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NEW HUNTER EDUCATION STRATEGIES TO PROTECT WHOOPING CRANES IN TEXAS AND KANSAS

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Abstract: The decline of the whooping crane (*Grus americana*) has often been attributed primarily to loss of habitat and overharvest. Although hunting of whooping cranes is now prohibited, shootings sometimes occur. Recent incidences have prompted the Texas Parks and Wildlife Department (Texas) and the Kansas Department of Wildlife and Parks (Kansas) to develop new strategies that increase hunter recognition of legal game species and awareness of endangered species concerns. Both agencies have produced or updated publications for goose and sandhill crane (*Grus canadensis*) hunters. Texas has developed video news releases for the general public and a video/DVD for hunter education classes designed to help goose and crane hunters avoid taking protected nongame species. Kansas has developed an online test that crane hunters must pass annually before they may purchase a crane permit.

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Key words: *Grus americana*, *Grus canadensis*, hunter education, Kansas, sandhill crane, Texas, whooping crane.

The Central Flyway in North America is home to the rarest crane species in the world, the whooping crane (*Grus americana*), and the most abundant and widely-hunted crane species in the world, the sandhill crane (*G. canadensis*) (Meine and Archibald 1996). Whooping cranes migrate through the Flyway during hunting seasons for sandhill cranes and geese, leading to a need for special conservation actions that prevent accidental shootings of these endangered birds.

The states of Texas and Kansas are two of the primary states for sandhill crane harvest and whooping crane use in the Central Flyway. Since 1975, Texas has ranked first in the number of sandhill cranes harvested annually, while Kansas has usually ranked third since its hunting seasons began in 1993 (Table 1) (Sharp et al. 2006). Kansas' harvest is significantly less than that of Texas; however, the presence of Endangered Species Act designated Critical Habitat in Kansas that is used by whooping cranes annually during fall migration heightens the conservation concerns in that state (Can. Wildl. Serv. & U.S. Fish & Wildl. Serv. 2005).

HISTORICAL PROTECTION MEASURES

Over the years, Texas Parks and Wildlife Department (Texas) and Kansas Department of Wildlife and Parks (Kansas) have adopted a variety of strategies to ensure whooping crane conservation while continuing to allow hunting of sandhill cranes. Texas has published side-by-side illustrations of whooping cranes and sandhill cranes in its annual waterfowl and crane regulations digest, while Kansas license vendors provide sandhill crane hunters with a brochure depicting look-alike species. Kansas hunters who purchase their sandhill crane permits online can download

the brochure.

Hunting seasons are timed to avoid overlap with average whooping crane migration dates to the extent possible. In Texas, hunting seasons for sandhill cranes are delayed until most of the whooping cranes have migrated through the sandhill crane hunting zones (Thompson and George 1987). Temporal separation is more difficult in Kansas, through which both species migrate; consequently, during 1993-2004 Kansas elected to start shooting hours at sunrise, one-half hour later than federal requirements, thus providing better visibility for proper species identification.

Both states protect whooping cranes by closing selected areas to hunting. In Texas, a coastal zone surrounding Aransas National Wildlife Refuge is not open to sandhill crane hunting at all, and the Light Goose (*Chen caerulescens* and *C. rossii*) Conservation Order hunt closes early in this area. Hunting zones are also modified near Kansas' designated Critical Habitat areas (Can. Wildl. Serv. & U.S. Fish & Wildl. Serv. 2005). Sandhill crane hunting is not allowed at Quivira National Wildlife Refuge, and the Refuge is closed to all hunting when whooping cranes are present. Portions of Cheyenne Bottoms Wildlife Area are closed to light

Table 1. Estimated retrieved harvests of sandhill cranes in Texas, Kansas, and the Central Flyway, 2000-2005 (Sharp, et al, 2006).

| Year | Texas | Kansas | Central Flyway |
|------|--------|--------|----------------|
| 2000 | 8,208 | 590 | 15,504 |
| 2001 | 6,999 | 1,033 | 15,000 |
| 2002 | 7,837 | 1,067 | 13,087 |
| 2003 | 11,560 | 942 | 18,335 |
| 2004 | 8,715 | 856 | 14,546 |
| 2005 | 12,681 | 475 | 18,575 |

goose and sandhill crane hunting when whooping cranes are present.

Both states also take steps to implement the general provisions of the Whooping Crane Contingency plan -- notifying landowners and hunters, issuing press releases, and monitoring whooping crane movements (U.S. Fish and Wildlife Service 2006).

Historical Losses

Whooping crane mortality appears to be greatest during migration; however, causes of mortality are known for less than 10% of these losses (Lewis et al. 1992). Since 1950, 30 whooping cranes are known to have died from powerline strikes, while 11 are known to have been shot. These data include the Aransas-Wood Buffalo flock that migrates through the Central Flyway, as well as more recent experimental populations (Can. Wildl. Serv. & U.S. Fish & Wildl. Serv. 2005). Seven of these shooting deaths occurred in the Central Flyway, but only 4 occurred during migratory bird hunting seasons; 2 birds were shot by goose hunters in Texas during legal goose seasons, and 2 others were shot by sandhill crane hunters in Kansas (Table 2). A fifth whooping crane was killed in 2003 in Texas by a hunter who was hunting in a closed area prior to the opening of any hunting season.

RECENT INITIATIVES

Since the shootings in 2003 and 2004, both Texas and

Table 2. Documented whooping crane shootings in the Central Flyway.

| Year | Description |
|------|--|
| 1968 | Texas – snow goose hunter shot a wintering whooping crane just north of the Aransas National Wildlife Refuge (NWR) boundary |
| 1989 | Texas – snow goose hunter shot a wintering whooping crane off San Jose Island near Aransas NWR |
| 1990 | Saskatchewan – a vandal ^a shot a migrating whooping crane in the spring |
| 1991 | Texas – a vandal shot a migrating whooping crane in the spring in Central Texas |
| 2003 | Texas – a hunter in North Texas, hunting outside of any legal hunting season and in a closed area, shot a whooping crane and several ducks |
| 2004 | Kansas – a group of sandhill crane hunters shot two whooping cranes near Quivira NWR just before shooting hours began |

^aVandals are defined as individuals who were shooting well outside of any other hunting season, apparently without intent to bag legal game.

Kansas have undertaken new education efforts to increase awareness among the general public and the hunting community.

Texas

In 2004, Texas’s Wildlife Diversity, Migratory Bird, Hunter Education, and Licensing Programs cooperated to create a “White Birds” campaign to make hunters more aware of look-alike species. A black-and-white poster depicting sandhill cranes, snow geese, whooping cranes, and 5 other nongame species was distributed to over 2,000 license vendors, and the poster artwork was printed in the annual waterfowl regulations digest. A 3-minute video news release was distributed statewide to inform the public about whooping crane migration, conservation, and look-alike species.

In 2005 Texas completed a 17-minute video, reproduced in VHS and DVD format, intended for hunter education and sportmen’s groups based on the format of the old “Shoot, Don’t Shoot” video series. The video, entitled “Be Sure Before You Shoot,” presents the viewer with an introduction to the conservation issues and then 5 sections composed of 24 scenes that depict 15 species of light and dark birds in flight (Appendix A). The video is intended to help goose and crane hunters differentiate between legal game and protected nongame species in the field and contains a mnemonic guide to learning bird identification (Appendix B). One section focuses on whooping crane identification. This video has been distributed to hunter education instructors and is being used in newly-developed Wing Shooting Responsibility Workshops.

Kansas

Kansas took immediate preventive measures after the shooting incident in their state. One was to further delay the earliest legal shooting time for sandhill crane hunting to 30 minutes after sunrise in November, when most of the whooping crane migration through Kansas occurs. Kansas also prepared several new printed materials, including a brochure entitled “Whooping Crane Information for Migratory Bird Hunters.” The brochure contains color pictures of legal game and similar nongame species. A new color poster was distributed to license vendors and regional offices in the crane hunting counties in 2005, and a new page depicting cranes and geese in good light and backlit situations was included in the 2005 hunting regulations summary booklet.

Kansas also created an online sandhill crane hunter certification test. Such a test has been used for bear hunters in Wyoming (WGF 2002) and swan hunters in Utah (UDWR

2002), but the Kansas test is the first developed for crane hunters. It consists of a series of 20 questions interspersed among background information about whooping crane conservation, identification of cranes and other look-alike species, and appropriate shot selection. Hunters are prompted until they select correct answers to all questions and must print a certificate after successful completion of the test. The test was mandatory for all sandhill crane hunters in 2006. It was completed by about 1,770 people for the 2006 season.

DISCUSSION

Overharvest during a period of unregulated hunting in the 19th and early 20th centuries is considered to be one of the primary factors causing the original decline of the whooping crane. The species has shown a steady population increase under protection from harvest (Can. Wildl. Serv. & U.S. Fish & Wildl. Serv. 2005). Causes of mortality, especially during migration, are poorly understood (Lewis et al. 1992); however, shooting, especially by otherwise legal migratory bird hunters, has not been documented to occur frequently. Nevertheless, loss of adults in a rare, long-lived species is worrisome, and if whooping crane populations continue to increase, potential for interaction with migratory bird hunters will continue to increase. States with migratory bird hunting programs should continue to seek innovative measures to better educate and instruct crane and goose hunters and should frequently assess the effectiveness of those programs. Mass media initiatives may also help educate the populace at large, develop support for conservation, and deter vandal-type shootings.

Appendix A. List of species included in “Be Sure Before You Shoot” video quizzes.

| Common Name | Scientific Name |
|-----------------------------|----------------------------------|
| American white pelican | <i>Pelecanus erythrorhynchos</i> |
| Double-crested cormorant | <i>Phalacrocorax auritus</i> |
| Great blue heron | <i>Ardea herodias</i> |
| Great egret | <i>Ardea alba</i> |
| Little blue heron | <i>Egretta caerulea</i> |
| Cattle egret | <i>Bubulcus ibis</i> |
| White ibis | <i>Eudocimus albus</i> |
| White-faced ibis | <i>Plegadis chihi</i> |
| Wood stork | <i>Mycteria americana</i> |
| Snow goose | <i>Chen caerulescens</i> |
| Greater white-fronted goose | <i>Anser albifrons</i> |
| Canada goose | <i>Branta canadensis</i> |
| Trumpeter swan | <i>Cygnus buccinator</i> |
| Northern harrier | <i>Circus cyaneus</i> |
| Sandhill crane | <i>Grus canadensis</i> |
| Whooping crane | <i>Grus americana</i> |

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Appendix B. FLAPSS mnemonic guide to species identification.

- F** **F**ormation or structure of the flock? Are there enough birds to determine if they are flying uniformly together such as in a “V” shape or “line”? If not, are there...
- L** **L**ight and dark patterns or distinguishable colors? Are they between me and the sun (i.e. in a shadow)? If so, what is the...
- A** **A**ction or motion of their wings? Is it steady, uniform or intermittent with pauses or lulls in shallow-rapid or slow-deep wing beats? If this does not give you a clue, then is the...
- P** **P**attern of flight - close to the ground or water, undulating and wavy or steady? If you still can’t determine what it is, then can you hear the...
- S** **S**ound of their wings or calls? If not, then be sure to check the...
- S** **S**hape, silhouette, or profile. Is it ‘pear’, ‘tear-drop’, ‘arrow-like’, ‘gangly’ or ‘chunky’?