To hear a sandhill crane call visit: allaboutbirds.org/guide/Sandhill_Crane/sounds

# WILDNESS INCARNATE

**Sandhill cranes are a conservation success.**

*Story by Kent Van Horn • Photos by Shane Rucker*

Daylight comes slowly today. At 5:50 a.m. it is 20 minutes past sunrise, but still dark. The cold wind adds force to the sleet and rain against my cheeks. In spite of multiple layers, I shudder from 35-degree cold, and acknowledge that it's a typical spring day in Wisconsin. I listen quietly; a red-winged blackbird calls, a mallard hen quacks then finally a rolling trumpet call echoes across marsh and field.

The reason for my departure from a warm bed this morning speaks. It is the call of the sandhill crane, prehistoric and penetrating as it resonates across the landscape. It is a call that speaks of wildness and mysteries unknown to those who start their day in warm beds.

When sandhill cranes are ready to mate, they begin a unique courtship ritual. The cranes have a series of movements that they do while making calls. The dance looks like two marionette puppets frolicking delicately on strings.

Two calls blend together as a pair engages in a unison call beyond the trees. This is my goal as I participate in the spring regional count organized by the International Crane Foundation (ICF) — to count sandhill cranes and particularly report paired birds. I begin trudging through field and marsh to see if my quarry is in my survey unit.

As I walk, dried grass crunches under my feet and the sounds conjure up memories. Twenty-five years ago these feet were walking through marsh grass on a duck research project in the Yukon River floodplain of central Alaska. As I rounded a group of spruce trees that day, a loud bugle from a disturbed pair of sandhill cranes broke the relative silence of the moment. I was about 20 miles from the Arctic Circle.

That memory fades into another setting, thousands of miles south in the Everglades region of Florida and a few years later.

As a young wildlife manager out on a wildlife survey of public land, the same trumpet call broke in. I looked out into the tall marsh grass and sandhill cranes were there making a declaration of wilderness despite being only miles from Miami. These experiences have helped to define my respect for a bird that now lives from Mexico to Siberia, and from the Pacific to Atlantic coasts; a bird that Aldo Leopold called "wildness incarnate."

## Sandhill summary

Sandhill cranes are found in a diversity of wetlands, however, they prefer an open landscape of grasslands, agricultural fields and wetlands. Sandhill cranes feed on plant tubers, seeds and grains, invertebrates, and small vertebrates found in uplands and wetlands.

They are territorial breeders, arriving each spring in Wisconsin where a pair establishes a 20- to 200-acre exclusive area for nesting and brood rearing. A pair's courtship includes an elaborate dance involving quick steps, half-spread wings and leaps into the air as well as the unison calling.

Sandhill crane nests are normally constructed over water in wetlands using the surrounding vegetation. A crane typically lays a single two-egg clutch annually but rarely fledges more than one young each year. After about 30 days of incubating the eggs, the young, called "colts," hatch out and are able to leave the nest walking or swimming within 24 hours. Parents first feed and then lead the growing colts to food.

After 60 to 70 days the young begin to fly and soon become strong fliers. In addition to the pairs, non-breeding cranes form small flocks in summer consisting of young birds, adults without territories and failed breeders. Sandhills are long-lived birds often surviving more than 20 years with the oldest wild sandhill crane reported at 35 years old. They go through "teenage years" from 2 to 7 years old when they pair up and may nest, but many do not successfully raise a colt to independence. As they grow older they become more experienced and successful parents.

## Exceeding a sustainable harvest

While the sandhill crane population is currently large and widespread, this was not always the case. As Euro-American presence expanded across North America in the 18th and 19th centuries, unregulated hunting, wetland drainage and habitat loss caused a significant reduction in the sandhill crane population.

Sandhill cranes were commonly harvested for food until the last century. In an account published in 1622, Edward Winslow and William Bradford noted that during the Pilgrim's first year in North America a "fat crane" was a welcome addition to the dinner table. From this and other information, many have suggested that sandhill crane was likely to have been on the original Thanksgiving dinner table, either in place of, or along side the turkey.

Unfortunately harvest of cranes and other wildlife species grew into unregulated market hunting during the early period of our country and exceeded a sustainable harvest level. At the same time, the productive soils of many shallow marshes were drained and farmed, reducing breeding habitat.

## Steps to recovery

In 1916 the Migratory Bird Treaty Act halted hunting of migratory birds, including sandhill cranes, unless a regulated harvest and monitoring of their populations was established.

Male and female sandhills look nearly alike. In the spring, they actually "paint" their feathers with mud to camouflage themselves in brown grasses.

Gradually, appreciation for wetlands grew, and habitat important to the cranes and many other wildlife species received protection. These conservation steps set the stage for sandhill crane recovery.

The sandhill crane likely reached its lowest population level in the 1930s. In 1936 President Franklin D. Roosevelt called the first North American Wildlife Conference to assess the status and stimulate conservation of many wildlife species. At this conference, Franklin S. Henika of Madison estimated that there were only about 25 nesting sandhill crane pairs in Wisconsin along with a few small breeding populations in other Great Lakes states. These were undoubtedly greater sandhill cranes.

At the same conference other biologists from Manitoba to Texas described "tens of thousands of the little brown cranes" on migration through the central flyway of North America. These birds would be another subspecies: the lesser sandhill crane. These estimates were anecdotal but describe a reduced population and distribution of sandhill cranes compared to today.

In the fall, cranes "stage" (gather in groups of several thousand) in larger wetland areas in Wisconsin like Crex Meadows, White River Marsh, Sandhill State Wildlife Area, Necedah National Wildlife Refuge and Comstock Marsh.

From the population low, the sandhill recovered to over 600,000 cranes and is now the most abundant crane species in the world. It is widely distributed, extending from northeastern Siberia, across North America from coast to coast and as far south as Cuba. During migration, sandhills are well known for congregating at staging areas in numbers in the 10,000's to 100,000's. As the sandhill crane population recovered, six subspecies were recognized as well as various populations that have distinct ranges and migration routes.

## Subspecies and populations

The three migratory subspecies include the lesser, greater and Canadian sandhill cranes. The Canadian sandhill crane is intermediate in size between the lesser and greater and some biologists do not consider it a distinct subspecies. These migratory subspecies are all relatively abundant and distributed across a broad breeding range in northern North America and eastern Siberia, with wintering grounds in the southern United States and Mexico. There are three non-migratory subspecies; the Mississippi, Florida and Cuban sandhill cranes, all with relatively low populations and restricted ranges.

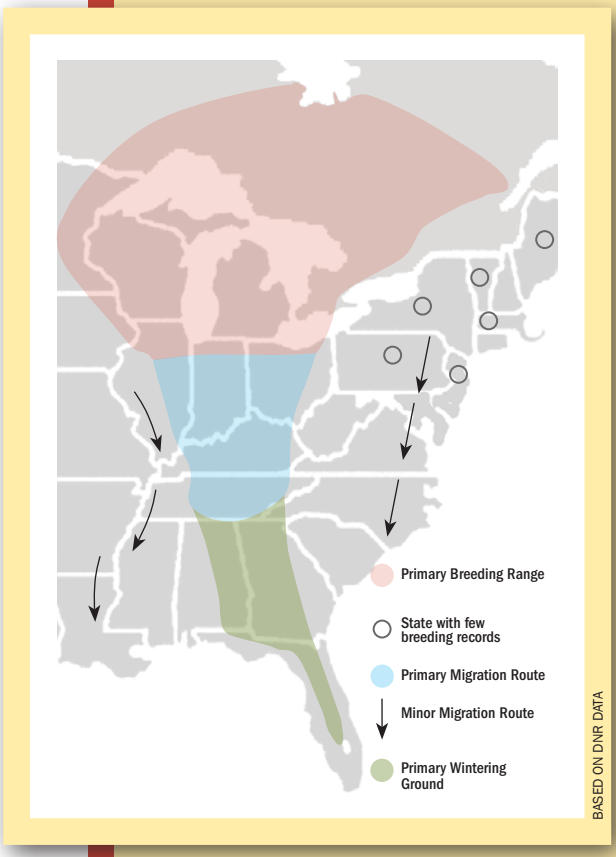
The U.S. Fish and Wildlife Service (USFWS) defines six migratory sandhill crane populations based on geographic ranges and migration routes, which allow management plan development, conservation efforts and hunting regulations by region. These populations include Pacific Flyway (lesser), Central Valley (greater), Lower Colorado River Valley (greater), Rocky Mountain (greater), Eastern (greater) and Mid-Continent (MCP) (lesser, greater and Canadian). The largest population of sandhill cranes is the MCP estimated at 450,000-500,000.

The greater sandhill crane subspecies is part of five of the six populations with a subspecies total of 100,000. Wisconsin is a core part of the Eastern Population (EP) breeding range for the largest of the greater sandhill populations which numbers near 60,000. The EP was the only population without a management plan until it was completed and approved by the Mississippi and Atlantic Flyway councils (36 states and provinces) in 2010.

## Range for the Eastern Population

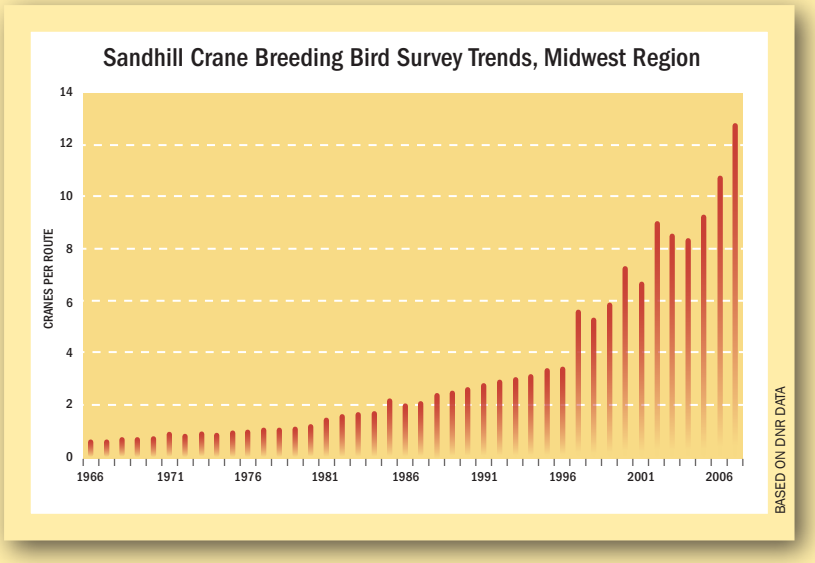
The majority of the EP breeds across the Great Lakes region (Wisconsin, Michigan, Ontario) and winters in Florida and southern Georgia. In late summer and early fall, these cranes leave the breeding grounds and congregate in large flocks at staging areas. EP cranes stage for several weeks before beginning their southeast migration through their primary corridor that includes Illinois, Indiana, Ohio, Kentucky, Tennessee and Alabama, en route to wintering grounds.

During recent mild winters, more cranes have remained further north in Tennessee, Kentucky, Indiana and even in southern Ontario on Lake Erie.

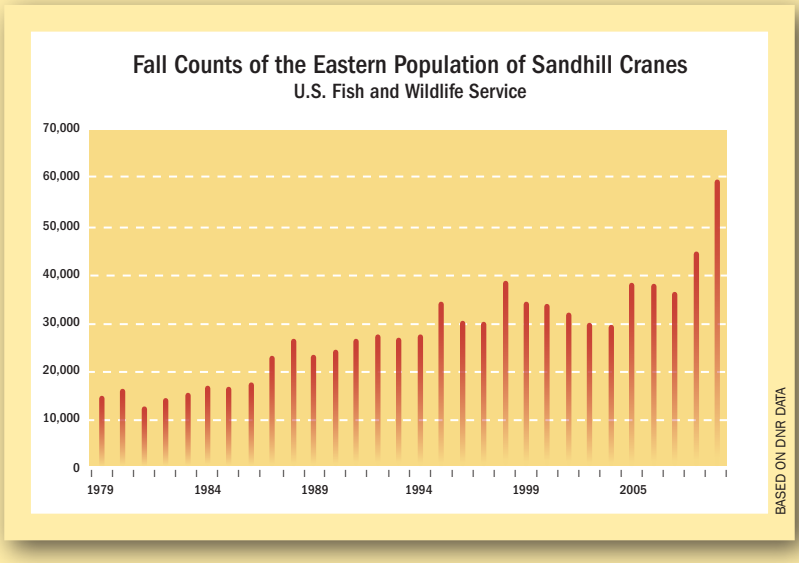



## Range expanding

The EP has shown a dramatic increase and range expansion in the last 20 years as documented by multiple sources. One source is the Breeding Bird Survey coordinated by the USFWS to monitor many species of birds through annual breeding indices (number of birds per route). For USFWS Region 3 (MN, WI, MI, IN, IL, OH, MO, and IA), which represents the U.S. core of the EP breeding range, the number of sandhill cranes counted per route has increased from under two cranes per route in the late 1960s to over 10 cranes per route in the early 2000s. This translates to an increasing population trend of about 10 percent per year.

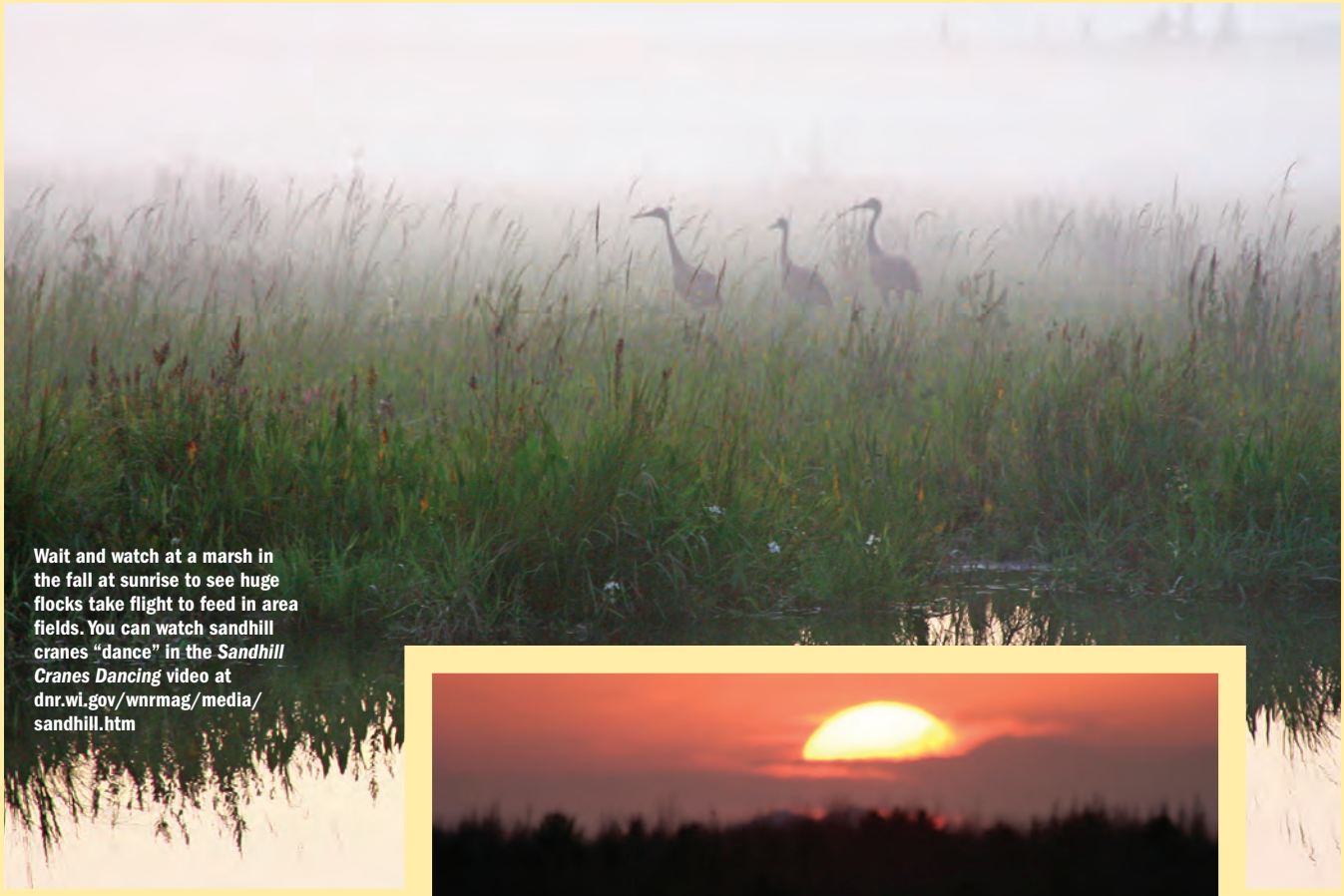



An additional EP survey coordinated by the USFWS each fall has also shown a dramatic population increase.




As the EP has increased, its breeding range has expanded. The EP breeding range core in south-central Ontario, Michigan and Wisconsin has steadily spread into Illinois, Iowa, Minnesota, Quebec and beyond. The Ontario Breeding Bird Atlas indicates that the probability of seeing a sandhill crane has increased from 12 percent during 1981-85 to 33 percent during 2001-05. Much of this increase was from EP cranes breeding in southern Ontario.

Breeding pairs occurred for the first time in Indiana in 1982, Ohio in 1987, Iowa in 1992, Pennsylvania in 1994, and in New York state in 2003. EP sandhills have pioneered into the northern Atlantic Flyway with 19 instances of nesting sandhills at six locations in Maine, Massachusetts, New Jersey and Vermont between 2000 and 2008. Breeding sandhill crane pairs in Quebec have increased from one to four pairs per 5-square-kilometer plots from 1990-2000 to eight to 13 pairs from 2002-2008.



Wait and watch at a marsh in the fall at sunrise to see huge flocks take flight to feed in area fields. You can watch sandhill cranes "dance" in the *Sandhill Cranes Dancing* video at dnr.wi.gov/wnrmag/media/sandhill.htm

Today, the sandhill crane population is in good shape, benefiting from habitat restoration projects around the state.

## Recovery

Within Wisconsin, breeding sandhill cranes have increased in overall numbers, breeding density and range. While Henika's 1936 estimate of 25 breeding pairs in Wisconsin was likely an underestimate, it still reflected a very low population. In contrast, the current spring sandhill counts in Wisconsin organized by ICF document a dramatic increase in the spring population to about 15,000 cranes. The fall USFWS coordinated count has totaled nearly 25,000 sandhills in Wisconsin during late October.

Breeding sandhill crane density in central Wisconsin may have reached capacity while breeding density estimates in northern Wisconsin continue to increase. A significant proportion of the summer sandhill population in Wisconsin consists of young birds or nonbreeders with a reasonable estimate of 5,000 breeding pairs of sandhills along with several thousand nonbreeders.

For perspective, this successful recovery of the EP can be compared to another once rare but well-known migratory bird, the giant Canada goose. This subspecies was thought to have been eliminated as a nesting species in Wisconsin by the 1930s and was later considered extinct as a subspecies. However the subspecies was "rediscovered" in 1962. Through conservation efforts this bird recovered across its range and by 1986 a spring count of giant Canada geese breeding in Wisconsin showed 11,000 geese. Over the next 20 years these geese experienced a growth rate of 13 percent per year reaching a level of over 120,000 birds.

While these two bird species have different breeding characteristics, their stories, nevertheless show the potential for the recovery of a wildlife species.

## A symbol

This significant increase in sandhill cranes has not gone unnoticed producing different reactions. From the writings of Aldo Leopold, which etched a picture of the crane as a symbol of lost wild habitat, the sandhill crane has emerged as an icon of conservation success and a changing wildlife legacy.

As a large visible wildlife species, with unique characteristics such as their courtship "dancing" and prehistoric call, sandhills are a charismatic species attractive to wildlife watch-

Sandhill families feed on tubers (a swollen underground plant stem, like a potato) worms, grasshoppers, snails, frogs, seeds, and sometimes snakes, small birds and mice. Cranes can be a problem for farmers when they pull up sprouting corn in springtime and eat large amounts of farm field grain in the fall.

ers. The crane's annual habit of congregating in thousands at staging areas during migration brings more attention.

Many residents have developed a passion for sandhill crane viewing and conservation over the decades. For example, the spring ICF sandhill crane count began in 1976 with 200 people in Columbia County and now involves over 2,500 volunteers covering most of Wisconsin as well as portions of our neighboring Midwest states. Large fall staging flocks attract wildlife watchers within Wisconsin at locations such as Crex Meadows Wildlife Area.

As sandhills move south they often form larger concentrations such as the 20,000 sandhill cranes that gather at Jasper-Pulaski Fish and Wildlife Area in northwest Indiana. Thousands of people are attracted annually to view this large group of cranes. Along the Platte River in Nebraska where the MCP migrates, concentrations of hundreds of thousands of sandhill cranes are a popular tourist attraction.

From the closure of sandhill crane hunting in 1916 and the 1930s population low point to the dramatic continental population recovery, sandhills also attracted attention from the hunting public. Within Wisconsin and elsewhere, much of the recovery of sandhill crane habitat can be attributed to hunter efforts.

Hunters have provided funding for decades through federal and state duck hunting stamps as well as taxes on firearms and ammunition that go to land acquisition and restoration. In Wisconsin, these funds supported the purchase of public lands such as the Necedah National Wildlife Refuge and Sandhill/Meadow Valley State Wildlife Areas in the 1930s and 40s, which are in the core sandhill crane recovery area.

Many hunters feel a connection between their conservation efforts and the recovery of a game species that had been common table fare for much of our nation's history.

## Finding a balance

On January 1, 1961, 45 years after the hunting of sandhill cranes ended, a 30-day hunting season was authorized on sandhill cranes in eastern New Mexico and western Texas. In the fall of 1961, a 30-day season was added for Alaska. Since that initial period, now 50 years ago, sandhill crane hunting has been steadily expanding as the continental sandhill crane population has continued to grow. Sandhill cranes are hunted in 12 states with Minnesota added to the list in 2010. Mexico and three Canadian provinces also have sandhill crane hunting.

It is a great conservation victory when a species can move from a rare status to a level where it can support regulated hunting across the continent.

The USFWS manages migratory game bird hunting by distinct populations. Currently the USFWS has authorized the hunting of four of the six migratory sandhill crane populations and all populations are either stable or increasing. Populations with hunting seasons include the Lower Colorado River Valley (LCRVP), Rocky Mountain (RMP), Pacific Flyway (PFP) and Mid-Continent (MCP). The MCP is the largest with an estimated 450,000-500,000 sandhills and an average annual harvest of 35,000 within the United States, Canada and Mexico. The RMP is estimated at 21,000 with an annual average U.S. harvest of 760 in recent years.

The Pacific Flyway is about 25,000 with an annual harvest of about 250 birds in Alaska only. The smallest hunted population of sandhill cranes is the LCRVP estimated at 2,800 cranes and the first hunt, a three-day youth hunt, was conducted in 2010 with no

**When winter falls on the Wisconsin landscape, cold mid-November winds will carry the cranes circling up to heights of 5,000 feet to catch stiff north winds on their flight to southern climates.**

recorded harvest. The Central Valley Population of sandhill cranes is estimated at 5,000-7,000 and does not have a hunting season.

The EP, at 60,000, is the second largest of the sandhill crane populations and currently does not have any hunting seasons. However, the EP management plan has provisions for establishing hunting seasons in both Canada and the United States if a state or provincial agency develops a jurisdictional hunting plan. Sandhill crane hunting seasons across the United States provide hunting opportunities for over 10,000 migratory game bird hunters each year.

Not everyone appreciates the significant increase in the sandhill crane population. During the 1990s the EP increased to approximately 30,000 cranes as measured by the USFWS fall survey. During this period conflict intensified in the agricultural communities of Wisconsin as well as Minnesota, Michigan, Tennessee and Ontario. The primary problem occurs shortly after crops are planted and the cranes arrive in the spring.

Sandhill cranes are very adept at pulling up the new shoots of crops such as corn and then eating the unearthed kernel. According to the University of Wisconsin–Extension, high risk fields can lose up to 20 percent of the planted corn from sandhill crane depredation and some fields have had losses of over 50 percent. Farm fields that are high risk for sandhill crane crop damage include those within one mile of emergent wet meadows and it is estimated that there are 2.8 million acres of farm fields within this category in Wisconsin alone.

Several south-central counties including Columbia, Dane, Dodge, Green Lake, Jefferson, Marquette, Waushara and Winnebago support these types of fields and have the highest density of nesting sandhill cranes. According to the United States Department of Agriculture-Wildlife Services (USDA) in Wisconsin, in 2009 they received 82 complaints of crane crop damage and farmers lost $571,636 to sandhill crane depredation.

This damage has resulted in demands from farmers and elected officials for crane population reduction, lethal control, hunting seasons and government damage compensation. Scare devices have been used on cranes causing agricultural damage but have had limited effectiveness

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