

# Cheyenne Bottoms: Jewel Of The Prairie





# An Introduction To Cheyenne Bottoms

by **W. Alan Wentz**  
*Assistant Secretary/Operations*

*Kansas Department  
of Wildlife and Parks  
Pratt*

**W**hat is Cheyenne Bottoms? The Bottoms has been described as Kansas' Galapagos, its Amazonia, its Serengeti all in one. It is a 41,000-acre elliptical-shaped, basinlike lowlands located six miles northeast of Great Bend in Barton County, Kansas. The Kansas Department of Wildlife and Parks operates a 19,857-acre wildlife management area that consists largely of wetlands along the southeastern edge of the sink.

More to the point, Cheyenne Bottoms is the most important ecosystem in Kansas and the most important migration point for shorebirds in North America and perhaps in this hemisphere.

The International Shorebird

Survey, based at Manomet Bird Observatory, in Manomet, Mass., rated Cheyenne Bottoms as the top shorebird staging area in the 48 contiguous states during migration. Studying more than 200 known stopover sites, the survey discovered that Cheyenne Bottoms attracted almost half (45 percent) of the entire northward migrating populations of North American shorebirds.

More than 90 percent of the population of five species pass through the Bottoms:

- White-rumped sandpiper
- Baird's sandpiper
- Stilt sandpiper
- Long-billed dowitcher
- Wilson's phalarope

In addition, 74 percent of all pectoral sandpipers, 73 percent of all marbled godwits and 59 percent of all Hudsonian godwits pass through the Bottoms. One waterfowl count on the Bottoms put the number of ducks at 225,000, geese at 25,000. The Bottoms is federally designated critical habitat for the whooping crane. Other endangered species, including the least tern, peregrine falcon and bald eagle, for example, also call the Bottoms home. Because of these important wildlife values, the Department has petitioned to list Cheyenne Bottoms as the first non-federal area in North America under the "Convention on Wetlands of International Importance."

But Cheyenne Bottoms is a threatened ecosystem. It is beset by water problems, sometimes too much and often too little. Inadequate attention has been paid to the area by all agencies, including ours, over many years. But new emphasis is being directed at the Bottoms by the Kansas Legislature, private organizations, and state and federal agencies. This special report will inform you of the Bottoms' importance and what the Kansas Department of Wildlife and Parks has planned for its future.



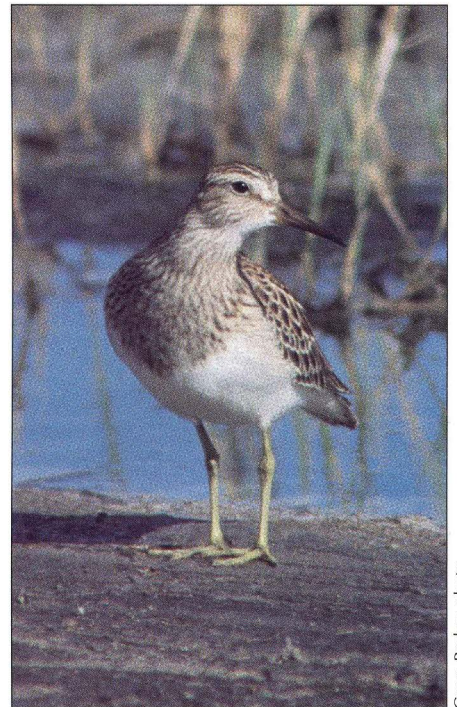
Mike Blair photo

The Baird's sandpiper is one of five species that rely heavily on Cheyenne Bottoms during migration. More than 90 percent of this species passes through the area.



Ron Spomer photo

Wilson's phalarope (above) and the pectoral sandpiper (below) are two shorebirds that regularly use Cheyenne Bottoms Wildlife Area during migration.



Gene Brehm photo





## Footing The Bill

“Sportsmen dollars have been paying for most of the work that’s been done at Cheyenne Bottoms Wildlife Area. But the Department’s renewed efforts at the Bottoms will take additional dollars,” says Kent Monte, acting chief of the Wildlife Division. One estimate, which includes survey design, land acquisition, new and reconstructed dikes and additional riprapping, has been set at \$15.5 million. The degree to which improvements can be added to Cheyenne Bottoms, however, depends largely on the funding available.

But while the Kansas Department of Wildlife and Parks is increasing its overall commitment to the Bottoms, we can’t do it all alone. These projects are going to require the cooperation and financial assistance of individuals, corporations, conservation organizations and the federal government, in addition to the state of Kansas.

“Everyone’s contribution is important,” says W. Alan Wentz, the Department’s Assistant Secretary. “That includes the schoolchildren that send us pennies, the corporations that might donate equipment and dollars, and the need for a federal government appropriation of millions of dollars to fix the water-delivery system.

“Building a small nesting island for least terns, for example, may cost about \$200,” Wentz says. “Improving the inlet canal is estimated to cost \$2.5 million. Adding a dike to an existing marsh pool could range from \$60,000 to more than \$1 million. Riprapping a dike to protect it from wind and wave action will cost \$384,000 per mile, and we have 20 miles of dikes in need of protection.

“Because of Cheyenne Bottoms’ enormous value to endangered species and migratory birds, we hope the U.S. Fish and Wildlife Service and the U.S. Congress will help fund some of the major development needs at the Bottoms,” Wentz concludes.



Ron Spomer photo

More than 90 percent of all long-billed dowitchers (above) pass through the Bottoms. The area is attractive to many species of shorebird, so it’s naturally popular with birdwatchers.



Gene Brehm photo



# The Way It Was

by Mike Miller  
Associate Editor

*Based on Marvin Schwilling's report entitled "Cheyenne Bottoms," which appeared in the December 1985 issue of The Kansas School Naturalist.*

Take a moment to look back in time. Imagine the area we now call Kansas 150 years ago. As you traveled from east to west, you would have seen dense hardwood forests in the eastern region. Then you certainly would have been impressed by the seemingly endless horizons of prairie and, of course, by the wildlife. You would have jumped mule deer, flushed prairie chickens (perhaps a foraging grizzly bear), seen herds of antelope, and very likely paused in awe as a huge herd of buffalo passed before you. What a mecca this vast prairie must have been, but you would not have been prepared for an encounter yet to come.

As you near the center of the state, you hear a faint, high-pitched din. It grows louder, until finally you crest a hill and before you lies an immense low





area. And quickly, the source of the din is evident. Thousands, no, hundreds of thousands of birds are everywhere. The spring migration is on, and Canada and white-fronted geese, mallards, pintails, teal, wigeon, gulls, sandhill and whooping cranes, and countless wading birds fill the air and ground before you. You watch the chaos as birds, like swarms of mosquitos, fill the sky.

You have come to the area now called Cheyenne Bottoms. You begin to cross the marsh and find the ground wet and spongy. A huge wave of blue-winged teal rolls up in front of you. Snipe flit about in erratic flights, as do dowitchers, yellowlegs and sandpipers. Family groups of white-faced ibis glide by, and you watch long lines of pelicans follow thermals in roller-coaster fashion. Still more waterfowl ignore your

presence and go about chattering and feeding. The water becomes deeper and the bullrushes thicker, so you begin to circle the area.

You now realize just how immense the marsh is. Elliptically shaped and totaling 41,000 acres, the marsh is bounded on the north, south and west by steep limestone, sandstone and clay bluffs, some reaching 100 feet above the marsh floor. You scale the bluffs to get a better view.

From the higher vantage point, you can see large pools of water and mudflats. The shallows are alive with foraging shorebirds including phalaropes, black-necked stilts, egrets and great blue herons. The sky above is like a busy airport with new flocks arriving and others lifting and moving to new areas. This must surely be the jewel of the prairie.

This is what early settlers and Indians must have seen when they came to Cheyenne Bottoms. And they, too, recognized the area's uniqueness and importance. The lowland is named after the Cheyenne Indians, who fought to keep the area as their hunting grounds. One such battle was said to be against the Kiowas or Pawnees; history is unclear. The particularly bloody battle took place around 1825 and one of the streams running into the Bottoms was said to have run red with blood, hence the name Blood Creek.

These early Americans must have

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This expanse shows a good mix of interspersed cattails and marsh. This interspersion is desirable because it maximizes the "edge," where two or more types of vegetation meet. Edge attracts wildlife.

Gene Brehm photo







**Pintails**



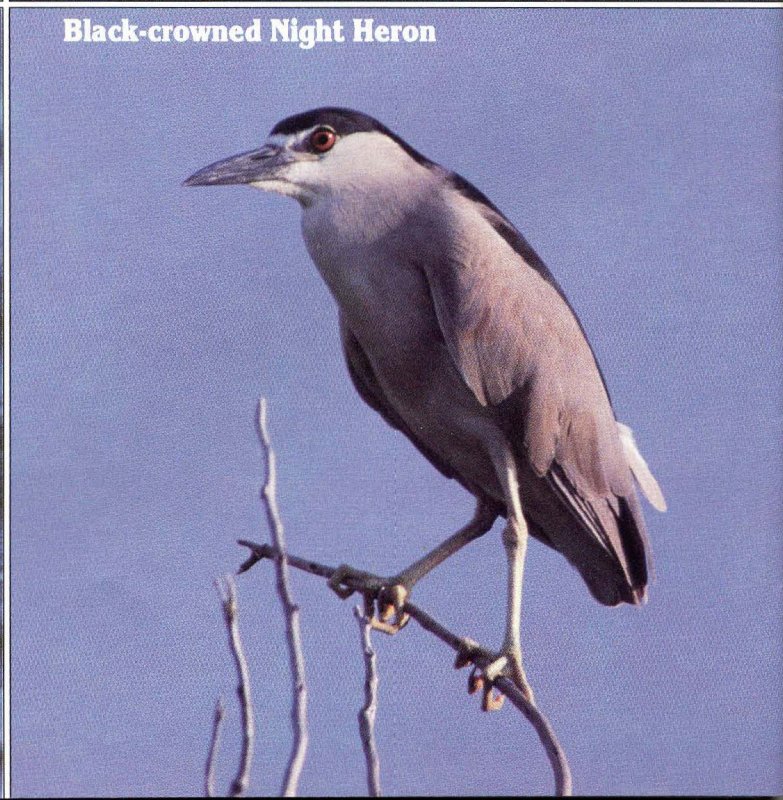
**White-faced Ibis**



**Sanderling**



**Yellowlegs**



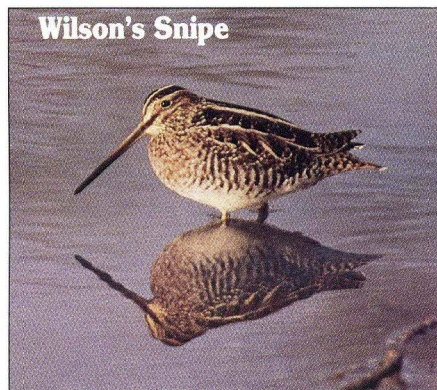
**Black-crowned Night Heron**





Mike Blair photo

More than 300 species of waterfowl and shorebirds have been observed at Cheyenne Bottoms Wildlife Area, an excellent place to observe spring and fall migrants. Several species regularly seen on the Bottoms are shown here and at left.



Gene Brehm photo

also felt the same frustrations we feel today. The marsh has never had a reliable water source. During dry periods, the area would be but a shadow of its former image. But flood conditions in the late 1800s and early 1900s created a huge lake. White men controlled the area by then, or tried to control it. An irrigation congress met in Great Bend in 1896, and the Grand Lake Reservoir Company was formed. The company proposed to divert water from the Arkansas River into Cheyenne Bottoms and form a great recreation and irrigation lake. The Koehn Ditch, completed in 1898, diverted water from the Arkansas River, through a canal and to the marsh. The canal worked fine, running water to the Bottoms for 100 days until flood waters washed out the diversion dam. But even then, it was

evident that there wasn't enough water to maintain a large lake during dry-weather periods.

During wet-weather cycles, however, the marsh was indeed a waterfowl paradise. In the late 1800s and early 1900s, the market hunters came to the Bottoms in droves. In 1880 canvasbacks sold for \$8 per dozen, redheads brought \$6 per dozen, mallards \$3 per dozen and other mixed ducks sold for \$1.50 per dozen. One account tells of the great slaughter of ducks in 1904. Dealers would make trips to hunting camps, bringing ammunition and buying ducks. The ducks were shipped in refrigerator cars to Eastern markets.

Most men sought to maintain the Bottoms as it was during the wet years. One group proposed another canal, this one diverting water from the Smoky

Hill River. But an opposing group wanted to drain the basin and farm the land.

In 1925 the Forestry, Fish and Game Commission was created, and the agency assumed the responsibility of developing the Bottoms. Then another wet-weather cycle filled the Bottoms with more than 20,000 acres of water, and interest in the area again peaked. The U. S. Fish and Wildlife Service recommended creating a national wildlife refuge. When Congress legislated \$250,000 for the project in 1930, the refuge seemed a certainty. But when the actual funding was reduced to \$50,000, the idea was scrapped.

During these frustrating years, conservationists made many pleas for help in saving the Bottoms. But it wasn't until the Pittman-Robertson (P-R) Act was signed in 1937 that funding was a reality. The P-R Act provided federal money to states for wildlife restoration. These federal monies allowed the Forestry, Fish and Game Commission to purchase and develop the southeast edge of the basin. Dikes, roads and hunting blinds were built, and a part of the area was opened to public hunting in 1952. In 1957 a diversion dam on the Arkansas River and an inlet canal were completed.

The waterfowl management area totaled almost 20,000 acres. Numerous management plans for the area were developed. There were five pools. Pool 1 was to be the water-supply reservoir. With that, the perimeter pools could be drawn down to permit growth of aquatic plants or the planting of millet, then refilled. But managing the marsh is much more than just water manipulation.

Throughout the years, the Bottoms has continued to frustrate managers. They fight too much water, too little water, too many cattails and siltation, not to mention the day-to-day maintenance of dikes, pumps and equipment. But during the spring and fall migrations, all the trouble is worth it. As more wetlands are drained in the name of progress, Cheyenne Bottoms becomes an even more important migration stop for waterfowl.

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white-faced ibis, sanderting and black-crowned night heron photos by Gene Brehm; pintail and yellowlegs photos by Mike Blair





Mike Blair photo

Area manager Karl Grover opens a gate, the primary means of water movement on the area.

# Cheyenne Bottoms Today...

by **Karl Grover**  
*Area Wildlife Manager  
Cheyenne Bottoms Wildlife Area  
Great Bend*

**W**hen Cheyenne Bottoms was new, the manager had the ability to drain any pool. With the inlet system, he was reasonably sure he'd have enough water to refill the pool when the management plan called for it. With this fairly reliable water source, the management of Cheyenne Bottoms was something that could be planned. Today, however, the area manager at Cheyenne Bottoms faces problems that were given little thought 15 or 20 years ago. These prob-

lems have made the current management strategy more of a reaction to weather as opposed to planned actions.

One of the biggest management obstacles is the decreased flows in the Arkansas River. Due to increased irrigation, damming and improved soil conservation practices that reduce surface run-off, the Arkansas River flows have dropped to the point where the inlet system can't be counted on to deliver sufficient water for filling the five area pools.



The natural aging of the marsh is another hurdle that must be cleared. Silt accumulation around the water-control gates and in the inlet system has severely hampered the movement of water used in marsh management. Silt removal, then, would allow for more efficient handling of water. Sediment buildup is a natural process that requires equipment specially designed to remove silt and dig level ditches. Equipment that can operate in mud and water hasn't been available.

Flooding is yet another variable in managing the Bottoms. The two creeks that drain into Pool 2 have no control gates. As a result, rains to the northwest of the marsh can cause significant flooding. In 1981 a lawsuit was filed against the Kansas Fish and Game Commission over flooding of private land adjacent to the Bottoms. This suit has resulted in limiting the management options for Pool 2. Drowning mowed cattails by holding water in Pool 2 is no longer an option.

Manipulating vegetation is yet another aspect of marsh management that's affected by water movement. Since the water-handling capability at Cheyenne Bottoms is hindered through silt accumulation, cattail expansion in the pools is accelerated. This leads to a deterioration of the wildlife habitat.

So why is our money and effort being devoted to preserving a swamp? The answer to this question goes far beyond economics. Here are a few quotes from some folks with close ties to the Bottoms:

\* \* \* \*

"Cheyenne Bottoms means a lot to me" says Roger Brack of Otis. "I can shoot geese on ponds out at my place, but it isn't the same. I like to hunt over decoys, but I don't have to shoot to enjoy the marsh. At Cheyenne Bottoms I've had a bald eagle swing over my decoys. That's special. Not many people get an opportunity to see birds like that."

\* \* \* \*

"I enjoy duck hunting, goose hunting, fishing and watching all kinds of wildlife and birds. I've been around Cheyenne Bottoms for 70 years, and I've seen lots of changes. You could go



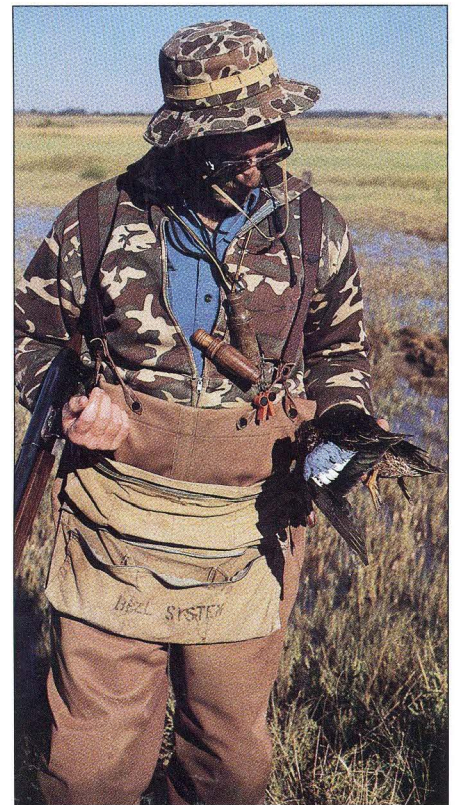
Mike Blair photos

Duck nesting baskets have been installed to enhance mallard production at the Bottoms.

down to the Bottoms and see thousands of ducks and geese. When they'd rise up, they'd look like big clouds," recalls Leroy Langloss of Hoisington.

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"Motel operators in Barton County can see in their records a gradual decrease in the number of non-resident hunters" says Chris Collier, director of the Great Bend Convention and Visitors Bureau. "This decline coincides with the decrease in water (and waterfowl) available to Cheyenne Bottoms."



Hunters using Cheyenne Bottoms bring dollars into the Great Bend-area economy.

**M**arshes such as Cheyenne Bottoms are priceless. Why? Because without these wetlands, the birds that depend upon them for their existence would no longer be available for photographing, hunting or simply viewing. Losses of that magnitude can't be measured. But even today, with the problems facing the Bottoms, peak duck numbers can approach 300,000, and peak goose numbers can reach 35,000. According to the International Shorebird Survey, Cheyenne Bottoms is one of the most im-



portant sites in the western hemisphere for migrating shorebirds. The survey estimated that 45 percent of the North American shorebird population stops at Cheyenne Bottoms during spring migration. The survey also estimated that more than 90 percent of the North American populations of white-rumped sandpiper, Baird's sandpiper, stilt sandpiper, long-billed dowitcher and Wilson's phalarope rest at the Bottoms during spring migration.

The U.S. Fish and Wildlife Service has classified the Bottoms as critical

habitat for the endangered whooping crane. The area also offers wintering habitat for the endangered bald eagle. The endangered least tern has been known to nest on the area and efforts are under way to provide the species with more permanent nesting habitat. The piping plover, listed as a federally threatened species, is a migrant visitor to the area.

Twelve species of ducks, including the mallard, blue-winged teal, canvas-back and the mottled duck, are known to nest at Cheyenne Bottoms. Of the

415 species of birds known in Kansas, 320 have been seen at Cheyenne Bottoms. For the birdwatcher, that means that more than 75 percent of the birds recorded in Kansas can be seen at this one location.

And it's been estimated that 15,000 visitors came to Cheyenne Bottoms in 1986 to enjoy watching or photographing the wildlife resource. Waterfowl hunters for the 1986-1987 season have been estimated at more than 12,000. Accurate estimates for the number of deer and pheasant hunters aren't avail-

## The Endangered Least Tern

**Habitat:** Least terns spend the summer in Kansas, nesting on barren areas near water (sandbars and salt flats, for example). Least terns may occur anywhere in the state, but nesting colonies are restricted to the Cimarron River and the Stafford County salt marshes. This migrant may occasionally nest at Kirwin Reservoir in Phillips County.

The Kansas Department of Wildlife and Parks has designated the following eight counties as critical habitat for the least tern: Barton, Rice, Stafford, Reno, Phillips, Meade, Clark and Comanche.

**Food:** A large supply of small fish and aquatic insects must be near the least tern's nesting area.

**Description:** As the name indicates, least terns are the smallest members of their North American family, measuring only 8-10 inches long. Slim, silver wings carry them gracefully through the air.

Least terns return to Kansas from their winter home in Peru and Venezuela in late April. Nesting begins by late May, when two eggs are laid on bare ground. After three weeks of incubation, the spotted young hatch and leave the nest to hide in clumps of grass. Least terns leave Kansas in late August.

**Key Features:** In summer, least terns have a yellow bill with black tip and yellow webbed feet. These rare terns are sometimes confused with two larger terns — the Forster's tern and the common tern. Least terns have more black on their pointed wings and are only half the size of their look-alikes.

**Reason For Decline:** Destruction



Mike Blair photo

Barton County, home to Cheyenne Bottoms, is one of eight Kansas counties designated as critical habitat for the endangered least tern. Area management plans call for building nesting islands for least terns. Construction cost: about \$200 per island.

and alteration of the tern's nesting areas — spots that were limited to begin with — are the main reasons for this bird's decline. Early reduction of the bird's numbers can be attributed to commercial use of their feathers and skins for women's hats around 1900. The number of least terns nesting in

Kansas today is about 55 pairs.

**Recovery Plans:** Management techniques consist of educating the public, protecting the terns through federal listing and maintaining nesting areas. In some areas, plants have been removed from sandbars and salt flats to restore nesting sites.

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able, but they are sure to exceed 1,000 individuals per year. And trappers harvest a part of the area's furbearer population.

In addition, Cheyenne Bottoms has a big economic impact on the state. A 1986 study reports that the Bottoms generates \$2.5 million to local and state economies each year. The study also shows that more than 60 percent of that \$2.5 million was contributed to the Barton County economy. So Cheyenne Bottoms is not only vital habitat for millions of birds and other wildlife, it's also an important resource for local and state economies.

The Bottoms also serves as an outstanding site for scientific investigations. Studies, in addition to the 1985-1986 Cheyenne Bottoms Environmental Assessment, included work on duck and goose nesting and production. Currently two studies are being conducted on the area. One deals with habitat use by shorebirds, and a second is looking at ducks' food habits during the fall migration. Research projects such as these help the Department ensure that the ecosystem remains a vital part of Kansas' natural scene.

Current management practices, scientific investigations and maintenance schedules at Cheyenne Bottoms are all directed toward one goal: to provide a diverse marsh habitat for migrating waterfowl and shorebirds.

To be more specific in how the Department is achieving that goal, several objectives have been listed:

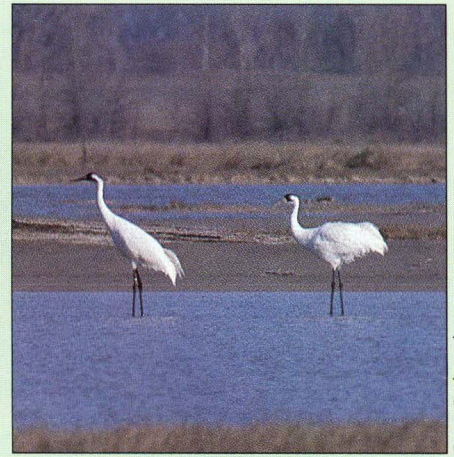
- Provide additional food sources for migrating and resident birds;
- Expand waterfowl and non-game nesting structures, and develop more areas throughout the marsh to enhance shorebird nesting;
- Provide diverse waterfowl hunting opportunity without reducing the birds' ability to feed and rest during migration;
- Provide additional opportunity for birdwatching and other non-hunting uses without posing threats to nesting birds;
- Expand area development and maintenance;
- Initiate studies to address specific management questions.

It's hard to keep all area visitors satisfied, but with this renewed commitment to maintaining and enhancing the Bottoms under way, there should be a lot to smile about.

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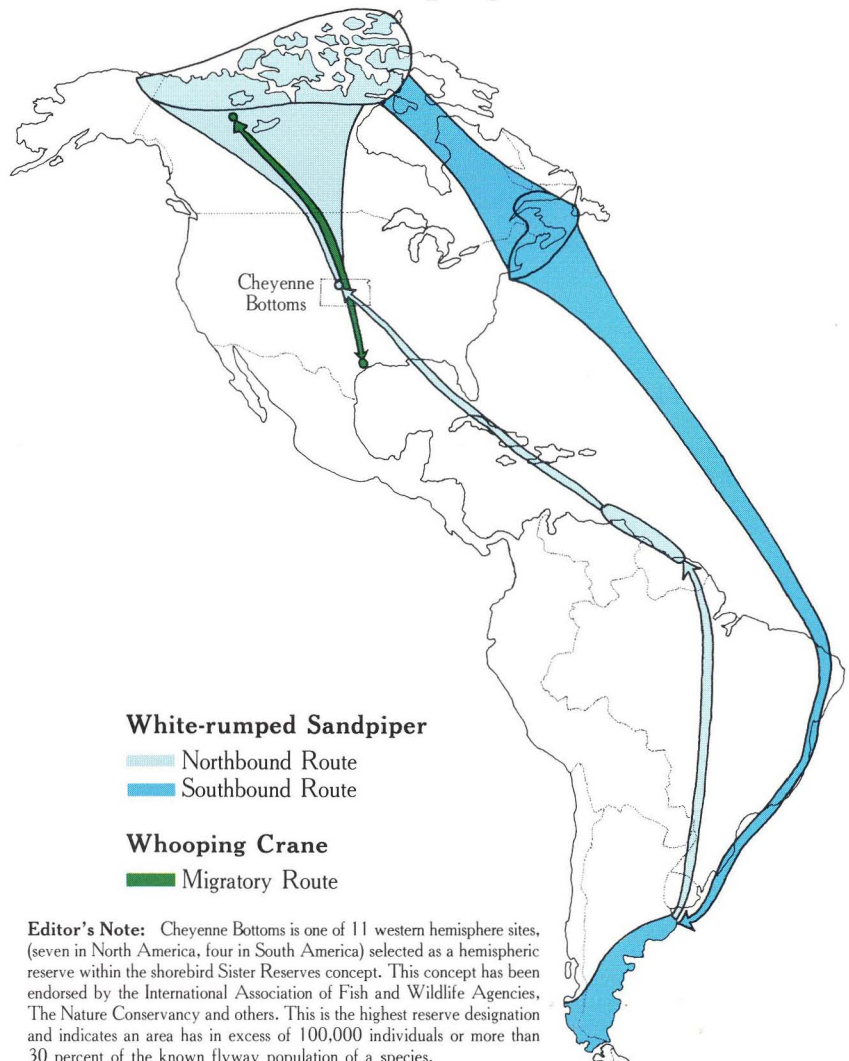
Marvin Schwilling photo



Gene Brehm photo

More than 90 percent of the world's white-rumped sandpiper (left) population passes through Cheyenne Bottoms. The Bottoms has been designated as critical habitat for the endangered whooping crane (right). The world population of whooping cranes numbers 199 birds, but only 156 are in the wild. About 134 whoopers migrate through Kansas.

## Migration Routes Of The White-rumped Sandpiper And Whooping Crane



Patti Murphy/University of Kansas Museum of Natural History map



# WATER:

## The Life Blood Of Cheyenne Bottoms

by **Bill Layher**  
*Supervisor-Environmental Services*  
*Pratt*  
and  
**Larry Zuckerman**  
*Aquatic Ecologist*  
*Pratt*

A marsh is not a marsh without water. So Cheyenne Bottoms Wildlife Area near Great Bend is not unique from that perspective. Without life-giving water, the array of bird life and other animals that depend on the Bottoms would disappear.

But some folks realize the Bottoms used to be dry — at least two or three years out of every five. So what's the problem? Wetlands have diminished across Kansas as well as throughout North America. Historical records suggest there once may have been as many as 12 great marsh complexes in Kansas, but only three of those remain today (Cheyenne Bottoms, Jamestown and Quivira). Small wetlands still exist, but we've lost nearly 50 percent of what remained in 1950. And we lose more of these precious acres every day. As wetlands diminish, the Bottoms becomes even more critical to passing hordes of shorebirds and waterfowl. There is no other wetland in the interior United States large enough for so many birds to stop and build energy reserves on the long migratory trek.

So water was obtained artificially for the basin, and the system has been maintained over the years, at least when water was available. In 1948 the Kansas Fish and Game Commission (forerunner of the Kansas Department of Wildlife and Parks) obtained legal rights to most or all of the water flows from Wet Walnut Creek and diverted a relatively stable water supply to Cheyenne Bottoms. This senior appropriation was granted for 20,000 acre-feet of water with a peak flow of 500 cubic feet per second (cfs). An acre-foot of water is the amount of water it would take to flood an acre of land 1 foot deep. Over the years the Department has secured this right through constant use. This "senior right" has priority over all other users in the Wet Walnut drainage.

The Soil Conservation Service (SCS) developed an environmental impact statement for the Wet Walnut Watershed Plan in the late 1970s (please see the map on Page 41). So far 23 watershed dams have been built in that basin. Early on, the Department ques-

tioned the impacts of widespread dam building on downstream flows that impact Cheyenne Bottoms Wildlife Area. SCS claimed that some 73 miles of then-intermittent streams would become permanently flowing streams from increased groundwater recharge when all 48 dams were built. But that's not happened. The Department has suggested that remaining dams be built as "dry dams," which would not impact streamflows as much since they only hold water during flooding. Dry dams would still control the floods that may occur every 10 or 20 years and also allow water flows to the Bottoms. Some agencies have been unwilling to change their plans, even in the face of potentially serious impacts on the Bottoms. The Department and conservationists may be forced to take more aggressive action to protect Cheyenne Bottoms' water rights if some adjustments aren't made in construction plans.

At the time of the original watershed development, no one was unduly concerned about water rights on the Wet Walnut. But things have changed in the last 10-20 years. River flows in the Arkansas River, the other main water source for the Bottoms, have declined. Large reservoirs in Colorado impound water that used to recharge the groundwater along the Arkansas River. Irrigation wells and center pivots along the Arkansas River in both Colorado and Kansas further drain the life from the rivers. Since December 1985, Kansas has been in federal court with Colorado over the lack of Arkansas River water.

Even when water flows from Colorado, the large irrigation ditches at Garden City greatly reduce the chances of downstream water delivery. In recent years the Division of Water Resources in the State Board of Agriculture has held the ditches to their allocated amounts, and at certain times water flows past the diversions. But it still has a long way to go to get to the Department's Dundee Diversion on the Arkansas River. And all along the way, the water is being used for additional irrigation. So the Arkansas River is reduced from a raging torrent as it passes through the Royal Gorge in Colorado to a stream with a 1 cfs minimum streamflow at Great Bend. And even that streamflow isn't met consistently.

The very existence of Cheyenne Bottoms lies in peril. Future management plans for this unique wetland are meaningless without sufficient water. The fight for this water is truly the fight for Cheyenne Bottoms.

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# Water Flow To Cheyenne Bottoms



Patti Murphy map



# ...And Into The Future

by Joe Kramer  
Regional Wildlife Supervisor  
Dodge City



Mike Blair photo

Blue-winged teal are the most common nesting duck on Cheyenne Bottoms.

**C**heyenne Bottoms, the 100,000-year-old natural basin that forms an immense marsh from 64 square miles of Barton County, Kansas, remains the subject of great interest. Local, state and national support is stronger now than it's ever been in the history of the Department's involvement with the area.

This support, this new emphasis, is fueled by recent study findings. One of the most recent was the January 1987 report titled "Cheyenne Bottoms: An Environmental Assessment," which was authorized by the Kansas Legislature and completed by the Kansas Biological and Geological surveys under contract with the Kansas Fish and Game Commission. The report contained information on the area's geology, water budget, land use, wildlife, vegetation, economic impacts and management options, to name a few of several headings.

In June of 1987, the Kansas Department of Wildlife and Parks convened a group of 20 to review this major study and provide management recommendations. This group was made up of marsh managers, wetland biologists, wetland field supervisors, federal-aid coordinators, wetland engineers and Wildlife and Parks staffers.

The technical group provided the Department with a priority ranking of management actions based on need and feasibility, but without regard to cost.

W. Alan Wentz, the Department's assistant secretary, has said: "The Department of Wildlife and Parks accepts the environmental assessment and the resulting management recommendations as the guideposts we intend to follow with the future of Cheyenne Bottoms."

These recommendations include:

- Maintaining the current structure and management capabilities with additional equipment, manpower, operational funds and related actions;
- Acquiring easements or fee title to adjoining lands. This would improve management and prevent the threat of litigation over flooding;
- Completing hydrological studies on the Bottoms as the first step in making a series of design changes (dikes, reservoir storage and water-movement structures, for example);
- Initiating design changes that prove feasible;
- Improving the water-delivery system from the Arkansas River to the Bottoms by conversion or reconstruction of the current open-canal system to a tube or closed system;

- Listing Cheyenne Bottoms under the "Convention on Wetlands of International Importance";

- Reviewing other recommendations in the environmental assessment, but placing these in a lower priority.

Says Wentz: "Wildlife and Parks will direct more of its attention to the critical needs of the Bottoms, shift new and existing departmental resources to the area, enhance funding and increase cooperation with other interested organizations.

How to work toward these goals? Three major areas have been identified:

## INCREASED RECOGNITION

The Department has filed a petition to list the area under the "Convention on Wetlands of International Importance." An additional petition has been prepared to designate Cheyenne Bottoms as a site of international importance for shorebirds. Also, the Department will initiate a campaign to focus media attention on the Bottoms. This should increase tourism and economic development in the Barton County area. Additional signs, brochures and other items will be used on





site to educate visitors at Cheyenne Bottoms. The Department's Information-Education staff will enhance the public's knowledge of and appreciation for the Bottoms through a media awareness program.

### SHIFTING OF RESOURCES & FUNDING

The Department's operation and maintenance (O&M) budget at Cheyenne Bottoms will be used in addition to other O&M dollars, which will be shifted as necessary.

The Department already has made major equipment purchases. Last December the Department bought a much-needed dump truck with duck stamp dollars earmarked for Cheyenne Bottoms. A total of \$50,000 contributed by Ducks Unlimited will be matched by \$50,000 of Chickadee Checkoff (non-game) money along with additional funds from Ducks Unlimited. This money will be used to buy key pieces of equipment such as an amphibious backhoe, a wide-tracked dozer, a four-wheel-drive loader and a Strauss cattail clipper. All pieces of new equipment will be identified by contributing organizations.

The Department's on-going reorganization process will also result in more manpower and equipment on the Bottoms. In addition, the Department has requested funding for more equipment and enhancements in the fiscal 1990 budget, which starts July 1, 1989.

The funding request will reach the federal government. The Department, through its cooperative agreement with the U.S. Fish and Wildlife Service, has applied for funding under Section 6 of the Endangered Species Act. Wildlife & Parks also has applied for additional monies under the Emergency Wetlands Resource Act of 1986. If these funds are granted, the money would be earmarked for management and for purchasing additional wetlands.

The Department has initiated major campaigns to raise additional funds for the Bottoms. A permanent wetland trust fund also is a possibility for Cheyenne Bottoms.

### INCREASED COOPERATION

The Department will work with key groups such as Ducks Unlimited, The Nature Conservancy, National Wildlife Federation and National Audubon Society at the national and state levels to raise funds for the Bottoms. In addition, the governor and Kansas Legislature will be asked for additional funding, and interested groups and organizations will be informed of the progress.

**N**ow that we've discussed the Department's efforts at improving Cheyenne Bottoms, what physical changes can you expect to see?

Some of the initial changes will include the removing of silt from 54 miles of canals and channels and 57 water-control gates on the area. This will allow for quick drawdown of water, the key to waterfowl management.

Level-ditching, a system of water removal, will occur in a radial fanlike fashion out from the water-control structures connected to each pool. While this level-ditching is occurring, "hunter-blind" islands and nesting islands will be constructed. The level-ditching also completes the quick drawdown capabilities. Hunters and bird-watchers will have greater access to the marsh as a result of this ditching system. Level-ditching, along with nesting and blind island construction, will also occur in the perimeter areas of the four outside pools.

Shorebird, goose and duck nesting sites are now being constructed and planned for Pool 5. The actual site — the pool's old goose pen area — can be built to accommodate birdwatchers and photographers.

What makes the old goose pen area so attractive as nesting sites is that its original design was used for pen-raised nesting Canada geese. Now the area can be used for wild nesting Canada geese, ducks and open-gravel nesting birds such as avocets, terns, plovers and sandpipers. The old goose pen area is surrounded by dikes, so water can be fluctuated independent of the surrounding Pool 5.

Other physical changes will be to

provide additional food sources for migrating and upland birds. These foods will include water-manipulated moist-soil plants and micro-life food in addition to seeded grains.

Controlling the cattails and salt cedars is an immediate need. This control, however, will improve with the better drawdown capabilities once the silt removal and level-ditching occurs.

These physical changes can and will occur without additional studies or design work. Why? Because most of this work can be accomplished through more efficient use of the original marsh management plan.

After the hydrological studies have been evaluated, those design changes that are proven feasible can occur. They include:

- Deep-water storage;
- Improved water-dispersal structures;
- Pump stations (both stationary and mobile);
- Reduction in pool size;
- Floodways on dikes for flood-water dispersal;
- Redesign of water-delivery system from Arkansas River to the Bottoms;
- Improved water-diversion systems on the Arkansas River, Dry Walnut and Wet Walnut creeks in addition to other features that will allow for more efficient water usage.

The future of Cheyenne Bottoms is very real and very promising. Protecting and managing the Bottoms is essential for a healthy environment, both today and tomorrow. And Kansans are concerned about what happens to their wild places. Assistant Secretary W. Alan Wentz may have summed it up best:

"We want to recognize the hard work that many people, including the Cheyenne Bottoms Task Force, numerous organizations, the Kansas Legislature, the governor and our staff have put into protecting and enhancing Cheyenne Bottoms. Without the efforts of so many, the Bottoms might not exist. We hope these individuals will continue and increase their efforts to help us implement the variety of management actions necessary over the coming years."

W&P





Ritief Photography photo

Ann C. Dohoney of Shawnee, Kan., poses with her winning entry. Kansas Ducks Unlimited has pledged 20 percent of the proceeds from each limited-edition print directly to restoration work on Cheyenne Bottoms. For every print sold, \$7.50 is earmarked for the Bottoms. The cooperation between the Department and DU has helped both agencies preserve and restore wetlands in Kansas.

## Cheyenne Bottoms And The Kansas Waterfowl Stamp

**A**nn C. Dohoney of Shawnee, Kan., painted this pair of Canada geese to win the competition for the 1988 Kansas Waterfowl Habitat Stamp. A commercial artist, Dohoney is no stranger to waterfowl stamp contests. She recently won the 1989-1990 Indiana waterfowl stamp contest and placed third in the 1980 federal duck stamp competition.

In 1987 Kansas became the 39th state to require waterfowl hunters to buy a habitat stamp. The \$3 stamp is required of all resident Kansas waterfowlers (unless exempt from having a hunting license). All non-resident waterfowlers who hunt in Kansas must buy the stamp.

Funds from the sale of the stamps are earmarked for waterfowl habitat improvement, development or acquisition by the Kansas Department of Wildlife and Parks. The Department is expected to receive about \$135,000 in revenues from the Guy Coheleach's 1987 "First of State" green-winged teal stamp.

These funds will be used to match monies set aside for the Department by Ducks Unlimited, Inc., (DU) under its MARSH program. Through MARSH, which stands for Matching Aid to Restore States Habitat, DU has made more than \$288,000 available to the Department since 1985.

Kansas Ducks Unlimited and Petersen Prints of Los Angeles, publisher of the stamp program, provide the stamps to the Department at no cost. Kansas DU receives the proceeds from the sale of limited-edition prints and designates 20 percent of those proceeds to restoration efforts at Cheyenne Bottoms Wildlife Area.

The art print edition of the 1987 stamp closed out at 13,465 units. Total monies available for Cheyenne Bottoms from the 1987 habitat stamp print will exceed \$95,000. The remaining monies will be used to develop a Kansas Donor Project in Saskatchewan. The project goal: to increase waterfowl nesting habitat there—*Lee Queal, DU*