

# ARANSAS WHOOPING CRANES\*

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As one enters the Aransas National Wildlife Refuge he is confronted with vast thickets of running live Oak (*Quercus virginiana*). This is quite a contrast to the miles and miles of plowed grain fields just outside the refuge. In this dense brush country one wonders immediately where a Whooping Crane might be.

The Aransas Refuge was established in 1937 to protect vanishing wildlife and habitats of coastal Texas. The 54,829-acre refuge occupies Blackjack Peninsula situated about half way between Corpus Christi and Galveston on the lower Texas coast. Grassland, live oak and redbay thickets cover deep sandy soils. The peninsula is ringed by tidal marshes and the uplands are broken by long, narrow ponds. The Aransas is home for cranes, spoonbills, deer, alligators, turkeys and many other interesting and unusual forms of wildlife and plants — some of which are found only in South Texas.

The refuge area is divided into five management units or use areas. These include a 5,000-acre wildlife interpretive unit, 20,000 acres of brush country, 16,000 acres of grassland, 7,000 acres of marsh and tidal flats and 7,000 acres of coastal prairie.

Within the 5,000-acre wildlife interpretive unit visitors can enjoy the small, but appropriately furnished, visitor center. Here is where the story of the Whooping Crane and other Aransas wildlife unfolds. A mounted specimen of a Whooping Crane which was donated by the Canadian government is complimented by a short slide presentation on the life cycle of this magnificent bird. A 17-mile paved drive continues into the refuge. Along

this route walking trails lead through oak thickets and along the edge of tidal marshes. An observation tower located 5 miles from the headquarters area overlooks a marsh and shallow bay area which is used at times by one family of Whooping Cranes. This overlook may be the visitor's only chance of seeing the rare cranes from the land.

Each family of cranes occupies an area of about 400 acres of marsh and vigorously defends this territory from other Whooping Cranes although numerous shorebirds, geese, ducks and other marsh creatures do not seem to bother the cranes. The whoppers' desire for isolation has caused them to disperse throughout the marsh on the refuge, as well as onto the marshes of Matagorda and St. Joseph Islands — barrier islands which are adjacent to the refuge proper.

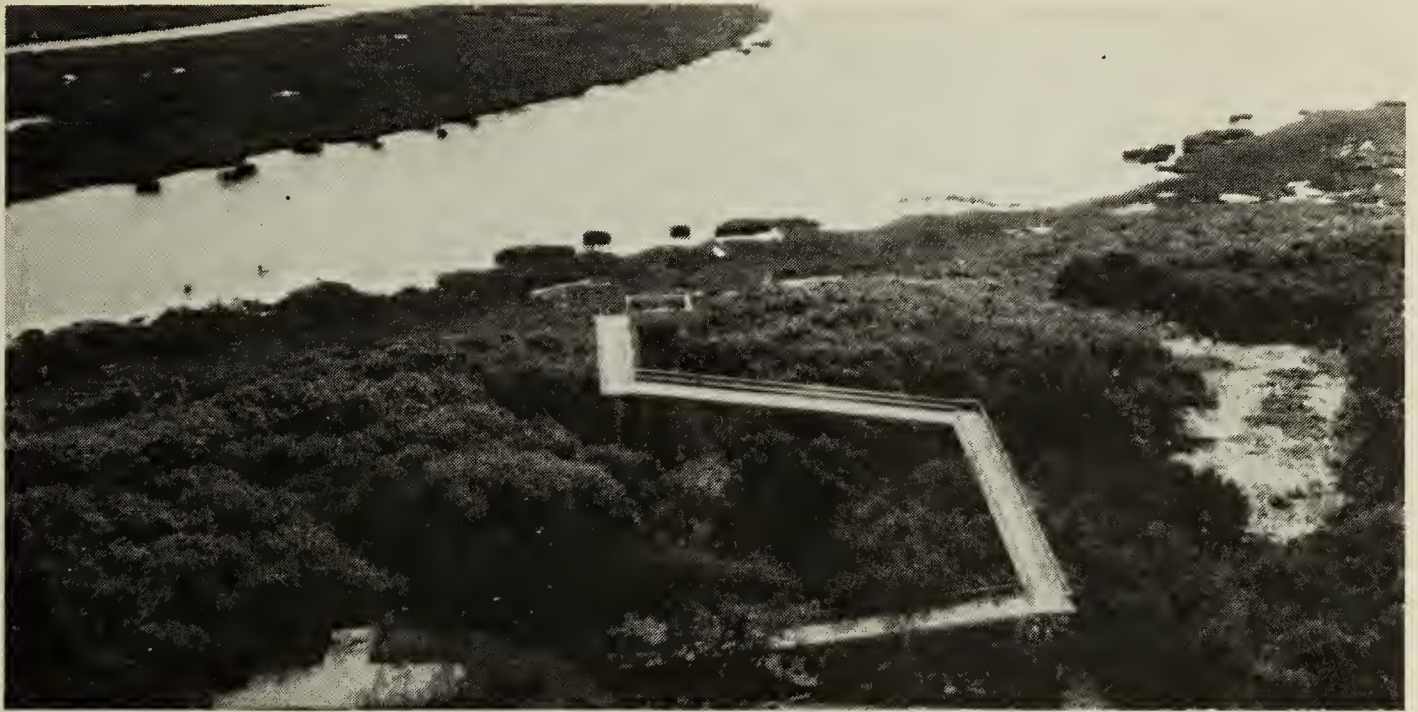
Realizing that prime whooper habitat was limited and that natural foods along the coastal tidal flats might, at times, be in short supply, various management programs have been attempted on the Aransas. The following is a brief discussion of these programs.

## MANAGEMENT PROGRAMS

**Farm Crops.** Two 97-acre experimental fenced fields were developed during the winters of 1964-65 through 1967-68.<sup>2</sup> Inclement weather during the 1964-65 period altered the cranes' normal feeding behaviour on coastal flats and resulted in use of the special food plots. Within these fenced enclosures such foods as hegari (*Sorghum vulgare*), corn, wheat, peanuts (*Arachis hypogaea*) and field peas (*Vigna sinensis*) were grown. Sandhill Cranes and Canada Geese consumed a considerable portion of the food intended for Whooping Cranes despite some utilization of

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View of observation tower and part of Aransas Refuge.

planted crops by whooping cranes, this program was discontinued in the late 60's. The cost to farm the sandy refuge soils, the preference of Whooping Cranes for marine life and the quick consumption of the planted crops by sandhills and geese were primary reasons for discontinuing the farming program for Whooping Cranes.

**Artificial Feeding.** During the same period (1964-1967) that farm crops were being grown, experimental feeding of Whooping Cranes by spreading milo and corn in both fenced exclosures was practiced. This artificial feeding program was used as a supplement to the farm crops since most planted grains were consumed by late November or early December by an assortment of wildfowl. As many as 34 whoopers, out of a wild flock of 47, were observed feeding within the fenced areas. Such a concentration of the only remaining wild whoopers prompted the end of this practice in early 1968. The exposure of the birds to a possible epizootic and possible domestication of the wild flock were primary reason for the decision to discontinue the artificial feeding program.

It is interesting to note that the period 1964 to 1968 was a period of rapid expansion of the Whooping Crane flock. From 33 birds in 1963 to 50 in 1968 was a remarkable expan-

sion of the flock and the greatest rate of increase in 5 years since whooper records had been maintained (see table). Consequently, during this same period egg-napping was taking place on the nesting grounds to start a captive flock. Some scientists still argue the merits of the Aransas feeding program while others contend that the taking of single eggs from the Canadian nesting grounds gave rise to the expansion of the wild flock. Or, was this simply the time when nature prompted the increase in the number of whoopers?

**Experimental Marine Impoundment.** A 70-acre impoundment was constructed on the Aransas east shore tidal flats in 1968-69. The project was designed to pump water, complete with marine life, through a 36" pipe into the impoundment from a canal that extended into the nearby bay. Excess water then spilled back into the bay through 5 screened water control structures, with the expectation of pumping small fish, shrimp, crabs and other marine species into the pond where they would be trapped. It was thought that this "super-saturated" food would provide supplemental whooper food that could not be taken by geese and sandhills.

This project became fully operational in October, 1969, and by January the impoundment was saturated with the desired variety and



Key summer and winter areas for Whooping Cranes. Grays Lake and Bosque del Apache are associated with the foster parent project (see next article).

abundance of marine fauna. To attract cranes to the impoundment, wheat and corn were scattered near the water. As usual, the cranes responded almost instantly to the grain, but would not go into the impoundment. After several weeks of this routine it was decided to make a substantial water draw down in order to trap the marine life in smaller and shallower depressions. A few days later 30 whoopers were seen flying out

the impoundment. They continued feeding in the impoundment almost daily until spring departure. On one occasion 48 of the 56 cranes on Aransas were observed in the impoundment.

Pumping was resumed in mid-October for the 1970-71 population of cranes but a shortage of marine fauna in the canal and low tides which prevented pumping for as much as a

two-week period created difficulties in saturating the impoundment. No whoopers were noted in the impoundment during the '70-'71 period. In subsequent years abundant natural foods were available in the tidal marsh and it has not been necessary to use the artificial impoundment. However, repairs to the pump and impoundment dike keep the system operational in the event it is needed to draw the cranes away from their natural habitat should some type of crisis occur in the tidal bays.

**Control of Oak Brush.** Live oak brush on the Aransas Refuge spreads at alarming rates in the coastal sandy soils. It rapidly becomes thicketed as the shallow roots penetrate the soil and send up new sprouts at very short intervals. These sprouts soon form stems that become quite dense and unusable by wildlife. In the late '50's and early '60's many hundreds of acres of brush were mowed in order to open up additional acres for use by cranes and geese. The ability for very young oaks to produce acorns offered a virtually unlimited supply of food for wildlife after these thickets were opened up.

Much of the mowing took place on the fringe of the peninsula and adjacent to the marshes used by Whooping Cranes. The whoopers soon became accustomed to the mowers and would often follow only a short distance behind, picking up the acorns that were readily available. It was soon found that the manipulation of Aransas brushland was good Whooping Crane management and this practice was continued on an irregular basis for nearly 10 years.

In recent years, however, the cost of operating heavy equipment and a similar rise in fuel cost made the cutting of brush on a large scale almost prohibitive. Thus other methods of opening up dense live oak thickets to sandhills, whoopers, geese and other wildlife were examined. Since prescribed burning was inexpensive and would temporarily knock back live oak and other woody plants, a systematic approach to burning rather

large areas of marsh and uplands was planned in 1973. Burning had previously been done on Aransas, but shifts in personnel had resulted in an on-again off-again approach to fire.

It was found that response to a burn was almost immediate by Sandhill Cranes, in particular. The day after burning a 2400-acre block in mid-October 1974, nearly 200 sandhills were observed grubbing for tubers and gleaning acorns and seeds from the area. Approximately 2 weeks after the burn one pair of Whooping Cranes came into a shallow pond within the burned area and stayed for 6 weeks. The refuge plans to continue to use fire in its management program for waterfowl and cranes.

## RESEARCH

In November, 1970, a study was undertaken by the National Audubon Society to investigate the behavior and habitat of the Whooping Cranes on the Aransas Refuge and adjacent islands. This study is still in progress and is being carried out by Biologist David Blankinship.

In his progress report Blankinship reports that detailed observations were continuing on Whooping Crane territorial, family and feeding behavior under near optimum conditions on the wintering ground. Seine and bottom core samples have been taken at two- to four-week intervals for each of eight sampling stations on the refuge to determine availability of food for the cranes.<sup>1</sup>

He also found that blue crabs (*Callinectes sapidus*) were the most important food items taken by the crane from their fall arrival through mid-January with clams becoming increasingly important after mid-January. Blankinship also stated that his mapping of crane territories indicated considerable sharing of territory by adjacent pairs or family groups. This may reflect changes in behavior that are permanent or may result from the abundant food supply during his years of observation.

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Next pages: Whooping Cranes at Aransas.







Aransas National Wildlife Refuge showing locations of Whooping Crane groups.

## HAZARDS

**Oil Development.** Fortunately, or unfortunately as the case may be, the Aransas Refuge and surrounding tidal waters sit on top of a rich oil and gas reserve. In recent years extensive drilling in the bays around the refuge has taken place. Numerous pipelines traverse the marshes, bays and islands to bring petroleum to onshore gathering stations or other pipelines. The possibility of an oil spill is forever in the minds of conservationists. While such an accident would be bad at any time of the year, it would be especially unfortunate when Whooping Cranes are on the wintering ground.

All possible precautions are taken in a cooperative effort between the refuge and the oil people. A moratorium on drilling is imposed during the period October 15 to April 15 each year to reduce disturbance and the possibility of an accident while the cranes are present. Another precaution is that permanent oil well platforms are built no higher than 15 feet above the high water mark. This regulation extends through the flight paths of the cranes so that the possibility of a crane striking such a structure is minimized.

**Intracoastal Canal.** The Gulf Intracoastal Canal bisects the Aransas Refuge marshes, creating yet another hazard for the Whooping Cranes. This canal is heavily used by tankers and barges hauling many chemicals and oil products. Constant alertness must be maintained to prevent the accidental spillage of a potent chemical within this canal. Should this occur many acres of prime crane habitat might be polluted. The refuge maintains a supply of grain for emergency feeding and, as has been shown in the past, a large number of cranes can be attracted inland by artificial feeding should the need arise.

Perhaps an even greater threat to the whooper's habitat in South Texas is a proposal to widen and deepen the present channel of the Intracoastal Canal. Placement of additional dredged material and the physical existence of a wider channel would require a considerable amount of land and water habitat. Hopefully, if the channel is enlarged alternate locations will be considered along the 15-mile segment that passes through the Aransas Refuge.

## WILD WHOOPING CRANE WINTERING POPULATION

	TEXAS			LOUISIANA
	Adult	Young*	Total	Total
1938	14	4	18	11
1939	15	7	22	13
1940	21	5	26	6
1941	13	2	15	6
1942	15	4	19	5
1943	16	5	21	4
1944	15	3	18	3
1945**	14	3	17	2
	(18)	(4)	(22) probable	
1946	22	3	25	2
1947	25	6	31	1
1948	27	3	30	1
1949	30	4	34	0
1950	26	5	31	0
1951	20	5	25	0
1952	19	2	21	0
1953	21	3	24	
1954	21	0	21	
1955	20	8	28	
1956	22	2	24	
1957	22	4	26	
1958	23	9	32	
1959	31	2	33	
1960	30	6	36	
1961	34	5	39	
1962	32	0	32	
1963	26***	7	33***	
1964	32	10	42	
1965	36	8	44	
1966	38	5	43	
1967	39	9	48	
1968	44	6	50	
1969	48	8	56	
1970	51	6	57	
1971	54	5	59	
1972	46	5	51	
1973	47	1	48****	
1974	47	2	49	
1975	49	8	57	

\* Young of the year.

\*\*The 1945 count of Aransas and environs does not include a potential of 4 adults and one young wintering elsewhere, as fall 1946 count of 22 adults (plus young) exceeds 1945 Aransas count.

\*\*\* January 16, 1964, two additional birds were reported near Tampico, Mexico.

\*\*\*\* A second young bird was seen on two air counts in early fall of 1973.



## PUBLIC RELATIONS

While research, management and protection are vital to the survival of the Whooping Crane, an alert and interested public is equally important.

At Aransas Refuge, where 150,000 visitors come each year, the opportunity to explain the plight and importance of the whooper is taken advantage of. Slide presentation and movies plus printed material are available to individuals, school classes and other groups who visit the area.

In the past year the film "Aransas" was shown nearly 200 times to 6,000 visitors; the well-designed refuge's environmental education area was used by 172 youth groups involving 5,600 youth; 30 bus tours from Canada make regular stops at the refuge; and refuge personnel placed posters in all hunting blinds adjacent to the refuge in an effort to alert hunters to the presence of Whooping Cranes. Apparently these efforts have paid off since there has been only one instance of a Whooping Crane being accidentally lost on the wintering grounds.

## ECONOMIC VALUES

Any discussion of the Whooping Crane would not be complete without mentioning the economic value of the species. Volumes have been written about the whooper's aesthetic value and its importance as the conservation symbol of two great nations — the United States and Canada. Little, however, has been written about the whoopers' economic value. This aspect was addressed in the early 1960's when a survey was made in Texas to determine the whooper's economic impact. At that time it was estimated that between 1-1/2 and 2 million dollars were pumped into the local economy from tourism directly related to the Whooping Crane. That figure today is now estimated to be between 3 and 4 million dollars. So, what's the value of a whooping crane?

## THE FUTURE

The Aransas Refuge is looking forward to the day when 50 breeding

pairs of cranes will return each winter with their offspring. A few years ago this figure seemed unreachable for any time in the immediate future. However, when 40 adults and 8 young appeared in Texas for the 1975-76 winter and Canadian officials reported in the summer of 1976 that 12 additional young were surviving on the nesting grounds, things were looking up for the whoopers. For the first time ever the flock might exceed 60.

Other events in 1975 leaned toward better conditions for the Whooping Cranes in Texas. The U.S. Air Force announced that it was closing the Matagorda Island Air Base and this land became surplus Federal property. Already Whooping Cranes had spread to the State marshlands on Matagorda and the Department of the Interior applied for the transfer of the Federally-owned upland to the U.S. Fish and Wildlife Service. The upland Federal lands total about 19,000 acres while the State of Texas owns approximately 16,500 acres of marshland on the bay side of Matagorda.

The management of this pristine island by both Federal and State agencies should assure its preservation and enjoyment for many years to come by both wildlife and people. The U.S. Fish and Wildlife Service has developed a proposal to accomplish the above objective. The accompanying map summarized the proposal.

**Summary.** The bold adventure in survival which has been shared by Canada and the United States finally seems to be coming to fruition. From less than 20 wild birds in 1938 to perhaps more than 65 in 1976 is progress and a tribute to many folks who have shared this challenge.

<sup>1</sup>BLANKINSHIP, D. R. 1973. *Cooperative Whooping Crane research program*, Progress Report, April 1973. National Audubon Society, U.S. Fish and Wildlife Service.

<sup>2</sup>SHIELDS, R. H., and E. L. BENHAM. 1969. *Farm crops as food supplements for Whooping Cranes*. J. Wildl. Manage. 33: 811-817.

