

# Black-necked Cranes

wintering at  
Cachai Lake, China

(*Grus nigricollis*)

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The Black-necked Crane (*Grus nigricollis*) is a rare species of crane that is endemic to China. The species was relatively little known outside China, having never been displayed even in a zoo until early 1958. In that year a couple of the birds were presented to the International Cranes Funds Organization.

### Protected Species

The birds are classified as being in danger of extinction. It is now one of the most protected avian species in China.

### Description

The Black-necked Crane stands over 40 inches (1 meter) in height and weighs approximately 11 to 18 lbs. (5 to 8 kg). The body feathers are smooth and are greyish white in color. The neck feathers are black and its long neck is muffled with a black-velour-scarf. The head is black with red on the top. A white spot is prominent in the area behind the golden eye. The wings, tail and legs are black. Its long beak, wax yellow in color, is extremely hard.

The birds live in the highland country and is the only species of crane to be found in such habitat.

The species is the last discovered of the 15 crane species known to exist (the first such crane spotting was reported in 1876). As of March 1986, the population of the Black-necked Crane in China totaled about 900.

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The birds breed in marshland at elevations 3500 to 5000 meters above sea level. The Black-necked Crane can be found in the Qinghai-Tibet Plateau and north of the Sichuan Province from May to July. During the autumn season, the birds migrate to the lakes and swamps of southern Tibet, Yunnan Province, Sichuan Province and to the northwest of Guizhou Province. The birds remain in these areas until March in the following year.

#### Study of Wintering Habits at Caohia Lake

Caohai Lake is an old, freshwater, highland lake. The lake bottom is 6000 feet (2170 meters) above sea level. The water area is approximately 17 sq. miles (45 sq km), with a maximum water depth of about 16 feet (5 meters). The water is so clear that one can see fish and shrimp. Large numbers of Wining Xi-fish, together with plenty of water and areas of lush grass, make this habitat ideal for these cranes.

The lake, called "Plateau Pearl," almost disappeared. Over the past 30 years, massive tree harvesting in the nearby mountains resulted in serious soil erosion. Between 1958 and 1972, the lake silted up. Man-made dikes were built to reclaim 11-1/2 square miles (30 sq km) of the nearby land for farming. These impacts on the lake were disastrous. The lake nearly dried up. The important Wining Xi-fish died out and the lush growth of water grasses also failed. The decrease in habitat had a severe impact on water birds with few using the little remaining habitat. More importantly, the rare, Black-necked Cranes have been missing from the area ever since.

#### The Lake Is Restored

The disastrous effects of the tree harvesting, along with the disappearance of the lake and birdlife caused

great concern. People joined together. Trees were planted on the slopes of the mountains. Irrigation facilities were created. Water was again being stored. In 1982 the water level of the lake had expanded to the point where there was some 9 1/2 sq miles (25 sq km) of water. Aquatic animal and plant resources developed rapidly. Water chestnuts, cat-tails, Li fish (carp), Ji fish (Crucian carp) and the important Wining Xi-fish could again be found through the entire lake area. Once again, flocks of migratory birds began to return to the lake for their winter resting and nesting period. At times thousands of birds can now be seen on the lake. Importantly, the Black-necked Cranes returned to the lake. Counts indicate the number of the species is on the increase - 35 in 1975, 305 in the spring of 1984, and 350 in 1985. Today, as we drive to the lake, we can hear the call of the Black-necked Cranes. Now, the largest flock of Black-necked Cranes uses this lake as compared with any of several other wintering places that we know of.

#### Wintering Habits and Characteristics

To establish a basis for our investigation and to ensure we did a good, quantitative investigation, we first observed these cranes' wintering habits and characteristics. We carefully noted their movements and distribution on Caohia Lake.

1. *Migratory time:* Black-necked Cranes and Grey Cranes (*Grus grus lilifordi*) use the lake throughout the entire winter season. Local peasants have a proverb about the birds' migratory period. It is said, "they enter Caohia in the 10th month and leave there on the 3rd month of the next year." However, climates differ every year. As a result, not all of the immigration-emigration times are the same. It is generally believed the cranes move to Caohia in the last ten day period of December and depart in the last ten day period of March the following year. Black-necked Cranes arrive slightly later than do the Grey Cranes. Our study party observed a giant flock of Grey Cranes, with only a few Black-necked Cranes in the period of November 10 thru 15, 1983. Observations showed more and more of the birds arriving soon thereafter.

2. *Habitat distribution of Black-necked Cranes in Caohia lake:* The

main habitat for the Black-necked Cranes in this area involves both sides of the Erdao River. They include the eastern part of the lake and the swamp near Snaogan to the northeast. The birds often seek food in Baijiazhui to the southeast and in the Hangguanshan area to the northwest. Ideal feeding areas for this species involve shallow water (20 inches) and marshland. In the winter of 1982, some Black-necked Cranes were distributed over Guoluoshan mountain in the southwest. However, the amount of water in the lake was increased in 1984. The marshlands were flooded. Fields were plowed, so the entire area was unsuitable for any cranes. As a result, no Black-necked Cranes were observed in that area throughout the entire investigation.

3. *Food and Rest:* Black-necked Cranes have widespread eating patterns. We examined the stomach contents of a Black-necked Crane that died of natural causes. The stomach contained root tubers of carrots, potatoes, radishes, maize, grass roots, and spiral shells. As the dawn broke each morning, both the Grey-necked and Black-necked Cranes rose in flocks, to fly to the fields and vegetable plots around the lake. The arrival of peasants, who began to work the fields around 8:00 a.m., usually startled the birds. The birds would then fly off to other nearby areas on Lake Caohia. The cranes spend most of each day seeking food. Between 12:00 noon and 1:00 p.m. a small number of the cranes in each colony would take a short rest. The resting bird would stand on one leg, hiding its head under its wing.

#### Flock Numbers

In winter months, the grass in and around Caohia Lake is withered, sparse, and in short supply. The lake is surrounded by mountains and we could see large areas of the lake and adjacent land. We found the birds very concentrated, moving about over a small range. This situation enabled us to investigate the Black-necked Cranes' numbers and movements. We undertook an on-the-spot survey. We divided the Black-necked Crane movements into five parts, with one observer assigned to each part. We kept contact with each other through use of radio telephones. We each counted the birds in "our" designated area by sighting through binoculars. To avoid error,

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Photo by George Archibald

This close-up of an adult Black-necked Crane shows its sharply contrasting black neck and head. Its reddish crown is similar to several other cranes.

duplicate countings, or missing birds due to the flocks flying back and forth, we would carefully watch for additional birds. We counted them up to ten times between December, 1985 and January, 1986. These counts resulted in identifying 339 Black-necked Cranes on December 23, 1986; 342 on December 26; 335 on December 27; 341 on December 28; 360 on January 3, 1986; 347 on January 4; 351 on January 5; 357 on January 6; and 356 on January 10, 1986. The study produced a mean number of 348 Black-necked Cranes.

#### Findings

The study proved that the birds have several kinds of gathering forms in the day and the night hours.

1. *Single*: Very few solitary Black-necked Cranes.

2. *Family group*: A couple of Black-necked Cranes and a few Grey Cranes mixed together. Parents with one young bird.

3. *Colony form*: Often seen, a col-

ony of birds, (usually 10 to 30). There was a total of 19 colonies.

4. *Mixed groups*: Mostly Black-necked and a few Grey Cranes mix, as one flock. There were between 90 and 110 Grey Cranes in the area.

5. *Mixed flocks-mainly Grey Cranes*: Grey and some Black-necked Cranes appear to mix together. Such flocks usually occurred near the peasants' vegetable fields in the morning. Some 150 to 200 Grey Cranes were involved in the flock. When startled, the Grey Cranes fly first, followed by the Black-necked Cranes.

*Flock Structure*: Consists of three

basic components.

a. Parents having their young birds (121 total).

b. The pairs with no young (166 total).

c. Young birds following parents (62 total).

d. Using data developed during the study, we determined that each adult pair of wild Black-necked Cranes can rear an average of one young bird per year. If the young bird survives, our study results duplicate results obtained in other studies done in other provinces in The People's Republic of China. ●

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