

## CRANES WINTERING AT EAST DONGTING LAKE

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## ABSTRACT

This paper presents preliminary results of an investigation on numbers, habitat, feeding and migration of Siberian cranes *Grus leucogeranus*, white-naped cranes *G. vipio*, hooded cranes *G. monacha*, and common cranes *G. grus* wintering at Dongting Lake. We observed cranes wintering at East Dongting Lake of Hunan Province during the winters of 1985-86, 1986-87 and 1987-88.

## NATURAL ENVIRONMENT

East Dongting Lake is on the south side of the Yangtze River, and on the east side of Dongting Lake, at  $29^{\circ}07'29''$  N and  $112^{\circ}48'113''05'$  E. The whole lake lies within the City of Yueyang. The Nature Reserve for Waterfowl was established in 1984 (see Figure 1). It covers an area of about 151,000 ha, including open water 93,000 ha, grassy marshland 20,000 ha, and mudflat 12,000 ha. There are annual wet and dry seasons in the area, with the wet season from May to October. During the dry season, 50,000 ha of open water area change to mudflat. The climate is categorized as a transition between the mid-subtropical zone and northern subtropical zone, with an annual average temperature of  $17^{\circ}$  C and water temperature of  $17.5^{\circ}$  C. The vegetation type is composed of grass marshland and aquatic marshland. It is a major wintering ground for waterfowl in the middle reaches of the Yangtze River. In this area, there are 114 fish species, 40 shellfish species, more than 140 bird species and 400 plant species.

## METHODS

We first used transects to search for cranes. After finding cranes, whole-day observations started. During observations, we recorded species, number of families and young. The duration of surveys were 15-30 December 1985, February 1987 and December 1987.

## NUMBERS OF WINTERING CRANES

There are four species of cranes wintering at East Dongting: Siberian, white-naped, hooded, and common cranes. In December 1985, we counted a total of 87 cranes: 2 Siberian cranes, 6 white-naped cranes, 59 hooded cranes (45 adults, 14 young), and 20 common cranes. The census in February 1987 found a total of 352 cranes: 18 Siberian cranes (14 adults, 4 young), 157 white-naped cranes (145 adults, 12 young), 120 hooded cranes (109 adults, 11 young),

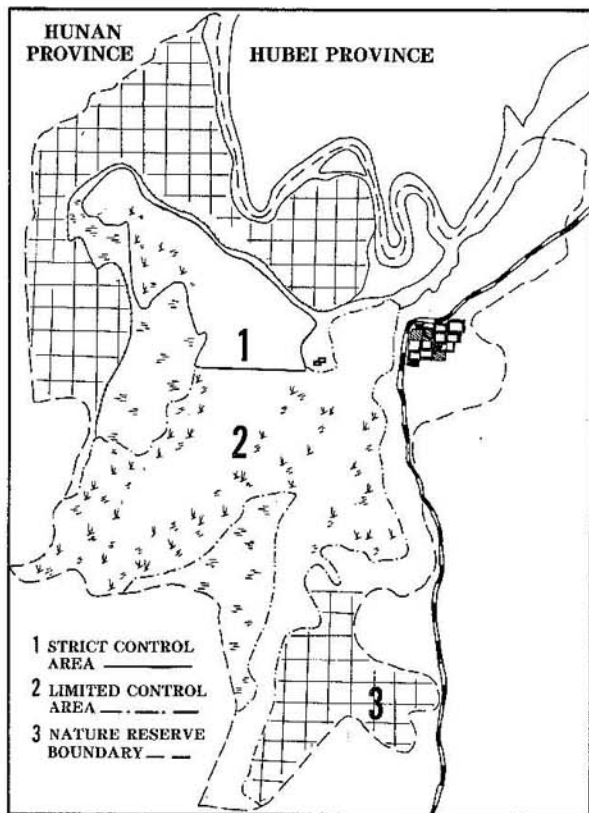


Figure 1. East Dongting Lake Nature Reserve.<sup>a</sup>

<sup>a</sup>the three management zones indicated on the map were established in 1990.

and 57 common cranes. In the December 1987 census, we found a total of 128 cranes: 3 Siberian (1 young), 54 hooded (10 young), 71 common (9 young). As indicated in Table 1, the largest numbers cranes were: Siberian cranes, 18 birds; white-naped cranes, 157 birds; hooded cranes, 120 birds; and common cranes, 71 birds.

| Species           | Number | Juvenile | Site          | Habitat       | Date         |
|-------------------|--------|----------|---------------|---------------|--------------|
| Siberian Crane    | 2      | 0        | Pingqiao      | mudflat       | 20 Dec. 1985 |
|                   | 18     | 4        | Meitanwan     | marshland     | 5 Feb. 1987  |
|                   |        |          |               | shallow water |              |
|                   | 3      | 1        | Haohu         | mudflat and   | 23 Dec. 1987 |
|                   |        |          | shallow water |               |              |
|                   | 3      | 1        | Qixinghu      | marshland     | 25 Dec. 1987 |
| White-naped crane | 6      | ?        | Daxihu        | marshland     | 20 Dec. 1985 |
|                   | 157    | 12       | Jianxin       | farmland      | 5 Feb. 1987  |
| Hooded crane      | 59     | 14       | Jianxin       | farmland      | 22 Dec. 1985 |
|                   | 90     | ?        | Jianxin       | farmland      | 4 Feb. 1987  |
|                   | 120    | 11       | Jianxin       | farmland      | 5 Feb. 1987  |
|                   | 3      | 1        | Jianxin       | farmland      | 23 Dec. 1987 |
|                   | 54     | 10       | Jianxin       | farmland      | 24 Dec. 1987 |
| Common crane      | 20     | ?        | Jianxin       | farmland      | 22 Dec. 1985 |
|                   | 57     | ?        | Jianxin       | farmland      | 5 Feb. 1987  |
|                   | 71     | 9        | Jianxin       | farmland      | 24 Dec. 1987 |

Table 1. Number of cranes wintering at East Dongting Lake.

## HABITAT AND FEEDING

Wintering cranes roost on the exposed mudflats in the northwest part of East Dongting Lake, and never stay overnight in standing water. They fly back to their roosts in a large flock before dark, about 1630. Except for Siberian cranes which feed in the lake, cranes feed in rice fields, often with ruddy shelducks *Tadorna ferruginea*. They look for food actively in the morning from 0900 to 1100 and have a rest at noon on a mudflat at the edge of the lake or in shallow water. They feed on *Vallisneria spiralis*, as well as fruit and tender buds of *Carex unisexualis*, *Potamogeton malainus*, and *Phalaris arudinacea* growing on the marshland. In the rice fields, the main food for cranes is rice remaining after the harvest. We did autopsies on three hooded cranes that were poisoned and analyzed the matter in the stomach (see Tables 2 and 3). Their main food was rice.

|         | Wet Weight | Dry Weight | Rice  | Husk  | Sand   | Snail Shell Fragments |
|---------|------------|------------|-------|-------|--------|-----------------------|
| 1       | 61.0g      | 34.5g      | 15.5g | 5.9 g | 12.7 g | 0.415mg               |
| 2       | 62.5g      | 29.4g      | 9.8g  | 7.3 g | 12.3 g | 0.423mg               |
| 3       | 62.5g      | 23.1g      | 11.0g | 5.3 g | 6.74g  | 5.123mg               |
| Average | 62.0g      | 28.9g      | 12.1g | 6.17g | 10.6 g | 1.987mg               |

Table 2. Weight of food components in the stomachs of three hooded cranes.

|         | Rice | Husk | Sand | Snail Shell Fragments |
|---------|------|------|------|-----------------------|
| 1       | 44.0 | 17.1 | 36.8 | 1.2                   |
| 2       | 33.3 | 24.8 | 41.8 | 0.1                   |
| 3       | 47.7 | 23.0 | 29.2 | 0.1                   |
| Average | 42.0 | 21.6 | 36.0 | 0.4                   |

Table 3. Percentage of food components for three hooded cranes.

Siberian cranes live in shallow water and on marshland along East Dongting Lake, feeding on plant tubers and small amounts of clams and snails.

There are three kinds of flocks for wintering cranes. 1) Family groups. Family members fed, took breaks, preened, and roosted together. 2) Single species flocks. The flocks were seen when they flew to and from roosting places. Usually, the flocks were large, with a maximum of about 100 birds. In December 1985, 59 hooded cranes were found, which were divided into two flocks. 3) Mixed species flocks. Hooded and common cranes and ruddy shelducks often fed together.

## MIGRATION

Siberian, white-naped, hooded, and common cranes migrate to East Dongting Lake in mid November and leave at the end of the following March. They stay for 130 days.