

# Feeding

# ARTIFICIAL FEEDING OF SWANS IN JAPAN

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## Introduction

There are 32 places where a considerable number of swans occur in winter or on passage (Fig 1). In addition, there are several places which a small number of swans visit regularly. Twenty places in Fig 1 are coastal lakes and others are inland lakes or marshes. Except for Lake Inawashiro, which is located 514 m above sea level, all sites are in the lowlands.



Fig 1. Main sites for swans in Japan.

According to the result of the Annual Count of *Anatidae* in 1979 which was promoted by the Environment Agency, 8416 *Cygnus c. cygnus* and 2550 *Cygnus columbianus bewickii* were observed. The latter winters in areas further to the south.

Table 1. Artificial feeding of swans in Japan.

| Area                  |   | Type of food   |
|-----------------------|---|----------------|
| Lake Kutcharo         | C | 6.7. s         |
| Lake Tohfutsu         | C | 6.7. s         |
| Lake Furen            | — | s              |
| Notke Bay             | — | s              |
| Odaito                | T | 6.7. s         |
| Akkeshi Bay           | — | s              |
| Lake Utonai           | C | 5. w           |
| Lake Onuma            | C | 4.5. w         |
| Ominato Bay           | T | 4.5.8. s       |
| Kominato Bay          | C | 4.5.7. s       |
| Lake Obuchinuma       | — | s              |
| Lake Ogawara          | — | s              |
| Lake Juusanko         | — | w              |
| Hirakawa River        | C | 4.5.7. w       |
| Lake Hachirogata      | — | s              |
| Mogami River (Sakata) | C | 1. w           |
| Shizukuishi River     | — | w              |
| Kitakami River        | — | w              |
| Lake Izunuma          | C | 1. w           |
| Abukuma River         | C | 1.2.3.4.5. w   |
| Lake Inawashiro       | C | 1.2.3.4.5. p.w |
| Lake Fukushima-gata   | — | w              |
| Lake Hyoko            | C | 1.2.3.5. w     |
| Lake Toyanogata       | T | 1.3.5. w       |
| Lake Sagata           | — | s              |
| Tone River            | — | w              |
| Lake Kotokunuma       | C | 5. w           |
| Lake Ohchigata        | — | w              |
| Lake Kahokugata       | — | w              |
| Lake Biwako           | — | w              |
| Nakaumi Bay           | C | 1.3.5.7. s     |
| Lake Shinjiko         | — | w              |

C = constant feeding; T = temporary feeding. Artificial food: 1 = rice; 2 = cereals; 3 = tea leaves; 4 = fruit rind; 5 = bread; 6 = oats; 7 = maize; 8 = apple. Natural food: p = pasture; s = sea plants; w = freshwater plants.

## Artificial feeding

Constant artificial feeding is carried out in 15 places and temporary feeding in several other places (Table 1). The food given to swans is mainly agricultural products of each region. Waste bread is important in the vicinity of cities. About 400 to 500 g (dry weight) per swan is given every day on the assumption that the daily minimum feed requirement of the swan is 10% of its body weight. Besides the food given artificially, swans also take natural food. In a cold northern district such as Lake Inawashiro, where snow and ice prevent natural food from being taken, artificial feeding of some 700 g per day decreased the mortality rate. The motives of artificial feeding are different for each place: some lakes or ponds are too small for swans to get enough food in winter; suburban lakes are valuable for swan watching, but their available natural food is poor; in cold northern places ice and snow cover the natural food.

Artificial feeding does not affect the essentials of migration in swans. They stay in their habitual wintering places even though weather is exceptionally severe and they will not move to warmer southern places they have not visited before, even if people try to induce them by artificial feeding. Artificial feeding is effective only when it is done in sufficient places. In February 1976, Japan was gripped with freezing weather. The cold was especially severe in Hokkaido and some 500 swans were frozen and starved to death in Odaito. At that time, some people insisted that the artificial feeding of swans there had made them give up migrating southward and that was the reason for their death. In fact, the artificial feeding in Odaito was first started at that time to save the dying swans. Similar situations were also seen in Honshu.

## Need for wetland conservation

Land reclamation by drainage is going on or planned in ten swan visiting places. We demand the government's reconsideration on such planning. Some people say that swans are not important for industry, but living with nature should not be evaluated only from the economic aspect. It is a barometer of healthy life. Nature-loving minds foster good sentiments, and handing such ideas down to future generations is our duty. Following these ideas, we keep on conserving swans voluntarily.

## Summary

Artificial feeding of swans is regularly carried out at a number of sites in Japan, but does not affect traditional migration patterns. Drainage is a major threat to several important swan sites.

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