



## ***Studying the Crane***

### **Science:**

- All cranes are large birds which inhabit wetlands, equipped with long legs for wading and a long neck and long sharp-pointed bill for feeding on tubers and small animals. True cranes from the family known as Gruidae are found on every continent except Antarctica and South America.

### ***Crane behavior and migration***

- Many cranes are known for their migratory habits. They breed in cooler areas and migrate during winter to warmer feeding grounds. Those which breed in warmer climates do not need to migrate. Young cranes can fly 80 to 90 days after birth and learn migration routes as they follow older birds.
- Migrating cranes fly in an echelon, a V-formation so that birds following the leader save energy by not having to push aside the air as they fly. The birds can cruise at speeds up to 70 km/h (45mph) and glide over considerable distances. Whooping cranes, for example, travel 4,000km (2,500m) in segments of 300 to 500 km (185 to 300 m), with several days en route at staging areas. Migrating birds are vulnerable to changes in the habitat of their breeding, stopover or wintering areas, and also to collisions with power lines.
- When cranes fly they extend their neck fully, while herons fly with their necks folded into an S-shape with their heads held close to their bodies. Both trail their legs behind.
- Cranes usually stay with the same mate all their lives.
- They are very friendly and sociable creatures, often forming into flocks of thousands of birds. Sandhill cranes can form into flocks larger than 100,000 birds!
- Cranes are known to live long lives; the average crane life span is 40 to 60 years in captivity but writers have noted a captive Siberian crane that lived for 83 years and fathered chicks at age 78!
- Some cranes have elongated trachea (gullet or windpipe) which loops around in an expanded breastbone to allow them to trumpet very loudly when alarmed, in flight, and during dances.
- Crane dances are spectacular - they bow and bob, throw their heads back and trumpet, throw grass, stones and feathers into the air, leap up and parachute back down on their broad wings! The crane dance is not only associated with mating behavior - cranes seem to jump for joy!
- Cranes sleep on one leg with the other is drawn up to the body and the head tucked under the wing.

- Cranes are opportunistic feeders with a varied diet. In summer they are likely to eat insects, frogs, small fish, small rodents, small birds and berries, and may scavenge dead animals. During migration they eat aquatic animals, tubers and roots, and waste grain on farms. In winter their diet includes small fish, snakes, crabs, clams and wild fruit.

### **History:**

- The Japanese crane was once widespread over much of Japan and mainland Asia. In feudal Japan the crane was protected by the ruling classes and fed by the peasants. When the feudal system was abolished in the late 19th century, the protection of cranes was also lost and by 1920 they had dwindled to a population of less than 20 birds. Only one colony had survived in a remote part of Hokkaido. After receiving protection from the Government they began to recover but suffered many losses during World War II and the subsequent occupation. The Government supported feeding of cranes in 1952 to bring the birds back from the brink of extinction.
- Migrants to Japan include the hooded crane (from Siberia) and the white-naped crane (from Siberia, Mongolia and Manchuria). These species have also been threatened by habitat change and wartime hunting. By 1954 the population of the hooded crane was down to 250 birds, and white-naped down to 25 birds. These have now recovered to number in the thousands.

### ***Cranes in myth, legend and tradition In Asia***

- In Japan the crane was known as 'the bird of happiness' and was often referred to as 'Honorable Lord Crane'. In China the crane was the 'Patriarch of the feathered tribe'. The Chinese saw the crane's white standing for purity, the red head for vitality (and also connected with fire).
- The birds were associated with fidelity (faithfulness and devotion to one's partner) because they paired for life.
- They were also symbols of longevity and in both China and Japan were often drawn with pine trees, tortoises, stones and bamboo - all symbols of long life. Both cultures also associated cranes with good fortune and prosperity so they are often painted with the sun - a symbol of social ambition.
- The Chinese believed that cranes ('heavenly cranes' *tian-he* or 'blessed cranes' *xian-he*) were symbols of wisdom - the messengers of legendary sages who were carried on their backs in flight between heavenly worlds. They believed that pure white cranes were sacred birds that inhabited the Isles of the Blest.
- The powerful wings of the crane were said to be able to convey souls to the Western Paradise and to take people to higher levels of spiritual consciousness. The Chinese also saw valuable lessons in the flight of cranes in which the young must follow and learn from their older and wiser leaders.
- Ancient Chinese symbolism included the crane with the phoenix, mandarin duck, heron and wagtail as a representation of the five relationships between people. The crane symbolizes the father-son relationship - when it sings, its young answer.

- In many parts of Asia the cries of migrating cranes were a significant signal of the seasons - crops needed to be sown as the cranes departed for their breeding grounds in spring, while their arrival coincided with the harvest in autumn.
- Japanese creation myths talk of a legendary warrior who conquered his foes to extend the borders of ancient Japan. On his death, his soul took the form of a crane and flew away.
- Legend has it that Yorimoto in the 12th century attached labels to the legs of cranes and asked people who captured them to record their location on the label and re-release the birds - a very early program of bird banding to find out about the movements of a species. Some of Yorimoto's birds were claimed to have still been alive several centuries after his death, giving rise to the notion that a crane lived for a thousand years.
- Another legend records that at Kakamura in the 11th century a feudal leader celebrated a Buddhist festival in which birds and animals are set free, by releasing hundreds of cranes as thanksgiving after a successful battle. Each had a prayer strip on its leg to pray for those killed in battle. This appears to be the first recorded association of the crane with celebration of peace and prayers for those lost in war.
- The oldest known use of the motif of a thousand cranes is a 15m (50ft) long scroll by Sotatsu, an artist of the early 17th century. The theme was repeated innumerable times in art on screens and walls. Inevitably the crane's reputation for long life and prosperity became a symbol of good health, and origami cranes became a popular gift for those who were ill.
- It is apparent that as populations of cranes declined, artists drew on the work of other artists for details of the birds. When a crane stands, it appears to have a black tail, but the only black feathers are on the trailing edges of their long wings. Yet for centuries, many artists in China and Japan portrayed flying cranes with black tail feathers. While the symbolism is clearly more important than biological accuracy, it is interesting to note that the symbol came very close to outliving the bird that inspired it.
- In Japan the crane was called *tancho* meaning 'red crown'. The red and white of the crane became important colors in Japanese symbolism and art. Because of their association with fidelity, prosperity and longevity, the crane motif and these colors are a common symbol in marriages in Japan. They are often used on the bride's kimono; on announcing their engagement the bride and groom often exchange decorations shaped like cranes; sweet cakes baked in the shape of cranes, and even ice sculptures of cranes are likely to be part of the wedding celebrations.