



### THE "SWIMMING FLOWERS" OF THE COURTYARD OF HEROES: KOI

Koi are ornamental varieties of domesticated common carp that are kept for decorative purposes in ponds or water gardens. Koi are available in all colors from the purest white, through yellow, orange, red, near-lavender, blues, greens and coal black, in limitless combinations.

#### Ten Interesting Facts About Koi

##### 1. What does "koi" mean?

"Koi" is simply the Japanese word for "carp." What are known as "koi" in English are referred to more specifically as nishikigoi in Japanese (literally meaning "brocaded carp"). In Japanese, "koi" sounds like another word that means "affection" or "love"; koi are therefore symbols of love and friendship in Japan.

##### 2. Are koi the same thing as goldfish?

Not really. The two are both carps, but they were bred from different species of carp at different times. Goldfish were developed in China more than a thousand years ago by selectively breeding Prussian carp for color mutations. Koi, on the other hand, were developed from common carp in Japan more recently. Since goldfish and koi were developed from different species of carp, even though they can interbreed, their offspring are sterile.

##### 3. Can you tell a koi from a goldfish by looking at them?

In general, goldfish tend to be smaller than koi, and have a greater variety of body shapes, and fin and tail configurations. Koi varieties tend to have a common body shape, but have a greater variety of coloration and color patterns. They also have prominent barbels on the lip. Some goldfish varieties (e.g. the common goldfish, and the comet goldfish) have body shapes and coloration that are similar to koi, and they can be difficult to tell apart from koi when these goldfish are young.

##### 4. How long does a koi live?

An average koi lives around 30 years, but one can live for centuries. One famous koi named "Hanako" was owned by several individuals and was reportedly 226 years old upon her death (c. 1751 – July 7, 1977).

#### 5. How can you tell how old a koi is?

Koi are covered in scales -- thin, overlapping plates of bone that cover their body. As a koi grows, the number of scales on its body do not increase in number, but rather increase in size. The growth of the scales is proportional to the koi's growth, and annual marks are formed on the scales at the same time every year, along the outer edges. So if you look at a koi's scale, it turns out that just like trees in cross-section, it has annular rings. This method is more accurate for younger Koi (i.e., less than 5 years old).

A more accurate way to judge a Koi's age is to examine the cross-section of a fin spine, which also has annular rings. The second anal fin spine is often used. This can be done without doing permanent damage, since the fin will grow back.

The most accurate way to determine a koi's age is to wait until it dies and examine its dead otolith, or "ear bone." White bands are formed during the spring and summer months, while darker bands are formed during winter, so the koi's age can be approximated by counting the light and dark bands as one year.

#### 6. How big can a koi grow?

The final size of a koi depends on environmental conditions such as pond size, oxygen concentration, water temperatures, water quality, amount and type of food, and length of the growing season. In general, however, Koi can grow almost an inch per month or faster when they are young -- but then growth slows down. In a fish's first twelve months, it grows to an average length of 9.2 inches; at its second birthday, it usually is about 15.6 inches long; and by the age of 5, it is generally about 25.7 inches long. At the age of 8, most koi have grown only an additional 3 inches or so (to 29.4 inches).

#### 7. What do koi eat?

Koi are omnivorous and will eat a great variety of foods. Special Koi food can be purchased. Many keepers supplement them with trout chow, catfish chow, bread, Cheerios, peas, lettuce, spinach, fresh shrimp, earthworms and krill. A real treat for Koi is watermelon.

#### 8. Can koi be trained to do tricks?

When koi become accustomed to their feeder's presence, they will often eat from his or her hand -- some have even been trained to take food from their owner's lips. Koi dispositions are mellow and their toothless mouths are soft.

#### 9. Can you tell a male koi from a female koi just by looking at them?

It is difficult to tell the gender of younger koi, but it gets easier as the fish get older. Females tend to have rounder bodies and rounder pectoral fins and their fins tend to be somewhat smaller; males tend to be sleeker, with more pointed pectoral fins, and their fins tend to be larger.

Older males have a sand paper like raspiness on the gill plates, and some people claim you can also feel a roughness if you lick your tongue across the front of the pectoral fin. Please don't try to test this by licking any of the fish in the koi pond in the Courtyard of Heroes!

10. What is one of the most unexpected characteristic of koi?

Koi can blush! Koi show stress by blushing red in their fins and on their bodies. When they are handled in a net, you can see the red in their fins, between the spines. Also, when they are in a stressful environment, such as in bad water, they will often show a red blush on their bodies under the scales. Sometimes they almost look like they have varicose veins!

(All photos in this document were taken by U.S. Air Force Staff Sgt Gustavo Gonzalez)

Information for this page came from:

-- The Wikipedia entry on "Koi," at

[en.wikipedia.org/wiki/Koi](http://en.wikipedia.org/wiki/Koi) (accessed 8/3/11)

-- The Olympic Koi, Goldfish & Water Garden Club Web site at

[www.olympickoiclub.org/aboutkoi.html](http://www.olympickoiclub.org/aboutkoi.html) ( accessed 8/3/2011)

-- The Colorado Koi Web site at

[www.coloradokoi.com/koisize.htm](http://www.coloradokoi.com/koisize.htm) (access 8/3/11)