Water Cress---*Nasturtium officinale*

Aquatic to semi-aquatic perennial from the cabbage family related to garden cress and mustard.

Hollow stems of this plant allow for its buoyancy and the leaves have a peppery or tangy flavor—plant produces clusters of small green and white flowers. This plant grows to an average height of about 18” tall.

Water cress can be grown hydroponically with water being slightly alkaline or in slow moving stream beds where it is often found naturalizing.

New shoots and leaves are mainly consumed as flowering stalks often become bitter. Water cress can also be eaten as days old sprouts.

Benefits from eating this plant include its significant amounts of iron, calcium, folic acid and vitamins A and C. It is also a mild stimulant, diuretic, expectorant, and a digestive aid.

Chinese Water Chestnut---*Eleocharis dulcis*

This aquatic grass-like perennial with tube-shaped, leafless green stems grows from 18” tall to 3’ depending on its location. It is grown for its small, rounded edible corm.

Do not confuse this plant with the Water caltrop (sometimes called Water chestnut) *Trapa natans* for both are totally unrelated. Chinese water chestnut is native to China where it is a widely cultivated commodity.

This plant is commercially grown in flooded paddy fields, but can be planted along pond edges in water which is 2” deep to 3’ deep.

The small, rounded corm is harvested in the fall from the pond mud and peeled, washed and eaten raw, stir fried, canned or grilled. The white flesh remains crisp even after cooking or canning. The corm can also be ground into flour and the paste used to make water chestnut cake common in dim sum cuisine.

The Chinese water chestnut is a good source of fiber, riboflavin, vitamin B6 and potassium. Almost 90% of its nutrition is in the form of carbohydrates.
**Water Caltrop---Trapa natans / Trapa bicornis**

Both species of Water caltrop (sometimes called Water Chestnuts) are tropical based aquatic plants with floatation occurring by inflated petioles. *Trapa natans* has a large 4-pronged seed and is hardier than *Trapa bicornis* and is considered a pest plant in the southern United States. *Trapa bicornis* is considered and annual aquatic and has 2-pronged fruit which is most often seen in Asian markets.

Both species prefer slow moving or still water with slightly acid soil in full sun. They do not tolerate shade. They thrive in very high summer temperatures with a frost-free winter. Most often, they are considered annual aquatic plants. They can grow in water up to 3’ deep because of the long floating stems that spread across the water surface.

To propagate, purchase seeds in the fall at Asian markets and store in water in a cold, but not freezing location over the winter. Plant outside in the pond in spring when water has warmed to 70 degrees F. Plant in a container of clay soil in water 2- 6” deep in full sun. They sprout fast and grow even faster as the weather warms.

Raw seeds contain toxins so they must be boiled or roasted to be edible. The starchy seed has a taste very similar to the tree chestnuts. The seeds are often cooked, dried and ground into a powder.

**Taro---Colocasia esculenta**

This is a great tropical aquatic plant that is closely related to Xanthosoma and Caladium and is often referred to as ‘Elephant Ears’. It does not tolerate hard winters (those with temperatures below 20 degrees F), but it comes back nicely from the ground in mild winter areas.

Grow this plant in sun or shade in moist sites or water up to 12” deep. It can grow anywhere from 18” tall to 6-7’ tall depending on the variety. It gives a very tropical feel to the landscape as well as providing very efficient nutrient cleansing for the pond. It tolerates many different soil types and grows very fast with the heat of summer.

Known as one of the earliest of cultivated plants, it is grown for its edible corm which is a staple food in oceanic cultures. The starchy corm needs to be cooked to eliminate calcium oxalate contained in its tissues which is toxic. This can also be accomplished by seeping the taro roots in cold water overnight. The leaves of Taro are also used and they are a good source of Vitamin B6, vitamin C, niacin, potassium, riboflavin and iron. The corms are very high in starch and are a good source of fiber.
**Lotus---Nelumbo nucifera**

Lotus is an aquatic perennial that is prized for its spectacular tropical ornamental appearance as well as its edible qualities and its sacred value in many cultures. Seeds have been known to remain viable for many years. It can be 18” tall to 5’ tall depending on the variety.

Lotus is very easy to grow once it has established itself in the pond. Roots grow very aggressively in earth-bottom ponds so care must be taken when planting in these situations. It can grow in water up to 3’ deep and prefers very clayey, nutrient rich soil in full sun to light shade.

All parts of the plant are edible including leaves, flowers, seeds and roots. The leaves are used as a wrap for food to steam the filling. Flowers are used for garnish and the seeds can be eaten raw (after peeling off the bitter seed coat) or they can be dried and popped like popcorn. Lotus roots (or rhizomes) are most often used in cooking as a vegetable in soups and stir-fried dishes as well as sliced and deep-fat fried.

Lotus roots are a very healthy food known to be high in fiber, vitamin C, potassium, thiamin, riboflavin, vitamin B6, and phosphorus—all this while being very low in saturated fat. They can be eaten raw, though there is a risk of parasite transmission depending on where the lotus plant is grown.

**Cattail---Typha latifolia---(most commonly seen)**

Very common hardy aquatic plant most pond owners are familiar with across the Northern Hemisphere. Some people even think of these hard-working plants as pests. They are found throughout most wetland environments.

The common cattail seen in naturalized areas can grow to about 6-8’ tall, however, there are many different cultivated varieties which can be as small as 18” tall or have lovely green and white variegated foliage.

Cattails grow in any soil that is moist up to a depth of 4’. They can grow in shade or sun. They go dormant every winter and as their brown leaves fall and decay on the pond bottom, they actually build soil so if allowed to grow unchecked, they will fill in the pond bottom reducing the pond’s overall depth.

Early American Indians utilized many parts of this plant as a staple in their diets. The rhizomes of this plant are packed with energy and can be harvested from late fall to early spring. They are starchy with tough fibers contained within the length of the rhizomes so the starch must be scraped out to eat. They are tasty and nutritious as are the lateral shoots coming from the main rhizome. The bases of new shoots can also be harvested in late spring and eaten raw or cooked—as can the flower head in early summer. Cattail pollen collected from the flowers in mid-summer can be used as flour or a thickener for sauces.
**Arrowhead---*Sagittaria latifolia***

This fast growing hardy aquatic perennial is also known by the name of ‘Duck Potato”. It grows with an extensive root system in colonies that can cover large amounts of ground.

The plant can have very large (up to 12’) arrow-shaped leaves depending on the nutrient availability in the site where it’s growing. If grown in a container lacking nutrients, it is very small with very narrow needle-shaped leaves. It can grow 3’ tall when at its most vigorous stage. It prefers sun but will tolerate shade and waters high in phosphates. This makes it an excellent choice for filtering the phosphates from the pond water which reduces algae growth. Arrowhead can tolerate water levels from 2’ deep to mud.

The tubers of Arrowhead have been an important food source in the past for the Native American Indians. They are a starchy vegetable similar to potatoes in all aspects and are produced at the end of long runners in the pond mud. They are harvested in the fall using a stick or pitchfork and collected as they float to the water surface. The tubers are eaten raw or cooked (15-20 minutes) similar to the way potatoes are prepared. As a side note, ducks are not usually interested in eating the tubers since they grow too deep for them to reach. However, beavers and especially muskrats thoroughly enjoy the energy rich tubers.

**Rice---*Oryza sativa***

Domesticated rice is an immensely important annual aquatic plant which most of the human population relies on for nutrition. Rice provides more than one-fifth of the calories consumed worldwide by humans. It is commonly seen growing in flooded fields along highways in Northern California where it is a very important export crop. Looking a lot like wheat or oats, it has grass-like foliage growing about 3’ tall.

Growing rice takes a lot of space in shallow flooded areas in full sun. It prefers to germinate with 2” of water over the soil and grows during summer with approximately 4” of water over its crown. It takes about 4 months of warm weather to reach harvest time when the water should be allowed to evaporate leaving only moist soil. The leaf stalks turn from green to tan signifying harvest time.

The rice seeds are harvested and then dried for approximately two weeks at which time they are milled using a rice huller to remove the outer husks of the grain called chaff. When this is done, the resulting rice is called brown rice which contains the most nutrient value but does not store well. If the outer bran layer is removed by further processing, you are left with commonly seen white rice which keeps much longer but lacks in nutrient value.

Rice is a good source of protein, though it lacks some essential amino acids so it is not considered a complete protein and must be combined with other foods such as beans to improve its nutritional value.