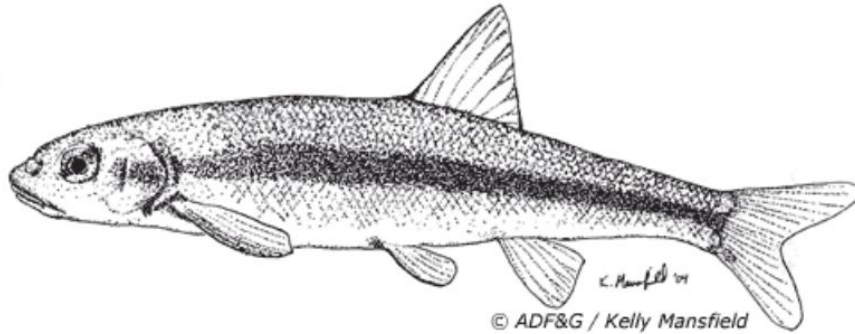


Lake Chub



Life History: The spawning period of the lake chub occurs between spring and early summer. Lake chubs move to shallow water of rivers and streams that have rocky or gravelly bottoms. Unlike salmon, no redds, or nests, are constructed for the eggs. Instead, the yellowish eggs fall into crevices in-between the gravel. Neither males nor females guard the eggs after fertilization. The eggs hatch about 10 days after fertilization. It is thought that the lake chub is sexually mature at age 3 or 4 and that it lives to an average age of 5 years old. Not much else is known of the life cycle.

Habitat: The lake chub is found in all types of freshwater bodies (lakes and streams), but in Alaska it has been found more often in silty waters. It tends to prefer shallow water, although it will move to deeper water during hot weather. The lake chub is usually abundant wherever it is found.

Food Habits: Young lake chubs feed primarily on zooplankton. Older lake chubs feed on terrestrial and aquatic insects, but also feed on algae, occasionally small fishes, and have been known to scavenge on decaying fish.

The lake chub is an excellent food source for larger fish and some birds.

Text: Kelly Mansfield
Illustration: Kelly Mansfield
2004

PYGMY WHITEFISH

Prosopium coulteri Eigenmann and Eigenmann,
1892
(Salmonidae)



Global habitat
Common in lakes and flowing waters of clear or silted rivers of mountainous country; in Lake Superior found at depths of 18-89 m; in western lakes, occurs in waters usually less than 6 m deep, not changing depth seasonally (Lee et al. 1980).

State habitat
In the Naknek system, Alaska, found at depths to 168 m but also abundant in the shallows (Heard and Hartman 1965). Spawns over coarse gravel in shallow areas in streams or lakes.

Food
Crustaceans, chironomids, ostracods,
pontoporeia, copepods, and fish eggs.

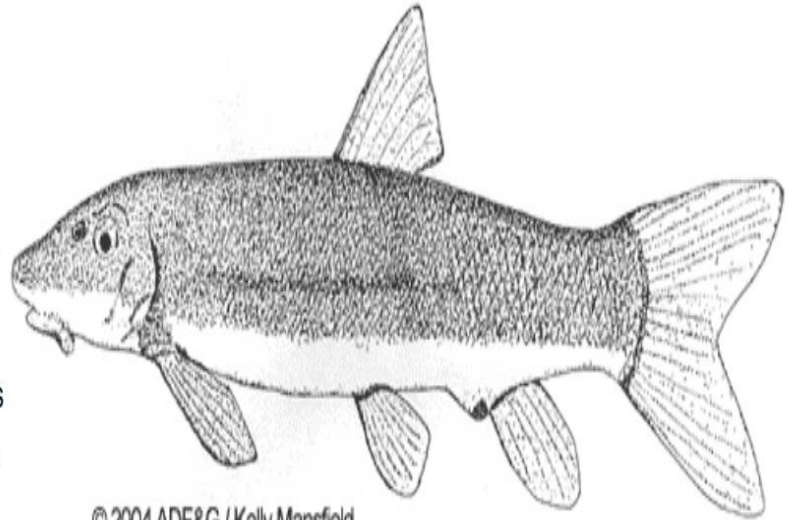
Longnose Sucker

The **longnose sucker** (*Catostomus catostomus*) is the only species of sucker located in Alaska. It is found throughout the state (except for islands) and other parts of North America in both lakes and streams where the water temperatures are usually clear and cold. A sucker is named for its unique fleshy mouth located on the bottom of its head.

General description: The longnose sucker has a reddish-brown, dark brassy green, or gray to black upper body and the underside is usually white. The lateral line, which is complete, is usually brownish-black, except during the breeding season when it turns reddish. Breeding males also develop tubercles (small bumps) on the head, anal fin, and the lower lobe of the caudal (tail) fin.

The longnose sucker has an elongated, round body with a somewhat long snout. The mouth has large lips that are lined with papillae (small fleshy projections), which create suction for ingesting food. There are no teeth located on the jaws. Instead, there are pharyngeal teeth (teeth in the pharynx area, which is the beginning of the digestive tract) that are used by pressing food

against a hard pad of cartilage. The caudal fin (tail) is forked with rounded lobes. Longnose suckers have been measured up to 25 inches in other parts of North America, but in Alaska they are usually shorter than 23 inches. The longnose sucker belongs to a group of fish (Cypriniformes, which also include the lake chubs) that have a unique feature called the Weberian apparatus. The Weberian apparatus is made up of four to five modified vertebrae in the head that connect the ear to the swim bladder, which aids in sensing sound and pressure changes.



Life history: Longnose suckers spawn between May and July depending on location. They sometimes travel to streams with gravel bottoms and cold water. They can also spawn and thrive in lakes or ponds. Unlike salmon, the longnose sucker does not build a nest for fertilized eggs. Instead, the fertilized eggs fall into crevices in the gravel. During spawning, which usually occurs during the daylight, the male grasps the female with his pelvic fins while they vibrate to release both eggs and sperm at the same time. A female can produce up to 60,000 eggs. The eggs, which are yellow in color, take up to about two weeks to hatch, depending on water temperatures. They remain as sac fry in the gravel for another one to two weeks before they begin to move around and feed. By October, longnose suckers have left the spawning areas and have moved downstream or to lakes to over-winter. Some longnose suckers spawn every year, while others skip years. The age at which a longnose sucker reaches sexual maturity varies depending on location, but can be as soon as two to three years old.

Food habits: The longnose sucker feeds primarily on the bottom of streams or lakes. It swims slowly along the bottom in search of invertebrates, which include insects, mollusks, snails, and crustaceans, and sometimes eats aquatic plants, algae and fish eggs. Its large lips enable it to suck up its food. Longnose suckers are a source of food for other larger fish, some mammals, and birds.

Human use: The flesh of the longnose sucker is typically white and flaky, but bony. People have used suckers for bait, dog food, and as food (sometimes as fillets called mullet). The longnose sucker is not usually sought after as a sport fish. In fact, some anglers dislike suckers because they believe suckers reduce fish populations by feeding on fish eggs and competing for similar food items, like aquatic insects. Suckers have been shown to compete with stocked salmonids in lakes and ponds.

Text: Kelly Mansfield

Illustration: Kelly Mansfield

2004

Common Loon



Behavior and feeding: Loons are perhaps the best diving birds. They can stay underwater more than a minute and have been found caught in fish nets 240 feet (73 m) deep. They propel themselves underwater with their feet, using their wings for turning. Loons feed on small fish but are also known to eat aquatic vegetation, insects, mollusks, and frogs. When alarmed, loons prefer diving for safety to flying. The larger loons need long take-off runs (up to one-quarter mile (400 m)) to get airborne, but once aloft they are strong flyers, clocked as fast as 60 mph (97 kph). They slide on their breasts instead of their feet when they land. They do not walk well on land, because their feet are set so far back on their bodies.

Life history: Adult loons leave younger birds at the coast and arrive at their freshwater nesting grounds by late May. Loon pairs mate for life and return every year to the same area to breed. The nests are typically right at the shoreline on islands or points of land. They are made of debris or rotting vegetation formed into a simple mound. Two drab-colored eggs are laid in late May or June. The parents take turns incubating them for about a month. The young are precocious and leave the nest within a day or two, then ride on their parents' backs more than half the time in their first week of life. This help keeps their soft downy feathers dry and warm. Loon chicks grow slowly and must be fed by their parents. Sometime in the third month the chicks learn to fly.

Usually one young of a pair survives to migrate to coastal waters in September or early October. Loons have difficulty hatching eggs and raising chicks on some lakes due to heavy predation from gulls, jaegers, and foxes, or disturbance from float planes, boats or fishers that force adults off their nests, allowing the eggs to chill and die. On busy recreational lakes motor wakes sometimes drown chicks. Loons occasionally get tangled in discarded fishing line or plastic six-pack holders, dooming them to slow starvation.

During fall migration, some loons congregate on large inland lakes before flying to coastal wintering areas. The young spend summer on the coast, rather than the freshwater lakes and ponds preferred by mature nesting pairs.

Trumpeter Swan

Migration

Trumpeter swans are migratory birds and fly south when temperatures start to drop in October or November. They may spend the first several weeks in northern states such as North Dakota and Wyoming, and then move farther south to states such as Arizona or Nevada as temperatures continue to drop.

Fast Facts

- **Size**

Weight: Males average 28 pounds (12.7 kg); Females average 22 pounds (10.0 kg).

Length: 1.6 m

- **Lifespan**

24 years

- **Range/Distribution**

Interior, Southcentral, and Southeast Alaska

- **Diet**

Foliage, seeds, and tubers of various marsh plants such as horsetail, pondweeds, sedge, bulrush, water milfoil, widgeongrass, and pond lily.

- **Predators**

Bears, wolves and coyotes, wolverines, raccoons, and common ravens will snatch eggs, while bobcats, red foxes, and golden eagles prey on post-hatchlings and adults. Humans are the most significant predators of trumpeter swans.

- **Reproduction**

Monogamous breeding pairs mate once yearly. Females lay 2–7 eggs.



Fast Facts

- **Size**

Weight: 3 lbs

Wingspan: 5.5 ft

- **Lifespan**

Up to 25 years

- **Range/Distribution**

Northwest Alaska, (base of Seward Peninsula) east to Canada and south to Southeast Alaska excluding the Aleutians, Kodiak Island, Alaska Peninsula, Seward Peninsula, and the Kenai.

- **Diet**

Mainly fish, occasionally small mammals and reptiles.

- **Predators**

Bald eagles and great horned owls, as well as climbing animals prey on nestlings and eggs.

- **Reproduction**

Pairs mate annually, females lay 2–4 eggs December through March in non-migratory populations, and April through May in migratory populations.



TREELINE EMERALD

Somatochlora sahlbergi Tryböm, 1889
(Corduliidae)

Global rank G4 (04Nov2004)

State rank S3S4 (14Jun2006)

State rank reasons

Distribution records for Alaska are limited and patchy; data is lacking. Abundance and trends unknown. Threats are likely minimal, although climate change may cause habitat reduction.



Habitat

Pools, ponds and small lakes at the edge of shrub tundra near treeline; fens (minerotrophic waters) and bogs (ombrotrophic waters; Cannings and Cannings 1985, Cannings and Cannings 1994). Pools where this species may be found usually lined with sedges, contain aquatic mosses, and often underlain by permafrost (Cannings and Cannings 1985). Important habitat characteristics include deep, cold water and the occurrence of an aquatic moss (such as *Sphagnum lindbergii*, *Scorpidium scorpioides* and *Drepanocladus fluitans*) as the dominant vegetation (Cannings and Cannings 1985).

Food

Both adults and larvae are carnivorous. Larvae prey upon zooplankton and other aquatic insects

and insect larvae including beetles, mosquitoes, midges and even other dragonfly and damselfly larvae. Adults prey upon flying insects such as mosquitoes, deer flies, caddisflies, moths, midges and smaller Odonates (Walker 1953, Cannings and Cannings 1985, Cannings et al. 1991, Corbet 1999).

WOOD FROG

Rana sylvatica LeConte, 1825
(Ranidae)

Global rank G5 (18Oct1996)

State rank S2S3 (23Jun2004)

State rank reasons

Widespread and relatively common in Alaska, especially on mainland, although overall population and trends are unknown. Recent high incidence of abnormalities reported in core of range is cause for concern. Recent increase in residential development in center of range threatens habitat availability and quality.

Taxonomy



weeks in Maryland, 15-16 weeks in Virginia (Riha and Berven 1991). In Maryland 20,262 juveniles emerged from a single pond in one year (Berven 1988). Sexually mature in 2-3 years (in Maryland, females mainly in 2 years, rarely in 1 year; Berven 1988).

State habitat

This species is closely associated with Alaska's Interior forests. Inhabits diverse vegetation types from grassy meadows to open forest, muskeg, and even tundra. Breeds in early spring in shallow bodies of permanent or ephemeral water (Hodge 1976, MacDonald 2003). A resident of grassland and open forest, is often found considerable distances from water (Hodge 1976). Hibernates under the snow in shallow depressions of compacted forest litter (MacDonald 2003).

Food

Metamorphosed frogs eat various small invertebrates, mostly terrestrial forms. Larvae eat algae, plant tissue, organic debris, and minute organisms in water; they are also capable of eating amphibian eggs, hatchlings and invertebrates (Petranka et al. 1994, Petranka and Kennedy 1999, Baldwin and Calhoun 2002).

LONG-TOED SALAMANDER

Ambystoma macrodactylum Baird, 1849
(Ambystomatidae)

Global rank G5 (14Dec2001)

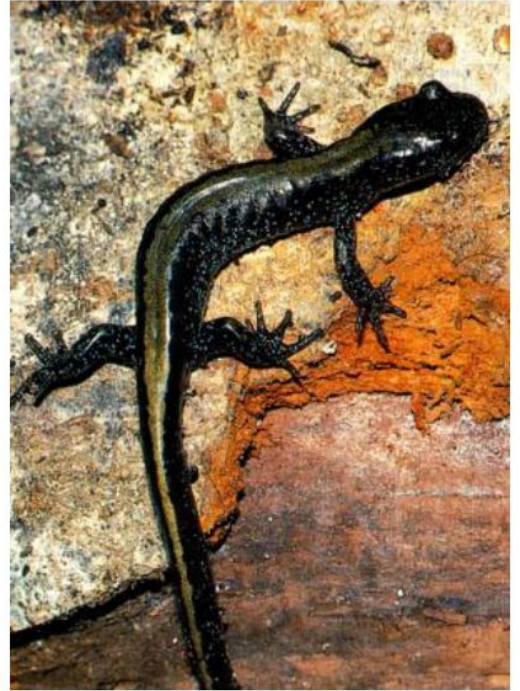
State rank S2? (25Feb1992 reviewed 1Nov2004)

State rank reasons

Restricted distribution in Southeast Alaska. Possible island endemism, but genetics not available to validate. Relatively common throughout its range, but overall abundance and trends unknown. Major threats include destruction of wetland habitats, predation by introduced trout, and exposure to UV-B.

Taxonomy

For phylogenetic analyses of North American *Ambystoma* see Kraus (1988), Shaffer et al. (1994), and Jones et al. (1999).



Food

Larvae feed on zooplankton, immature insects, snails, and occasionally other salamander larvae, including conspecifics. Adults eat terrestrial and aquatic invertebrates including: insects, insect larvae, spiders, slugs, earthworms, amphipods, etc.

Phenology May be active almost all winter in Pacific Northwest coastal ponds (Stebbins 1985).

Habitat

Found in a wide variety of habitats, from semiarid sagebrush deserts to sub-alpine meadows, including dry woodlands, humid forests, and rocky shores of mountain lakes. Adults are subterranean except during the breeding season. A terrestrial habitat use survey near Hinton, Alberta determined that individuals were found primarily in well-drained areas with thick litter on the forest floor and close to relatively permanent water bodies (Graham 1997). Salamanders were also found in seral stages ranging from three-year-old clear-cuts to 180-year-old forests and occurred in active logging areas (Graham 1997). Breeds in temporary or permanent ponds, or in quiet water at the edge of lakes and streams. During the breeding season adults may be found



During the summer, muskrats may be seen in many roadside ponds and sloughs where there is suitable vegetation as a food source. Often the casual observer will hear a big splash and see something swimming around in the water, giving the impression that the pond is inhabited by large fish which are jumping and surfacing. Indeed, sometimes there are large pike in the grassy sloughs, feeding on an occasional muskrat! If the viewer sits quietly by the edge of the pond or slough, the resident muskrats will soon go about their business, providing hours of entertainment.

Fast Facts

- **Size**

Weight: 2–4 lbs

Length: 10–14 in

- **Lifespan**

3 yrs

- **Range/Distribution**

Throughout most of Alaska's mainland except some islands of Southeast Alaska, the Alaska Peninsula west of Ugashik Lakes, and the Arctic Slope north of the Brooks Range.

- **Diet**

Herbivorous. Eats mainly aquatic plants such as the roots and stems of cattails, lilies, sedges, and grasses, occasionally some animal life such as mussels, shrimp, and small fish.

- **Predators**

Mink, river otters, coyotes, owls, northern harriers

- **Reproduction**

Breed twice per year. Females give birth to litters of 7–8 young.

Fast Facts

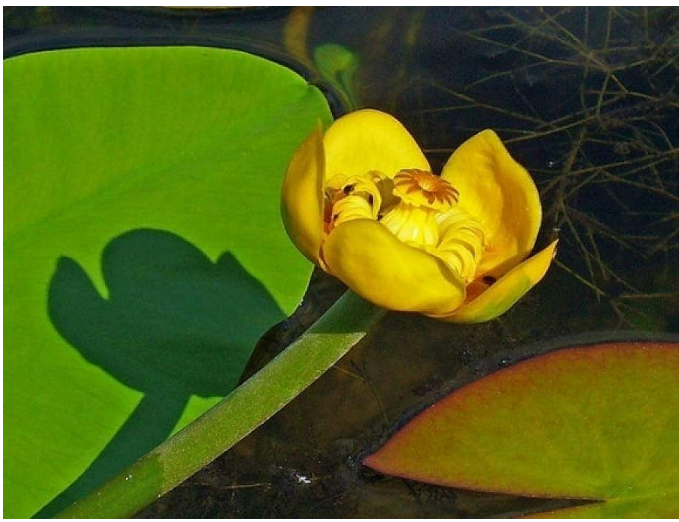
- **Size**
Up to 1,600 pounds
- **Distribution**
Generally associated with northern forests; found in Alaska from the Unuk River in Southeast to the Colville River on the Arctic Slope.
- **Diet**
Herbivorous, eating willow, birch, and aspen leaves and twigs, along with sedges, Equisetum, pond weeds, and grasses.
- **Predators**
Wolves, black bears, and brown bears
- **Reproduction**
Usually one calf is born, but twins can occur if food has been plentiful



The den is used as a food cache, rearing area, and general home. Dens are of two types depending on water level fluctuations. Bank dens are simply dug into the stream or river bank with a mass of sticks, mud, and rocks constructed over the top of the den. Lodges are constructed of the same materials as bank dens, but are located where the water level is more stable and slower moving, like in a pond or lake.

Where streams are too large or swift to dam but do provide ample water throughout the year, the beavers may use bank dens. These may have several tunnel exits with at least one above the high water mark and another below the low water mark. The den itself is a large chamber averaging 2 feet wide by 3 feet long by 3 feet high (60 x 90 x 90 cm).

Bank dens and lodges have two things in common: they have one chamber-like room and at least one tunnel exit to deep water so it will be free of winter ice. The exit provides quick and easy access for food gathering and emergency escape from predators. Each year beavers will add materials to the lodge whether or not repairs are necessary. The same lodge is used by a beaver family year after year, so some can be quite large. It is the family's home year-round.



Nuphar polysepalum

Nymphaeaceae/Water Lily

This yellow pond lily grows in ponds and slow streams. The plant has thin submerged leaves and large, heart shaped, leathery leaves with long stems floating on the surface. The leaves grow mostly horizontally to gather sunlight. The enormous 6-10", globe-like flowers are yellow and solitary.

This plant has been used as a source of food by many Native groups. The thick root may be boiled and eaten. The root and seeds may be roasted, ground and used as a grain.



Veratrum viride

Liliaceae/Lily Family

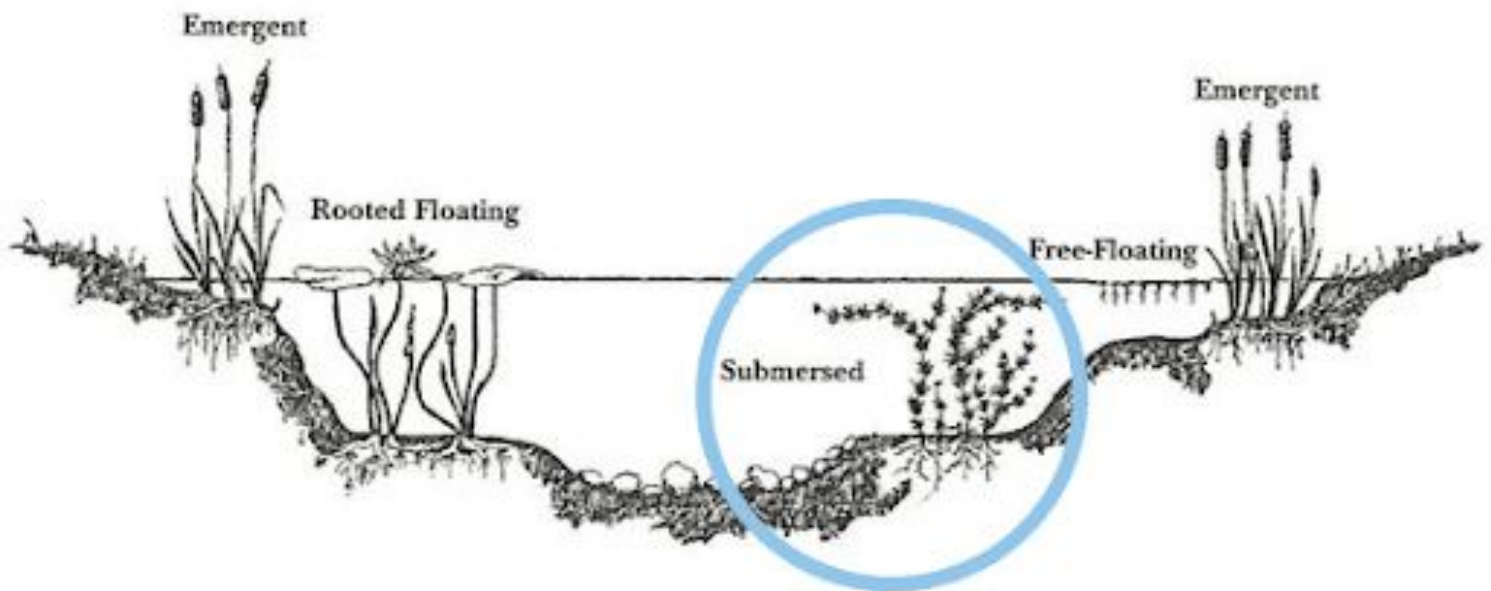
False Hellebore grow in moist open meadows and moist to wet open forests. It is a large (up to 6' tall) plant with very large broad leaves with obvious linear veins that are spirally arranged around the stem. It's resemblance to corn gives it another common name of corn lily. The numerous green flowers have 6 petals that are tightly arranged on drooping to erect branches at the top of the stem. This is a very poisonous plant that may cause vomiting and paralysis if consumed.

Typha latifolia

Typhaceae/Cattail Family

Cattails grow along the shores of marshes, ponds, lakes, rivers or drainage ditches. They are a tall, stiff plant, often reaching 10' tall.

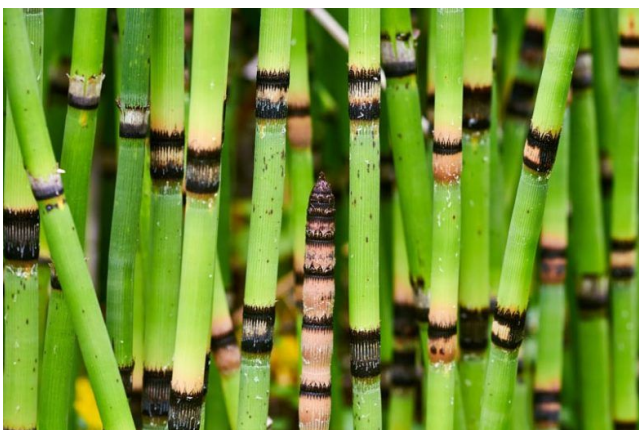
The leaves look like giant blades of grass, about 1" wide and 1-2' long. The tiny, numerous flowers grow along a spike. The lower portion of the spike has the female flowers which are dark brown and the upper





Acorus calamus (Sweet Flag)

Sweet Flag, Calamus, Flagroot, Sweet Cane, Sweet Grass, Sweetroot, Sweet Rush, Acorus americanus, Acorus calamus var. americanus



Equisetum hyemale (Horsetail)

Horsetail, Rough Horsetail, Dutch Rush, Dutch Rushes, Pewterwo

Species: *Lemna trisulca* L., star duckweed or ivy-leaf duckweed

Family: Lemnaceae

Most duckweeds are among the world's smallest flowering plants with entire plants composed of tiny floating, round, bright green disks. Star duckweed, however, is quite different since it is truly submersed (except when flowering or fruiting). Individual nonflowering star duckweed plants are longer and narrower than common duckweed, often floating in masses beneath the water surface; flowering plants more closely resemble common duckweed.

Leaf: No true leaves; the leaf-like body is called a thallus. Two types: nonflowering plants are elongate or spatula-shaped (6-10 mm long), tapered to a stalked base, connected in branched chains of 8-30 plants, and submersed beneath the water surface. Flowering plants are more oval-shaped with a separate margin and a shorter stalk at the base; they are found floating on the water surface.

Stem: None.

Flower: Tiny, rarely seen. Arises from the base of the plant.

Fruit: Inconspicuous, usually 1-seeded.

Root: Often rootless.

Propagation: New plants bud from the base of the plant and break apart. Overwinters as winter buds. Distributed by wind and water.

Importance of plant: Food for many aquatic insects. Because of its high nutritive value, it is used as a feed for fish in India, and Southeast Asia. Sometimes used as a soil conditioner.

Distribution: Throughout much of North America. In Alaska, star duckweed is known from other populations in the Arctic region.

Habitat: Still and slow-moving water, such as in swamps, along shoreline after water levels have risen.

May be confused with: Flowering duckweeds (*Lemna* spp.) or for *Lemna trisulca* (star duckweed or ivy-leaf duckweed) which has red or purple and have overlapping leaves along a central stem.

