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## *Stizostedion vitreum*

(walleye)

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By *Robin Street*

Kingdom: [Animalia](#)  
 Phylum: [Chordata](#)  
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 Class: [Actinopterygii](#)  
 Order: [Perciformes](#)  
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 Family: [Percidae](#)  
 Genus: [Stizostedion](#)  
 Species: **Stizostedion vitreum**

### Geographic Range

The walleye is abundant in many lakes over much of North America, from the Northwest Territories across Canada east of the Rocky Mountains to Labrador, southward along the Atlantic Coast to North Carolina, west to Arkansas, and north along the Missouri River. Their original range involved the Mississippi, Great Lakes, and St. Lawrence drainages, but they have been widely introduced into Atlantic, Pacific, and Gulf drainages

(Phillips, et al., 1982; Froese and Pauly, 2002)

**Biogeographic Regions:** nearctic  (native .

### Habitat

**Depth**  
 27 m (high)

(88.56 ft)

Walleyes prefer deep lake and river water but will move into shallow flats to feed during early evening and night. (Tomelleri, 1990)

**These animals are found in the following types of habitat:** temperate ; freshwater .

**Aquatic Biomes:** lakes and ponds; rivers and streams.

## Physical Description

### Mass

2 to 10 kg  
(4.4 to 22 lbs)

### Length

107 cm (high)  
(42.13 in)

The name walleye refers to the glassy, large pupils of this fish; their white stare is a result of light reflected back through the pupil by crystalline matter in the retina. This allows the walleye to see extraordinarily well in darker waters. Walleyes are long and slim; brownish- green or silver above to creamy white below with dark stripes. The ventral lobe of the tail fin has a prominent white margin. Walleyes have large canine teeth. They have a large, visible, black spot at the base of the last three spines in the first of their two dorsal fins. They can reach 107 cm in length and can grow to 11 kg. Average weight is around 5 kg (Phillip, et al., 1982; Froese and Pauly, 2002)

**Some key physical features:** bilateral symmetry .

**Sexual dimorphism:** sexes alike.

## Reproduction

### Breeding interval

Breeding occurs once per year.

### Breeding/spawning seasonBreeding season

April through June

### Number of offspring

16000 to 143000

### Time to hatchingGestation period

20 days (average)

### Age at sexual or reproductive maturity (female)

3 to 5 years

### Age at sexual or reproductive maturity (male)

3 to 5 years

In the spring, Walleye migrate as far as 100 miles in search of prime spawning sites; they seem to prefer the rocky shores of lakes and dam ripraps. Males are not territorial and do not build nests. Spawning occurs at night. It involves one or two females and up to six males who chase, swim in circles, and erect their fins. They move to shallow water, where each female rolls on her side to release eggs while the males release sperms. A female deposits 20,000- 50,000 eggs per pound of body weight in a single night! Eggs typically hatch in twenty days. (Tomelleri, 1990; Phillips et al., 1982; Froese and Pauly, 2002; Ontario Fishing Network, date unknown)

**Key reproductive features:** iteroparous ; seasonal breeding ; sexual .

The eggs are not placed in a nest or guarded, instead they drift in the water and become stuck among the rocks. Many of the eggs do not survive. When the baby fish (called fry) hatch, they are about 1 cm long and very hard to see in the water because they are so thin.

**Parental investment:** no parental involvement.

## Lifespan/Longevity

**Longest known lifespan in wild**  
10 to 20 years

In southern areas, walleye may live 10 to 12 years but in northern waters they may live to be more than 20 years old

## Food Habits

Walleye are strictly carnivorous. Young walleye eat plankton. As they get older, they mostly eat fishes such as yellow perch and freshwater drum. They also eat insects, crayfish, snails, and mudpuppies (a kind of salamander). They even eat small mammals when fish and insects are not available. Feeding occurs at night. (Tomelleri, 1990; Froese and Pauly, 2002; Ontario Fishing Network, date unknown)

**Primary Diet:** carnivore  (eats terrestrial vertebrates, eats non-insect arthropods).

## Predation

### Known predators

- [white bass](#)
- [muskellunge](#)
- [white perch](#)
- [largemouth bass](#)
- [northern pike](#)
- [channel catfish](#)
- humans

Adult walleye are top predators, which means that they do not have any natural predators in their habitat except humans. Humans do catch and eat adult walleye. The eggs and young fish are susceptible to predation by other fish such as [white bass](#), [muskellunge](#), [white perch](#), [largemouth bass](#), [northern pike](#), and [catfish](#). Young walleye avoid predation by staying near cover.

## Ecosystem Roles

Walleye are top predators. Once they reach adulthood, they primarily eat other animals and are not themselves eaten (except by people). They compete for food with other fish that are predators, including smallmouth bass and white perch.

## Economic Importance for Humans: Positive

The walleye is perhaps the most sought after warm-water game fish and it supports a large fishing industry, particularly in the Central U.S. and Great Lakes area. (Phillips, et al., 1982)

**Ways that people benefit from these animals:** food ; controls pest population.

## Conservation Status

Walleye are not threatened or endangered. Populations of walleye are managed by humans as a game fish.

## Other Comments

The walleye is the state fish of Minnesota and by far the most popular fish in that state. In southern areas, walleye may live 10 to 12 years but in northern waters they may live to be more than 20 years old (Phillips et al. 1982; Ontario Fishing Network, date unknown)

## Contributors

Robin Street (author), University of Michigan: April, 2002.

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