



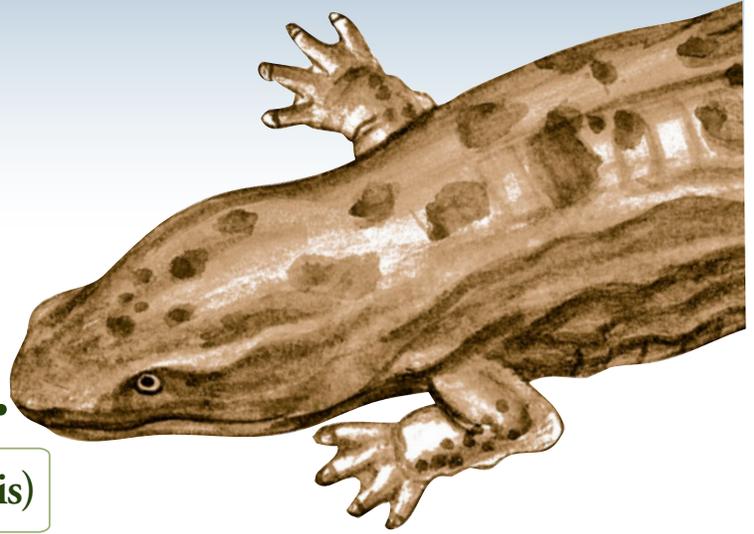
A COMMUNITY TREASURE

FACT SHEET

written by John Tautin

Hellbender

(*Cryptobranchus alleganiensis*)



Body Description

— One of the most unusual organisms that lives in French Creek is *Cryptobranchus alleganiensis alleganiensis*, known commonly as the eastern hellbender. This giant salamander can reach the length of 29 inches. Males range in size from 11 inches to 22 inches, while females tend to be larger. The hellbender is the largest amphibian in Pennsylvania and one of the heaviest salamanders in North America, sometimes weighing over 5 pounds.

The well-muscled body and head are somewhat flattened, and the skin of the body is wrinkled and folded. These fleshy folds of skin, through which respiration occurs, help increase the creature's surface area. Increased surface area increases the hellbender's ability to respire.

The hellbender's legs are short but powerful, with 5 rounded toes with flat tips on the hind feet, and 4 toes on the fore feet. Its tail is laterally compressed and rudder-like. The color is unusually greenish brown, but can vary from a yellowish brown to a dark brown.

Aquatic salamanders such as the eastern hellbender have their ear bone attached to their lower jaw bone, and when they touch their lower jaw to the stream bottom vibrations are picked up and transmitted to the ear bone.

The hellbender's eyes are located on either side of its head providing the creature with a wide field of vision for detecting prey and predators. There is some debate about the efficacy of the hellbender's eyesight, but it is generally agreed that photoreceptors in the eyes assist with depth perception and detecting movement.

Hellbender (*Cryptobranchus alleganiensis*)

Class: Amphibia

Order: Caudata

Family: Cryptobranchidae

Genus: *Cryptobranchus*

Species: *Cryptobranchus alleganiensis*

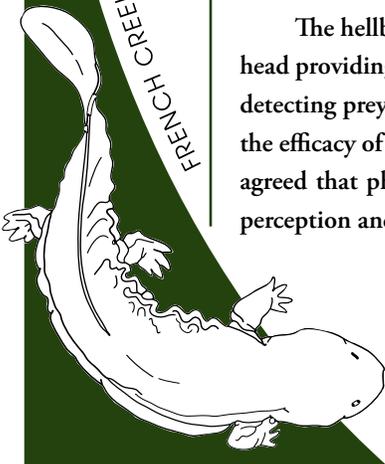
Subspecies: *Cryptobranchus alleganiensis alleganiensis*

Common names: Hellbender, Eastern hellbender

Cryptobranchus means "hidden gills"

Food

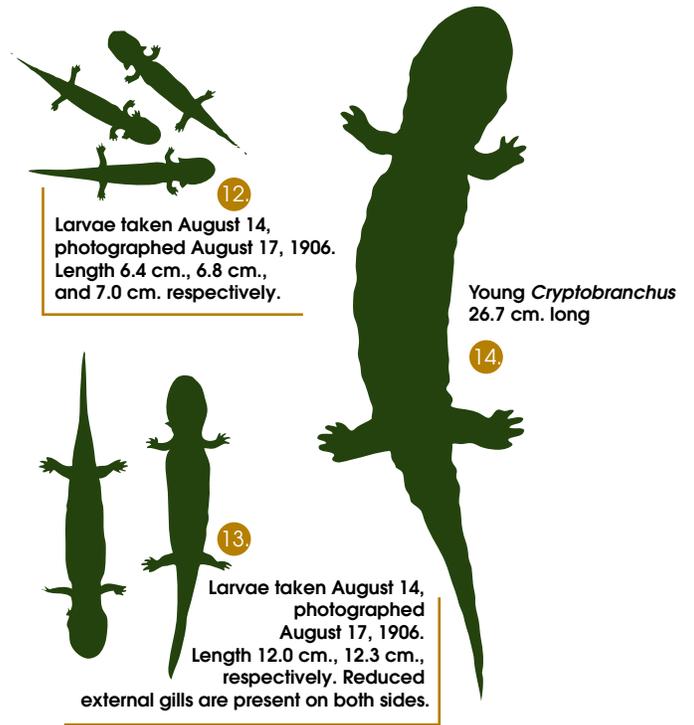
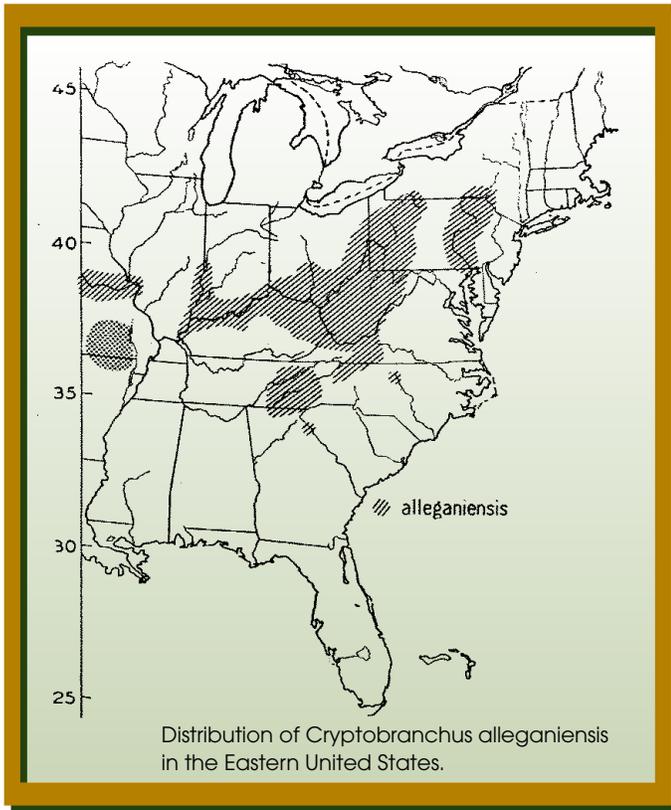
— The hellbender subsists primarily on crayfish, and no longer thrives in streams and rivers where pollution has destroyed crayfish populations. In addition to crayfish, its diet consists of small fish, worms, and insects. A structured jaw bone and teeth aid in the consumption of prey, and can leave a painful, nonpoisonous wound to human hands if the creature is mishandled or hurt. In general, this docile creature avoids human contact.



FRENCH CREEK VALLEY CONSERVANCY www.frenchcreekconservancy.org

Hellbenders are permanent aquatic salamanders that are found in moderate to large streams and rivers that have significant currents. These creatures are nocturnal, so during the day hellbenders hide on the stream bottom beneath sheltering objects such as large rocks or fallen trees. Because of this, hellbenders prefer waterways with a rocky substrate.

The number of hellbenders has been reduced over the century because of acid mine drainage, industrial pollution, and excessive siltation. Nevertheless, this creature still survives throughout the Ohio River drainage basin (which includes French Creek) and the Susquehanna River and its tributaries. The hellbender can also be found in scattered river systems in the southern Appalachians. The hellbender maintains viable populations in French Creek because of the stream's overall high water quality and its ability to sustain the hellbender's food sources.



Figs. 12-14. Larval and Post-Larval stages of *Cryptobranchus alleganiensis*, 30% linear reduction. From living specimens.

Breeding occurs from the third week in August to the end of September in Pennsylvania and New York. The male excavates a hole in the stream bottom beneath a large sheltering object, such as a flat rock. The entrance to the shelter always faces away from the water current.

The incubation period of the eggs ranges from 10 to 12 weeks, and once hatched the larvae are about 1¼ inches in length. Born with external gills and gill slits, a hellbender will not undergo the metamorphosis stage of losing its external gills for 18 months; this is one of the longest larval periods (that eventually produce a metamorphic change) of any American species of salamander. Before maturity is reached, the external gills disappear, but the gill slits remain. Respiration then occurs through the mouth and directly through the body skin which has numerous surface blood vessels for oxygenation of blood.

A hellbender can live up to 29 years.

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 Larval and post-larval stages of Hellbender: Smith, Bertram G. The Life History and Habits of *Cryptobranchus alleganiensis* Source: Biological Bulletin, Vol. 13, No. 1 (Jun., 1907), pp. 5-39 Published by: Marine Biological Laboratory Stable URL: <http://www.jstor.org/stable/1535594>.