These rare salamanders haven't been documented in Illinois since 1990. Do they still exist?

Hellbenders

Story By Chris Phillips

The largest salamander in North America, the hellbender, is known in Illinois only from a few streams in the southern portion of the state. Degradation of these habitats, especially dredging and channelization, has resulted in the near-extirpation of the hellbender (*Cryptobranchus alleganiensis*) from Illinois.

Hellbenders, sometimes referred to as a waterdog or mudpuppy, are entirely aquatic and prefer fast-flowing, clear streams with abundant rocks, which they use for cover. Adults can reach lengths in excess of 20 inches. All verified records in Illinois are from the Wabash and Ohio rivers and a few tributaries. The most recent specimen was taken by a commercial fisherman in the Wabash River, near Maunie, in 1990. Other Illinois records include Skillet Fork Creek, the Cache River and the Ohio River proper. Small, remnant populations may still inhabit the Wabash River just upstream of the confluence with the Little Wabash River.

Surveying for hellbenders is typically done with mask and snorkel, which is difficult in the Wabash River as the visibility is poor and the water is typically deep. An exception to these conditions may occur at the Grand Chain Rapids, just downstream of Maunie. Considering this is the location of the most recent observation of the hellbender in Illinois, it is the highest priority for future surveys.

(Photo courtesy Mike Knoerr.)

Seventeen years have passed since the last confirmed sighting of a hellbender in Illinois.

Hellbenders are most often confused with another large aquatic salamander, the mudpuppy (*Necturus maculosus*). Distinguishing between the two species is straightforward as the mudpuppy has external gills throughout its life. In addition, hellbenders have numerous folds of skin on the sides of the body and are generally much larger than mudpuppies. Hellbenders respire directly through their skin, which requires that the waters they live in be highly oxygenated. The body folds facilitate respiration by increasing the surface area for gas exchange. Sluggish current and siltation reduce the amount of oxygen that is available for uptake by hellbenders, and limit their distribution.

The diet of hellbenders consists of crayfish, fish and invertebrates such as helgramites (Dobsonfly larvae). Reproduction is similar to most fish in that fertilization is external (sperm and eggs are mixed in the water). Courtship and breeding, which occur in late summer and early autumn, usually take place under large, flat rocks. Male hellbenders guard the eggs, which may number more than 200 from a single female. Newly hatched hellbenders are about 1 inch long and have external gills until about 2 years of age.

The hellbender is native to the Ozarks of Missouri and Arkansas, the Appalachian Mountains, and tributaries of the Ohio River from New York to Illinois. In areas where hellbenders are more abundant, they often are encountered by fisherman, especially on trot lines. Historically, some anglers have killed hellbenders as they mistakenly believed this salamander is venomous and that they reduce game fish populations by eating their eggs. Although hellbenders may bite if provoked, they are not venomous and there is no evidence that they have a negative impact on local game fish populations.

(Photo courtesy Missouri Department of Conservation.)

As hellbenders mature, juveniles (below) lose their dark coloration and take on the mottled appearance of an adult (above).

Hellbenders receive protection in almost all states in which they occur. Declines in abundance have been documented in several states, including Missouri and Arkansas.

If hellbenders are eventually documented in the Wabash River, it will require cooperation between Illinois and Indiana to conserve this magnificent amphibian. Hellbender surveys involving biolgoists from both states could begin next year.

(Photo courtesy Missouri Department of Conservation.)