



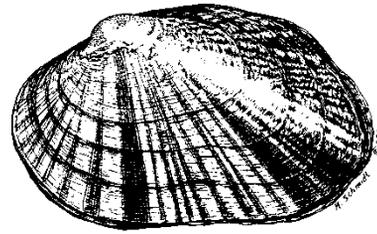
## STREAMS

**Perennial streams** flow continuously in years with normal precipitation. They provide essential water sources for wildlife throughout the year, and are critical habitat for many plant, vertebrate, and invertebrate species. We loosely define “riparian corridor” as the zone along a perennial stream that includes the stream banks, the floodplain, and adjacent steep slopes. **Intermittent streams** flow only during certain times of the year or after rains. They provide important habitat and nutrient cycling services themselves, and are also vital water sources for perennial streams, lakes, ponds, and wetlands of all kinds.



Intermittent stream

Perennial stream



**Brook floater**  
© K. Schmidt 2001



K. Bell 2006

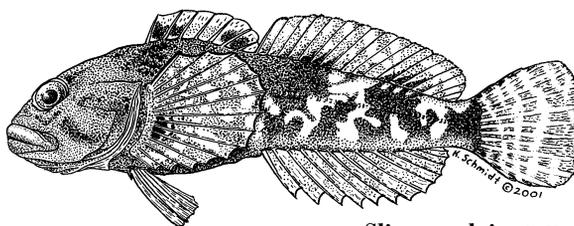
### SPECIES OF CONSERVATION CONCERN

- Riverweed, goldenseal, cattail sedge
- Rare mollusks and dragonflies
- Wood turtle, northern dusky salamander, spring salamander
- Slimy sculpin, brook trout
- Muskrat, river otter, beaver, mink, Indiana bat
- Louisiana waterthrush, winter wren, great blue heron, American black duck

These are just a few of the species of regional or statewide conservation concern that are known to occur in and around stream habitats. See Kiviat & Stevens (2001) for a more extensive list.

## THREATS TO STREAMS

The habitat quality of a stream is affected not only by direct disturbance to the stream or its floodplain, but also by land uses throughout the watershed. Activities in the watershed that cause soil erosion, changes in surface water runoff, reduced groundwater infiltration,



Slimy sculpin, © K. Schmidt 2001

or contamination of surface water or groundwater are likely to affect stream habitats adversely. **Road runoff** often carries contaminants such as heavy metals and road salt into streams. **Applications of fertilizers and pesticides** in or near the riparian zone can degrade the water quality and alter the biological communities of streams. **Disruptive activities** such as construction, logging, soil mining, clearing for vistas, and creating lawns in and near riparian zones can adversely affect the species that depend on streams, riparian zones, and nearby upland habitats. **Removal of streambank trees and floodplain vegetation** can lead to elevated water temperatures, increased flooding downstream, scouring and bank erosion, and sedimentation. **Hardening of the streambanks** with concrete or other materials can be harmful both to stream and floodplain habitats. **Removal of snags** from the streambed degrades habitat for fishes, turtles, snakes, birds, muskrats, and their food organisms.

## CONSERVATION RECOMMENDATIONS

- ❖ Avoid direct disturbance of streams such as damming, filling, hardening of streambanks, or removing snags and natural debris.
- ❖ Minimize impacts from new and existing roads and stream crossings.
- ❖ Establish a protective buffer zone extending at least 160 ft (50 m) on either side of **all streams** in the watershed, including perennial and intermittent tributary streams. Buffer zones should remain naturally vegetated and undisturbed. Avoid or minimize applications of fertilizers and pesticides on existing lawns and agricultural areas within this zone.
- ❖ Protect large, contiguous blocks of habitat (e.g., forests, meadows, wetlands) within 650 ft (200 m) of **large perennial streams**. Wood turtles and many other stream-dependent species range widely and need a complex of different habitats. Wood turtles often nest in upland meadow or open shrubland—habitats that tend to be prime areas for development.
- ❖ Maintain broad, naturally vegetated travel corridors between habitats (e.g., between stream habitats, wetlands, and upland meadows) and between neighboring habitat complexes.

### References

- Harding, J.H. and T.J. Bloomer. 1979. The wood turtle (*Clemmys insculpta*): A natural history. Bulletin of the New York Herpetological Society 15(1):9-26.
- Kiviat, E. and G. Stevens. 2001. Biodiversity assessment manual for the Hudson River estuary corridor. New York State Department of Environmental Conservation, Albany. 508 p.
- Lowe, W.H. and G.E. Likens. 2005. Moving headwater streams to the head of the class. BioScience 55(3):196-197.