



2007 Series

NEWS FROM THE RIVER

Cool Physical Adaptations of Creatures of the Salmon River Corridor

By 2007 Salmon River Steward Luke Lewis

With built-in antifreeze to biological sonar mechanisms, wildlife species that frequent the Salmon River corridor have adapted to thrive in this Northern forested environment. Each species' particular traits help it survive, obtain food, attract mates, avoid predation, and remain protected. Some of the animals with cool physical adaptations in the Salmon River corridor include the North American Beaver, River Otter, Little Brown Bat, Northern Flying Squirrel, and Gray Tree Frog.

One of the unique traits of the North American Beaver (*Castor canadensis*) is its large front teeth used to cut down trees (they prefer aspen and birches) to build lodges and for food. Beavers have the ability to close their lips behind their front teeth so that they can gnaw wood underwater without swallowing water. This animal prefers the entrance to its home, to be submerged for safety, and they build dams to raise the surrounding water level.

As aquatic rodents that spend much of their time under water, beavers have transparent eyelids that function as goggles, allowing the beavers to clearly see underwater without hurting their eyes.



Salmon River Steward Luke Lewis points out some interesting details of the North American beaver to a young program attendee. Photo: Mary Penney, New York Sea Grant

The River Otter (*Lontra canadensis*), an aquatic animal of the weasel family, has evolved a sleek, aerodynamic body to cut through the water and a strong, rudder-like tail that makes it a strong swimmer able to catch fish.

Otters can close their ears and nostrils underwater, and are able to hold their breath for up to eight minutes because they voluntarily slow their heart rate. Sight is the main sense Otters use to hunt, but in murky waters, they use highly sensitive whiskers to search the bottom of the water for food.

Through the public presentations of the Salmon River Steward Program, Steward Luke Lewis has shared his keen observations of the adaptations of the wildlife that frequent the river corridor.
Photo: Mary Penney, New York Sea Grant



River Otters can live anywhere near water, even in extreme heat or cold. An outer coat of coarse, hollow hair keeps them dry, and an inner coat of dense, soft hair keeps them insulated. They produce special waterproofing oil that they groom into their outer coat.

Bats are the only mammals that truly have the ability to fly. They belong to the Order Chiroptera, meaning “winged-hand.” The Little Brown Bat (*Myotis lucifugus*), the most abundant bat in New York State, is an efficient predator of insects. Cornell University professor Paul D. Curtis, has documented that during a single summer 100 Little Brown Bats consumed hundreds of thousands of mosquitoes and other flying insects. Their excellent predatory skills come from an extra sense, called echolocation. Bats use their echolocation as biological sonar, by bouncing ultrasonic waves off

objects to navigate and find prey in total darkness.

Bats survive the winter by going into a state of torpor (like hibernation) that slows the animals’ body temperature by fifty percent, and decreases their heart rate to 20 beats per minute. (Their in-flight heart rate is 1,000 beats per minute).

The Flying Squirrel (*Glaucomys sabrinus*), another nocturnal mammal, does not actually fly, but rather glides from tree to tree, and has been reported trading nearly 148 feet of air. Its “wings” are a furry membrane, extending from the front legs to the rear legs. They act like a hang glider, giving the squirrel enough lift to “fly” from tree to tree. During spring and summer nights, if you go to a small forest clearing, sit quietly on the ground with a good flashlight, you may be able to spot Flying Squirrels soaring over your head from one tree to another.

The Gray Tree Frog (*Hyla versicolor*), the “chameleon of the frog world,” has the ability to change colors to blend in with its background, changing green to gray to avoid detection from its many predators, such as birds and raccoons, and also to hunt more effectively. These exotic looking frogs eat a variety of invertebrates such as insects and spiders.



Adhesive toe pads on their feet serve as suction cups, allowing the tree frog to cling on vertical surfaces. Gray Tree Frogs over-winter under bark and fallen leaves. They accumulate glucose in their blood that serves as anti-freeze.

For more information about the Steward Program please contact New York Sea Grant, 315-312-3042; or visit us on the web at www.nysgextension.org.

The Eastern Lake Ontario Dune Steward & Salmon River Steward Program is managed by New York Sea Grant in partnership with the New York State Department of Environmental Conservation, New York State Parks, and The Nature Conservancy.

