

## Sea Lamprey

Mother lamprey spent from the rigors of spawning slowly dies in the nest she has dug in the stream bottom.



**Despite that photography was invented 160 years ago, nobody has taken a picture of a sea lamprey's eyes. They only take pictures of the "sucker" part, in order to make these innocent animals look as ugly as possible, so as to justify their continued killing, desecration and revilement.**

**As a journalist interested in reality, rather than ideology, I thought it wise to take a picture of a spawning sea lamprey and its eyes so that we might see that like Shylock, sea lampreys bleed when pricked, and have eyes as wide and deep and expressive as any of us or our children.**

**This spawning sea lamprey had been killed by a bald eagle on the shore of Cushnoc Island, Kennebec River, Augusta, Maine, June 3, 2004.**

**I put it back in the water, but it was dead, but at least it was back in its native home.**

**It is my belief that when we have lost the ability to see the fundamental spirit of life in another animal's eyes, it is us, not they, who are dead.**

**Doug Watts**



**The sea lamprey is an invading nonindigenous species that has had an immense impact on fish communities, fisheries, and fishery management in the St. Lawrence River and the Great Lakes of North America. Native to the Atlantic Ocean, sea lampreys probably entered the Great Lakes via the Hudson River and its artificial extension, the Erie Canal, which was opened to Lake Ontario in 1819. The sea lamprey is a parasitic fish that uses its rasping mouth parts to attach itself to fish, and feed off their bodily fluids.**

**Most literature about the sea lamprey begins like the paragraph above. Descriptions such as these are usually followed by a picture of a lampreys mouth followed by another picture of**

several lampreys stuck to some poor half-alive fish in a tank. We will begin our description of the sea lamprey in a different way.



## Our good friend and own native son the Sea Lamprey

The sea lamprey is one of our most remarkable anadromous fishes. They are one of our most primitive fish, they swam in the shadows of the dinosaurs, and tasted the melt water of glaciers. Lampreys roamed about in the great inland sea that once rippled over what is now called the Hockomock Swamp. They then watched this sea drain away as the earth's surface rebounded and rose after being released from the burden of the great glaciers. As this sea drained lampreys swam up and spawned in what has come to be called the Taunton River.

While the lampreys went about their stone moving chores in the riffles of our Great River, the first humans began arriving over the windswept tundra of Ancient New England. Like the lamprey they too moved stones in the river. These human stone movers [built weirs](#) in the shallow riffles. Here they would catch lamprey and other anadromous fish to feast on after the long lean winters. Lampreys and humans alike would return to these same riffles over and over through the millennia that followed. Until a stranger arrived on the scene, which would change their landscape forever.

When these strangers arrived, they marveled at the abundance of life that coursed through the waters of our Great River. As they settled along its watershed, this abundance of life would sustain both them and their crops. As the economy of this frontier shifted from one



of sustenance to industry, these settlers waged some of the colonies earliest legal and political battles over the passage of fish. Oddly enough chronicles of these events can be found in volumes of the Acts & Resolves of the Massachusetts General Court. Here we find numerous laws which were passed to provide passage for fish in early colonial times. Later as industry gained momentum in the late 1700's, many of these same laws were repealed, in order to benefit wealthy industrialists, whom were better connected politically, than the frontier folks of the soil that still depended on the fish for sustenance.

As the water driven wheels of industry churned the still pristine waters of our Great River the lamprey quietly continued about its stone moving business. Unlike other anadromous fish whose passage was blocked by the dams of early industry, the lamprey was uniquely adept at getting past them. By using its suction cup like mouth the lamprey could stick to and drag itself over dams to reach streams that were inaccessible to other fish. It wasn't until gross pollution fouled our rivers, that the lamprey virtually vanished.

Today few lampreys return to their historic spawning grounds in our Great River. As with other anadromous fish the reasons are unclear. However it is interesting that since their introduction into the Great Lakes humans have waged a virtual war in order to eradicate lampreys there. Millions of dollars and countless man hours have been devoted to this war over the past fifty or so years. The lamprey even has a chemical named after it, the Lampricide. Through this war the lamprey has still managed to survive in the Great Lakes, they now control their numbers to the point where they are no longer the threat that they once were, yet they still stubbornly refuse to be eradicated. Their survival under this onslaught of modern technology is a testament to the lampreys' durability and adaptability and begs the question why are they so few in our Great River today?

If you were to lay all the pages of literature written about the lampreys negatives end to end they would probably reach from the Matfield to Mount Hope Bay. Yet what about the lampreys positives? Here again Aldo Leopold's words of wisdom tweak our curiosity "If the biota, in the course of aeons, has built something we like but do not understand, then who but a fool would discard seemingly useless parts. To keep every cog and wheel is the first precaution of intelligent tinkering."

For those of you wondering why we refer to the lampreys as stone movers, it is because that is what they do to prepare the river bed for spawning. They move stones, in fact their Latin name *Petromyzon Marinus* means stone sucker. Because of their large size (up to three feet long) the lamprey is capable of attaching to and moving softball size stones. They take these stones from the river bottom and pile them in the [shape of a horseshoe](#) downstream of their nest. By doing this they create a depression in the river bottom of well-aerated gravel, which is vital to the survival of their eggs. In rivers such as the Kennebec, where lampreys are abundant their stone moving literally changes the course of riffles from year to year. On favorable spawning sites what appear to be miniature [stone walls](#) run across the shallow riffles. Curiously enough Atlantic salmon which come up the river in the fall to spawn seem to prefer the same spawning sites that the lamprey used in the spring?

Unlike the Atlantic salmon and our other anadromous species the noble sea lamprey dies after spawning. Exhausted from the rigors of migration and tireless stone moving they quietly disappear to become one with the river. This act in itself may have played an

important role in the ecology our rivers. Before so many of our rivers became overloaded with nutrient pollution from sewer treatment plants and other human sources, the death of the lamprey may have supplied our pristine rivers with a source of life-giving nutrients, much like the salmon do on our Pacific coast.

What benefits might we gain by returning native sea lampreys to our Great River? One of the major impairments to the upper watershed is sedimentation of the river bottom. This sedimentation takes on different forms, from shifting sands caused by road run off and collapsing banks to compaction of fine sediments in the riffle reaches. This smothers the life that requires well oxygenated gravel bottomed substrates. Much of this life comes in the form of aquatic insects or macro invertebrates, these are the building blocks and foundation of the aquatic food chain. The lampreys stone moving displaces these compacted sediments and allows the river current to flush them out, providing a well-aerated substrate for both themselves and all else that requires the same to survive.



In 2001 my family and I went to Ticonic Falls in Waterville Maine on the Kennebec River to watch the alewives climb the ledges of the falls. While there, my son and daughter found a lamprey stranded in a small pool on the ledges. The poor thing had been pecked about half to death by sea gulls and bore several ugly wounds from their beaks, but it was still alive. The kids looked up at me with these sorry little faces and asked if I thought it would live? I assured them with great confidence that the lamprey was a very tough customer and that if it got over the dam above us then it would be just fine. My son then reached down with his net and gently guided the lamprey in with his hand. He then carefully placed his battered patient in a pail of water and along with his sister marched off to the top of the ledges to release it over the dam. After watching it swim away the two of them triumphantly marched back down the ledges to inform us of their success. It's funny that to this day they tell this story with great pride, of the day they saved a sea lamprey.



## Good links about our good friend the Sea Lamprey

[Kennebec River Lampreys](#)

[Connecticut River Lampreys](#)

From: A Week on the Concord and Merrimack Rivers by Henry Thoreau

"In the shallow parts of the river, where the current is rapid, and the bottom pebbly, you may sometimes see the curious circular nests of the lamprey eel (*Petromyzon Americanus*), the American stone-sucker, as large as a cart-wheel, a foot or two in height, and sometimes rising half a foot above the surface of the water. They collect these stones, of the size of a hen's egg, with their mouths, as their name implies, and are said to fashion them into circles with their tails. They ascend falls by clinging to the stones, which may sometimes be raised, by lifting the fish by the tail. As they are not seen on their way down the streams, it is thought by fishermen that they never return, but waste away and die, clinging to rocks and stumps of trees for an indefinite period; a tragic feature in the scenery of the river bottoms worthy to be remembered with Shakespeare's description of the sea-floor. They are rarely seen in our waters at present, on account of the dams, though they are taken

**in great quantities at the mouth of the river in Lowell. Their nests, which are very conspicuous, look more like art than anything in the river."**