Bluegills and People

When most people think of bluegills, they think of fishing. Many avid anglers were first introduced to the sport of fishing when an adult taught them how to catch bluegills. They are the perfect "beginner" fish for young anglers – they will accept many kinds of bait (including worms, hot dogs and corn kernels), are often very abundant, and are easy to catch, so children are not likely to get bored waiting for that first bite.

They also tend to strike hard, and when hooked, they often turn sideways and fight the whole time, so even experienced anglers enjoy fishing for them. As a result, they are frequently stocked in public lakes and ponds as well as in private ponds.

The thing that makes bluegills worth catching, besides the pleasure of fishing for them, is their flavor. The meat is described as white and flaky and the flavor is described as "delicious", "sweet", and "delicate". Because of their size and the usual method of cooking them, they are often referred to as "panfish". Depending on how they are cooked, they are low in calories and high in protein, omega 3 oils and vitamin D. Even though they tend to produce a small fillet, many anglers consider them well worth the effort.

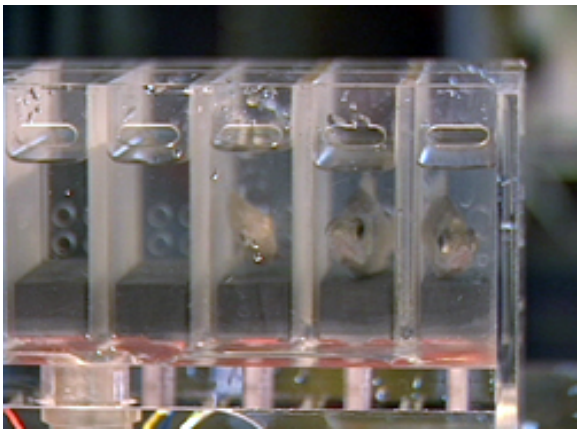
From: www.allfishingbuy.com

In addition to being stocked in ponds for their own sake, bluegills are often stocked to provide forage for larger game fish like largemouth bass. Once they are mature, they may spawn several times during a season; the juvenile fish then serve as the primary food for the bass. In Maryland, bluegills used for stocking are raised at the

Unicorn Lake Hatchery in Queen Anne's County and the Joseph Manning Hatchery, located in Cedarville State Forest in Charles County.

Bluegills also serve another important function in ponds besides fishing. Bluegills, especially juveniles, feed extensively on aquatic insects – including mosquito larvae. Having them in a pond, therefore, whether the pond is used for fishing or not, often helps to reduce the mosquito population without having to resort to pesticides. This is especially useful in ponds and lakes located in urban or suburban areas. Some states are actively stocking ponds with small bluegills as a means of mosquito control, especially in the hope of reducing the risk of West Nile virus.

Probably the most unusual use for bluegills is urban water quality monitoring, an issue of special concern in the face of terrorist threats to city water supplies. Much of the research for the system was done by Army scientists at Fort Detrick in Frederick, Maryland. The system is now being used to monitor water quality in San Francisco, New York City, Washington DC, and other large cities. Eight to twelve bluegills are kept in a tank filled with water from the municipal water supply and monitored by computers. Like humans, the fish "cough" (flex their gills) in the presence of toxic substances. The computers are so sensitive that they can not only detect these coughs, but can even tell which fish is coughing. If the number of coughs exceeds what is considered normal, the computer alerts staff to a possible problem. The system was tested with 27 different toxic chemicals, including pesticides, mercury, heavy metals, cyanide and fuel oil, and the fish detected them all. The fish are quite spoiled; they are rotated out of the tank at regular intervals and are fed treats as well as their usual food. After a specific period of use, the fish are "retired" (released).

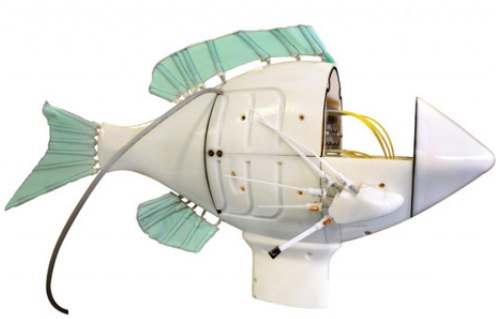


From: http://www.aip.org/dbis/stories/2007/17028.html

Bluegills are also being used to test groundwater from wells at Aberdeen Proving Ground before it is discharged into the Gunpowder River or the Chesapeake Bay. The fish are kept in chambers and treated groundwater is pumped through the chambers. If the fish show no signs of distress, a tracking line on the computer screen is green; if they show signs of distress, the line turns red. If more than half the fish are in distress, an

alarm goes off which stops the release of the treated water into the Bay. So far, this has never happened. Each fish is used for three weeks and then released.

Bluegills are extremely efficient swimmers, very maneuverable and capable of sudden bursts of speed. As a result, their swimming motions are being studied by engineers at Drexel, MIT, Harvard, and George Washington University in the hopes of developing an agile, propellerless robotic submarine. These submarines could be used for a number of things – surveying shipwrecks, searching for mines, or mapping the oceans – more efficiently than current unmanned submarines. Engineers have already created a prototype mechanical "fin" that copies the movements of a bluegill's pectoral fins.



From: https://www.asme.org/engineering.../**robotics**/fish-fins-inspire-agile-**robot**

They are also looking at how the fish's pectoral fins work in conjunction with the other fins as well as with the motions of its body. So someday, there may be a submarine that is not only named "Bluegill" but that actually moves like one.