

## Bluegills as Invasive Species

Besides trout, other fish species have been introduced accidentally and intentionally into freshwater habitat worldwide. Several Centrarchid fish species, such as bluegill sunfish (*Lepomis sp.*) and smallmouth bass (*Micropterus dolomieu*), have been widely introduced throughout Western North America (Moyle and Light 1996), where they pose serious threats to amphibian populations. For example, Adams (2001) found that, in an enclosure experiment, bluegill sunfish (*Lepomis gibbosus*) decrease the survival of the northern red-legged frog (*Rana aurora*) and pacific treefrogs (*Hyla regilla*).



*Rana aurora* photo ©2003 William Flaxington and *Lepomis macrochirus* photo ©2002 John White

Source: <http://amphibiaweb.org/declines/IntroSp.html>

## Bluegills- Oregon

The second mesocosm study examined the susceptibility of the larvae of three salamanders and three frog species to being devoured by certain native and introduced species of fish in Oregon's Willamette Valley. They found that the larvae of native rough-skinned newts, which develop toxic skins early in life, were eaten by fish less often than larvae of two native salamanders lacking such defenses. Bullfrog larvae were eaten less often than two species of native frogs. Native frogs, the scientists reported, are palatable to all fish tested. Of all fish species tested, the bluegill showed the strongest preference for tadpoles of native frogs rather than bullfrogs. They found the bluegill among the most harmful of introduced fishes to native amphibians in the Willamette Valley and they recommend mitigation, such as the occasional draining of ponds or the creation of semi-permanent waters for the conservation of wetland-breeding amphibians. (Contact: A.V. Nebeker, 541-754-4884; [nebeker.alan@epa.gov](mailto:nebeker.alan@epa.gov))

Source: [www.epa.gov/wed/pages/news/april01/nebeker.htm](http://www.epa.gov/wed/pages/news/april01/nebeker.htm)

## **Illegal Fish Stockings Threaten Maine Lakes and Rivers**

Bluegill and Green Sunfish, both exotics, have only recently been discovered in several Maine lakes and streams. In 2002, both species were discovered in a small pond in central Maine - they have out-migrated to a stream that supports a fine native brook trout population, and they will soon colonize a large headwater lake in the Sebasticook River drainage. Their effects on native fish species are unknown.

Source: [www.maine.gov/ifw/fishing/illegal\\_stocking.htm](http://www.maine.gov/ifw/fishing/illegal_stocking.htm)

## **Sunlight Research May Lead to Invasive Fish Species Management Tools in Lake Tahoe**

Researchers from Miami University (Ohio) are exploring whether solar ultraviolet radiation (UV) can control warm-water fish invasion in nearshore Lake Tahoe. In recent decades human disturbance such as shoreline development has altered nearshore water clarity and reduced UV exposure in some locations (Fig 1). This decline in water clarity has coincided with the introduction and establishment of the warm-water fish species. Amanda Gevertz and Andrew Tucker, two Miami University graduate students working with faculty members Jim Oris and Craig Williamson, have been testing the idea that declining water clarity in nearshore habitats creates a refuge from damaging UV and effectively opens an “invasion window” that allows UV sensitive non-native fish to reproduce in areas where they may have previously been excluded.

Warm-water fish were introduced into Lake Tahoe during the 1980's. These fish, including largemouth bass and bluegill, compete with and prey upon native fish in the nearshore environment. In areas where non-native fish populations have become established, native minnow species (e.g. Lahontan redbreast and speckled dace) have virtually disappeared. As a critical component of the lake food web and as some of the last remaining native fish species in the lake, the disappearance of these native minnows would be detrimental to the ecology and diversity of Lake Tahoe.

Source: [www.tahoescience.org/](http://www.tahoescience.org/)

## Bluegill – Queensland, Australia



### General information

This fish is declared noxious in Queensland. It is unlawful to possess noxious fish alive or dead or to use them as bait. It is illegal to place or release noxious fish alive or dead into Queensland waterways. Penalties of up to \$200,000 apply.

Source: [www.dpi.qld.gov.au/28\\_13881.htm](http://www.dpi.qld.gov.au/28_13881.htm)

### Major threats to freshwater species in southern Africa.

Loss and degradation of habitat is the leading threat followed by water pollution and alien invasive species. The Olifants and Berg river systems, both in the Western Cape area, support the highest numbers of regionally threatened species.

**The Olifants river system:** The main threat to fishes is the introduction of invasive alien fishes. The introduction of Smallmouth Bass (*Micropterus dolomieu*) in the 1930s for angling purposes is regarded as a major threat, with predatory impacts also from Bluegill Sunfishes (*Lepomis macrochirus*) and Rainbow Trout (*Oncorhynchus mykiss*).

Source: [www.iucnredlist.org](http://www.iucnredlist.org)