HERO OR VILLAIN?

Is it a legendary devourer of mosquito larvae that reduces the mosquito population, or a predator so aggressive that it is more detrimental than helpful in controlling mosquitoes? The mosquito fish *(Gambusia affinis/holbrooki)* is a little of both.

Range:

The natural range of Gambusia is the Atlantic and Gulf Slope drainages from southern New Jersey around the coast to Mexico, and the Mississippi River basin from central Indiana and Illinois south to the Gulf. *Gambusia holbrooki* is native to the Atlantic and Gulf Slope drainages as far west as southern Alabama, and it is the most common fish in the Everglades; *Gambusia affinis* occurs everywhere else.

Because of their reputation as mosquito-control agents, both species of Gambusia have been routinely and indiscriminately stocked in temperate and tropical areas around the world since the turn of the century and are still touted by commercial fish farms as "the most versatile fish for stocking in any pond or lake in the United States."

Description:

The female is grayish color but may have a bluish sheen to her body and some yellow in her fins when the light is right. The male is quite smaller. He is also very drab in color except he has some bars in his tail and dorsal fin and a gonopodium (extended anal fin). The male is approximately 3/4" and the female about an 1" in length. They are members of the guppy minnow family.

Reproduction:

Gambusia reproduce rapidly, and a female can produce three to four broods in her short lifetime. The species can survive a 90% die-off due to cold or drydowns and be at full population levels within months of favorable conditions.

After a gestation period of about four weeks, the female gives live birth to a brood that can vary from a few to several hundred. It spawns throughout the year, and utilizes internal fertilization with the gonopodium. Females store sperm in their reproductive tract for up to two months and give birth to living offspring. The courtship consists of males relentlessly pursuing females for the entire year. Fertilized eggs develop within 28 days and the young offspring are born. Birth usually occurs during the warm spring and summer months. When the young, about 3/8 inch long, are born, they are active and immediately swim for the nearest cover and will soon feed. Adults will prey on them if they can.

Good guys:

- Gambusia have a number of advantages over such things as goldfish and koi for biological mosquito control in ponds and other water sources. For one thing, they actually eat mosquito larvae. They are voracious surface feeders with upturned mouths specially designed to get mosquito larvae where they live. They prefer the cover and protection of shallow overgrown areas along the shore which are also the preferred environs of mosquito larvae.
- Gambusia are an extremely hardy and adaptable fish that can survive in a wide variety of pH's and temperatures (43-95º F and, for short periods of time, as high as 107º F). They can survive very low dissolved oxygen values and salinities twice that of seawater.
- They have been known to consume 230 mosquito larvae or pupa in one hour, but they feed on a wide variety of prey ranging from aquatic insects and crustacea to zooplankton and algae. Gambusia are often stocked by prawn farmers to control predacious dragonfly nymphs in their ponds.
- Since they give birth to live young, they don't need any special sand or other substance for spawning. They are self-sustaining and self feeding.
- They are also a main source of food for larger fish and wading birds.

Bad guys:

- Gambusia are very aggressive, even toward larger fish. They often attack, shred fins, and sometimes kill other species, and they prey on eggs, larvae, and juveniles of various fishes, including largemouth bass. When introduced by well-meaning mosquito control agencies into areas where they do not naturally exist, they may actually increase the mosquito population by consuming native fish which do a better job of controlling mosquito larvae.
- Introducing mosquitofish can also precipitate algal blooms when the fish eat the native fish that are zooplankton grazers.