



# Fast Facts About West Nile Virus, Mosquito Fish (Gambusia), and Alternatives for Mosquito Control

February 28, 2003

*Natural resource agencies are working with public health officials to recommend appropriate mosquito control measures to protect humans and domestic animals from West Nile Virus (WNV), while also protecting fish and wildlife that could be affected by control measures. Mosquito fish are not native to Oregon and must be used with caution and only in appropriate locations.*

## Questions and Answers

### **Q: What are mosquito fish and where are they effective in controlling mosquitoes?**

A: Mosquito fish are nonnative predator fish that were brought into Oregon from the eastern and southeastern U.S. Mosquito fish (Gambusia) are one tool to reduce mosquito numbers in contained ponds where no other natural controls are present. **By law mosquito fish can only be used in locations described below.**

There is no way to totally eliminate mosquitoes, which also play an important and beneficial role in the food web.

### **Q: What other methods exist for mosquito control?**

A: Prevention, the natural food web and chemical treatment.

**Prevention:** Eliminate or limit the number of places available for mosquitoes to lay their eggs by removing containers that collect standing water such as buckets and old tires. Keep gutters clean and clean out birdbaths and pet water bowls weekly.

**Natural Food Web:** Fish, wildlife and insects that eat immature mosquitoes (larvae) in the water or flying adults may already be present. Amphibians such as frogs and salamanders, dragonflies and many aquatic insects feed on mosquitoes. A variety of birds such as swallows consume numerous mosquitoes, and bats eat thousands of mosquitoes in a night. For information on how to encourage these mosquito-eaters, contact an Oregon Department of Fish and Wildlife (ODFW) wildlife biologist. If you have questions about whether mosquito fish are appropriate for your situation, contact a county vector control agent or an ODFW fish biologist.

**Chemicals:** These control methods can have significant environmental impacts and should be considered very carefully before use. "Larvicides," such as *Bacillus thuringiensis israelensis* (B.t.i.), kill mosquito larvae in the water and are currently considered to have less impact to the environment than products that target adult mosquitoes.

Some county health departments will be applying a phased approach to mosquito control depending on the types of mosquitoes in an area and results from testing mosquitoes and birds for WNV. For more information, check with your county health department or county vector control district.

### **Q: Where can I legally use mosquito fish for mosquito control?**

A: To protect Oregon's native fish and wildlife, Oregon law (ORS 498.222) allows mosquito fish to be stocked only in "aquaria," defined as self-contained systems that are not fed or drained by natural waterways such as ornamental ponds and stock troughs. Natural waterways include creeks, streams, sloughs, ponds, lakes and ditches if connected to natural waterways. Ponds located in floodplain areas are not considered "aquaria" and should not receive mosquito fish, because flooding could allow them to enter natural waterways.

### **Q: Why can't mosquito fish be placed in natural waterways?**

A: They may eat or harm small or young native fish, young frogs and salamanders, and beneficial aquatic insects. They also may out-compete these native species for available food and habitat. In

addition, their presence may reduce some natural mosquito control provided by native fish, wildlife and aquatic insects. Mosquito fish predation and competition have contributed to the elimination or decline of federally threatened and endangered fish species in the western U.S. and may be detrimental to the conservation and recovery of the federally endangered Oregon chub in the Willamette Valley.

**Q: Where can I get mosquito fish?**

A: Mosquito fish (*Gambusia*) are available from some pet shops, garden stores, pond supply stores, nurseries, and some county vector control districts. Before purchase, check with an ODFW fish biologist to determine if your site is suitable for mosquito fish and whether a fish transport permit is required.

**Q: Can I transport mosquito fish from one water body to another?**

A: No. Oregon law prohibits the transport of any live fish or live eggs from one water body to another or into the state without a permit from ODFW (OAR 635-007-06000). This is to prevent placing fish in waters where they might harm or adversely affect other species of fish and wildlife.

Mosquito fish are classified as "aquaria" fish. Purchasers do not need a permit to transport them from a retail store to an appropriate self-contained pond or other structure unconnected to natural waterways as described above. County vector control districts that supply mosquito fish operate under an ODFW fish transport permit and will provide a receipt that allows transport of fish to private property.

**Q: Do all mosquitoes carry WNV?**

A: No. Of the 53 known mosquito species in the northwest United States, only a small number may have the potential to carry WNV. The virus is transmitted to humans, horses, and some other mammals and birds from the bite of an infected mosquito. There is no evidence that mammals or birds can transmit WNV to people.

**Q: How likely am I to get West Nile Virus?**

A: According to the national Centers for Disease Control and Prevention (CDC), the chance of being bitten by a mosquito carrying the virus is very low, even in areas where the virus has been reported. Most people who become infected will develop no symptoms or mild symptoms. In a few rare cases (less than 1 percent), people can develop severe or life-threatening illnesses. Individual prevention measures described below are the most effective way to avoid mosquito bites and potential infection.

**Q: How can I protect myself from WNV?**

A: In addition to prevention measures described earlier, the national Centers for Disease Control (CDC) recommend the following:

- Apply recommended mosquito repellents and wear protective clothing when outdoors.
- Add or maintain screens on windows and doors.
- Check the CDC website at [www.cdc.gov](http://www.cdc.gov) or call your local county health department for more information.

**Q: How can I protect my horse and pets from WNV?**

A: Check with your veterinarian about protecting horses and other domestic animals and pets.