

# Prevention Is The Best Cure

By Steve Spade, Byron Hatchery Manager

"I've got sick fish in my pond, what can I do about them?" That is a question that I get all the time and my answer is "the best cure is prevention". The reason is that few drugs are available to treat fish diseases and they are costly. When sick fish are noticed it is usually too late and the sick fish will die from the stress of treatment. This is why prevention is the best cure.

Many potential fish diseases pathogens are continually present in water, soil, and air. In nature, fish are often resistant to these diseases until living conditions deteriorate to the point where the fish become stressed. When stressed, fish may not be able to resist diseases and may get sick and die. The easiest and most effective cure for fish diseases is to prevent stress.

What is stress? Stress is defined as those factors that cause bodily reactions that may contribute to disease and death. There are two basic causes of stress; chemical and physical. Chemical conditions causing stress primarily consist of water quality factors, such as low dissolved oxygen levels in the ponds, extremes in temperatures and pH levels as well as increased levels of carbon dioxide, ammonia, nitrite, hydrogen sulfide, etc. Physical factors causing stress include injury, fish transport, predators and overcrowded fish populations. While fish are able to adapt to stress for short periods, it eventually depletes their energy reserves which suppresses their immune system increasing the susceptibility of fish to infectious diseases.

How do you prevent stress and keep fish healthy? Maintaining good water quality is very important. Check ponds once a week beginning in June and continuing through early September. Check them at sunrise or a little after and look for two things. First look at water color and clarity. If the water turns brown and the clarity is less than 20 inches then a potential oxygen problem is developing. Second, see if fish are on the



*The easiest and most effective way to cure fish disease is to prevent stress. One way to prevent stress is to reduce physical injury to the fish. The use of knitted nets (above) instead of knotted nets will reduce injury and scale loss.*

*Maintaining good water quality is also important. The use of aerators (below) may help by adding oxygen to the water as well as allowing toxic carbon dioxide, ammonia, and hydrogen sulfide to escape into the atmosphere.*



surface "piping" or gulping air. If either of these circumstances occur, several steps should be taken as quick as possible. The use of pumps to spray large amounts of pond water back into the pond or the use of commercial aerators may help avoid an immediate fish kill as well as reduce stress which could lead to a disease outbreak. Pond aeration will not only add oxygen to the water, but will also allow for the escape of toxic carbon dioxide, ammonia, and

hydrogen sulfide to the atmosphere. Also, keep vegetation to a minimum in a pond as excessive vegetation can lead to dissolved oxygen problems and disease outbreaks. This can be done by stocking grass carp.

Other ways to prevent stress and keep fish healthy is to reduce physical injury to the fish. This can be done in several ways. When handling fish, speed and gentleness are of the utmost importance. Use knitted instead of knotted nets to reduce injury and scale loss. Also handle and transport the fish at times when fish are least susceptible to stress and infection. This means handling them during the cooler times of the day and not during spawning season. Use non-iodized salt or rock salt at a rate of 0.3 to 1.0 percent in the holding or transport tanks when handling and moving fish. This will minimize osmotic stress as well as bacterial infection. Finally, all tanks need to be large enough to allow complete freedom of movement as well as have no sharp edges inside. The less the fish is handled, the less the chance for injury and the less it is susceptible to diseases.

Finally, be careful of your source of fish when stocking a pond. If purchasing fish, buy them from a reputable dealer with a guarantee of 10 days or more. If collecting from another pond make sure that pond does not have a history of disease problems. Fish diseases are easily transferred from the source pond to another.

If you have any concerns about your pond or your fish population, keep in mind these suggestions and enjoy a healthy and productive fishery.