Injured Koi Fish

My koi was injured while jumping around in the pond.

By Stephen M. Meyer

Q. I have a large showa koi fish. I have had this koi fish for 12 years. It is about 20 inches long, and it is beautiful. I am writing because it now has a large open wound (about the size of a nickel) on its side, which it inflicted on itself in trying to jump out of the fish pond. I do not know how to treat it.

The fish pond holds about 2,000 gallons of water. It has some pond plants around the margins. The filter/aerator keeps the water clear and clean. There is never any measurable ammonia or nitrite. I have measured dissolved oxygen a few times and it was always around 6.6 ppm or higher. There are 11 other koi fish of equal size in the pond.

I don't want to lose this special koi fish. What should I do?

A. Some koi really do seem to like jumping. I have several koi fish that just delight in leaping around the pond. The rest just watch. And sure enough, every once in a while a koi "jumper" misses its reentry and smacks against something hard and rough. Physical wounds on these koi are not uncommon.

Lets consider treatment options in sequence. First, there is the do nothing option. This is almost always the best approach for simple external wounds on fish in healthy water conditions.

In warm waters with high oxygen content, no measurable nitrogenous waste loads (ammonia and nitrite), no measurable concentrations of other toxic substances, low levels of suspended matte, and low fish loads, fish heal quickly without any intervention. They just need a low stress environment and time.

You seem to have most of the key elements for no treatment at all, except for what I would consider a low fish load. You have twice as many fish as I would recommend for that size pond.

A low fish load is important not only because it places less of a biological demand on the pond and inhabitants (i.e., lower ammonia production, lower oxygen consumption, reduced competition for food) but also because it reduces the overall density of pathogens in the water. Specifically, in ponds in which the water is recirculated, the density of pathogenic bacteria suspended in the water is directly proportional to the fish load (which also increases the concentration of fish-based dissolved organic carbons in the water). This means a wounded fish is at greater risk of infection in a more heavily stocked pond.

Then, too, the greater the number of fish in a pond, the greater the number of types of disease sources or pathogens. You increase the odds that some nasty bacterium, parasite or fungus will be in the population of fish. And higher fish loads mean that there is greater chance of contact between the wounded fish and other animals that may be harboring pathogens.

I am not suggesting you reduce the number of fish in the pond now, or that you remove the injured koi fish to isolation. This would just produce additional stress and increase the risk to the fish. Some time in the future, as part of a general management scheme, you might want to consider either fewer fish or more pond.

Regarding the injury to your koi fish, if the wound is not closing rapidly, then modest intervention may make sense. This is usually the case in cold waters, dirty waters or when the injured fish is malnourished. Cold water greatly slows the fish's healing process and suppresses the response of its immune system. Dirty waters can stress fish, and the many suspended particulates can serve as transport vectors for pathogens. Fish weak from poor nutrition are obviously less capable of healing quickly.

In all these instances, parasites, fungi and bacteria may get the upper hand and the wound will stay open, or perhaps expand. In this respect it is important to realize that the wound is like a portal to the pond through which dangerous amounts of minerals, salts and so on leach out of the fish. This can cause the fish to die of shock.

The risks posed by the open wound can be easily remedied by adding about 2 pounds of salt to the pond for every 100 gallons of water. The salt in the water reduces the osmotic imbalance between the fish and the water and therefore greatly

slows the outflooding of minerals from the fish's body. The salt will also inhibit, to some degree, fungal and bacterial growth on the wound.

As I noted above, sometimes the wound may actually start to expand as pathogens infest the opening. If this happens, more direct intervention is called for. I use topical treatments exclusively in this case. I strongly advise against injections of antibiotics. More often than not this puts the fish at greater risk than does the original wound.

The topical application of anti-bacterial/anti-fungal ointments is easy and relatively stress-free (for the fish). The fish is gently moved to a holding container that is just large enough for the animal to stretch out fully. Squeeze a blob of Canalog, Bacitracin or some other anti-bacterial ointment onto your index finger. (You can get these ointments over the counter at any well-stocked pharmacy.) Placing one hand under the fish and carefully raise the fish out of the container just enough to expose the wound to the air. Smear the ointment over the wound. Then return the fish to the pond. You should repeat this treatment daily until the wound starts to close up (usually three or four days).