

# Dealing with a Fish Mortality Incident

When fish start to die, steps can be taken to help reduce losses, promote recovery and increase the longer-term resilience of your fishery. There are also things that can be done to help you understand the cause of fish losses and therefore how to help avoid them in the future. Prompt actions can also help protect other fisheries on your site or in the local vicinity, particularly if dealing with disease. This 10-step guide sets out what to do if faced with fish losses at your fishery.

## 1. Seek professional advice from the outset

It is likely that you have received this document from your local Environment Agency fisheries officer upon attending your fishery. Always keep in close contact with your local fisheries officer throughout a mortality event to identify the best course of action. Be mindful that information can be found or offered from many different sources, but it is vital that the steps you take both now and in the future are based on evidence, knowledge and experience.

## 2. Close the fishery

During any mortality event it is recommended that you close the fishery. Avoiding capture and handling can reduce stress on the fish and allow essential observations of the fish and fishery to be made without disturbance. It can also greatly increase site biosecurity (see below), ensuring that nothing enters site or spreads to other waters. Closing the fishery can have reputational benefits too, especially if the fishery is not performing as well as it should.

## 3. Record the species and numbers affected, and rate of losses

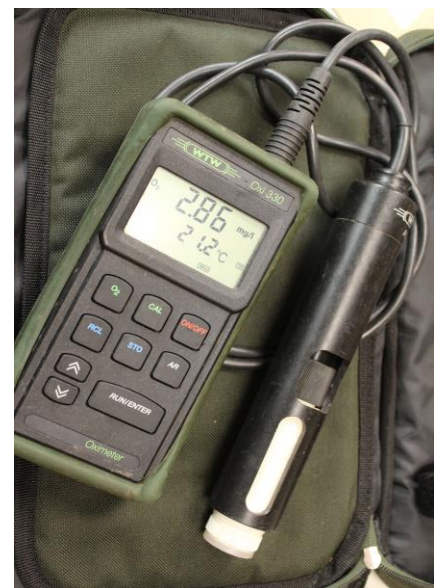
To understand the cause of a mortality it's important to collect as much information about the event as possible. Keeping a log of the species, numbers and sizes of fish affected is key to assessing the rate of mortality and whether it is likely to stem from environmental factors, disease, non-infectious conditions or other causes. It can also help assess whether a problem is progressing or easing and how long it could last. Keeping a daily log helps to monitor the mortality over time.

## 4. Maintain good conditions

Many mortalities are either triggered or increased by stress. This can come in many different forms but can include poor water quality, exposure to harmful substances, work being carried out to the fishery or unnecessary disturbance. Stress can greatly reduce a fish's ability to fight infection or cope with environmental changes, so it's vital that any stressors are reduced or avoided during a mortality event. Good fishery conditions can help fish recover and aid long term fishery resilience.

## 5. Check water quality and log the basics

Many fishery problems stem from poor water quality. Key water quality parameters include pH, Ammonia and dissolved oxygen (DO), the latter being critical during a fish mortality event where fish may already be compromised or debilitated. Your Environment Agency fisheries officer may be able to test water quality for you.



DO can be easily measured with a hand-held oxygen meter and every fishery should aim to monitor and log DO regularly, particularly during warmer weather. Removing dead fish is important and providing additional aeration can also help if conditions require.

## 6. Keep vigilant and report changes

Always keep vigilant if your fishery is experiencing problems. Report any significant observations to your local fisheries officer, including a change in rate of mortality, species affected, fish behaviour or disease signs. These can all help identify the cause of losses or inform next steps or actions needed to help deliver the best outcomes for the fishery.

## 7. Pictures can speak a thousand words

The behaviour and symptoms of fish can tell us a lot about the possible cause and severity of a problem. This information can also help identify what steps to take during a mortality to reduce losses and what sort of samples or measures need to be taken. Images can really help provide a snapshot of what the fishery or individual fish are going through. Most modern phone cameras take a great quality image, and these can help fish health professionals to identify key symptoms. Images also form a great record for future reference and to compare similar cases.



## 8. Freeze freshly dead fish

In the case of a low-level chronic mortality event, or in larger or low stock fisheries it can sometimes be challenging to obtain live fish samples should these be needed for examination. In these cases, it is recommended to freeze any freshly dead fish as they can provide some level of investigation. If disease is suspected or the cause of a mortality is unknown, then it is likely that your Environment Agency fisheries officer will seek to obtain a representative live fish sample that can be examined at our National Fisheries Laboratory.

## 9. Samples for diagnostic investigation

Our National Fisheries Laboratory conducts comprehensive investigations to establish whether disease is the cause of mortality or playing a role in the losses. These include detailed laboratory examinations and diagnostic testing for all types of disease. Samples will not be taken if the mortality is caused by pollution or significant water quality issues. For more information of what we test for and what it can tell you, please see our 'Fish Disease Investigations' leaflet.

## 10. Ensure site biosecurity

During a mortality event, maintaining biosecurity is crucial. Without knowing the cause of losses, you could be dealing with a disease that may impact other fisheries on site or within the local vicinity. Equally, allowing access to the site during a mortality could bring in additional harmful organisms including pathogens. Never stock fish when a mortality is ongoing or before understanding the triggers for a previous event. Always 'check, clean, dry' or disinfectant any equipment before moving between sites to help reduce risk of disease.

**For any queries, please contact your local EA fisheries officer. For specific information on fish health and disease, please contact our [National Fisheries Laboratory on 02084 745244](https://www.environment-agency.gov.uk/national-fisheries-laboratory) or [07768 022726](https://www.environment-agency.gov.uk/national-fisheries-laboratory) or by email: [fish.health@environment-agency.gov.uk](mailto:fish.health@environment-agency.gov.uk)**