



# UNUSUAL MORTALITY RATES IN MARLBOROUGH FARMED SALMON

## BACKGROUND

Over the past few summers there have been higher than usual numbers of fish deaths at a salmon farm in the Marlborough Sounds. The first reported event of this occurred in 2012 and a further larger event happened in February this year.

The Ministry for Primary Industries (MPI) has been working closely with the farmed salmon company involved to investigate the situation. MPI is looking at a number of factors that could be involved, such as the environment, management at the farm and the presence of bacterial agents. These all could have a relationship to the unusual deaths.

## WHAT DO WE KNOW?

At the time of the 2012 event, MPI tested tissue samples from dead fish but could not find a definite cause. The Ministry concluded that there were likely to be multiple factors at play including the farm site, water temperature and flow and feed.

When the mortality event occurred earlier this year, further testing was carried out at the Animal Health Laboratory (AHL) in Wellington. MPI's scientists developed and validated new tests and through this new work, detected the presence of two bacteria that had not been reported in New Zealand before.

One is a Rickettsia-like organism and the other, a bacterium called *Tenacibaculum maritimum*.

It is important to note that these two bacteria could be a factor in the fish deaths, but they are almost certainly not the whole story. Once again, MPI believes that the event has a range of causes and the bacteria could be involved in the fish deaths, in combination with other factors.

Bacteria and viruses are part of the marine environment around the world. They may or may not cause disease. Rickettsia-like organisms are also present in wild and farmed fish populations in other jurisdictions globally.

## FOOD SAFETY

The bacteria identified do not pose a known risk to human health. In addition, the management and quality control procedures required at salmon processing plants ensure no affected fish are distributed for human consumption.

## TRADE

At present the detection of these new organisms in New Zealand is not considered a trade risk.

## ABOUT THE BACTERIA

### Rickettsia-like organisms (RLOs)

RLOs are very small bacteria that live inside the cells of fish. Some can be harmless, while others may cause disease and death in fish.

MPI's genetic testing shows the bacteria found here are different to a form of Rickettsia found in Chilean salmon farms. We know that we do not have the strain of *Piscirickettsia salmonis* which is known to create problems for salmon farming overseas.

Historical tissue samples from the 2012 event have been tested using the newer diagnostic techniques. This has shown the Rickettsia-like organism was present then. It is likely to have been here for some years and may be widespread in our marine environment.

### *Tenacibaculum maritimum*

*Tenacibaculum maritimum* bacteria affect the skin of finfish, causing ulcers.



## WHAT'S HAPPENING NOW?

Further sampling on the affected marine farm will help determine whether there is any link between increased mortality events and the prevalence of these two bacterial organisms.

MPI is planning to sample fish from marine farms in other regions of the country to see if the bacteria are present there. This sampling will take place later in the summer when water temperatures increase and a mortality event is more likely to occur.

The Ministry has asked salmon farms in other regions to provide records of fish health and samples of any salmon showing signs of illness.

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The information we gather will help us decide how the situation should be managed in future. If there is no evidence of the bacteria on other farms outside of Marlborough, MPI may impose controls on the movement of fish and equipment from affected locations to safeguard the health of fish in other areas.

Since this mortality event, no unusual fish death events have been reported to MPI from marine or freshwater salmon or trout farms in other areas of New Zealand and no problems have been reported in wild salmon populations.

## WHAT CAN I DO NOW TO PROTECT MY OPERATION?

### Prevent the spread of any infection by practicing good biosecurity:

The main ways bacteria, including these new organisms, can spread to uninfected areas is by:

- **direct transfer of infected fish;**
- movement of contaminated equipment, nets and people;
- tidal movement and water flow;
- in non-farmed finfish that can carry the disease.

There are some simple measures you can take to help prevent the spread of infectious diseases. Think about:

- cleaning and disinfecting equipment and vessels when moving between farms;
- keeping a record of any stock movements;
- keeping any new stock separate from existing stock so that good health is confirmed before introducing it to cages.

Full information is available from MPI's Aquaculture Unit.

### Monitor fish stock carefully:

Report any unusual death rates or signs of illness in stock to MPI on **0800 80 99 66**.

### Develop a contingency plan:

Review your Fish Health Management Plan for the event of increased mortality rates. MPI can help with this.

This planning could include:

- identifying the triggers for reporting unusual or unexplained mortalities to MPI;
- a procedure for taking samples and chilling them for transportation for testing;
- a plan for emergency harvest, should this be required; and
- ensuring the welfare of your fish – under New Zealand law, farmers (both on land and in the water) have a responsibility for the welfare of their stock.

## FISH WELFARE

While individual farmers/companies are responsible for the welfare of stock in their care, MPI is the government agency responsible for animal welfare in emergencies and for enforcing animal welfare regulations and acts. We are monitoring the salmon situation closely and working with the affected farms to prepare for the possibility of further deaths. This could occur on farms as the weather and water warms.

[www.mpi.govt.nz](http://www.mpi.govt.nz)

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