

# Puffy Skin Disease - An emerging skin condition of rainbow trout

**Puffy Skin Disease is an emerging skin condition of rainbow trout. Cases of the disease have increased sharply since 2011 in both fish farms and fisheries. Collaborative studies involving the Environment Agency, Stirling University and CEFAS are underway to identify the cause of this disease and help us understand how it can be managed to protect our fisheries.**



*Classic 'Puffy Skin Disease' lesions on the flanks of rainbow trout from a still water fishery*

## What does Puffy Skin Disease do?

Trout with Puffy Skin Disease (PSD) have severe raised swelling on their flanks. In extreme cases, nearly the entire side of the fish can be affected. Fish with the disease become lethargic, lose condition and appear unsightly. Trout with PSD also go off their feed, reducing catch rates, fishery performance and angler satisfaction. Badly affected trout can die as a result of the disease. PSD poses a significant threat to the success and value of still water trout fisheries.

## What causes Puffy Skin Disease?

The cause of PSD has not yet been identified. We have conducted detailed laboratory investigations of trout with PSD, but to date no consistent infectious organisms have been found in these fish. It is not known whether the condition spreads from fish to fish, but it seems likely. Studies are underway using advanced diagnostic tests to identify the cause of this disease.

## How are we monitoring the disease?

We are working closely with fishery owners to monitor this emerging disease. This will help us to establish the number of fisheries affected, the impact of the disease and whether there are any actions that can help prevent or limit losses. So far, our studies indicate that PSD is a seasonal condition in fisheries and is most severe during the summer and autumn. Skin lesions seem to subside in winter and early spring, before developing again with warming water temperatures. During the height of summer, up to 100% of the stock may show signs of the disease. To date, we have only observed PSD in rainbow trout, with no other fish affected. A recent study by Cefas confirmed that Puffy skin Disease has been found in over a third of trout farms in England.

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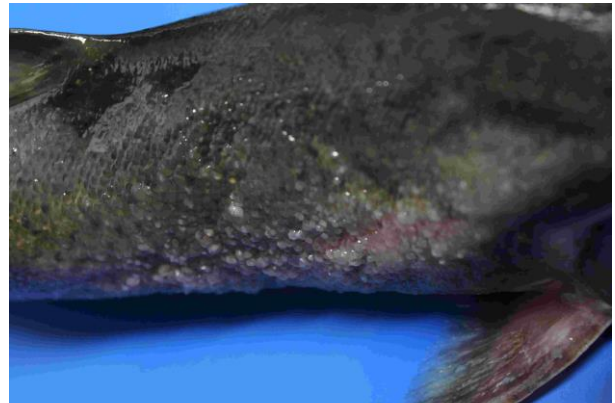
## What about other skin diseases of trout?

There are other skin conditions of rainbow trout that can be confused with Puffy Skin Disease. One example is Red Mark Syndrome (RMS), also called cold water strawberry disease. RMS was first recorded in Scotland in 2003, and has since been found in trout farms throughout England and Wales.

Fish affected with RMS develop oval shaped, red ulcers on their flanks. The scales in the affected area may lose their pigmentation and the skin can become inflamed and raised. RMS and PSD have different effects on fish and fisheries. PSD appears to be more persistent and damaging to fisheries than RMS. Trout with RMS can look unsightly, but do not show a loss of appetite, condition or changes in behaviour. As with PSD, the cause of RMS has not been identified and confirmation of both disease requires laboratory examinations.



*Typical RMS on the flank of a rainbow trout*



*Raised swellings caused by PSD*

## Who should I contact if I suspect a problem in my fishery?

Please report any cases of disease in fisheries to the Environment Agency immediately. We can help confirm the condition through detailed investigations combining field and laboratory sampling. We can also provide the necessary advice and guidance to help minimise disease problems and limit future losses. If PSD is confirmed, we may ask you to complete a questionnaire to improve our understanding of the condition.

## Are there controls in place to limit the spread of these conditions?

There are no specific controls in place to limit the spread of Puffy Skin Disease. Without knowing the cause of the condition, it is very difficult to manage its spread. The most effective way to protect your fishery from disease problems is through good fishery management. This includes careful stocking practices, early reporting of problems and maintaining good environmental conditions.

**If you suspect disease in your fishery or want more information on Puffy Skin Disease, please contact:**

**National Fisheries Laboratory, Monitoring: Laboratories, Environment Agency, Bromholme Lane, Brampton, Huntingdon, PE28 4NE**

**Tel: 02084 745244; Email: [fish.health@environment-agency.gov.uk](mailto:fish.health@environment-agency.gov.uk)**

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