

Red Skin Disease in wild Atlantic salmon – a severity field guide



Red Skin Disease (RSD) is a term given to an emerging disease of wild Atlantic salmon characterised by haemorrhaging along the underside of the body, and occasionally the lower flanks. Milder symptoms of ventral haemorrhaging have been recorded in some populations of salmon for decades, but the severity and prevalence appear to have increased markedly in the last few years.

The most consistent characteristic of the condition appears to be distinct and pronounced ventral haemorrhaging in fresh run Atlantic salmon. This haemorrhaging is described as petechial or pinpoint, expressed as rounded reddened spots on the skin.

The cause and impact of RSD are currently unknown and detailed histopathological descriptions are still being established. Until then, the following field guide has been produced to standardise clinical reporting of RSD-like lesions to support ongoing monitoring of this condition across salmon rivers. It also serves to distinguish this emerging condition from other, frequently observed skin lesions in migratory salmonids.

This index is not intended as a definitive diagnostic guide, but simply to standardise reporting of RSD. This document may evolve as our understanding of RSD develops and will be updated accordingly alongside a more detailed case description.

The images in this guide show the ventral surface of salmon exhibiting varying severities of ventral haemorrhaging associated with RSD, along with descriptions to assist the assessment of individual fish.

To distinguish RSD-like lesions from other skin conditions, there is a page at the end of this guide showing a range of images of wild Atlantic salmon with common symptoms and infections - none of which are considered to be consistent with RSD. Whilst secondary infections may be a typical progression of RSD-like lesions, these growths often mask underlying characteristics and hinder a reliable assessment of this condition.

Severity and characteristics of RSD

Based on observations from rivers across the UK and Ireland, it appears that RSD-like lesions can vary widely both in the extent and severity of ventral reddening. As such, the categorisation of mild, moderate, and severe lesions is based on the coverage of ventral regions of affected fish and the severity of haemorrhage/inflammation. The contribution of these two factors to the assignment of RSD severity is demonstrated in the diagram below.

Mod	Severe	Severe
Mild	Mod	Severe
Mild	Mild	Mod

↑
Severity of haemorrhage

Coverage of ventral surface →

Severity of haemorrhage: refers to the colour of lesions and extent of disruption to the skin, ranging from subtle pale marks with little or no skin disruption, through to deep red, aggressive lesions with notable disruption to skin surface including scale displacement.

Coverage of ventral surface: refers to the extent of the ventral surface covered by haemorrhagic/inflammatory lesions. Ranging from discrete, localised marks to extensive rash-like lesions covering most if not all of the ventral surface, and even extending on to the lateral surfaces of the fish.

Normal ventral surface



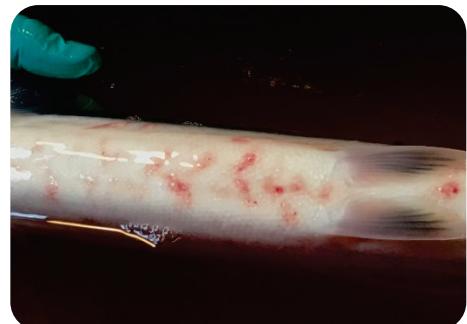
Clean, white ventral surface with no evidence of haemorrhaging or significant skin lesions. N.B. Some minor blemishes or imperfections in wild migratory fish are common and normal and may arise from multiple causes.

Mild RSD-like lesions



Ventral haemorrhage typically focal or diffuse, with minimal disruption to the skin. Lesions are relatively pale, discrete and typically cover less than 50% of the ventral surface.

Moderate RSD-like lesions



Coverage and severity of lesions variable with patches of more significant reddening including raised or more disrupted regions of the skin. Coverage may be extensive and variable, with either mild severity of lesions covering a large proportion of the fish, or focal regions consisting of more pronounced red marks.

Severe RSD-like lesions



Pronounced and extensive petechial or rash-like haemorrhage covering large proportions of the ventral surface, occasionally extending onto the flanks of the fish. Evidence of skin disruption including raised areas of scale displacement with marked petechiae, extending into larger patches, usually raised and deep red in colour.

Symptoms associated with other skin conditions of wild salmon



Red Vent Syndrome, involving localised swelling and reddening of the vent.



Lice damage, with typical fine, petechia often localised posterior to the fin bases.



Abrasion, with associated scale displacement.



Severe bacterial infection with ulceration and inflammation.



Saprolegnia infection with typical rounded, cotton wool-like growths.



Mixed secondary infections involving bacteria and Saprolegnia.

Contact details

England: To report fish mortalities or fish in distress please contact the **Environment Agency** incident hotline on 0800 80 70 60. For further information on RSD please contact our National Fisheries Laboratory on 02084 745244 or email fish.health@environment-agency.gov.uk

Wales: contact the **Natural Resources Wales** hotline on 0300 065 3000, or visit the website: [Natural Resources Wales / Report an incident](#). For further information, contact fisheries.wales@cyfoethnaturiolcymru.gov.uk

Ireland: contact **Inland Fisheries Ireland**. Tel: 0818 34 74 24, or email salmonhealth@fisheriesireland.ie

Scotland: contact the Fish Health Inspectorate at **Marine Scotland**. Telephone 0131 244 3498, or email ms.fishhealth@gov.scot

For further information on this document, please contact fish.health@environment-agency.gov.uk