

A Risk Analysis Approach to Aquatic Disease Management

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FISHERIES RESEARCH SERVICES

INTRODUCTION

- Risk analysis as a tool has begun to be applied to aquatic animal health problems in recent years¹
- The aim of this study is to use a risk analysis approach to determine whether there is justification for modification of existing legislation (EU directive 91-67/EEC) in relation to an important fish disease
- Viral haemorrhagic septaemia (VHS) is an aquatic viral disease, causative agent is a rhabdovirus – VHS virus (VHSV), that costs the European rainbow trout industry €12 -36 million per year
- The UK is VHS free
- VHSV has four genogroups and is endemic in the marine environment but marine strains have not been associated with disease in freshwater rainbow trout
- Current legislation does not distinguish between the four genogroups of VHSV, so it protects rainbow trout industry but is limiting development of marine species aquaculture

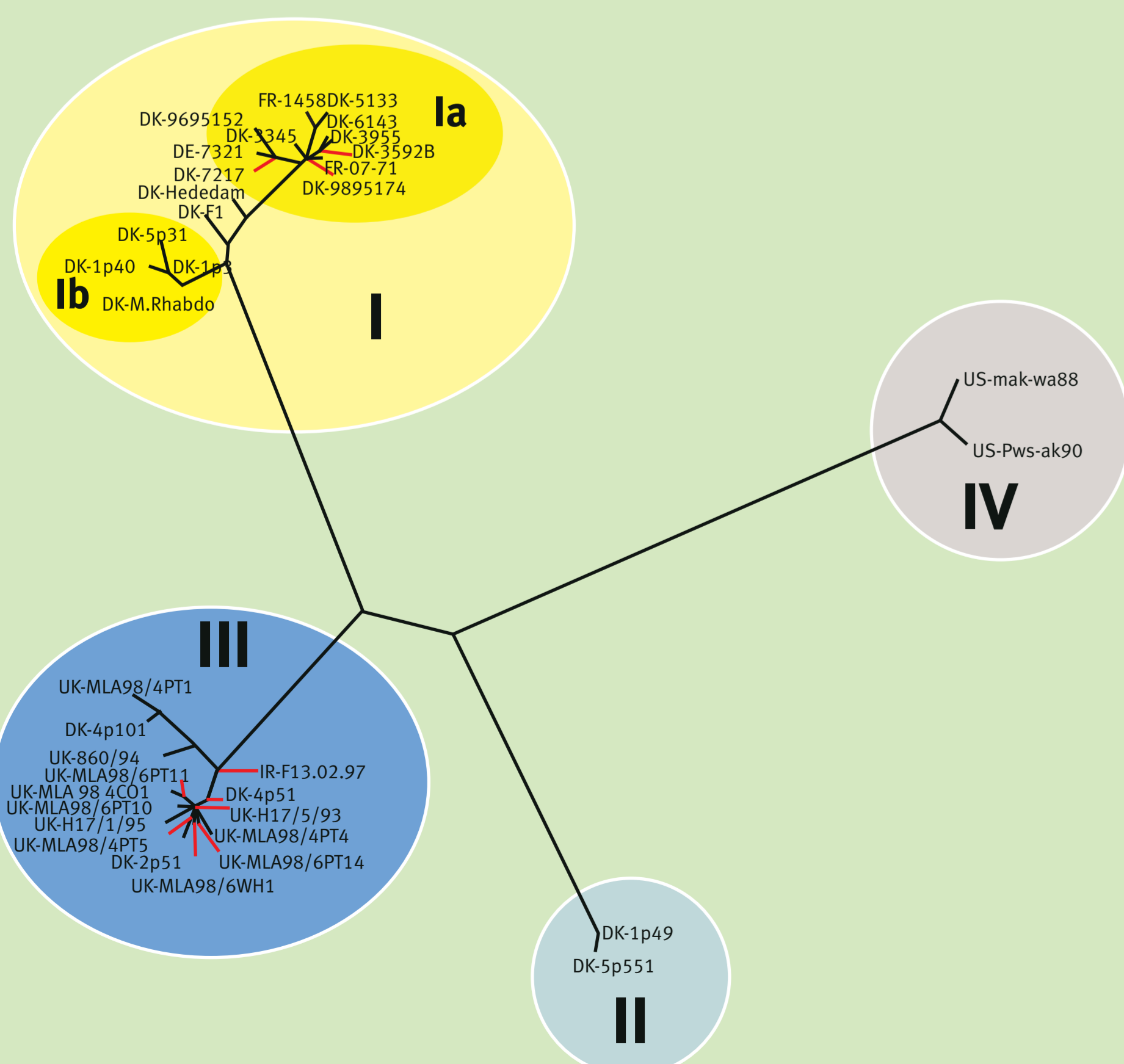
VHS – THE PROBLEM

There are four genogroups of VHSV – that have different virulence in different fish species.

BUT current legislation does not distinguish between marine (Ib and III) and rainbow trout forms (Ia) of VHSV

This hinders the development of marine aquaculture because farmers must eradicate if VHSV is detected, regardless of genogroup

Should legislation change to acknowledge the existence of a marine reservoir of VHSV?

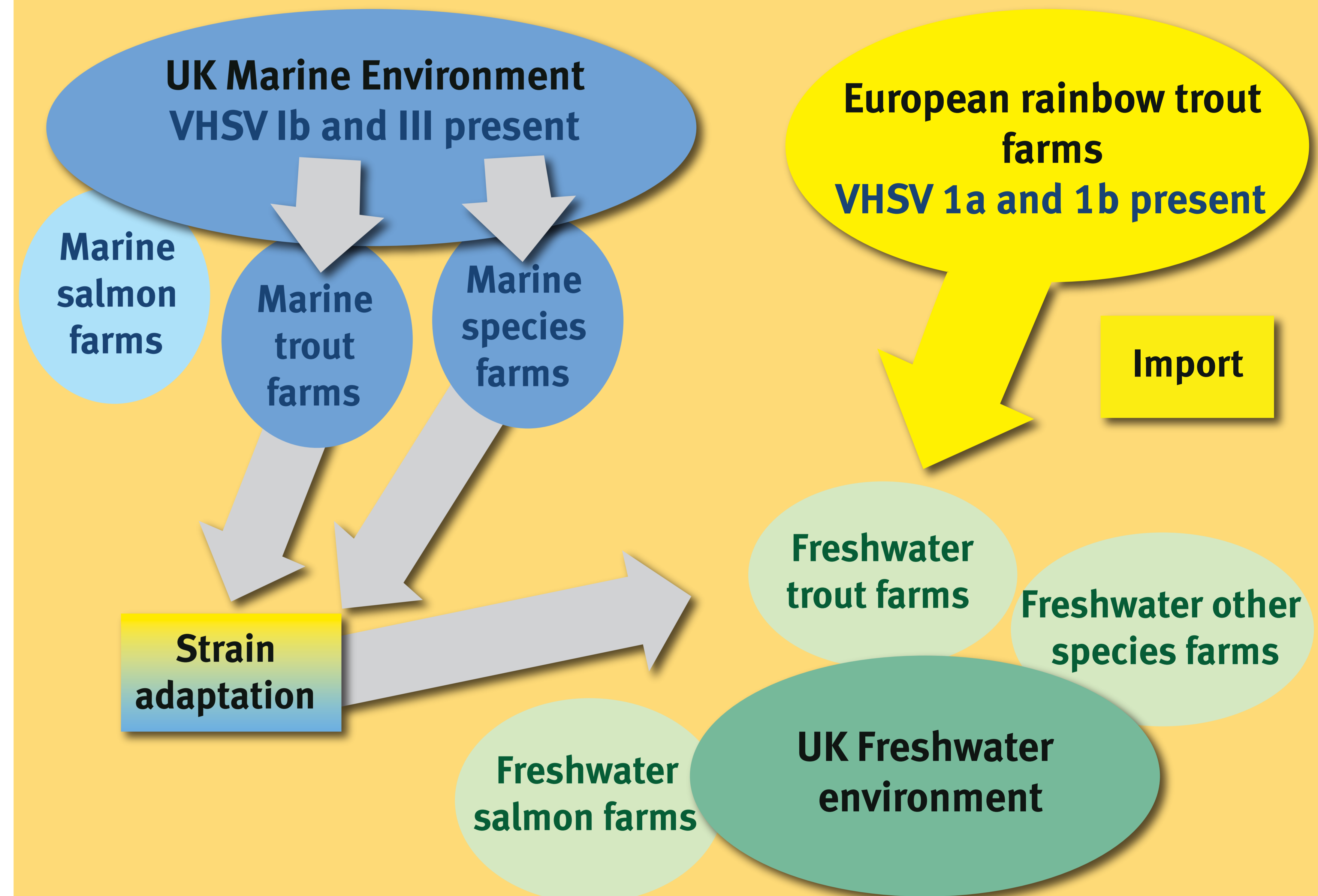


VHSV geno-group	Rainbow trout	Atlantic salmon	Turbot	Halibut	Cod
Ia	High	Low	Low	Low	Low
Ib	Low	Low	High	Low	Low
II	Low	Low	Low	Low	Low
III	Low	Low	High	Low	Low
IV	Low	Low	Low	Low	Low

Comparative susceptibility of different fish species to the four VHSV genogroups based on experimental aquarium challenges³⁻⁵.

Phylogenetic classification of VHSV isolates. Groups I, II and III are found in European waters and group IV is North American².

IDENTIFICATION OF THE KEY RISK PATHWAYS FOR ENTRY OF VHS INTO UK



The VHS problem is complex and other risk pathways are likely to be identified during analysis

A model has been developed using the sectors above as inputs – this will be useful later in analysis to examine different management scenarios

References

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