

**WATER RESOURCES ACT 1991**

**THE WALES ROD AND LINE (SALMON AND SEA TROUT) BYELAWS 2017**

**THE WALES NET FISHING (SALMON AND SEA TROUT) BYELAWS 2017**

**DOCUMENT NRW/6A**

**SUMMARY PROOF OF EVIDENCE**

**OF**

**ROBERT VAUGHAN**

**MANAGER OF SUSTAINABLE LAND, FARMING AND FOREST MANAGEMENT**

**on behalf of**

**NATURAL RESOURCES WALES**

**NOVEMBER 2018**

## 1 **Personal Background**

1.1 My name is Robert Vaughan and I am the Manager of Sustainable Land, Farming and Forest Management for Natural Resources Wales (**NRW**). I have worked for NRW, its predecessor bodies in Wales and for other similar bodies in England for 36 years. During this time, I have worked on surface and groundwater catchment matters, principally the management of surface and ground water resources and quality, forestry policy, agriculture and land-use management, flood risk management, and research and innovation. I have also contributed to national (England and Wales) fora to oversee technical, scientific and policy advances in the sustainable management of catchments and their natural resources. In undertaking these roles I have worked closely with fisheries experts and stakeholders to develop the sustainable management of natural resources which in turn supports the sustainable fisheries management of our catchments.

1.2 I am a Master of Science in Water Resources Technology.

## 2 **Scope of evidence**

2.1 Capitalised terms used in this summary proof of evidence that are not defined in the proof are defined in the Glossary appended to the proof of Mr Gough<sup>1</sup>.

2.2 My evidence considers the various ways in which land management affects the conditions of rivers in Wales. What happens within a catchment impacts on the way and speed at which rainfall finds its way to surface watercourses. High flow events caused by land management changes that increase runoff have a dramatic impact on erosion and the morphology of rivers. Similarly the flora and fauna, including fish, can be detrimentally impacted. Conversely the loss of water caused by rapid runoff means that flows drop off quickly leading to low river flows in dry periods, again impacting heavily on river fauna.

2.3 Rapid runoff can also carry materials such as sediment or nutrients into water courses. With increasing compaction and sealing of our soils these impact on the

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<sup>1</sup> NRW/1(D)

quality and condition of rivers and directly damage the condition of the river and pollute the water it contains.

2.4 Across Wales our land and our rivers are used as a means of waste and sewerage disposal. In most, but not all cases, regulations control the discharge to limit the impact. However there remain risks of pollution from both permitted discharges, diffuse sources and from accidental discharges.

2.5 My evidence also describes how NRW identifies these challenges and what steps are being pursued in order to reduce the impact on fish populations, both in the short-term and over the longer-term.

### **3 Summary and conclusions**

3.1 Land management in Wales has, over many hundreds of years, created today's urban and rural landscape. In more recent decades the pace of land use change has increased producing both positive and detrimental impacts on rivers across Wales.

3.2 NRW has the role of looking after the natural resources of Wales. It uses the powers provided through Wales, UK and European legislation to achieve the right outcomes. It also recognises the importance of working with others to deliver improvements. To this end NRW has developed close and cooperative relationships across Wales and beyond to effectively recognise and tackle the many environmental challenges.

3.3 Restoring ecosystems is, however, a long-term process and NRW needs to manage the expectations of those seeking instantaneous improvements. Where required, changes in business practices and culture, legislation and policy and the commitment of investment, may take time to secure particularly during economically challenging times. As a consequence the following evidence can only ever provide part of the solution required to ensure we have a sustainable fishery. Additionally there will be other challenges we have yet to define and new initiatives that will help overcome them. It will take time to deliver the outcomes needed.

3.4 The evidence provided considers initially the impact land management has had on water quantity across Wales. Water volumes, velocity and its availability is key to a healthy environment for fish. Wales has abundant rainfall but the geology, soils and topography encourages rapid run-off so that many rivers experience low flows whenever there are dry periods. Modern land management practices both in our urban and rural landscape has exaggerated this response. The changing climate

adds to this. We now experience rapid storm runoff due to low rainfall infiltration, and dry weather flows are reducing creating more regular drought like conditions. These are detrimental to fish.

3.5 To overcome these issues NRW is:

3.5.1 Using reservoirs to store water for subsequent release to supplement low river flows and to adjust extreme river temperature;

3.5.2 Using its water resource powers to control abstractions to ensure water is conserved, augmented, redistributed and the proper use of water is secured; whilst balancing legitimate needs against environmental in-river needs;

3.5.3 Through the Water Framework Directive (**the WFD**)<sup>2</sup> identifying flow and level concerns in water bodies in Wales and developing and delivering solutions;

3.5.4 Adopting and promoting sustainable drainage approaches, both in urban and rural locations and in new and existing developments. This moves away from end-of-pipe solution and tackles runoff where it starts so that water is retained in catchments and slowly released to benefit fish and rivers;

3.5.5 Promoting the Restoring Sustainable Abstractions<sup>3</sup> programme to rectify historic abstractions that may be damaging the environment. This includes installing screens on intakes to prevent fish ingress;

3.5.6 Using its hydro-power guidance which is specifically designed to protect fish;

3.5.7 Using the UK Forest and Water guidelines to deliver best practice forestry operations on the Welsh Government Woodland Estate and influencing the private sector to do likewise.

3.6 Water quality is similarly impacted by land management activity and the evidence gathered by NRW and partners shows there has been commendable improvements in Water quality in some areas. It is recognised this has opened up many river stretches where fish have been absent for many years. In other aspects, however, there remains much to do. Many of the improvements stem from the legislative focus and investment in tackling point source discharges such as those from sewage works

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<sup>2</sup> LEG/16

<sup>3</sup> POL/35

and combined sewer overflows. With the success here the focus has moved onto intermittent and smaller discharges. The latter have limited impacts individually, but in combination can cause major quality problems. Combined with the water quantity issues, climate change, air quality impacts and the changes in land management practices we see not only increases in pollution but also increased sediment erosion. These are all having a damaging impact on our fish populations.

3.7 To overcome these issues NRW is:

- 3.7.1 Working with the Water Companies, Water Industry Regulators and Government to introduce programmes for investment to meet statutory environmental requirements;
- 3.7.2 Adopting sustainable urban drainage systems approaches in urban and rural areas that reduce the rapid runoff of pollution and sediment into watercourses;
- 3.7.3 Through the WFD<sup>4</sup> identifying quality concerns in water bodies in Wales and developing and delivering solutions;
- 3.7.4 Implementing an approach to prioritise and tackle the top diffuse pollution issues;
- 3.7.5 Working with Government to develop regulatory approaches, including applying existing and proposed powers to help reduce the risk from agricultural pollution. Additionally we are advising Government as they prepare for a post Brexit agri–environment scheme, building on the tools already developed during the Glastir programme;
- 3.7.6 Working with the Agriculture Sector to develop mutual understanding of the root causes of pollution problems and identifying the spectrum of approaches available for driving improvements. These include the full range of NRW regulation approaches: Advice and guidance, investment incentives, farmer led nutrient management, robust formal regulatory approach and promoting innovation;
- 3.7.7 Tackling acidification on the forestry estate;

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<sup>4</sup> LEG/16

3.7.8 Developing innovative techniques to tackling the metal mine discharge pollution that affects so many rivers across Wales;

3.7.9 Working to reduce the need for chemicals on NRW land and working with others such as Dŵr Cymru Welsh Water to find ways to reduce the risk of inappropriate use of chemicals and potential pollution sources;

3.7.10 Tackling the risk from fuels and oil;

3.7.11 Registering septic tanks and helping householders understand their responsibilities in ensuring their systems operate properly.

#### 4 **Statement of truth**

4.1 I hereby declare that:

- I. This proof of evidence includes all the facts which I regard as being relevant to the opinions that I have expressed and that the inquiry's attention has been drawn to any matter which would affect the validity of that opinion;
- II. I believe the facts that I have stated in this proof of evidence are true and that the opinions I have expressed are correct; and
- III. I understand my duty to the inquiry to help it with matters within my expertise and I have complied with that duty.

**Robert Vaughan**

Manager of Sustainable Land, Farming and Forest Management

Natural Resources Wales