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Salmon and sea trout stocking – alternative mitigations

Following ‘A consultation on NRW’s salmon stocking, third party salmon stocking and the future of NRW’s hatcheries’ held 4th March - 27th May 2014 this paper provides additional information about alternative mitigations to salmon and sea trout stocking.

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Introduction

Natural Resources Wales is a Welsh Government Sponsored Body. Overall policy responsibility for Welsh fisheries is devolved to the Welsh Government. NRW is responsible for regulation of inland fisheries in Wales (including salmon, sea trout, eel, smelt and lamprey out to 6 nautical miles) and has a general duty under the Environment Act 1995 to “maintain, improve and develop fisheries”. This is achieved through implementation of legislation and externally funded work based on actions agreed with Welsh Government.

As a new organisation, Natural Resources Wales (NRW) is reviewing many aspects of the work we do to make sure they are as effective as possible in delivering for people, the economy and the environment. One programme of this work is the ‘Agenda for Change’ which looks at how NRW works with partners towards achieving sustainable inland fisheries for Wales.

As part of this we are considering all of our fisheries activities. In December 2013 we reviewed our own existing salmon stocking activity and associated hatchery operations. In the review we considered the rationale, justification and implications of NRW’s activities in rearing and stocking salmon into Welsh rivers, the implications of our considerations for others wanting to do this, and our own capacity in this work. We carried out a full public consultation from 4th March - 27th May 2014 to capture views on the review and its recommendations and seek any new evidence, before deciding on the way forward.

One of the review recommendations was that all salmon mitigation and enhancement stocking in Wales undertaken by NRW and 3rd parties should end. In addition, NRW and interested parties should develop alternative mitigations using a range of habitat restoration methods to provide broader and more sustainable environmental benefits. In the consultation feedback there was a great deal of interest in the alternative mitigations that might be implemented if mitigation stocking ceased. The purpose of this document is to highlight a range of alternative mitigations and how they might be implemented.

Alternatives to salmon mitigation stocking

Background

Our review of salmon stocking and hatcheries described how stocking has been used in catchments across Wales in 'mitigation', largely for the impacts caused by construction of impoundments to create reservoirs. Mitigation stocking has also occurred where major developments such as barrages and hydro-electric pump storage schemes have been constructed.

Where these developments have occurred, rivers have been made inaccessible or habitat made less suitable for salmon and sea trout which has reduced overall fish production in the catchments affected. Mitigation stocking has been used in an attempt to compensate for lost juvenile salmon and sea trout production in order to return stocks to their natural level.

Stakeholder feedback

In our consultation on stocking and hatcheries we proposed that we should cease enhancement and mitigation stocking, substantially reduce our hatchery capacity and redirect the resources made available into alternative mitigations that would provide greater benefits to fish stocks and the environment in Wales.

In the consultation feedback the views of respondents included:

- It would have been beneficial to have more information about alternative mitigations in the review and consultation documents.
- Any alternative mitigation measures should be over and above NRW's routine obligations.
- Habitat restoration alone would not provide sufficient mitigation for the loss of spawning and nursery streams caused by the creation of impoundments.
- Many other alternatives were suggested as mitigations including:
 - Large scale or landscape scale habitat restoration to reduce the impacts of agriculture and forestry
 - Amelioration of acidification
 - Increased coastal enforcement
 - Control of exploitation by rods and nets
 - Improved fish passage at barriers (including natural barriers)
 - Reducing the impact of pollution from sewage and mine water
 - Eradication of invasive non-native species

- Restoration of flows in over-abstracted reaches
- Control of fish eating birds or habitat manipulation to reduce bird predation
- Restore compacted gravel beds used for spawning
- Each catchment should have a 'fishery mitigation plan' as part of which all the alternatives should be identified, quantified, discussed, agreed and potentially delivered with stakeholder involvement.
- Sufficient resources might not be directed into alternative mitigations or they may not be delivered over a short enough timescale.
- The resources redirected from stocking and hatcheries should be ring fenced in perpetuity for mitigating fisheries benefits.

This document sets out the principles NRW will follow in delivering alternative mitigation for the loss of salmon and sea trout spawning and nursery streams. In addition, it proposes a process by which alternative mitigations could be delivered with stakeholders at a catchment level.

Developing alternative mitigations

Our approach to delivering alternative mitigations will be to work with stakeholders at a catchment level using a consistent approach across Wales.

Principles

The principles NRW will follow when developing alternative mitigations will be:

- i. A **'mitigation target'** will be calculated and expressed in terms of area or annual salmon and sea trout smolt production to reflect the damage caused to fisheries by the construction of impoundments and other major developments.
- ii. **Alternative mitigations will be used to meet the mitigation target** and generate additional natural salmon and sea trout production.
- iii. **Alternative mitigations will be over and above the 'day job'** that would be done as part of NRW's routine work.
- iv. **Local stakeholders** will be involved with the development and implementation of alternative mitigations over the period 2015-2020.
- v. **Appropriate Monitoring** will be undertaken to assess the benefits of alternative mitigations and their contribution to the mitigation target.

Our aim will be to deliver effective and sustainable alternative mitigations so that there will be no ongoing mitigation requirement or expenditure. This may not be possible in all instances in which case some ongoing commitment may be required.

Catchment Mitigation

The river catchments eligible for alternative mitigations as a result of impoundments and other major developments are:

Catchment	Reason for Mitigation	Location	Legally obliged to mitigate
Eastern Cleddau	Impoundment	Llys y Fran	Dwr Cymru / Welsh Water
Towy	Impoundment	Llyn Brianne	Dwr Cymru / Welsh Water
Dee	Impoundment	Llyn Celyn	None
Seiont	Hydroelectric Power Scheme	Dinorwic near Llanberis	Natural Resources Wales
Taff	Tidal barrage	Cardiff Bay	Natural Resources Wales (expires 2020)
Wye	Impoundment	Elan Valley	None

Although there is no legal obligation for Natural Resources Wales to mitigate for the Llyn Celyn (Dee) and Elan Valley (Wye) schemes we will in any event aim to deliver the alternative mitigations at these locations. In addition, although NRW are contractually bound to assist the Mawddach Trust stocking program until 2020, we will discuss more sustainable options with the Trust that they may want to consider as an alternative to stocking.

Alternative Mitigation Activities

Alternative mitigations that will be funded and delivered by NRW and 3rd parties to replace mitigation stocking schemes may include a combination of alternatives including:

- Fish passage improvements at partial natural barriers to fish migration.
- Landscape scale habitat restoration projects in headwater streams.
- 'In river' habitat restoration schemes.
- Restoration of compacted spawning grounds.
- Enhancement of spawning areas or the creation of man-made spawning areas.
- Amelioration of the impacts of acid rain.
- Any additional initiatives that both local stakeholders and NRW staff agree would be beneficial.

Delivery process at a catchment level

A key part of delivering alternative mitigations on the ground will be ensuring stakeholders are involved in developing the alternatives and potentially in their delivery:

1. **Form local stakeholder group**, or use an existing group, to assist NRW in developing and delivering alternative mitigations.
2. **Quantify individual river mitigation targets** created by impoundments or other major developments.
3. **Identify and quantify benefit of alternative mitigation options** that could contribute to the mitigation target.
4. **Discuss alternatives with stakeholder group**, identify any other options and produce a prioritised list with agreed site investigation leads that will be used to produce a **'Fishery Mitigation Plan'**.
5. **Site investigation** leads (NRW or a 3rd party) will assess the practicalities of delivering the work necessary for each option on site.
6. **Review feedback from the site investigations** in the stakeholder group, modify the mitigation plan if necessary and agree who will lead on the delivery phase.
7. **Project plans** will be produced by delivery leads for the favoured options using a standard format setting out robust costs, benefits and likely timescales as annexes to the fishery mitigation plan.
8. Obtain necessary **approvals to deliver work** on site and **secure necessary resources** to deliver project.
9. **Deliver** project.
10. Representatives of NRW and the stakeholder group carry out a site visit to **audit** the completed project.
11. Implement an appropriate **monitoring programme** to assess the benefits.

In order to deliver this catchment work with stakeholders NRW will aim to complete steps 1-4 by **31st March 2015**. Depending on the complexity of the alternative mitigations the timing of steps 5 -11 will vary but the aim will be to complete all alternative mitigations by **31st Dec 2020**.

Delivery of Fishery Mitigation Work

NRW will lead on the development of a Fishery Mitigation Plan for each catchment affected with the support of a local stakeholder group. The plans will be short documents that set out the mitigation targets and the actions that will need to be completed. They will be 'live' documents that are regularly updated to reflect any changes in the prioritised mitigation option list, delivery costs or timescales.

In this delivery process it is intended that the stakeholder group will play an important role in facilitating the planning and delivery of the mitigations. The process will allow for either NRW or 3rd party groups to deliver the alternative mitigations. The lead on each element of a Fishery Mitigation Plan will be determined at a catchment level based on the type and amount of work required. NRW may need to lead on the delivery of some of the more technical options but this will be determined on a case by case basis.

The project leads will produce short project plans (step 7) in a standard format that sets out the costs, benefits and time-scales associated each piece of work. The project plans will form annexes to the Fishery Mitigation Plans and can be used to produce a delivery timetable with costs for each catchment.

The resources made available from the cessation of stocking and hatchery closures will be made available for alternative mitigations. Depending on the costs of the work required, NRW may need to secure additional resources through joint funding bids with partners to maximise the resources available.

NRW's Sustainable Fisheries Programme will co-ordinate and manage the implementation of this work. The Programme Manager and board will oversee the work and keep both the NRW board and stakeholders informed of progress.

It is anticipated that, once the alternative mitigation projects are completed in all catchments, the obligation to mitigate will be fulfilled and the programme will be complete. However, the delivery of the mitigation targets will be monitored and the need for any ongoing commitment beyond 2020 considered. After closure of the programme the resources made available from the cessation of salmon stocking and hatchery closures will be redirected into other priority fisheries activities and initiatives.