

Itchen Drought Order

Habitats Regulation Compensation Package

Draft 20 March 2018

This document has been prepared following consultation with the Environment Agency, Natural England and the Hampshire & Isle of Wight Wildlife Trust. The Agency, Natural England the Trust have worked very hard to develop these packages of monitoring, mitigation and compensation in a very compressed time frame.

The contents are broadly agreed but, due to time constraints, are subject to further work. Specifically:

- The costs and budget arrangements which underpin this package are to be agreed.**
- The compensation packages are works in progress and incomplete.**

The Agency and Southern Water are committed to working together and with Natural England and others to refine these documents and complete the missing information in the near future.

In the meantime, these draft documents are shared on a without prejudice basis. The observations and advice of interested parties will be a valuable contribution to that process.

Introduction

This document sets out Southern Water Service's ("**SWS**") proposals for a package of measures to compensate for potential adverse effects on the River Itchen Special Area of Conservation ("**SAC**") as a result of SWS's abstraction from the River Itchen below the hands off flow ("**HoF**") of 198Ml/d pursuant to a Drought Order ("**the Itchen Drought Order**") as required under the Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora 92/43/EEC ("**the Habitats Directive**").

This document has been prepared by SWS in respect of the matter before the Planning Inspectorate (ref. RSA/WR/00016/17/18) as part of a settlement agreement with the Environment Agency ("**the EA**") ("**the Settlement Agreement**").

Content of this paper

The purpose of this document is to set out a package of compensatory measures in relation to the possible adverse effects on the River Itchen SAC of abstraction pursuant to an Itchen Drought Order.

It sets out the principles used to develop the proposed package and provides a high level of scope for each measure. It has been developed by SWS with advice from NE and the EA.

Agreeing the measures at this stage is one aspect of ensuring that SWS is "application ready" for the purposes of applying for an Itchen Drought Order.

Summary of proposed measures

The aim of the proposed package of measures is to compensate for the potential adverse effects of the Itchen Drought Order on the Itchen SAC: H3260 Water courses of plain to montane levels with the *Ranunculus fluitantis* and *Callitriche-Batrachion* vegetation (Chalkstream Habitat); S1106 Atlantic salmon *Salmo salar*; S1044 Southern damselfly *Coenagrion mercuriale*.

On the best available evidence and subject to further assessment and agreement, the proposed package of measures is considered by the Environment Agency and Natural England to be sufficient to compensate for the most likely adverse effects of continued abstraction pursuant to an Itchen Drought Order on the River Itchen

This document contains a number of alternative measures, included due to the need to complete scoping exercises and to ensure deliverability of different options. SWS, the EA and NE will consider further whether any alternative measures could be combined in part.

The package of measures includes a range of differing timings. Certain measures, such as feasibility studies, are to be completed upfront; other measures will be triggered by later events Triggers and ordering of events will be agreed with SWS, the EA and NE.

H3260 Water courses of plain to montane levels with the *Ranunculus fluitantis* and *Callitriche-Batrachion* vegetation (Chalkstream Habitat)

Compensatory restoration measures are required in respect of the potential for damage to chalk river habitat in the River Itchen. Based on initial assessment of areal extent, and subject to further evaluation and agreement, it is estimated that the impacted area of the Annex 1 chalk river habitat could include up to 36ha of the River Itchen.

Compensation cannot be undertaken within the Itchen SAC and therefore alternate appropriate locations are required. Watercourses supporting chalk stream habitat in need of restoration to be subject to work have been identified through discussion between Southern Water, EA, NE and HIWWT and comprise the following options:

- a. River Test between Wherwell and Kimbridge; or
- b. River Meon.

Two have been identified such that if landowner interest and agreement cannot be achieved on one, then consideration will move to the next.

Both rivers are of sufficient size and length that compensatory work benefitting the appropriate area of chalk river habitat (to be agreed) is expected to be deliverable through existing mechanisms or through establishing a new mechanism. This would preferably take place at a single large or several smaller project locations on the chosen river.

Option 1: River restoration to improve chalk stream habitat in the River Test

Description: Restoration measures for the Test between Wherwell and Kimbridge have been identified in the Test and Itchen Restoration Strategy. The specific measures implemented will be determined based on the requirements of the river and will be subject to further assessment. They are likely to include a selection of the following:

- Restoration of channel continuity by weir removal or lowering
- Rehabilitation of the riparian zone through:
 - improved vegetation management by reducing the mowing/cutting regime
 - riparian planting
- Rehabilitation of the channel by:
 - re-profiling the banks to enable berm features to develop
 - bed level raising (where it has been artificially lowered)
 - introduction of gravels
 - restoring connectivity with the floodplain by lowering/removal of embankments.
 - channel narrowing (where it has been artificially widened) by in-channel measures or planting
 - reduce agricultural sediment inputs

Objective: To deliver compensation of the potential adverse effects to the integrity of the lower Itchen SAC in channel chalk stream habitat resulting from the operation of the Lower Itchen Drought Order as identified in the appropriate assessment of the draft Drought Plan and accompanying documents

Expected results: River restoration activities will improve the physical habitat and natural processes within the selected river reaches which will improve the conditions and resilience of the chalk stream communities – as characterised (but not limited to) by macrophyte, macroinvertebrate and fish communities.

Timing and duration: Implementation timetable to be agreed between SWS, the EA and NE

Funding and delivery: Following further assessment, Southern Water will fund a range of river restoration measures within the River Test SSSI to be identified and delivered by the EA project officer for the Test and Itchen River Restoration Strategy (or other EA officer to be identified by the EA).. The Environment Agency is responsible for identifying and delivering the appropriate measures once funding has been provided by SWS.

Option 2: River restoration to improve chalk stream habitat in the River Meon

Description: For the Meon, measures have been identified for a number of locations in Holmes (2009⁷⁵). The specific measures implemented will be determined based on the requirements of the river and will be subject to further assessment. They are likely to include a selection of the following:

- Restoration of channel continuity by weir removal or lowering
- Rehabilitation of the riparian zone through:
 - improved vegetation management by reducing the mowing/cutting regime
 - riparian planting
- Rehabilitation of the channel by:
 - re-profiling the banks to enable berm features to develop
 - bed level raising (where it has been artificially lowered)
 - restoring connectivity with the floodplain by lowering/removal of embankments.
 - channel narrowing (where it has been artificially widened) by in-channel measures or planting

Objective: To maintain the coherence of the Natura 2000 series network by delivering an appropriate level of compensation for potential adverse effect to the integrity of lower Itchen SAC in channel chalk stream habitat resulting from the operation of the Lower Itchen Drought Order.

Expected results: River restoration activities will improve the physical habitat and natural processes within the selected river reaches which will improve the conditions and

⁷⁵ Environmental Quality Appraisal of the River Meon. Final Report June 6th 2009. A Report to EA, Solent and South Downs Area

resilience of the chalk stream communities – as characterised by macrophyte, macroinvertebrate and fish communities.

Timing and duration: Implementation timetable to be agreed between the EA, NE and SWS.

Funding and delivery: Southern Water will fund a range of measures within River Meon to be identified and delivered by an appropriate third party (such as the Meon Valley Partnership or Wild Trout Trust) The delivery agent is responsible for identifying and delivering the appropriate measures once funding has been provided by SWS.

S1106 Atlantic salmon *Salmo Salar*

The compensation measure for this species will be focused on habitat enhancement for all life-cycle stages of salmon and minimisation of migration barriers.

The Lower Itchen Sources Drought Order could potentially impact approximately 30km of the lower River Itchen (taking account of the braided nature of the river, but excluding the ‘dry’ channels of the Itchen Navigation canal). The affected area will be subject to further assessment and agreement between the parties (the EA’s current assessment is that an area up to approximately 9km may require compensation). The proposals below will require further assessment and agreement, in particular to ensure that different measures – such as fish passage easements and habitat enhancement/restoration – are combined appropriately.

Survey work

Description: sampling and analysis of DNA in Meon salmon and comparison with previously gathered data for other chalk river including the Itchen.

Objective: to establish whether salmon in the Meon are of the same genetic strain as salmon in the Itchen to ensure compatibility with the “chalk rivers” salmon group of which the Itchen is a part.

Funding and delivery: Survey be completed in summer 2018 by Exeter University, who have agreed to do this work, and funded by Southern Water.

Option 1: River Meon habitat enhancement

Description: Subject to the results of the above, as well as further assessment, create enhanced habitat and fish passage easement for salmon in the lower Meon catchment. Four sites are currently being considered and will be subject to further assessment (including in respect of priorities and potential further sites):

- (1) Mayles House weir (structure 6) 550m Head loss March 4 2009 (sloping weir)
- (2) Soberton Mill Head weir 610mm head weir March 4 2009 (boards in three spillways)
- (3) Droxford Mill overflows (several fish passage issues).
- (4) Site just below Titchfield Mill (clearing out channel).

Objective: to improve fish passage throughout the Meon and improve conditions for natural fish rearing

Funding and delivery: Southern Water will fund the works, which will be delivered by an appropriate third party (such as the Meon Valley Partnership or Wild Trout Trust). The implementation timetable is to be agreed.

Option 2: River Meon habitat enhancement

Description: modifying structures/water management at Titchfield Haven in order to improve the attractiveness of fish to the River Meon. Subject to feasibility study and further assessment – in particular given that this location is part of an SPA to ensure no deterioration of the SPA habitat (and if possible betterment though this is not a primary objective of the option). This measure would likely require an investigation into modifying flow splits and managing water levels at Titchfield Haven, which would improve in-stream water quality and habitat conditions for salmon migration and be compatible with SPA management requirements. Appropriate measures would be subject to further assessment but would likely include a solution to better manage flow splits/levels in the lower Meon specifically for salmon.

Objective: to improve fish passage and habitat into the Meon.

Funding and delivery: Southern Water will fund the works, which will be delivered by an appropriate third party. The implementation timetable is to be agreed

Option 3: River Stour habitat enhancement

Description: easement of fish passage by removing a weir in the lower River Stour. If the weir cannot be removed, provide additional habitat around the weir. This measure is subject to further assessment for feasibility, including through consultation with the local EA team. The EA considers that this option would require a programme of river restoration.

Objective: to improve access of salmon through the River Stour and or improve conditions for natural salmon rearing.

Funding and delivery: Southern Water will fund the works, which will be delivered by an appropriate third party.

S1044 Southern damselfly *Coenagrion mercuriale*

Compensatory measures are required in respect of the potential for adverse effect on the integrity of the Itchen southern damselfly population during operation of the Itchen Drought Order.

Compensation cannot be undertaken within the Itchen SAC and therefore alternate appropriate locations are required. Although the River Itchen valley is a stronghold for the southern damselfly, there are areas of naturally functioning habitat outside of the Itchen Valley which already support southern damselfly, notably in the Test valley. There is also suitable habitat in the Meon valley, although the species has not been recorded there. The species has poor dispersal capacity and therefore the restoration of natural function to floodplain wetland areas close to existing populations is the preferred approach to delivery of a package of compensatory measures, but if this cannot be delivered then an alternate has been identified.

Key habitat features indicating favourable conditions for the species include:

- A constant (perennial) slow to moderate flow of water;
- Stable water levels;
- Channel substrate consisting primarily of silt and detritus;
- Presence of a broad fringe of herbaceous emergent dicotyledon plants along margins, especially water-cress *Rorippa nasturtium-aquaticum* and fool's water-cress *Apium nodiflorum*;
- Presence of some areas of open water (i.e. ditch not completely choked by vegetation);
- Largely (but not necessarily completely) unshaded by bankside shrubs and trees.

Habitat factors that limit the distribution of southern damselfly on sites primarily comprise:

- Development, or presence, of too much scrub;
- Too little water, too little flow, flow not perennial, fluctuating water levels;
- Management of adjacent meadows inappropriate.

The compensatory works proposed will supplement, and be additional to, those implemented in respect of the Candover Drought Order. The Itchen DO will affect approximately 15km of the Itchen from Otterbourne waterworks to Woodmill.

In respect of the Itchen DO, the following measures are proposed:

- Conduct a feasibility study, using a combination of recent survey work by HIWWT, the data from other existing survey programmes, and survey / site visits where information doesn't exist, to identify options for the Test and Meon. Three key option areas have been identified.
 - It has been suggested that land near Mottisfont would be appropriate as it would be close to sites already supporting the species.
 - If it is not possible to identify sites near Mottisfont, then investigate potential for enhancing or creating southern damselfly habitat in the Test near to known sites elsewhere in the catchment, with a focus on, but not restricted to, areas between Timsbury and Stockbridge.

- If no options prove feasible in the Test valley then review and ground truth the results of River Meon feasibility study conducted in 2006⁷⁶.
- Secure management of land and relevant water control structures adjacent (within 1km but ideally within 500m) to, but not currently supporting an existing southern damselfly population in the River Test catchment, or to appropriate areas of floodplain wetland in the Meon.
- Create, or enhance existing, habitat for southern damselfly. The extents of habitat to be created/enhanced in advance of the DO, and following implementation of the DO, are subject to confirmation and on-going discussion but will comprise work to two - four sites and an appropriate extent of river channel. The extent required post implementation will be informed by monitoring and assessment of the impacts at the time.
- Monitoring will be undertaken for 3 years post habitat creation / enhancement and post-use of the DO.
- The need for translocation of the species will be assessed based on the results of the monitoring post habitat creation / enhancement. Southern damselfly has a weak dispersal capability and therefore this measure may be necessary to ensure the success of the compensation, however translocation has not previously been shown to work for this species and should not be assumed to be successful. This proposal will be subject to further assessment, including in respect of monitoring requirements for the population post translocation.

Objective: To deliver compensation for potential adverse effect to the integrity of River Itchen southern damselfly population identified in the draft Drought Plan appropriate assessment resulting from implementation of the Lower Itchen Drought Order.

Expected results: Delivery of habitat enhancements, or habitat creation, that leads to an increase in the number of sites occupied by the southern damselfly population in the Test valley, or the provision of appropriate habitat for the species in the Meon catchment.

Timing and duration: Implementation timetable to be agreed.

Funding and delivery: HIWWT to scope and deliver the measures detailed above, funded by Southern Water.

⁷⁶ Price, A. (2006). *An assessment of the potential for watercourses of the River Meon to support southern damselflies*. Research project