

Candover Drought Order

Mitigation 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 scope of the monitoring packages remains incomplete with regards to the need for monitoring of the mitigation and compensation works.

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 the package of measures to mitigate for the possible environmental impacts on the Candover Stream and the River Itchen as a result of Southern Water Service's ("SWS") abstraction from the Candover Boreholes up to 27 MI/d and discharge up to 5 MI/d into the Candover Stream via the existing outfall and discharge of up to 25 MI/d via a new pipeline to a new discharge point located on the River Itchen, pursuant to a Drought Order ("the Candover Drought Permit").

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 Agency") ("the Settlement Agreement"). This package of measures has been agreed between SWS and the Agency.

This mitigation package will be incorporated into SWS's Drought Plan Environmental Monitoring Plan.

Content of this paper

The purpose of this document is to set out a package of mitigation measures in relation to the possible impact of abstraction pursuant to a Candover Drought Order. This mitigation package has been developed by SWS with advice from Natural England and the Agency.

In accordance with proposals from the Agency and Natural England, in consultation with the Hampshire & Isle of Wight Wildlife Trust, all mitigations measures will be funded by SWS but delivered by the Hampshire & Isle of Wight Wildlife Trust (subject to formal agreement).

Involving the Hampshire & Isle of Wight Wildlife Trust in the delivery of mitigation measures increases the chances of achieving the stated objectives, as this organisation can deliver work in ways and locations that the SWS, the Agency and Natural cannot and optimises budget and resource efficiencies and economies of scale.

The programme of measures will be funded by SWS whether or not a Candover Drought Order is applied for. SWS has agreed to this on the basis that in-river and catchment restoration measures provided are most effective to mitigate against the potential impacts of a Candover Drought Order. The funding and majority of the works will be delivered by 2024 at the latest.

The Environment Agency agrees that:

[Principles under discussion]

Summary of proposed measures

The aim of the proposed programme of river restoration measures is to:

- improve habitat conditions and increase resilience of the River Itchen and Candover stream community and associated wetland habitat to support ecology during and between low flow events, including events compounded by use of SWS's Candover Drought Order;
- to reduce the risk of Water Framework Directive deterioration caused by abstraction in droughts.

The package consists of:

- A package of in-river mitigation measures, aimed at increasing the resilience of the white-clawed crayfish population in the Upper Itchen tributaries.
- Catchment wide work, aimed at improving habitat and species resilience to drought conditions in the Upper Itchen. The programme of river restoration measures selected for implementation will be informed by reference to the Agency's report "Restoration measures to improve river habitats during low flows" (2016).

In-River Mitigation Measures for the Upper Itchen

Mitigation Measure 1: Increasing the resilience of the white-clawed crayfish population in the Upper Itchen tributaries.

Description: The resilience of the population of white-clawed crayfish in the Upper Itchen tributaries would be improved by increasing the range of the population.

The distribution of white-clawed crayfish in the Cheriton Stream is currently considered to be restricted to an approximate 1km stretch in the lower reach of the Cheriton stream.

Although the reasons for this are not currently known, localised variability in habitat suitability is known to influence crayfish distribution in these tributaries.

It is considered most appropriate to facilitate the natural extension of the crayfish range in the Cheriton Stream if possible, although if that does not prove possible then assistance would be proposed through the introduction of captive breed specimens.

The proposed mitigation will comprise the following actions:

1. Undertake an initial study of the Cheriton Stream to determine:
 - Whether crayfish occur upstream of the currently reported upper limit
 - Assuming restricted, assessment of the likely reasons for this
 - Assessment of the suitability of the habitat upstream to support white-clawed crayfish and identification of potential enhancement measures.
 - Special attention will be paid to identification of or creation of refuges in drought.
2. Implement habitat enhancements identified in point 1 fothe habitat for crayfish in areas of perennial flow in the Cheriton upstream of the currently reported species range.

3. If natural range increase is likely, then monitor. However, if unlikely then conduct a programme of river supplementation of crayfish at suitable locations in the Cheriton Stream from brood stock at Bristol Zoological Gardens taken from local genetic provenance.

Objective: To improve the resilience of the population of white-clawed crayfish in the Upper Itchen tributaries.

Expected results: Extend the range of white-clawed crayfish in the Cheriton Stream this improving the resilience of the population to drought and other pressures.

Timing and duration: A feasibility study to be completed in 2018-2019. Habitat work and species introduction (if required) to be completed by 2024.

Delivery and funding:

SWS will fund the following:

- The initial study of the Cheriton Stream
- Habitat enhancement for crayfish in areas of perennial flow in the Cheriton
- If required, a programme of river supplementation at suitable locations in the Cheriton Stream from brood stock.
- Monitoring of the population (would be covered by the proposed Environmental Monitoring Plan).

The level of funding appropriate to provide mitigation for the Candover Drought Order has been agreed with the Agency. The Hampshire & Isle of Wight Wildlife Trust (subject to formal agreement) will be responsible for delivery the programme of measures once funding has been provided by SWS.

Catchment Mitigation Measures for the Candover

Mitigation Measure 2: Significant increase in support to the Watercress and Winterbournes - Hampshire's Chalk River Headwaters Landscape Partnership Scheme

Objective: To improve habitat and species resilience to drought conditions in the Upper Itchen. Impacted feature(s) at which mitigation is aimed (primarily through building resilience) are:

- The Chalkstream habitat (characterised by macrophyte, macroinvertebrate and fish communities, physical habitat and natural processes)
- White-clawed crayfish population and supporting habitats
- Southern Damselfly population and supporting habitats
- SSSI Wetlands other features
- NERC wetlands

Description: This Heritage Lottery Funded (HLF) Scheme focuses on the headwaters of the Test and Itchen and aims, through a community-focused catchment approach, to improve resilience, restore landscapes and built heritage structures, reverse species declines and reduce water pollution. The Scheme, which is managed by the Hampshire & Isle of Wight Wildlife Trust, has received financial support from a wide range of interested parties including the Agency, Natural England and Southern Water.

The Watercress and Winterbournes HLF Scheme has recently commenced a 2-year development phase and this will be followed by a 3-year implementation phase. Key activities that are of direct relevance to building resilience of the River Test features impacted during drought conditions include:

- Habitat restoration and management
- Natural flood management
- Enhancement of spawning habitat
- Conserving crayfish
- Encouraging good headwater and adjacent land management – guidance, best practice examples, training and small capital grants
- Exemplar sediment & water management at a Watercress Growing site, sharing learning with other growers
- Recruitment and training of local volunteers to carry out; pollution patrol, monitoring of invasive non-native species, repairs to water meadow structures and riverfly monitoring
- Invertebrate, water quality and biodiversity monitoring

Expected results: Measures implemented to improve the river habitat, increased knowledge of habitat quality and the health of key species, enhanced capacity in the local community to sustain long-term improvements in river and water meadow management.

Timing and duration: All work to be completed by 2024.

Funding and delivery: SWS will significantly increase the level of its support to the Watercress and Winterbournes HLF Scheme to further enhance the scale of improvements secured through its implementation phase. The level of funding appropriate to provide mitigation for the Candover Drought Order has been agreed with the Agency. The Hampshire & Isle of Wight Wildlife Trust (subject to formal agreement) will be responsible for delivery of this measure once funding has been provided by SWS.