

Test Surface Water Drought Permit and 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 scope and detail of the mitigation packages for the lower Test for the Test Drought Permit and for the Test Drought Order remain to be agreed.

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 River Test as a result of Southern Water Service's ("SWS") abstraction from the River Test below the hands off flow ("HoF") of 355 MI/d (Test Total Flow) pursuant to a Drought Permit ("**the Test Surface Water Drought Permit**") or abstraction below 265 MI/d (Test Total Flow) pursuant to a Drought Order ("**the Test Surface Water Drought Order**").

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 Environment Agency.

This mitigation package will be incorporated into SWS's Drought Plan Environmental Monitoring Plan and any application for a Test Surface Water Drought Permit or Test Surface Water Drought Order.

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 Test Surface Water Drought Permit and a Test Surface Water 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 following organisations:

- The Agency and Natural England Test and Itchen River Restoration Strategy
- The Winterbournes and Watercress Heritage Lottery Fund Project, led by Hampshire & Isle of Wight Wildlife Trust and Wessex Chalkstreams and Rivers Trust (subject to formal agreement)
- The Test and Itchen Catchment Partnership, led by Hampshire & Isle of Wight Wildlife Trust and Wessex Chalkstreams and Rivers Trust (subject to formal agreement)

Involving a range of organisations in the delivery of mitigation measures increases the chances of achieving the stated objectives, as those bodies can deliver work in ways and locations that the SWS, the Agency and Natural England cannot and optimises budget and resource efficiencies and economies of scale.

The programme of measures will be funded by SWS whether or not a Test Surface Water Drought Permit or 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 some of the potential impacts of a Test Surface Water Drought Permit or Drought Order. The funding and the majority of the works will be delivered by the end of 2024 at the latest.

The 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 Test chalkstream community and associated wetland habitat to support ecology during and between low flow events compounded by the use of SWS Drought Permit/Orders;
- and to reduce the risk of Water Framework Directive deterioration caused by abstraction in droughts.

The package consists of:

- A package of in river restoration for the Test, targeting the waterbodies at risk from SWS's Test Surface Water Drought Permit and Drought Order.
- Catchment wide work, aimed at addressing wider catchment pressures so as to increase resilience to synergistic and compounding effects. 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).

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In-River Mitigation Measures for the River Test

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

Description: River restoration will be carried out on the River Test to improve the resilience of the River Test chalk stream community to low flow conditions.

River restoration opportunities, to mitigate the potential effects of abstraction during the application of the Test Surface Water Drought Permit, are not feasible in the River Test SSSI downstream of the Testwood abstraction (unit 91).

As a result of discussions between SWS, the Agency and Natural England, river restoration activities undertaken by the Hampshire & Isle of Wight Wildlife Trust within the River Test SSSI between Kimbridge and Romsey (unit 90, upstream of the abstraction) have been identified that will contribute to the condition and resilience of classic chalk stream communities throughout the SSSI during low flow conditions. There is also the possibility to undertake some mitigation measures upstream of Kimbridge but downstream of Wherwell. Any mitigation measures between upstream of Kimbridge will need to be clearly distinguishable from potential compensatory works for the Itchen Drought Order.

The Test and Itchen Restoration Strategy identifies specific measures for reaches within this unit. 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). These could include:

- 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:
 - Naturalisation of canalised channels and carriers
 - re-profiling the banks to enable berm features to develop
 - bed level raising (where they have been artificially lowered)
 - restoring connectivity with the floodplain by lowering/removal of embankments.
 - channel narrowing (where they have been artificially widened) by in-channel measures
 - creating a backwater

Objective: To deliver an appropriate level of mitigation within the River Test SSSI to enhance the condition and resilience of the chalk stream communities to low river flows.

Expected results: River restoration activities will improve the physical habitat and natural processes within the targeted reaches of the River Test which will improve the conditions and resilience of the chalk stream communities, as characterised by macrophyte, macroinvertebrate and fish communities.

Timing and duration: The majority of the work to be completed by the end of 2024.

SWS will fund: SWS will fund a range of river restoration measures within River Test SSSI unit 90 to improve chalk stream habitat in the River Test. The level of funding appropriate to provide mitigation for the Test Surface Water Drought Permit and Drought Order has been agreed with the Agency. The Agency is responsible for identifying and delivering the appropriate measures once funding has been provided by SWS.

Mitigation Measure 2: River restoration in the Test to improve conditions for the fish community.

Description: River habitat restoration targeted at salmonid spawning and juvenile life stages, plus Eel and fish pass easement.

River restoration opportunities, to mitigate the potential effects of SWS Testwood abstraction during the application of the drought permit, are not feasible in the River Test SSSI downstream of the Testwood abstraction (unit 91).

As a result of discussions between SWS, the Agency and Natural England, river restoration activities undertaken by the Hampshire & Isle of Wight Wildlife Trust within the River Test SSSI, unit 90 (upstream of the abstraction), have been identified that will contribute to the condition and resilience of fish communities throughout the SSSI during low flow conditions.

The specific measures implemented will be determined based on the requirements of SSSI unit 90 but may include the following:

- scoping and designing measures with the specific intention of improving salmonid and juvenile habitat not already covered by the Test and Itchen River Restoration Strategy.
- Eel and fish pass easement, for example at:
 - Saddlers Mill Fish Pass
 - Romsey Industrial Estate fish pass

Objective: To deliver an appropriate level of mitigation within the River Test SSSI to enhance the condition and resilience of the fish communities to extreme low river flows.

Expected results: River restoration will improve the physical habitat and natural processes for fish communities within SSSI unit 90 of the river and fish pass easement will allow free movement of fish throughout the unit. These measures will improve the conditions for the fish community increasing their resilience to periods of extreme low flows.

Timing and duration: The majority of the works to be completed by the end of 2024.

Funding and delivery: SWS will fund a range of river restoration measures in the Upper Test to improve conditions for the fish community. The level of funding appropriate to provide mitigation for the Test Surface Water Drought Permit and Drought Order has been agreed with the Agency. The Environment Agency is responsible for identifying and delivering the appropriate measures once funding has been provided by SWS.

Mitigation Measure 3: Increasing shading in the River Test downstream of Wherwell or Kimbridge [tbc].

Description: Planting of trees and shrubs alongside the River Test reduces water temperatures which reduces stress on in-river flora and fauna during drought conditions.

Southern chalk streams can reach the upper temperature range of salmonids in summer months and all freshwater wildlife can suffer from increased temperatures. Summer mean and maximum water temperatures are on average 2°C to 3°C lower in shaded rather than open rivers.

The Keeping Rivers Cool Project has identified 64 target sites on the River Test where there is low tree and shrub coverage and which are therefore a priority for action. Some of the most sensitive areas for migratory salmonids are in the lower reaches of the river and are currently not funded.

Tree and shrub planting, to mitigate the potential effects of SWS Testwood abstraction during the application of the drought permit, may not be available in the River Test SSSI downstream of the Testwood abstraction (unit 91).

As a result of discussions between SWS, the Agency and Natural England, river restoration activities undertaken by the Hampshire & Isle of Wight Wildlife Trust within the River Test SSSI, unit 90 (upstream of the abstraction), will increase the resilience of freshwater communities throughout the SSSI during and between low flow events.

The specific location of the target sites will be identified by Hampshire & Isle of Wight Wildlife Trust as part of the Watercress and Winterbournes Heritage Lottery Fund bid.

Objective: To deliver an appropriate level of mitigation within the River Test SSSI to enhance the condition and resilience of the freshwater communities to low river flows.

Expected results: Increasing tree and shrub cover on the Test riverbanks will reduce summer mean and maximum temperatures reducing stress on the freshwater communities in summer drought conditions. This measure will improve the conditions for the chalk stream communities increasing their resilience to periods of extreme summer low flows.

Timing and duration: The majority of the work to be completed by the end of 2024.

Funding and delivery: SWS will fund tree and shrub planting as part of the Keeping Rivers Cool Project. The level of funding appropriate to provide mitigation for the Test Surface Water Drought Permit and Drought Order has been agreed with the Agency. The Hampshire & Isle of Wight Wildlife Trust (subject to formal agreement) will be responsible for delivery this measure once funding has been provided by SWS.

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Catchment Mitigation Measures for the River Test

Mitigation Measure 4: Significant increase in support to the Watercress and Winterbournes - Hampshire's Chalk River Headwaters Landscape Partnership Scheme

Objective: Improve Chalkstream habitat and species (characterised by macrophyte, macroinvertebrate and fish communities, physical habitat and natural processes) resilience to drought conditions in the upper catchment.

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
- 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: The majority of the work to be completed by the end of 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 Test Surface Water Drought Permit and 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.

Mitigation Measure 5: Support to the Test & Itchen Catchment Partnership (T&ICP)

Objective: Identify and address additional issues/pressures that are preventing the achievement of favourable SSSI condition.

Description: Improve habitat and species resilience to drought conditions on areas of the Test catchment outside of the Headwaters covered under the Watercress and Winterbournes HLF Scheme. The T&ICP would be responsible for agreeing where the funds are best directed and who would implement the agreed works (e.g. whether it should be the Hampshire & Isle of Wight Wildlife Trust or the National Trust).

Expected results: Specific works identified and implemented that improve resilience to pressures that are preventing achievement of favourable condition of the River Test SSSI.

Timing and duration: The majority of the work to be completed by the end of 2024.

Funding and delivery: SWS will significantly increase the level of its support to the Test & Itchen Catchment Partnership to further enhance the scale of works aimed at addressing the issues /pressures that are preventing achievement of favourable SSSI condition. The level of funding appropriate to provide mitigation for the Test Surface Water Drought Permit and Drought Order has been agreed with the Agency. The Test & Itchen Catchment Partnership are responsible for delivery of this measure once funding has been provided by SWS.

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