

Chalky Water: River Tas Study

Background:

The River Tas is a tributary of the Yare, in Norfolk. Both are considered to be chalk streams due to the amount of baseflow from the chalk aquifer, however, they flow over mixed geology. The Tas catchment contains some rare examples of lowland valley fen and other priority habitats.

Organisations working in the River Tas catchment have come together to develop a common vision and fund a strategy for the catchment which will identify opportunities for river restoration, natural flood management, restoring biodiversity and landscape connectivity. The organisations on the Steering Group are: Environment Agency, Norfolk Rivers Internal Drainage Board, Norfolk FWAG, Norfolk Wildlife Trust, Natural England and Norfolk Rivers Trust.



The Tas catchment is split into four waterbodies, 3 of which are considered to be chalk streams (listed below). The WFD status and hydrology compliance category is as follows, this information is available at [England | Catchment Data Explorer](#):

Waterbody name	Waterbody ID	Overall WFD status (2019)	WFD elements less than good
Tas (Head to Tasburgh)	GB105034045730	Moderate	Fish, Dissolved Oxygen
Tas (Tasburgh to R. Yare)	GB105034051230	Moderate	Fish, Phosphate
Tributary of Tas (Flordon Beck)	GB105034050950	Moderate	Fish, Phosphate

Note. All of these waterbodies are assessed as having a hydrological regime that supports good. The Hempnall Beck GB105034045720 is not considered to be a chalk stream.

There are 4 Valley Fens within the Catchment (fen habitats dependant on chalk groundwater): Flordon Common SAC SSSI, Aslaction Parish Land SSSI, Shotesham Common SSSI, and Forngett Meadows SSSI, with 51 County Wildlife Sites 17 with fen/marsh water dependant habitats.

Project brief:

TASK 1, hydrological situation:

- Review the hydrological pressures in the catchment, using the EA's 2017 Yare & Tas Catchment Report and focus on the 3 chalk waterbodies in the Tas catchment (Tas (Head to Tasburgh) GB105034045730, Tas (Tasburgh to R. Yare) GB105034051230, Tributary of Tas (Flordon Beck) GB105034050950).
- Identify areas within the catchment which are failing WFD status or other hydrological and ecological indicators and analyse to identify any trends, reasons, identifiers.
- Identify abstraction points and amounts and discuss whether this could be having an adverse effect on the catchment and valley fens or if we are seeing natural drying out?
- Identify any trends in water resources within the catchment
- Ecological assessment of the waterbody to assess if the hydrological thresholds used in the 2017 report were correct i.e. that no species have become locally extinct due to abstraction, and recommendations for new thresholds.
- One section of the report should focus on is Flordon Meadows SSSI, looking at the potential impacts of drought in order to develop a more detailed hydrological picture of this area, including seepage systems, inputs and any recommendations around work which could be undertaken to make this area more resilient.

TASK 2, opportunities mapping/prioritisation:

- Identify areas where land drainage has been most emphatically used and where possible options to reverse the impacts of drainage systems could be explored. As part of this review topography to highlight areas where water storage for aquifer recharge could be most beneficial.
- Identify areas where there is the poorest morphology and where the river is over deepened, as well as areas where landscape connectivity is most well connected and most poorly disconnected.
- Identify areas and produce a GIS map showing where we could work with natural processes and restore more natural hydrology using natural flood management techniques e.g. reducing drainage, upper catchment water storage, run-off attenuation features, and areas of impeded soil permeability.
- Summarise this to highlight a prioritised list of areas for improvement, which would benefit the catchments hydrological weaknesses and where potential multiple benefits and synergies could be exploited through biodiversity restoration and landscape connectivity opportunities.

Outputs

By 31 March 2023 produce a final report including:

- Summary and conclusions on Task 1 & 2
- a section which effectively reproduces section 6 of the EA's 2017 Yare & Tas Catchment Report, which used the Northern East Anglian Chalk (NEAC) model.
- Recommendations for any further work
- GIS outputs with ArcGIS shapefiles supporting report findings, as well as layers detailing;
 - Land which is intensively drained and potential opportunities
 - Areas of poor river morphology
 - Priority areas to target working with natural processes

Alongside this it is expected that the successful contractor will attend a half day project set up meeting and a further half day meeting to discuss comments on the draft version of the report, both in Norwich.

Any questions on this tender to be submitted to Amy Prendergast amy.prendergast@environment-agency.gov.uk cc: Matthew Philpot matthew@wlma.org.uk by 31/11/22 @ 1200hrs. Deadline for quotes 15/12/22. Tender Award 31/12/22.

Appendix A

Water Resources Compliance table

EFI = Environmental Flow Indicator

	Flow adequate to support GES	Flow not adequate to support GES: Low to Moderate Confidence (uncertain)		Not adequate to support GES: High Confidence (quite certain)
Abstraction Sensitivity Band	Compliant with EFI	Non-compliant Band 1	Non-compliant Band 2	Non-compliant Band 3
		(up to 25% below the EFI at Q95)	(25-50% below the EFI at Q95)	(more than 50% below the EFI at Q95)
ASB3. high sensitivity	<10%	<35%	<60%	>60%
ASB2. moderate sensitivity	<15%	<40%	<65%	>65%
ASB1. low sensitivity	<20%	<45%	<70%	>70%

Table 3: The percentage difference from natural flows for each compliance band and how this relates to supporting good ecological status (GES). Percentages given are the range below natural flow for the relevant abstraction sensitivity band.