

# WILD TROUT TRUST

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## **Falconers – Adur tributary stream**



**Advisory Visit August 2025**

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## **Key Findings:**

- **At the time of the site visit in August 2025 the stream at Falconers was dry.**
- **Ephemeral streams can be very important as spawning and nursery sites for trout, provided they have reliable flow from late autumn through winter to the following midsummer.**
- **Any structures that impact on both upstream access for trout on spawning migrations, or the downstream redistribution of parr, or migration of smolts during the spring, are potentially issues that need to be identified and if possible addressed.**
- **The habitat potential, driven by stream shape and structure at Falconers may well be sufficient to sustain trout spawning but could be improved.**
- **The key action required is an evaluation of the man-made structures that lie between Falconers and downstream of the Hammer Pond at Knepp, where sea trout are known to reach annually.**

## 1. Introduction

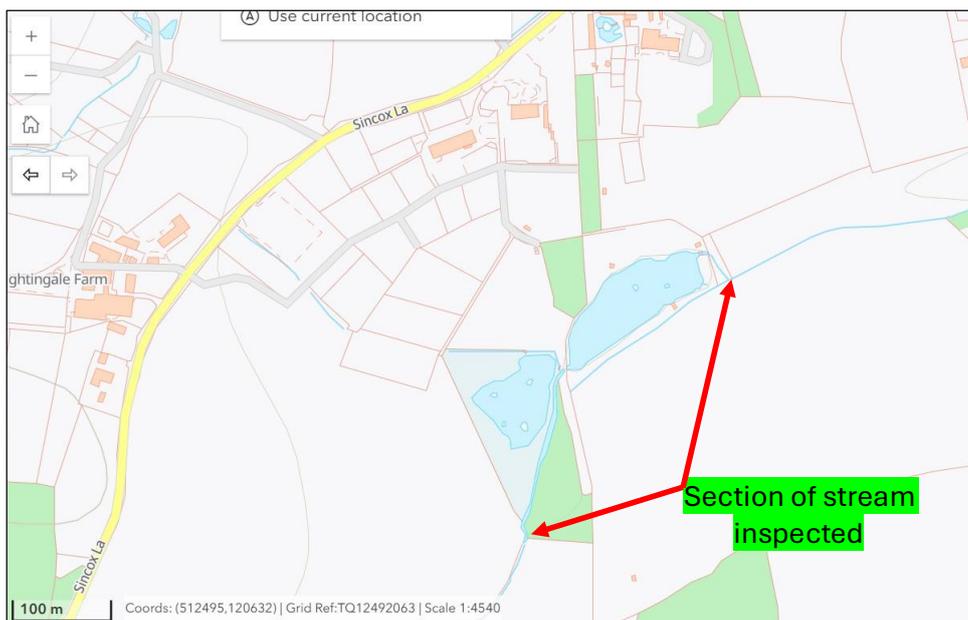
This report is the output of a Wild Trout Trust advisory visit undertaken on a 500m section of ephemeral stream that feeds into the River Adur in West Sussex at Falconers Farm. The reach inspected started at National Grid reference TQ 124207 to TQ 121204.

The advisory visit was undertaken at the request of the stream landowner at Falconers near Shipley.

The landowner has observed what are thought to be large sea trout, *Salmo trutta*, moving through the stream during autumn/winter and he is keen to explore options for improving habitat quality and connectivity.

Comments in this report are based on observations on the day of the site visit and discussions with the landowner.

Throughout the report, normal convention is followed with respect to bank identification i.e. banks are designated Left Bank (LB) or Right Bank (RB) whilst looking downstream.



Map 1. The section of stream inspected

## 2. Catchment overview

The Adur system is one of three major catchments that drain the southern half of the Weald, sharing similar physical and chemical characteristics to the Arun to the west and the Sussex Ouse to the east.

The majority of the Adur catchment drains a relatively impermeable geology of Gault and Weald clay. As such, many of the small streams that feed into the upper parts of the catchment are best described as small, slightly acidic spate streams and are characterised by deeply incised and heavily modified channels. Many of these streams were historically modified for milling and for early iron works, where all the materials necessary to drive this industry were locally available. Many on-line hammer ponds were created to drive large furnace bellows for smelting and huge forge hammers for working the iron.

To compound the issues associated with damming these streams, many reaches have also been straightened and dredged for flood defence purposes. Outcrops of naturally occurring stream-bed gravels, made up mainly of chips of eroded iron and sandstone, are comparatively rare. Occasional seams of flint and chert can be found, particularly on the small groundwater-fed tributaries draining the foot of the South Downs but finding Sussex streams rich in gravel deposits, that are suitable for trout spawning, is comparatively rare.

It is surprising therefore that a species like trout, both resident brown and fully migratory sea trout, have managed not only to survive but in many cases thrive in many of these heavily modified systems, where access to and from the sea is essential to maintain a viable and sustainable population. The fact that sea trout can run up and utilise many of these Sussex streams is extraordinary, given the physical barriers that have been in place for hundreds, if not thousands of years.

At the time of the site visit in August 2025, this tributary was virtually dry, following an exceptionally dry spring and early summer. It is highly likely that these ephemeral Sussex streams are entirely dependent on the fully migratory component of the population to ensure continued survival. This may be one reason why Sussex sea trout are just as likely to be cock as hen fish, which is comparatively unusual, as small resident cock browns often fulfil this role on many other systems where perennial flow is guaranteed.

More information about sea trout ecology can be found on our website here: <https://www.wildtrout.org/content/sea-trout>



Photo 1. A spectacular River Adur hen sea trout, captured during an EA fishery survey at Shermanbury. Sussex sea trout have the largest average size of any sea trout found in the UK.

### **3. Potential for trout**

The Wild Trout Trust cannot find any records, survey data, or even anecdotal information about trout populating this headwater stream. A simple scan of the map for the catchment indicate that this section of stream lies upstream of the ancient Hammer Pond located on the nearby Knepp Estate.

The fact that a large silver fish has been spotted at Falconers suggests that access is possible. However, the presence of large trout seeking to penetrate annually into these upper reaches of the catchment might only be feasible following exceptionally high flow conditions in the autumn/early winter.

We know that sea trout on spawning migrations move up into the reach located on the Knepp Estate. We have also had reports of them utilising habitat on the main stem of the Adur above Knepp in the Coolham area. Before embarking on actions designed to improve opportunities for trout on the Falconers reach, it is highly recommended to walk the stream from its confluence with the main stem of the Adur at Knepp (where we are confident sea trout can access most seasons) right up to the reach at Falconers. From the map it appears the stream is crossed by three road bridges at Hooklands Lane, Penbridge Lane and Swallows lane, with the ancient, on-line Hammer Pond located between the latter two. None of these sites have been evaluated by the WTT.

Our experience of road crossings of small streams does raise the question of potentially more barriers to free migration, along with the water level control structure on the dam of the Hammer Pond. Many streams have been put into culvert tubes, sometimes perched above downstream bed levels, causing downstream bed erosion and over time resulting in a distinct step in water and bed levels. Problems are often compounded by the smooth and uniform nature of the culvert itself, so any fish able to jump up and into the downstream end of the culvert must then negotiate elevated fluming flow velocities running through the tube. We have seen firsthand how fish continually battle to get up and into these culverts, only to become exhausted and fall back – see Photo 2. With any luck, all the bridges will be clear-span bridges with no elevated erosion aprons or tubes but this needs to be confirmed via a site inspection.

It is sometimes too easy to write off all these structures as “impassable” for fish, however, sea trout continue to amaze us and in a wet year, they are sometimes able to negotiate what to many might seem impossible barriers. That said, if we are going to see populations of wild trout thrive, then we need to do everything we can to make sure these fish have the best possible chance of penetrating up into headwaters, where spawning and nursery habitat is often readily available.

Taking some photos of potentially problematic structures and sharing them with the WTT might enable us to express a view as to whether a problem exists or not. Low-cost modification to structures to help ease fish migration is often all that’s needed to facilitate reliable access for trout.



Photo 2. An old road culvert on the Adur at Wineham (now bypassed) and an exhausted sea trout that failed to make it past the barrier. Do any of the road crossings downstream of Falconers look like this?

#### **4. Habitat assessment.**

Undertaking an assessment of the suitability of habitat for trout in a dry channel is challenging. However, should sea trout find their way up to the reach at Falconers, there is every reason to be optimistic that the reach can contribute to fulfilment of the life cycle. Currently the channel is only lightly maintained, containing plenty of cover and opportunities for the development of classic stream features, such as pools, riffles and glides.

For a stream channel in Sussex to be valuable for trout recruitment, it does require perennial flow. It is not known how often the reach at Falconers runs dry, but we do know that some ephemeral streams can play an important role in trout recruitment, albeit with the requirement that parr vacate these reaches during the summer and early autumn prior to flow dropping away.

The key to having a reach that could contribute towards Adur trout populations is good access and complex habitat. The stream currently has some good examples of a naturally fallen woody material being left *in situ*. This is important because both large woody material (fallen trees/branches; photo 3) and coarse woody material (brushwood; photo 4), contribute towards driving geomorphological processes. The large chunks of fallen wood, including big branches encourage bed and bank scour, and drive the formation of physical features necessary for a healthy ecology. The coarse woody material can help to trap fine sediment and provides food for invertebrates, and essential cover for small fish.



Photo 3. Large woody material straddling the stream channel. It is critically important to leave as much woody material in the channel as possible.

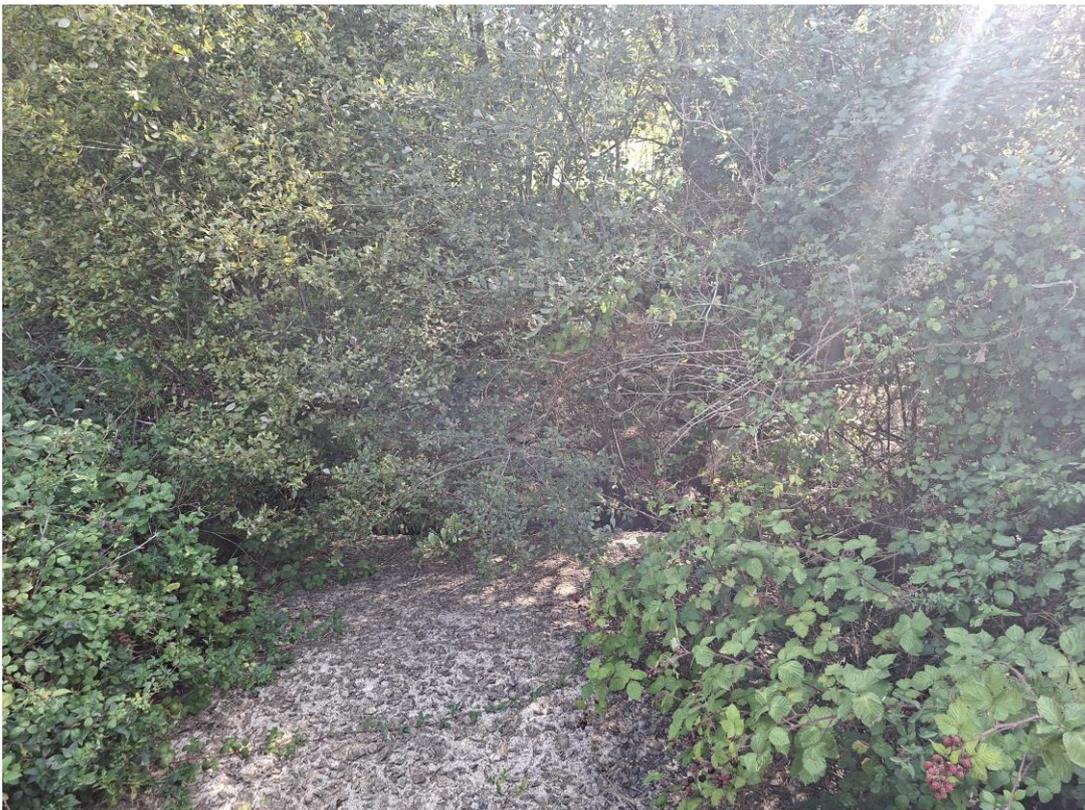


Photo 4. Fallen brushwood and scruffy, well vegetated margins will provide essential habitat once flow is restored.

Some outcrops of streambed gravels were observed (cover photo) and these may be sufficiently deep for trout to cut spawning redds. The example in the photo suggests the bed is quite flat and ideally any areas where seams of gravel form

into up-ramps (pool tails for example) tend to be utilised preferentially by spawning trout over flat-bottomed sections.

The key to providing high quality habitat for trout on small streams like this is providing the diverse in-channel physical form that supports the full range of holding and spawning habitat. In essence, that looks like deeper, well covered pools for adult trout and shallow, complex glide and riffle habitat for both fry and parr, also with complex woody cover.

An up-ramp of clean, loose, angular gravel (20-40mm) is required for spawning and if it's absent it can be imported to create valuable spawning sites. That investment is only recommended if you are certain that adult sea trout are regularly making it up to the reach. This might not be every year, but the investment isn't worth considering unless the reach is viable more often than not. The WTT can provide advice on design and implementation of any potential habitat improvement project.

## **5.0 Conclusions**

The stream at Falconers may well be an important spawning and nursery stream for sea trout. Before embarking on any work to further improve habitat opportunities for trout, it is recommended to carry out a walk-over of the reach running down from Falconers Farm to the Hammer Pond at Knepp and take photographs of any structures, if possible with some assessment of the difference in any changes in upstream and downstream water levels (head loss). Armed with this information, it might be possible for the WTT to provide a view on fish-passage potential of sites and structures on the back of good photographic information.

It is also understood that both the Sussex Wildlife Trust and the Knepp Estate have strong ambitions for wild beaver releases locally. The impact of complex beaver dams on the ability of sea trout smolts to be able to quickly and easily escape from nursery streams has yet to be properly evaluated. The WTT has concerns that downstream migration may at best be delayed, and in the absence of any springtime lift in water levels, pose a significant threat to free smolt migration. Therefore, the future viability of some of these small Adur tributaries as productive spawning and nursery streams for fully migratory trout is uncertain.

The questions that need to be answered prior to investing in habitat improvements at Falconers are:

- Can sea trout easily negotiate both the outlet and inlet structures on the Hammer Pond at Knepp?
- If not, does the estate have any plans in place to improve fish migration at this site?
- Do any of the road crossings upstream of the Hammer pond pose an issue for migrating fish?
- Are there any online ponds that might block migration, or potentially threaten to elevate stream water temperatures?

If it is deemed possible for sea trout to be able to regularly reach the Falconers reach, then embarking on a plan to improve habitat for trout is something the WTT can potentially help with.

## **6.0 Acknowledgement**

The Wild Trout Trust would like to thank the Environment Agency for their continued support of the advisory visit service, in part funded through monies from rod licence sales. The advice and recommendations in this report are based solely on the expert and impartial view of WTT's conservation team.

## **7.0 Disclaimer**

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*Legal permissions must be sought before commencing work on site. These are not limited to landowner permissions but will also involve regulatory authorities such as the Environment Agency and Natural England – and any other relevant bodies or stakeholders. Alongside permissions, risk assessment and adhering to health and safety legislation and guidance is also an essential component of any interventions or activities in and around your river.*