

Candover habitat improvement monitoring results

The local Environment Agency Fisheries and Biodiversity team have been working with the Wild Trout Trust to enhance wild brown trout habitat on the upper reaches of the Candover Brook since 2011. The reaches in question were particularly prone to heavy bankside poaching (trampling) by cattle and had very little vegetation cover and variation in channel form, meaning there was virtually no available cover for adult trout. The two principal enhancement techniques were bankside fencing and the pinning of large woody debris (live & dead tree trunks) into the channel.

The original design for fish monitoring was to have three surveys: one on the enhanced reach, before and after works and two untreated control sites (one immediately upstream of the treatment site, one a short distance downstream), to reflect natural variation in trout abundance (long term monitoring shows that trout abundance on the Candover can vary considerably in response to flow conditions). Monitoring progressed as planned in 2011 and 2012 but in autumn 2012, after the annual fish survey had been conducted, Control site 1 was fenced and had large woody debris pinned into the channel, ceasing to be a control and becoming a second treatment site.

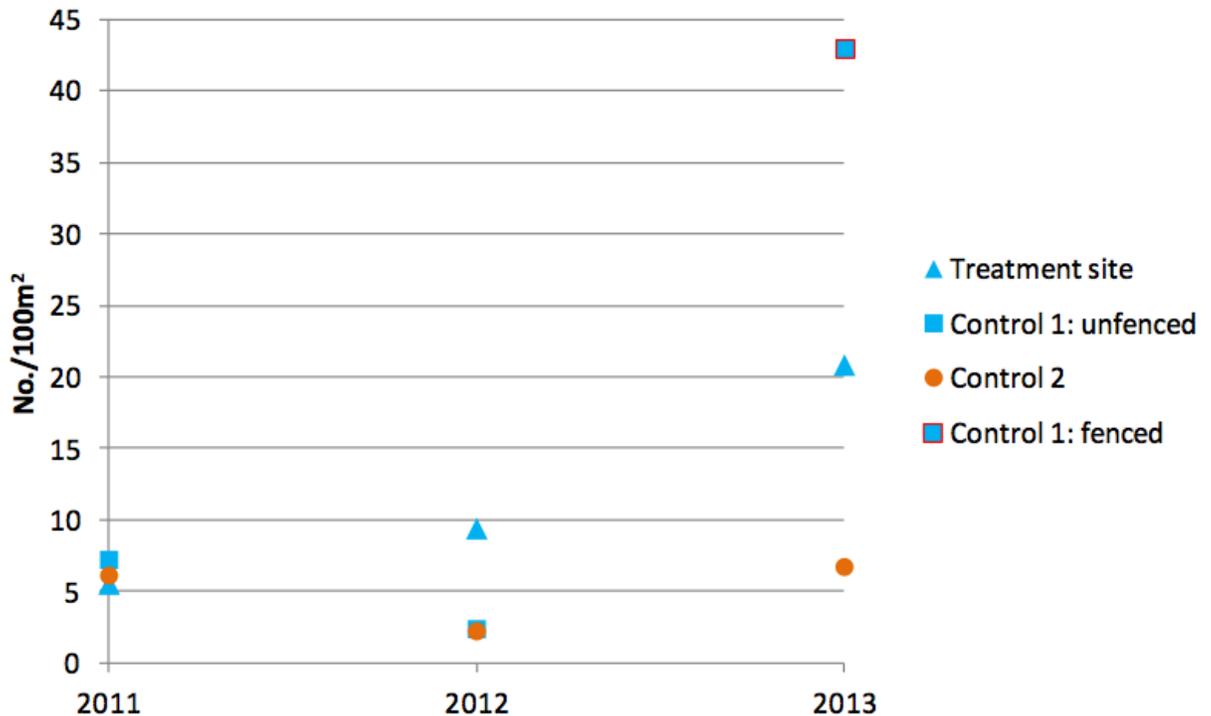


Chart Itchen 13: Candover habitat enhancement project trout densities

Chart Itchen 13 shows wild brown trout density at each site in 2011, 2012 and 2013, based on single run electric fishing over 100m of channel.

Chart Itchen 13 demonstrates that in 2011, before any trout habitat enhancement had commenced trout abundance at both control sites and at the proposed treatment site was similar at between 5 and 7 individuals per 100m². In 2012, the effects of the enhancement works at the treatment site were apparent in that year's survey data, with approximately a halving of trout abundance at both control sites and close to a doubling at the treatment site.

The 2013 survey data indicates a more than doubling of trout abundance at the remaining control site (Control 2), between 2012 and 2013 to a value similar to that recorded in 2011. However, abundance at this site remains low compared to less impacted sites on the same stream.

Following the enhancement of Control 1 in late 2012, trout abundance increased more than 17- fold: showing a far greater response to the improvement works than to natural variation. Similarly at the original treatment site, trout abundance more than doubled between 2012 and 2013, probably reflecting further maturation and colonisation of the enhancement measures.

The remarkable increase in trout abundance at Control 1 is a typical response to the fencing of chalkstream headwaters chronically impacted by livestock poaching. The initial major change in the habitat is prolific growth of marginal watercress, producing a fast, sinuous open channel, relatively deep compared to the unfenced one. As a result, there is a rapid increase in cover available for trout, boosting the reach carrying capacity significantly. It's worth noting that even though the total number of trout caught in this newly fenced reach increased from fourteen in 2012 to forty in 2013, in the same period the encroaching watercress reduced the total area available as fish habitat from 596m² to 93m². This is a clear demonstration of the general principal that a narrow channel with excellent habitat quality will tend to support a greater abundance of fish than the same length of wide channel with poor habitat.

Image showing downstream from an unfenced area towards a fenced area.



Image showing upstream into a fenced area

