Dr Nick Giles & Associates
50 Lake Road
Verwood
Dorset
BH31 6BX

Wild trout habitat specialists
Design & Build restoration projects

Consultants: Fisheries, Conservation, Freshwater & Wetland Ecology.

Tel 01202 824245 Fax 01202 828056
Email gilesassociates@btopenworld.com Web site www.nickgilesassociates.co.uk

Report on Wild Trout Trust Advisory Visit to the upper River Uck, East Sussex. December 13th 2004

Summary points

1. Nick Giles walked the Home Farm water on December 13th 2004 in the good company of Sir Freddy Sowery. The farm includes parcels of High Weald woodland and streams which the family are managing positively for conservation. At this upper end of the Uck catchment, there are probably sparse populations of wild brown trout and migratory sea trout from the Sussex Ouse may also penetrate these headwaters, if their passage is clear.
2. The streams run through Wealden sandstones and clays and are generally bounded by mixed woodland which is under coppice / standard tree management. The Sussex Wildlife Trust have advised that the shaded stream banks have a useful varied damp flora including various ferns, liverworts and mosses and so sky-lighting to improve bank vegetation and in-stream algal and weed bed growth has to be tempered with the maintenance of shaded areas. As usual, a mixed mosaic of light and shade will promote habitat and species diversity. Too much shading will lead to a die-back of the bank side sward, bank erosion and siltation of the channels whilst too much strong sunlight may dry out too many damp patches. Where the stream beds are better-lit there are beds of starwort. The key adverse effects of over-shading include:
    - Bank side grasses are shaded-out, producing erosion of banks which are no longer bound by grass roots.
    - Silt washed in from the banks is added to by large amounts of dead leaves falling from the trees each autumn – this leads to silting of the channels.
    - Aquatic plants including marginal rushes and reeds, in-stream *Callitriche* beds and algae coating stone surfaces are all suppressed.
    - This leads directly to little food for aquatic invertebrates and diminished insect and other invertebrate populations.
    - Few invertebrates mean that there is little food for wild brown trout.

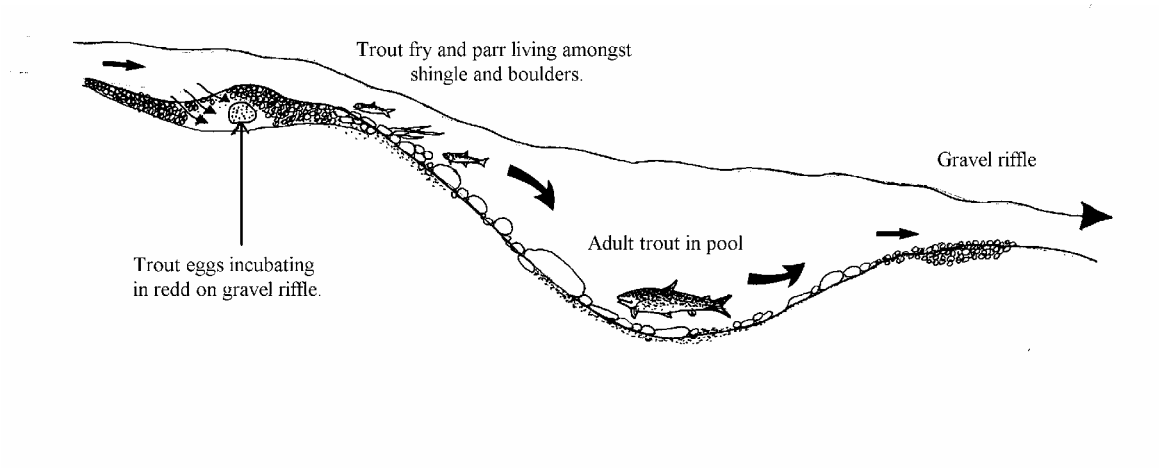
3. Brief pond net samples of invertebrates in the streams revealed stonefly, mayfly and caddis fly nymphs and larvae – good indicators of clean water. Shrimps were generally abundant but were largely replaced by water lice (*Asellus*) in the vicinity of the pond in Wyatt Wood. Whilst *Asellus* is often an indicator of stream enrichment, in this instance its presence is probably more a refection of the suitable habitat created for this species by the presence of the pond. Both streams walked suffered to varying degrees from iron ochre staining. Ferrous hydroxide and associated bacterial growths are the result of the naturally iron-rich sandstone, the oxidation of the ferrous salts reducing dissolved oxygen levels in the streams. The iron ochre is non-toxic but does produce fine silt which tends to clog stream beds and reduce the incubation success of trout eggs. Where iron-rich seepages occur, it is likely that both dissolved oxygen concentrations and pH will be lowered. It is likely that these streams can only support low densities of wild trout.
4. The pond in Wyatt Wood has been colonized by tench which have traveled downstream with flood waters. The pond has an abundant invertebrate community including snails, pond olive mayflies, *Asellus*, shrimps, damsel fly nymphs and corixids. This could potentially support a brown trout stock, especially if the tench stock abundance is reduced periodically. The Sowery family may wish to stock brown trout in the pond and to fish it in future. To this end, it is recommended that:
    - Excess tench are netted out on a three or four-yearly cycle and sold; this will help to keep the pond clear and may generate sufficient funds to purchase some stock trout.
    - Triploid brown trout (unable to interbreed with any wild trout in the system) are stocked – around 60 of 9-12 inches in length, introduced after Easter.
    - The trout could be fished catch-and-release or a bag limit could be introduced, supplementing the stock later in the season, if necessary.
    - Environment Agency consent will be required, prior to any fish stocking and it is possible that the Agency may be able to supply a small number of Uck provenance wild trout to introduce into the pond. It is quite likely that these fish will survive and run the gill upstream to spawn each winter. These wild trout would be conserved, rather than being killed when caught by anglers.
    - The small stream above the pond would provide enough suitable habitat to support a small-scale wild brown trout population.

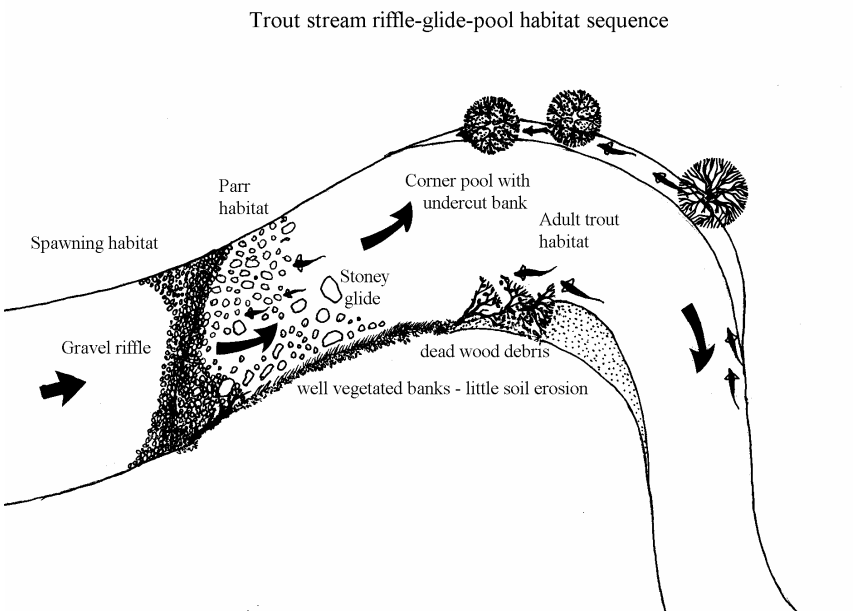
In summary, these small High Weald streams and pools have the potential to support wild brown and sea trout in modest numbers and to provide trout fishing for triploid browns in pools where the water quality and food supply are adequate. Further downstream the Sussex Ouse has a run of sea trout including numbers of large fish and these big old trout run the system over a number of years, spawning each winter and then often making it back to sea as kelts. The improvement of headwater habitats which sea trout can access can only be good for the overall stock. Whether sea trout manage to get above Uckfield is unknown at the time of writing this report.

Background notes © Dr Nick Giles.

Wild trout habitat

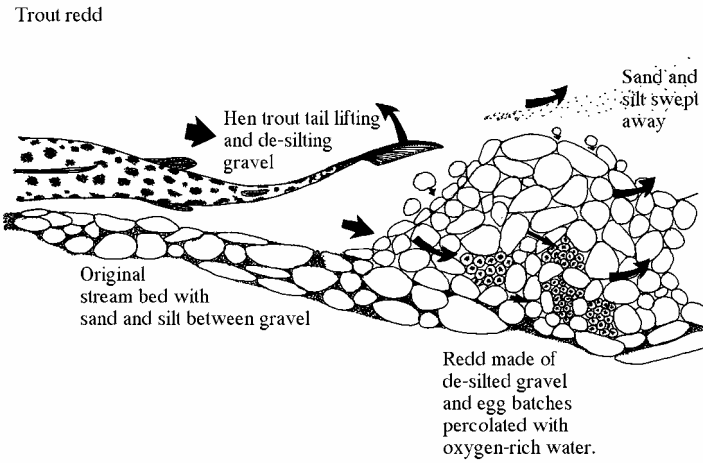
Brown trout need good, clean water flows, relatively silt-free gravel for spawning, abundant cover from predators and a nice varied sequence of shallow riffles, weedy glides and deeper pools. The diagrams below show how a short section of good habitat can provide everything a wild trout needs throughout its life cycle:





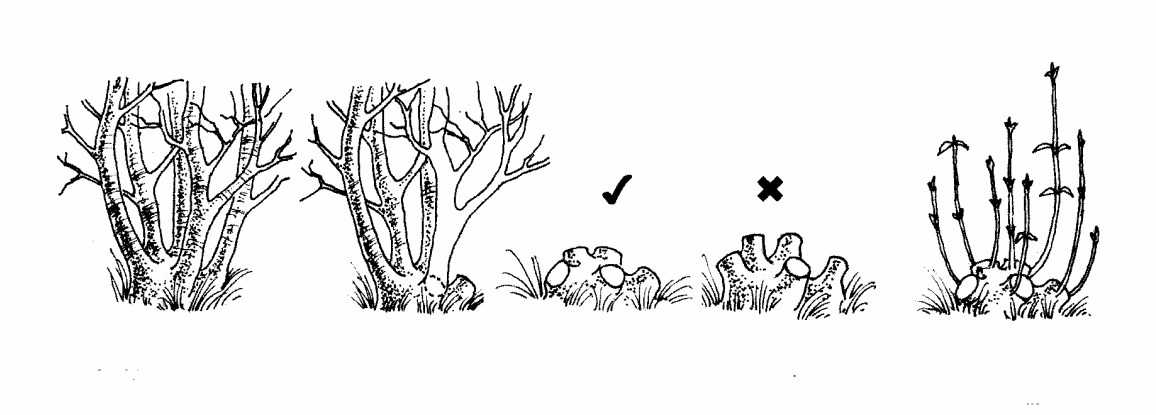
Siltation of spawning gravels

The wild trout stock is certainly being adversely affected by a river bed which is extremely silty and compacted, providing a poor environment for incubating fish eggs. This can be helped by a thorough water-jetting of suitable areas of gravel early each autumn, before the trout spawn in early winter. These cleaned areas will also be of value to bullheads and lampreys which spawn in the spring. Fly life will also be boosted by the opening-up of the formerly clogged river bed which will be re-colonised by a wide range of aquatic invertebrates. Larger flints uncovered during the water-jetting will be used by bullheads for breeding and cover and by trout fry and parr for cover. Sediments disturbed during the jetting process will re-deposit downstream in areas such as inner bends where they will produce habitats for various burrowing invertebrates (eg *Ephemera* mayfly nymphs) and for lamprey larvae.



Over-shading

Good coppicing practice:



Old growth Correct coppice Spurs too long Useful re-growth