WILD TROUT TRUST

The Chalkstream Habitat Manual

Environment Agency

NATURAL ENGLAND

THE RIVER RESTORATION CENTRE

www.wildtrout.org

Introduction

Acknowledgements

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The Wild Trout Trust would like to thank the following individuals who made up the project steering group:

- Allan Frake and Lawrence Talks (Environment Agency)
- Simon Johnson, Tim Jacklin and Andy Thomas (Wild Trout Trust)
- Martin Janes (River Restoration Centre)

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Introduction to the manual

Following on from the successful 'Wild Trout Survival Guide', the Wild Trout Trust identified a need for more detailed and practical guidance on habitat enhancement techniques specific to river types, in this case, chalkstreams.

After considerable discussion, the Trust has adopted a web-based Portable Document Format (PDF), with guidance arranged in easy to read sections.

This approach has a number of advantages:

- information can be viewed on-line, (*requires* Adobe Acrobat Reader®, which can be downloaded free from http://www.adobe.com/products/acrobat/readstep2_allversions.html), or saved to hard disc as required (free of charge);
- it can be emailed to other organisations or individuals, or printed out as a hard copy for use on site;
- it can be easily updated and reviewed in line with new legislation or practice.

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How to use the PDFs

The information contained within each section is aimed at practitioners. The Trust receive large numbers of calls and emails from a wide range of individuals and organisations, seeking detailed advice on any number of 'how to' issues: How do I install a groyne? Which way should it face? How can I improve spawning for trout? We have attempted to answer these and many other questions in these PDF sheets.

Each section is a stand alone document, cross-referenced to others where appropriate. For ease of use we have used ‘Bookmarks’ (which appear as an icon or tab on the left side of the PDF viewer window). By clicking on them, these enable the reader to jump to any section. Photographs and explanatory diagrams are included to illustrate points made in the narrative. Plan views of a 'typical' river have been included, both to show the range of problems often encountered and possible ways of resolving them. Links to useful websites, contacts, and further reading are provided.

Whilst these guidelines are very practically based it is important to realise that there are a number of over-arching river processes that help to shape chalk rivers. Many of these are covered in detail in the Trust's 'Wild Trout Survival Guide'. Those that particularly affect chalk rivers include the large number of sluices and impoundments erected over time for milling, water meadow drowning, and fisheries purposes. Their impact on chalk river habitat is very significant and must never be overlooked when planning any enhancement or restoration scheme.

Even more fundamentally, it is imperative that at all times we should work with natural river processes, rather than against them. Careful observation of your river, and consultation with professional ecologists and fisheries specialists (including of course the Wild Trout Trust) will inform future decisions. In some cases, the best approach to restoration may be to do nothing, be patient and let the river naturally repair past damage. However, in many instances, affirmative action is required to assist natural recovery.

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List of sections

Legal considerations

In a complex world, there are inevitably a number of legislative considerations for any project. This section highlights key areas that must be addressed at the planning stage, including land drainage consenting, and species protection.

Health and Safety is everyone's responsibility. No project should be undertaken without due H&S planning and the development of appropriate risk assessments. The main areas that must be covered by this planning and assessment are examined.

Restoring over-wide channels

Over-wide channels are a feature of many chalkstreams. They are often a consequence of excessive dredging in the past, or due to a reduction in river flow as a result of abstraction or climate change. The benefits of channel narrowing are examined in this section, along with a range of techniques proven to be effective. The benefits and drawbacks of the techniques are examined.

Instream structures

Chalkstreams can often lack feature, with a uniformity of channel form offering poor habitat for trout and other species. The use of simple instream structures can be used to improve habitat diversity and availability. This section examines the use of naturally occurring materials to create such structures, with advantages of each technique examined.

Gravel rehabilitation/restoration

The concept of the 'habitat bottleneck' has become well understood with respect to trout population dynamics. All too often, bottlenecks in chalkstreams occur at the spawning habitat lifestage. By careful restoration and rehabilitation of existing gravel spawning areas, and the creation of additional sections, spawning success can often be improved. This can allow a reduction in the intensity of stocking with fish farm reared trout, and an increase in wild trout.

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Tree management

Trees have a major impact on the morphology and ecology of chalkstreams. The balance of light and shade cast by their canopies influences the growth of instream and marginal vegetation, whilst their roots provide protection from erosion and cover for trout. Careful management of riparian trees and shrubs can therefore be used to optimise habitat conditions for trout. This section examines the range of management techniques available, and their efficacy.

Protecting marginal habitat

Damage to marginal habitat, particularly from grazing agricultural stock, can result in increased rates of erosion, often to the detriment of chalkstream habitat. Controlling grazing by the use of fencing can reduce this damage significantly.

Influencing land management

Much of the management of chalkstreams focuses on the channel and adjacent banks. However, many of the processes that drive the formation of the channel and its ecology take place in the wider catchment. This section identifies the most important of these processes, and details mechanisms to address a range of potentially damaging impacts that can arise on a catchment scale.

Management of riparian and instream vegetation

Weed cutting, both instream and bankside, is a long-standing component of chalkstream management. It is also a hugely controversial one. This section examines the benefits and potential pitfalls of weedcutting, and offers a balanced view of its place in the fisheries management toolbox

Use of Large Woody Debris (LWD)

For a long time, large branches and trees that fell into chalkstreams were regarded as little more than a nuisance, and were routinely removed. However, the contemporary view of LWD has changed dramatically. There is clear evidence that LWD is a key component of chalkstream ecology and as such, should be more carefully and sympathetically managed. Guidance is provided as to the most effective way of achieving optimum benefit to trout habitat from LWD.

Erosion control

Erosion is a natural and necessary part of riverine processes. Without it, there would be no pools and gravel shallows, no deep runs or silty margins. However, at times, erosion can be excessive, generally due to the impact of mans' activities. It may then be necessary to reduce the rate of erosion to something nearer to a natural level. This section examines when it may be appropriate to control the rate of erosion, and how best to do so.

Case study: The River Glaven:

The Wild Trout Trust is proud of the high level of uptake of its advice by recipients of Advisory Visits. One of the most outstanding projects undertaken by volunteers, with the assistance of the Trust, was the enhancement of the River Glaven at Letheringsett, Norfolk. The case study chronicles the planning, design and implementation of this scheme, with successes and failures clearly identified. The high quality of the work, and its benefits to the river's ecology were recognised by the award of first prize in the amateur category to the River Glaven Conservation Group at the 2007 Wild Trout Trust conservation awards.

Further information

This guide does not claim to be comprehensive. Despite the detailed advice it provides on chalkstream management, there will inevitably be times when more information is required. This section provides a wide range of web-based links, written text and contacts to other groups that the Wild Trout Trust believes will be of benefit.

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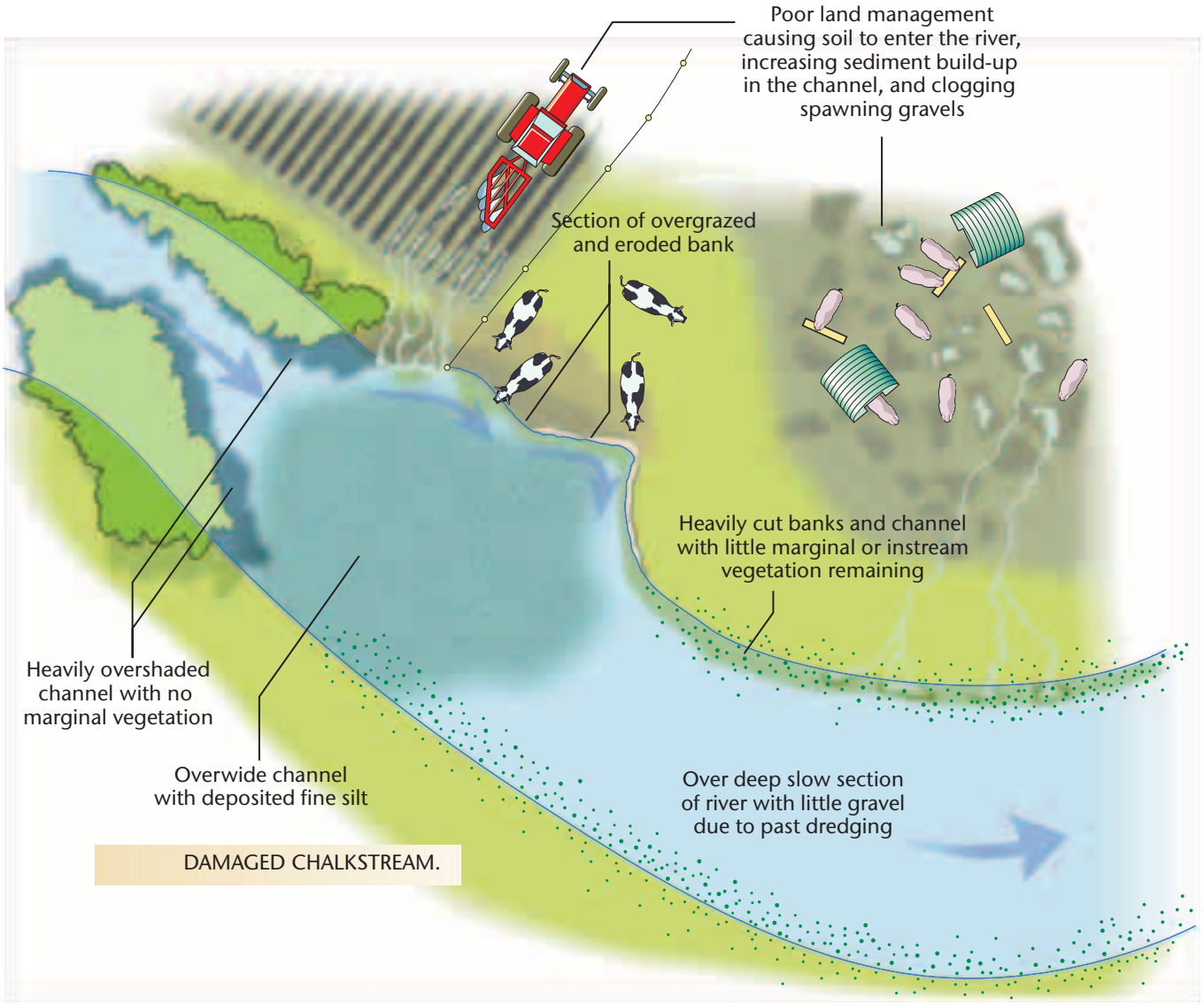

DAMAGED CHALKSTREAM.

Feedback

Feedback is both useful and informative. Over time, the Trust hopes to improve and develop the content of the PDF's. Inevitably, we won't get it right first time. Your input could help us to improve and update their content. Comments can be sent to projects@wildtrout.org

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