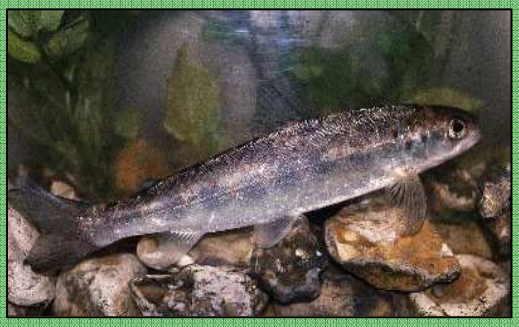
Advice On Wildlife Friendly Weed Clearance & Vegetation Management In Watercourses

SUSSEX WILDLIFE TRUST

Introduction

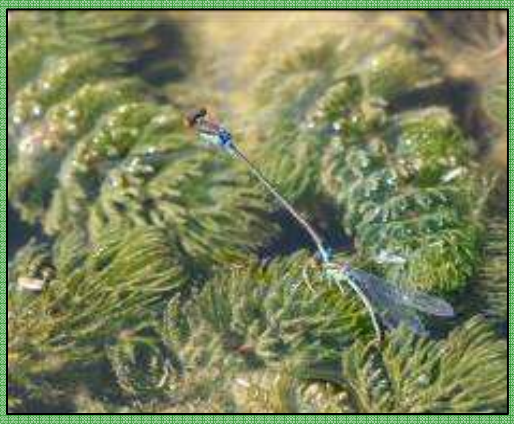
Managing vegetation in watercourses is often essential to maintain wet fences, functioning drainage channels, or habitats for protected species (such as water voles). However, maintenance is often carried out too frequently, or simply to create a 'tidy' watercourse.



Salmon smoult sheltering under vegeta-tion-

Most in-channel vegetation is important for wildlife, providing food, shelter and protection from predators for birds, fish, insects and mammals. Vegetation can also help to retain and purify water in watercourses and maintain a higher water table in dryer months.

This advice sheet provides the basic advice you need to manage your watercourses effectively. Remember that each site is unique and (particularly for fisheries or protected sites or species) it is often best to consult an Environment Agency, Natural England or Wildlife Trust advisor prior to carrying out weed control.



Damselflies laying eggs in aquatic vegeta-tion-

Is the vegetation in the watercourse actually a weed and do you really need weed control?

Is the weed growth natural or has it been exacerbated by other causes (such as too much nutrient run off from farmland)? If so, then a programme of arable margins and nutrient budgeting may be a more effective control of weeds than clearance. If the growth of wetland plants is natural, and it is not causing you a problem, do you need to clear it?

Possible reasons to clear weed in your watercourse :-

- To maintain wet fences for livestock
- To maintain drainage function of watercourse & to help water flow more quickly through land
- To reduce shading of the channel (for wildlife such as water voles)
- For ease of maintenance (removing dense vegetation to allow access for people and machinery)
- To maintain local fisheries (removing weeds to allow easier fishing)
- To remove non-native invasive plants such as Pennywort, Parrotsfeather, Crassula or Water Fern
- To remove/stop plant roots trapping silts which are causing unnaturally fast rates of weed growth
- To create more light and flow for rarer or more specialist plants

Wildlife Friendly Clearance & Vegetation Management In Watercourses

Things to consider when planning weed control

Do you need to clear vegetation every year?

Clearing annually may not be necessary and can be costly. For ditches, a 5-8 year management rotation is recommended, or at most, once every two years.

Do you need to clear the whole channel?

If possible, leave patches of vegetation on the banks, or in half or one third of the channel.

Is excessive stock poaching causing bank erosion?

Poaching makes it necessary to clear watercourses more often. Consider partial bankside fencing and creation of cattle drinks to protect some vegetation for wildlife.

Can you leave bankside vegetation uncleared?

This may be better for wildlife and will bring cost savings by reducing man-hours and machinery costs. The more diverse the structure of a watercourse (i.e. pools, riffles, marginal and in-stream vegetation, etc) the more diverse animal, fish and plant communities will be present.

Is the watercourse main river or Internal Drainage Board (IDB) managed?

If so then you may need Land Drainage Consent or written permission from the Environment Agency or IDB.

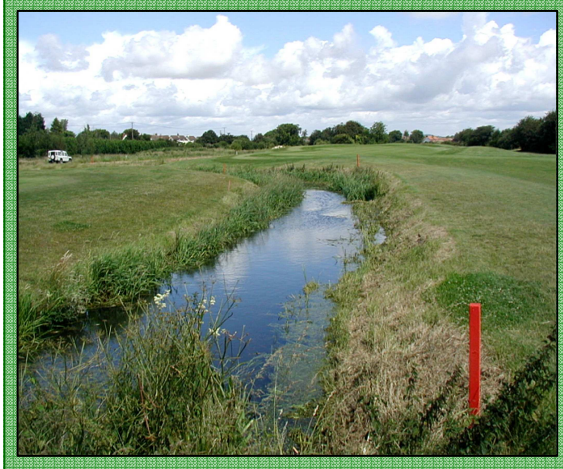
Does existing vegetation help my fishery?

Marginal and submerged vegetation provide fish refuges, and improve natural fish food production. Underwater vegetation can deter birds such as cormorants. Many water weeds help to oxygenate water and prevent fish kills in hot summer months. However, excessive algal growth and its subsequent die back can exacerbate fish kills. This is often due to problems with excess nutrients in silt and water, and lack of natural algae controls.

Does existing vegetation help my water quality?

Reedbeds in particular are excellent filters for silt, farm and fishery run-off. If maintained in the right condition they can provide large farm benefits. (See Reedbed advice sheet or info on Reedbed Treatment Systems).

Examples of vegetation clearance in watercourses which are less damaging to fish and wildlife



Sections of in-channel and emergent vegetation in watercourses can be retained whilst still allowing (flood) flow conveyance

Types of weed control

Mechanical control

- Hand tools i.e. pole & chain scythes. May require a boom to collect cut material afterwards
- Tractor mounted attachments (Flail mowers, 'Bradshaw' buckets, Draglines etc.) – To cut vegetation & pull weed out of the channel
- Weed cutting boats / Weed harvesters – Useful to cut and collect weed, particularly on large waterbodies

Environmental control (Denying plants their basic requirements i.e. light and nutrients)

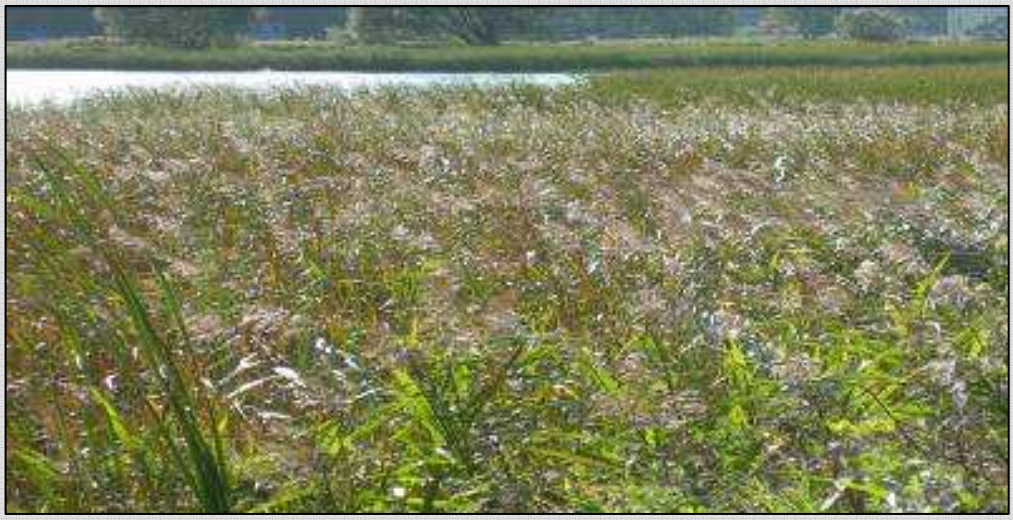
- Light – Shading using black plastic sheets, planted trees, increasing depths of water to 'drown' certain plants
- Nutrients – reduce nutrient input and run-off into watercourses from land /f arming practices
- Barley Straw – If applied correctly, this can be used to reduce filamentous algae

Biological control

For some non native invasive species, biological control is now approved. For example the Azolla weevil is now approved for use in the UK to target the non-native plant Azolla (Water fern). In the past, (Grass) Carp were sometimes used to remove vegetation. However they are a non-native species, require a licence to introduce and are harmful to local wildlife. Carp are bottom feeders which disturb silt (reducing light for plants) and which eat submerged plants. Their presence usually removes all plant growth, severely damages the pond ecology and disturbed silt may cause algal blooms. **ALL fish introduced into inland waters require prior consent from the Environment Agency, and licences are unlikely to be granted for introduction to online waterbodies.**

Chemical Control

Use of herbicides – Most commonly Glyphosate (Round-Up). **There are now now aquatic herbicides approved for use IN water. Those being used adjacent to water will require consent from your local Environment Agency.**



Fishing lakes with reed which help clean water, provide shelter from predators for fish and provide habitat for fish food such as aquatic invertebrates

Preferred (less damaging) methods of weed control

Clearing by hand - Is the most sympathetic and can be targeted to smaller areas where it is most needed
Environmental control – By treating the problem at source, you may be able to prevent algal blooms and excessive vegetation growth and therefore prevent the need to clear water plants at all.
Mechanical cutting – Probably the fastest and most practical way to clear weeds from watercourses, many machines have special adaptations to allow fast and efficient vegetation removal without too much damage to the environment.

Preferred timing of weed control

Timing of vegetation cutting will vary year to year, depending on the prevalent weather. Some years vegetation will start growing in February and in other years growth will not start until April. For wildlife, late autumn (September or October just prior to the cold season) is the best time to carry out weed control. This allows birds, mammals, amphibians and insects to breed throughout the summer but does not disturb them during hibernation, Wildlife populations will be at their strongest at this time of year, so the impact of removing vegetation is limited. Late autumn weed removal also allows a small amount of plant regrowth before winter, protecting river banks from erosion and maintaining habitats for fish and wildlife. Timings may be different e.g. for flood management.

Where to put vegetation cuttings and silt slubbings

At least 2m (preferably one bucket reach) from the top of the bank. This allows wildlife to return to the watercourse, but does not smother wetland plants or water vole burrows.

NOTE. Cleared vegetation and silt contain nutrients which can cause excessive growth of nettles and other ruderal species where the cuttings / slubbings are spread. Slubbings come under Waste Regulations, but if they are placed within this distance of the bank, they require no licence or exemption from the Environment Agency.

Example of excessive ditch clearance
© F. Southgate

If possible avoid:-

- **Using herbicides.** They should only be used as a last resort. They can have a severe effect on aquatic ecosystems, and legal consent is required from the Environment Agency.
- **Scrub cutting during the growth season.** If possible cut after flowers, berries and nesting birds have gone. Breeding birds are protected by law, so are water voles and other species which may be using your ditches.
- **Excessive de-silting / de-slubbing of watercourses.** The natural succession of vegetation from open to enclosed vegetation is an important ecological process in itself and should be allowed to happen if possible. De-silting and reprofiling can be highly damaging to many species such as water voles, amphibians, fish and dragonflies.
- **Clearing all weed from your watercourses in one year.** Little and often is better.
- **Removing roots and bulbs of plants.** Cut above the bulb to allow regrowth the following year.

Treatment of specific wetland plants

The Centre for Ecology and Hydrology has an informative website with well researched advice on the best control methods for a number of aquatic plants. www.ceh.ac/science_programmes/aquaticplantmanagement.html

Some native wetland plant species which you may need to control include Fools Water cress, Hemlock Water Dropwort, and Water crowfoot. Some plants may be rare however and many will be serving useful ecological and water quality functions. Complete removal is therefore not recommended.

Non Native Invasive Species

There are an increasing number of non-native invasive plants being introduced into the wild. Most of these plants originate from the aquarium trade and garden centres. Many of them can reproduce from small fragments of root, and once established on your land are almost impossible to remove.

Non-native invasive plant species you should manage include Floating pennywort, Parrots feather, Water fern, Australian Swamp Stonecrop, Yellow-fringed Water Lily, Skunk Cabbage, Canadian Pondweed, Himalayan Balsam, Water Primrose. Seek professional advice before management and visit www.**nonnativespecies**.org for the most up-to-date research and recommendations.

When managing non-native invasive species bear in mind

- Root fragments can remain on footwear, tools and machinery and can easily be transported to other sites
- If you are clearing plants in a channel with flowing water, take precautions to avoid sending root fragments downstream to other parts of yours or your neighbours land
- Water fern and Pennywort in particular can fool people and sheep into thinking there is solid ground. This has been known to lead to drowned animals.
- Ducks and stock animals can easily transport non native plants between sites on mouths and feet.
- Once present, for some species the only way of getting rid of them is to;

1) completely fill in the affected ditch/pond with soil (this may require consent and is highly damaging to local wildlife)
2) spray with herbicides. Spraying near water requires **a licence** and is a last resort.

Parrots feather (*Myriophyllum aquaticum*) – one of the non-native invasive plants which reproduce from root fragments © T Renals

With non native invasive species, prevention is always better than cure.

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Contacts

Sussex Wildlife Trust
(Wetlands Project)
www.sussexwt.org.uk
01273 497555

Natural England
0845 600 3078
enquiries.southeast@naturalengland.org.uk
www.naturalengland.org.uk/regions/southeast/contacts.

Wildcall (Advice line)
01273 494777
wildcall@sussexwt.org.uk

Environment Agency
Ask for Fisheries & Biodiversity or
Land Drainage consent teams
03708 506506
www.environment-agency.gov.uk

Non Native Invasive Species Secretariat
www.nonnativespecies.org

Centre for Ecology & Hydrology
www.ceh.ac.uk

References & Further Reading

- Water Plants – Their Function and Management – Environment Agency www.environment-agency.gov.uk/commondata/acrobat/water__eng_172087.pdf
- Better Habitats mean Better Fishing – Fisheries habitat improvement – Environment Agency www.environment-agency.gov.uk/commondata/acrobat/421376_ea_fish_hab_v6_1445307.pd
- Water for Wildlife UK - All choked up – Invasive alien plant species www.waterforwildlife.org.uk/
- Waterwise No 4: Woody Weed Control Along Watercourses- www.epa.sa.gov.au/xstd_files/Water/Brochure/waterwise4.pdf
- Defra: Farming & Watercourse Management Booklet- http://adlib.everysite.co.uk/adlib/defra/content.aspx?id=000IL3890W.17UT3205A1C45V
- Woody debris in streams. Fish live in trees too. www.**fish**active.com/pdfs/Lge_Woody_Debris_and_Rivers_2011.pdf

Sussex wetlands project promotes the sustainable management of rivers and the restoration of wetland habitats for people and wildlife