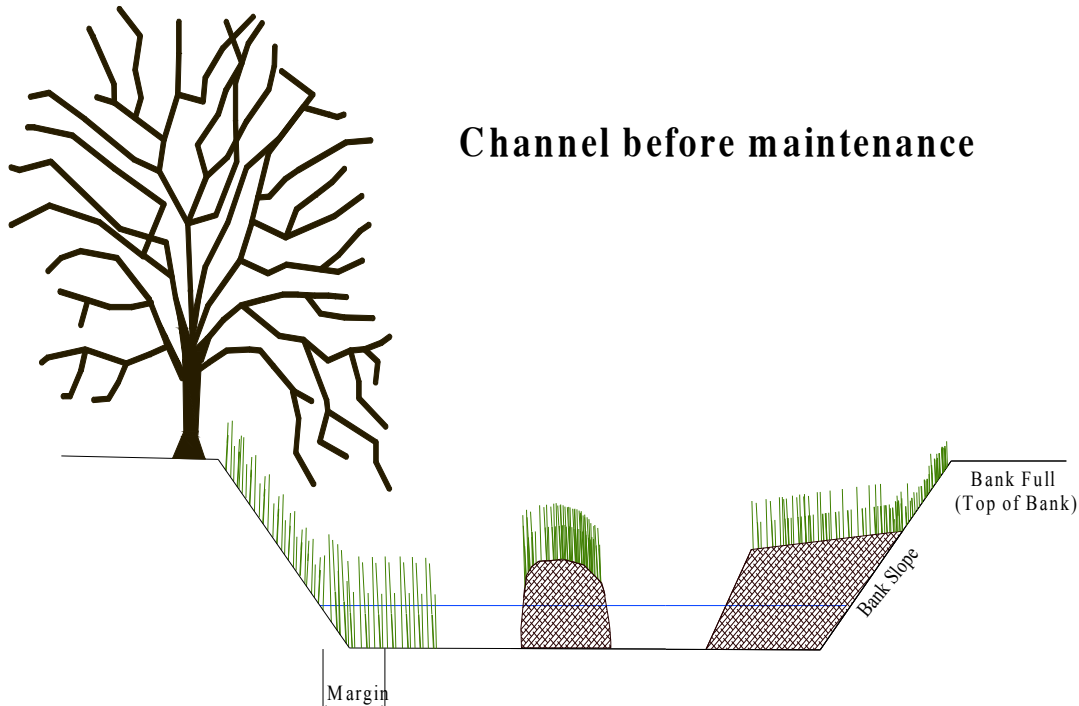
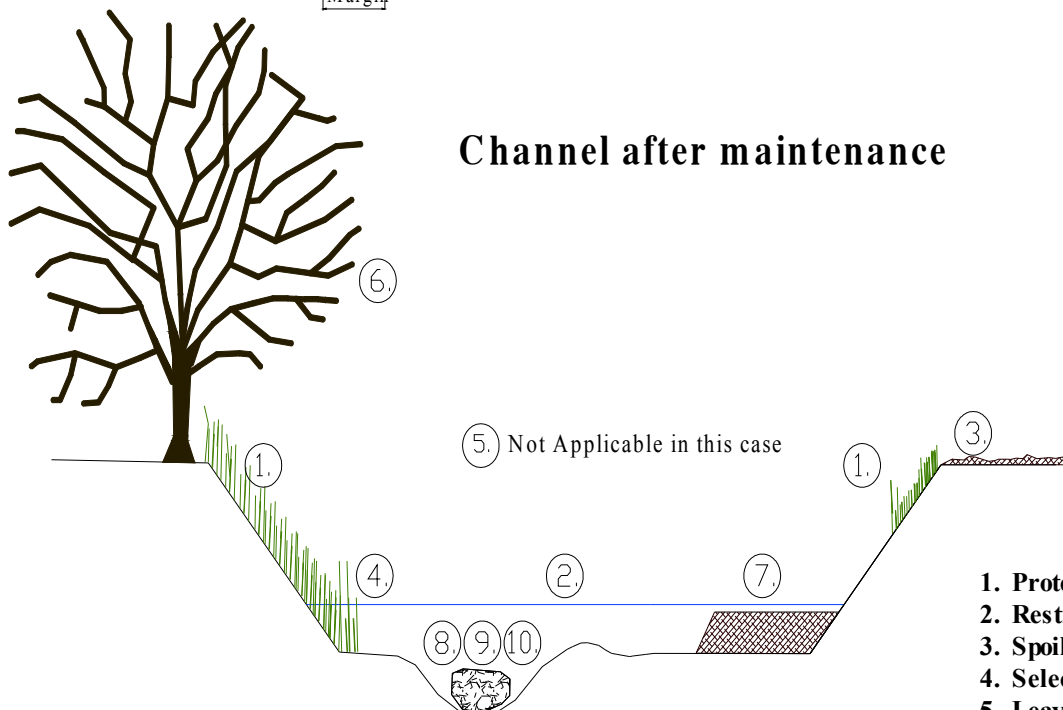


Environmental Drainage Maintenance Guidance Notes

10 Steps to Environmentally Friendly Maintenance



Channel before maintenance



Channel after maintenance

1. Protect bank slopes
2. Restrict maintenance to channel
3. Spoil management
4. Selective vegetation removal
5. Leave section untouched
6. Management of trees
7. Manage berm to form two stage channel
8. Replace stones and boulders
9. Loosen gravel beds
10. Re-profile channel bed

Environmental Strategies for Channel Maintenance



1. Protect bank slopes

- 1.1 Do not disturb the non-working bank slope
- 1.2 Minimise any effect on working bank
- 1.3 Leave margin of vegetation at foot of each bank slope



2. Restrict maintenance to channel

- 2.1 Remove only necessary silt – **no new diggings**
- 2.2 Remove instream material only
- 2.3 Retain marginal vegetation
- 2.4 Check spoil regularly. *See Lamprey & Crayfish SOPs*

3. Spoil Management

- 3.1 Maximise spoil placement on bank full line or spoil heaps **and**
- 3.2 Minimise spoil placement on bank slopes
- 3.3 Spread spoil as thinly as possible
- 3.4 Allow water to drain out of bucket over the water – lets small fish, lamprey and crayfish escape



Environmental Strategies for Channel Maintenance



4. Selective Vegetation Removal

- 4.1 Retain a band of vegetation on both sides at water's edge
- 4.2 Selectively manage instream vegetation
- 4.3 Maximise use of weed-cutting bucket
- 4.4 Avoid maintenance in coarse fish channels from 1st April to 1st July



- 4.5 Retain 1/3 to 1/2 of instream floating type vegetation, such as *Ranunculus* (water crowfoot) – see photo to right



5. Leave sections untouched

- 5.1 If channel capacity is not affected, leave section alone



Environmental Strategies for Channel Maintenance

6. Management of Trees

- 6.1 Remove trees that are blocking the flow
- 6.2 Tree-cutting window 1st September to 28th February



- 6.3 Remove overhanging branches to known flood level

- 6.4 Use saw secateurs for removal, not excavator bucket

- 6.5 Manage Trees to reduce very heavy shading
- 6.6 Manage briars and scrub.
See Otter SOP



7. Manage berms to form two-stage channels

- 7.1 Retain berm where channel capacity is not affected
- 7.2 Remove top of berms to low flow levels
- 7.2 Remove vegetation and soil from gravel berms
- 7.3 Replace sod to the berm where feasible
- 7.4 Only narrow berms if 'excessively' wide for the channel (i.e. greater than a third of the channel width)



8. Replace stone and boulders

- 8.1 Reinststate boulders and gravels as removed by maintenance operations
- 8.2 Reinststate suitably sized boulders into channel from spoil heaps where feasible
- 8.3 Boulders should be placed at or below low flow level and spaced out

9. Work in gravel bed channels

- 9.1 Loosen or toss bed gravels to wash out fines
- 9.2 Only considered between 1st July and 30th September
- 9.3 No work in gravel bed / spawning channels in fisheries 'closed season'
Note: This varies locally check with local IFI



Environmental Strategies for Channel Maintenance



10.1 Excavate bed to form deeper pool areas and shallow riffles



10.2

Overdeepen the channel along one side and place spoil on opposite side –particularly on curves and bends

10.3 Use existing boulders to form simple low-level structures



10.4 Record where such works are carried out