Streamside planting

KEY POINTS IN RESTORATION PLANTING

Planting plan

Matching plants to site

Ongoing maintenance

10 STEPS TO PLANTING AND RESTORING A WATERWAY

1. Get to know your stream over different seasons, especially potential flood levels.

2. Seek advice on resource consent, design and possible assistance from councils.

3. Prepare a planting plan:

- Compile a list of plant species for each zone identified along the stream bank. Observe local streams where plant species have been successfully established.
- Space plants on the plan according to the zone and desired effect.
- Fencing needs to be stockproof – electrified 2-3 wires or permanent if power isn't available.

4. Order plants well in advance.

5. Planting season:

- Bare root plants – during winter or early spring
- Container grown – from autumn to spring

6. Preparing the site

- Remove invasive weeds and clear all vegetation for half a metre around each planting spot.

7. Set out plants according to their zone and eventual size.

8. When planting, dig a hole deeper and broader than the root system.

Never cram the roots and firm the soil to exclude the air gaps. Do not allow the roots to dry in the sun. The first two years after planting are critical for young plants. Good survival and growth are strongly dependent on the control of all surrounding vegetation to reduce the competition for moisture and nutrients. On wet sites, plant on a mound to avoid waterlogging, and on dry sites plant into a deeper hole leaving a depression to catch rainfall.

9. Weed control, mulching and fertiliser.

- Keep a 1 metre area around your trees free of competing grass and weeds, mulch to conserve soil moisture and inhibit new weed growth; specific herbicide mixes vary so seek advice from your local supplier, contractors and consultants.
- If required, fertilise in the second year after planting, using a balanced NPK fertiliser such as Nitrophoska blue extra.

10. Ongoing maintenance

- Make regular checks in the first two years; replace plants that have died
- Controlling competing weeds is essential, as they will quickly smother young plants
- Check fences remain stockproof, and control possums, rabbits and hares.
- As the plants cover the site and achieve canopy closure, ongoing maintenance is greatly reduced.

BENEFITS OF WELL MANAGED WATERWAYS

Reduced stock losses and easier stock management • Reduced erosion, sedimentation and pugging

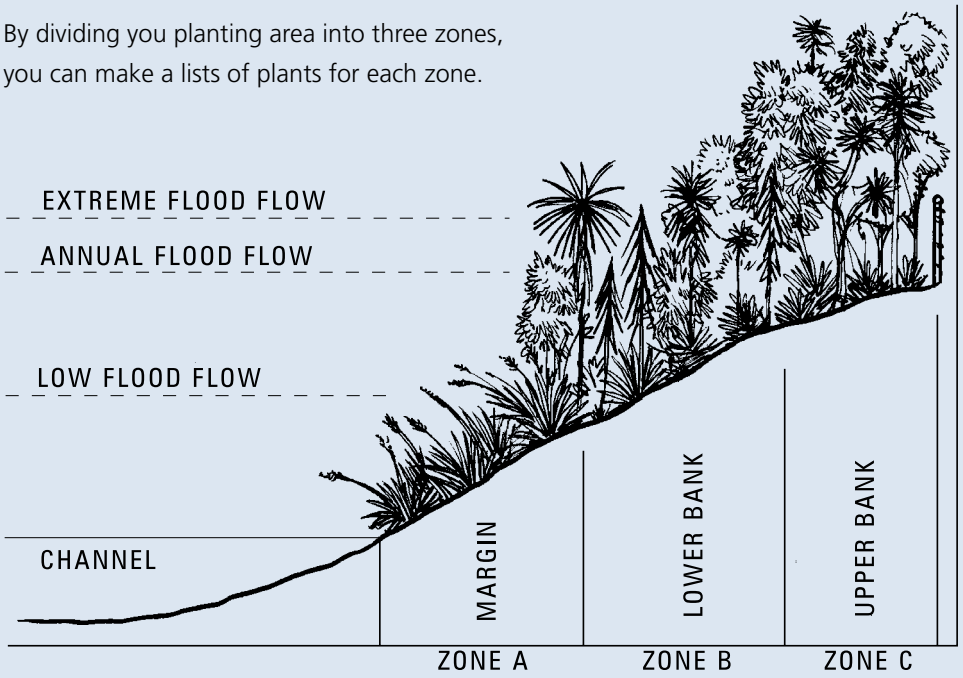
Recreational opportunities such as fishing and duck shooting

Enhanced farm landscape with potential income from timber tree production

Enhanced wildlife and stream habitat • Reduced nutrient runoff into waterways

PREPARING A PLANTING PLAN

By dividing you planting area into three zones, you can make a lists of plants for each zone.



PLANT SPACING

In areas close to the water, plant at 2.5m spacing and on higher ground at 2-2.5m. Trees in Zone C are planted at 3-5m apart. Ensure the plant species chosen will tolerate local frost conditions and only use coastal plants where salt spray is an issue.

ZONE A
MARGIN WATERLOGGED SOILS

Plants that will tolerate prolonged waterlogged soils. For use along the waters edge, swamps and spring seepage areas.

SPECIES

Sedges *Carex buchananii*
Rushes *Carex flagellifera*
Tussock *Carex secta*
Tussock *Carex ventosa*
Flax *Phormium tenax*
Swamp cypress *Taxodium distichum*
Dawn redwood *Metasequoia glyptostroboides*
River birch *Betula nigra*
Willow *Salix alba 'kinuyanagi'*

ZONE B
LOWER BANK PLANTINGS

These do not tolerate waterlogged soils or flooding for any length of time.

SPECIES

Cabbage tree *Coryline australis*
Toe toe *Cortaderia richardii*
Manuka *Leptospermum scoparium*
Kohuhu *Pittosporum tenufolium*
Lemonwood *Pittosporum eugenoides*
Kowhai *Sophora microphylla*
Red maple *Acer rubrum*
Sweet gum *Liquidambar styraciflua*
Tupelo *Nyssa sylvatica*
Willow *Salix alba*

ZONE C
UPPER BANK TREES

Trees that compliment plants in the previous zones but whose selection is for shade, aesthetics or timber production.

SPECIES

Japanese cedar *Cryptomeria japonica*
European ash *Fraxinus excelsior*
Maidenhair tree *Gingko biloba*
Oriental plane *Platanus orientalis*
Poplar, *Crow's Nest, Kawa, Veronese*
Oak *Quercus palustris, Q. petraea x robur, Q. rubra*
Redwood *Sequoia sempervirens*