# HOW TO IMPLEMENT

## WHERE DO WE START? PRIORITY AREAS...

Understandably, this 1000 acres is a very large area to contemplate restoring. Relax, much of the valley will restore itself over time. You will be surprised how fast. Birds will do a lot of plant spreading which will increase exponentially over time.

We need to kick start things. Here is a list of priority projects...

1. **Get rid of foreign invaders! *Now!*** Weeds will need to be controlled and removed and their future spread checked at regular intervals. Weeds to be removed straight away before they can spread any more are broom and gorse. The lone pine should be felled before it can produce any more baby wildings. Pull out any pine babies you see. You are lucky - the weed problem in the valley isn't too bad yet. Start early. Work in with the Department of Conservation to remove the weed source from the Redcliff Creek. Develop an animal pest management programme too, focused on shooting and trapping rabbits, possums, etc. Rabbits will play havoc with new plantings such as of kowhai and mikimiki.
2. At this time, organise nurseries to collect seed and start growing on the native plants for Autumn planting 2002... Get lots and lots of kahikatea plants secured for next Spring-Summer 2001. Get lots of harakeke and *Carex* spp. growing on too - they are excellent plants for controlling weeds and providing habitat.
3. **With great fanfare, remove the Jericho diversion. *Autumn 2001*** Remove the diversion race which has been taking water from the Jericho Stream and putting it into the Redcliff Creek. Get the machines in for the last time, make the land as it was, the Jericho flowing back into the red tussock swamp area. Then with as much ceremony, drive the diggers and 'dozers away, close the gate and make the valley peaceful once more...
4. **Make little dams along the lower Jericho Stream, slow the water. *Winter 2001*** Create a series of wetted areas using traditional poi ball and manuka dam and harakeke techniques (see sketches, pp.? ). Try it out, have some fun, see what happens. This will give you the first guidance on where the kahikatea forest can be planted.
5. **Bring back the mighty kahikatea. *Spring-Summer 2001/2002.*** Plant a broad swathe of kahikatea, surrounded in smaller trees, shrubs and groundcovers up the valley flanking the 'new' Jericho Stream. Reintroduce this magnificent forest giant, so long lost from the valley. This will involve just over 6000 kahikatea, planted at 6 metre spacings and another 20,000 plants for the surrounding mixture!
6. ***Start to construct the Jericho kaika, Autumn 2002.*** Start bringing to the valley the buildings from West Arm to create the complex, a base for operations. Start preparing the surrounding gardens.
7. **Plant the bird food island nuclei around the valley. *Autumn-Winter 2002*** Establish little nuclei plantings all around, little islands of food for birds to come and get and spread. Start putting these in under the manuka, on the hillslopes out on the grassy flats...
8. **Build a network of walks. Let everyone in! *Summer, end of 2002***
9. **From this point on, just keep on adding plants, controlling plant and animal pests, and, enjoying the spaces. Watch the changes taking place...**
10. **Look at the potential for releasing native birds and other animals lost from the valley...*Later***



## Weed Management

Broom and gorse are well-established in parts of the valley especially along the Redcliff Stream. The cost to undertake control throughout the block would be major. Therefore weed control has to be strategic. The priority for weed control is to:

- Remove or contain infestations in open situations where it has the greatest potential to spread and become a problem. Ongoing management required by on-site caretaker in particular.
- Control isolated clumps, before they present a major problem.
- Reduce the amount of ground disturbance which allows seedlings to establish. Minimal machine work, preventing stock access and controlling vehicle access will all assist.
- Remove the few elderberry plants that are present, as these present a spread risk.

Weeds within the manuka shrublands are considered a lower priority for control as natural regeneration is expected to control these infestations.

The few pine seedlings are proposed be removed immediately - perhaps ceremonially.

The drier terrace scarps up toward the forestry need to be kept clear of broom. Shrubland may regenerate well on these slopes.

Technical assistance should be sought from Environment Southland's Senior Biosecurity Officer (Keith Crothers).

Liaise with Department of Conservation plant pest management, Murray Nieuwenhuyse, regarding weed control in the Marginal strip along the Redcliff. Seek that they clear the gorse down Redcliff Creek to the pinch point of the lower grassland. Whilst not a priority previously when farmed, now de-stocked and restoration is the activity, it is important that the Redcliff corridor be cleared to a lower point to assist the Trust in its restoration activities.

**Introduced species noted as established on the Jericho Block include:**

| | |
|---|---|
| **Tree/Shrubweeds:** | |
| *Cytisus scoparius* | broom |
| *Pinus* sp. | pine |
| *Rosa rubiginosa* | briar rose |
| *Sambucus nigra* | elderberry |
| *Ulex europaeus* | gorse |
| **Grasses, Herbs, etc:** | |
| *Agrostis capillaris* | browntop |
| *Anthoxanthum odoratum* | sweet vernal grass |
| *Cirsium palustre* | marsh thistles |
| *Hieracium pilocella* | hawkweed |
| *Holcus lanatus* | Yorkshire fog |
| *Hypericum perforatum*? | a St.Johns wort |
| *Hypochaeris radicata* | catsear |
| *Juncus articulatus* | jointed rush |
| *Juncus effusus* | a rush |
| *Leontodon taraxacoides* | hawkbit |
| *Lotus pedunculatus* | birdsfoot trefoil |
| *Poa annua* | annual poa |



## HOW THE PLANTING GUIDES WORK

The following series of coloured pages relate back to the **LANDFORM TYPES** map. The different colours 'washed' over the aerial photograph of the valley divide the land up into different types of terrain. These different colours; orange, red, blue and purple match the colour pages further on (the area in yellow is not included in the guides).

You need to figure out which part of the valley you are in. It shouldn't be too hard!

Once you have figured out where you are, pick the matching coloured pages and look at the 3D diagram. This shows the type of ground conditions you should be on. Does it?

You will now need to 'fine-tune your position. Read down the list of questions. They will help you to figure out exactly what kind of ground you are standing on. This will help when you go and choose your plants. Some plants like having wet feet, others like to be warm and dry. Some don't mind either.

So now you know which large area of the valley you are in (which 'colour'), and you know what type of ground condition you are standing on (from the 3D diagram and questions), you can check the plant list column headed up dry/high or moist/wet and see what plants are ticked off for each.

Read through the next couple of pages on **PLANTING GUIDELINES**, look at the little sketches and follow the easy step by step guidelines on how to go about preparing the ground, planting and caring for your new native plants.

Then its just a case of going over and picking up the right plant which will be named and planting it in your newly discovered spot...

You will be well rewarded with a happy, fast-growing plant for years to come...



# VEGETATION PROPOSED FOR EACH LANDFORM TYPE

## MAIN VALLEY FLOOR
***(under shelter)***

Perfect habitat for planting 'food producing' native 'islands' under the existing healthy manuka. Clear lightshafts, and encourage the plants upwards to poke out the top, their berries, fruits and flowers a beacon to guide the birdlife in to gorge themselves carrying on the good work by 'spreading' the plants all over the valley for you...

## MAIN VALLEY FLOOR
***(out in the open)***

Open pastureland and tussockland, now de-stocked, weed spread kept in check, always monitored for future invasion. Good habitat potential for stunning kahikatea stands in the damp hollows. Over time, tiny native seedlings having waited patiently beneath the sea of grasses will get their chance to emerge, creating a future shrubland eventually giving way to full forest. Manage, watch and wait...

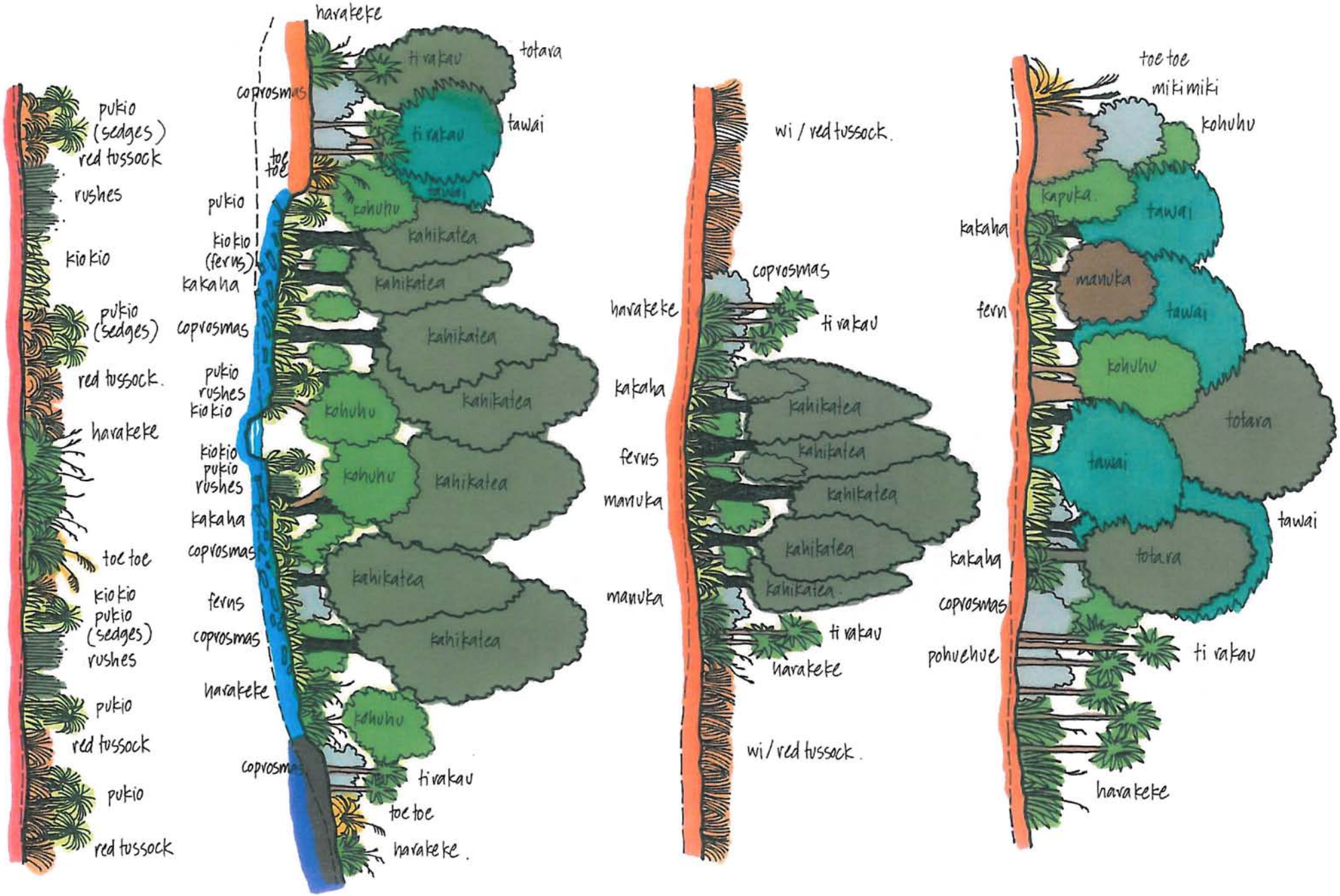
## WET SLOPES

The Jericho Stream, its flow gently and naturally slowed, in places spreading out forming low wetted areas, meanders over deep, rich, peaty soils. Home now to a newly planted kahikatea forest many years lost from the valley. In time, a full kahikatea forest wetland plant and animal community complete with birdsong, winds its way sinuously up the valley ever drawing the eye up to the mighty Takitimus...

## LOWER RED TUSSOCK WETLAND

Low, wet, lush. The Jericho Stream, now free from the shackles of its engineered diversion race, is reacquainted with its old pathway. A vast red tussock swamp blooms from the wealth of water, punctuated with dramatic drifts and knots of pukio, harakeke, toe toe.




pukio (sedges)
red tussock
rushes
kiokio
pukio (sedges)
red tussock
harakeke
toe toe
kiokio
pukio (sedges)
rushes
pukio
red tussock
pukio
red tussock
harakeke
totara
tawai
ti rakau
coprosmas
toe toe
pukio
kiokio (ferns)
kakaha
coprosmas
pukio rushes kiokio
kiokio pukio rushes
kakaha
coprosmas
ferns
coprosmas
harakeke
coprosmas
kohuhu
kahikatea
ti rakau
toe toe
harakeke
wi / red tussock
coprosmas
ti rakau
kakaha
ferns
manuka
manuka
ti rakau
harakeke
wi / red tussock
toe toe
mikimiki
kohuhu
kapuka
tawai
kakaha
manuka
fern
tawai
kohuhu
totara
tawai
tawai
kakaha
totara
coprosmas
pohuehue
ti rakau
harakeke

# VEGETATION PROPOSED FOR EACH LANDFORM TYPE

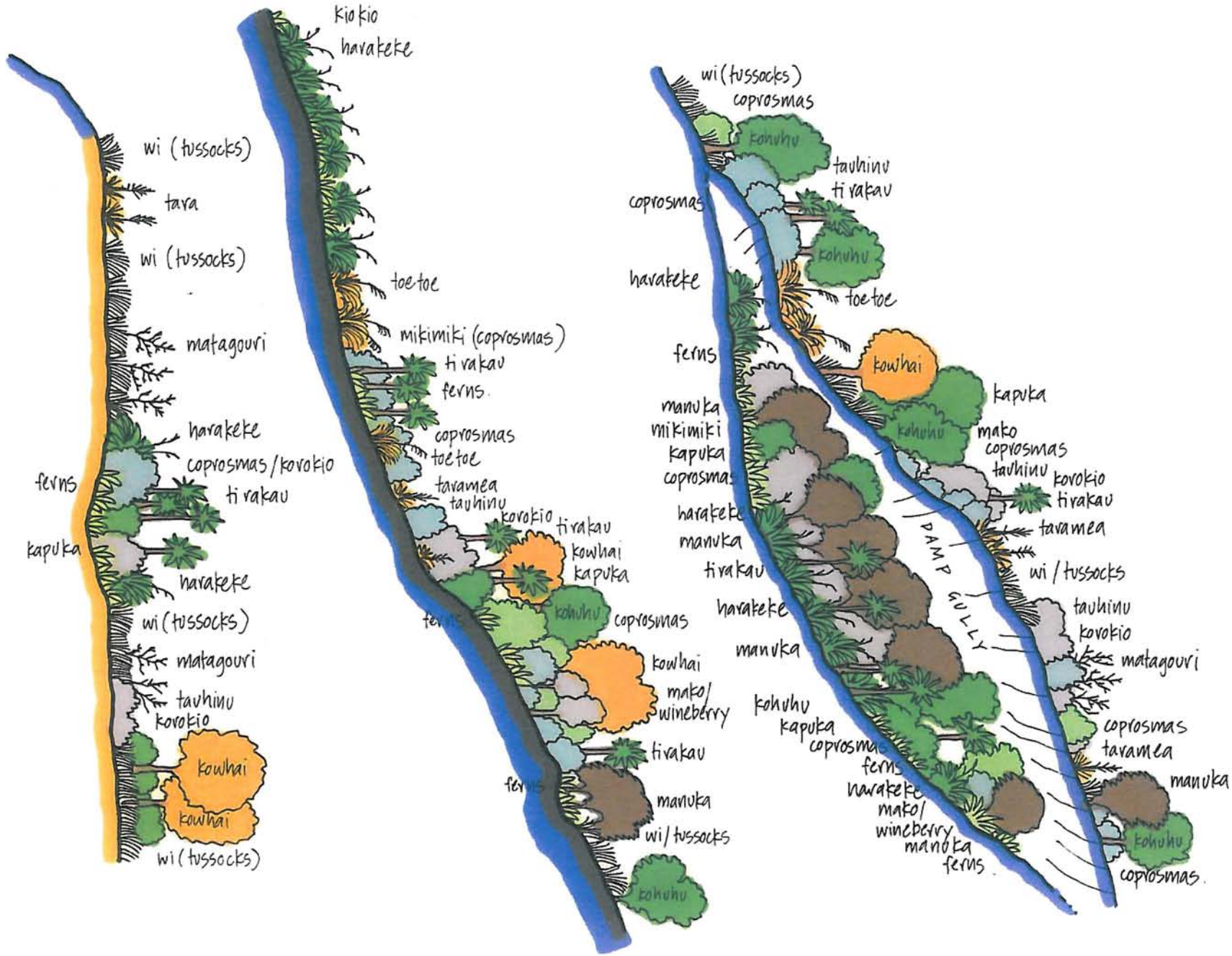
## SUNNY SLOPES

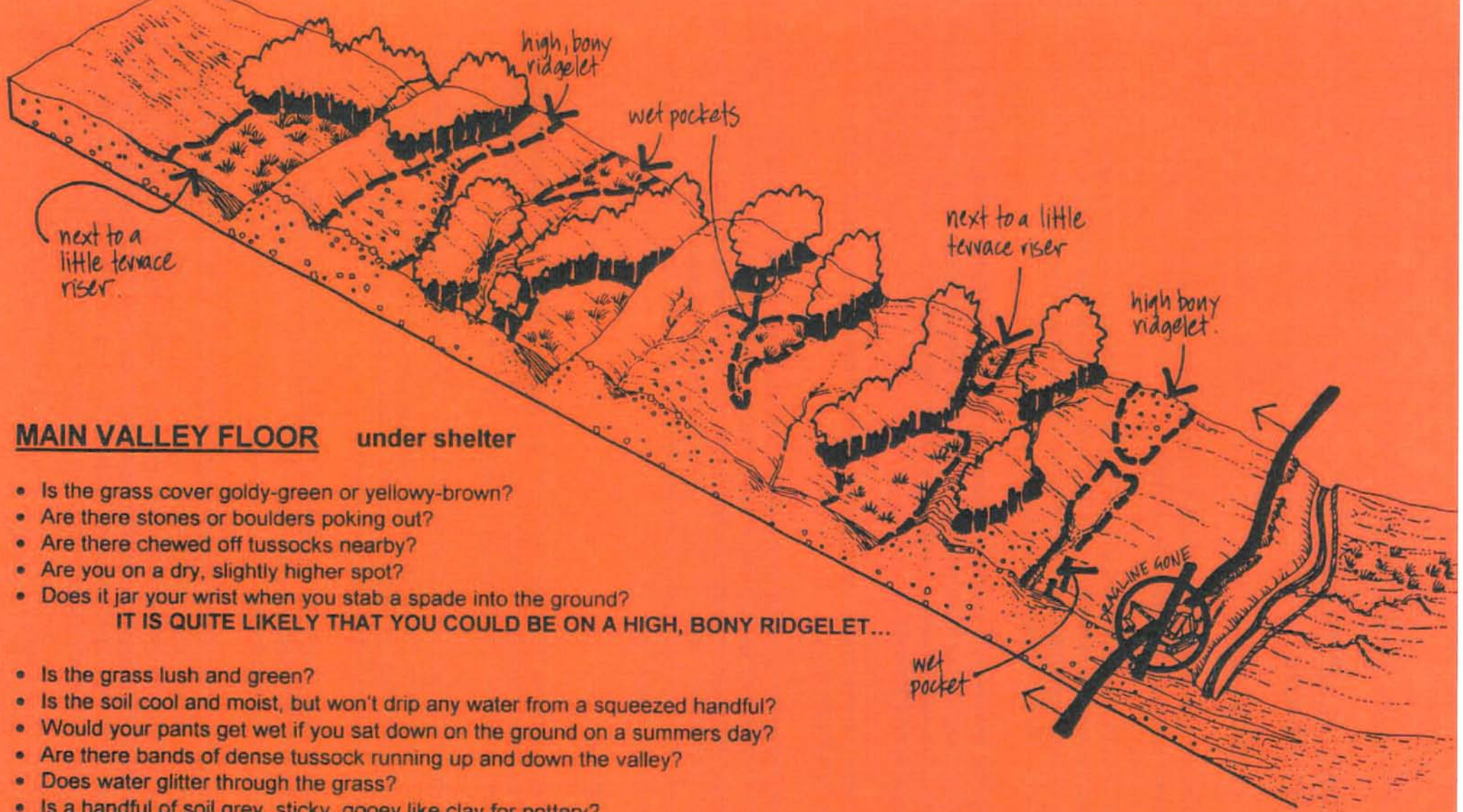
A broad sweep of sunny, north facing, terrain stands guard over the valley, ranging from gentle to steep, gully to ridge, the ground dry to wet. Hillside springs bubble and seep providing homes for lush plants. Picnic spots abound. Stroll up there, find a clearing, have a bite to eat, enjoy the great views and plant some native fruiting shrubs. Let the birds do the rest. In time see what you have triggered...

## TOP TERRACE

Hot and sunny, high and flat. Stroll the open grassland plain, passing through groves of prickly matagouri, speargrass and kowhai for a taste of the drier shrubland plant community. Enjoy the open views all the way down to the Waiau and pick out all the natural forest regeneration you have helped start, going on in the valley far below...




wi (tussocks)
tara
wi (tussocks)
matagouri
harakeke
coprosmas / korokio
ferns
tirakau
kapuka
harakeke
wi (tussocks)
matagouri
tauhinu
korokio
kowhai
kowhai
wi (tussocks)
kiokio
harakeke
toetoe
mikimiki (coprosmas)
tirakau
ferns
coprosmas
toetoe
tauamea
tauhinu
korokio
tirakau
kowhai
kapuka
kohuhu
coprosmas
kowhai
mako/
wineberry
tirakau
manuka
wi/tussocks
kohuhu
wi (tussocks)
coprosmas
kohuhu
tauhinu
tirakau
coprosmas
kohuhu
harakeke
toetoe
ferns
kowhai
kapuka
manuka
mikimiki
kapuka
coprosmas
harakeke
manuka
tirakau
harakeke
manuka
kohuhu
kapuka
coprosmas
ferns
harakeke
mako/
wineberry
manuka
ferns
PAMP GULLY
mako
coprosmas
tauhinu
korokio
tirakau
tauamea
wi/tussocks
tauhinu
korokio
matagouri
coprosmas
tauamea
manuka
kohuhu
coprosmas




## MAIN VALLEY FLOOR under shelter

- Is the grass cover goldy-green or yellowy-brown?
- Are there stones or boulders poking out?
- Are there chewed off tussocks nearby?
- Are you on a dry, slightly higher spot?
- Does it jar your wrist when you stab a spade into the ground?

**IT IS QUITE LIKELY THAT YOU COULD BE ON A HIGH, BONY RIDGELET...**

- Is the grass lush and green?
- Is the soil cool and moist, but won't drip any water from a squeezed handful?
- Would your pants get wet if you sat down on the ground on a summers day?
- Are there bands of dense tussock running up and down the valley?
- Does water glitter through the grass?
- Is a handful of soil grey, sticky, gooey like clay for pottery?
- Would you be hopping fast so your feet didn't get too wet?
- Would your trainers disappear under water as far as your ankle?
- Is it gumboot sucking strength?
- Are you in dense manuka, dark and gloomy?

**IF SO, YOU ARE PROBABLY IN A WET POCKET, MANUKA FOREST OR NEXT TO A LITTLE TERRACE RISER...**

P L A N T I N G  G U I D E L I N E S

# MAIN VALLEY FLOOR
# under shelter

## SITE PREPARATION

It is best to be planting during either Autumn, late winter or early Spring when weather and ground conditions are moist.

Push into the manuka forest at least 3 metres so there is enough shelter and clear lightwells, approximately 2 metres by 2 metres in the existing manuka forest to let in sunlight to the ground. Remove the larger manuka branches, trunks etc from the 'clearing'. Finer manuka 'slash' can provide good mulch.

Just after the plants have been delivered to the site and before planting, lay the different species out in organized groups of the same species. Keep plants in a shady, cool spot if possible, keep watered and make sure plants are put into the ground soon afterwards.

To create an effective nucleus, plant densely rather than spreading plants out around a larger area.

Before actually planting anything, make sure you know the correct techniques by asking someone more experienced to demonstrate planting. Demonstrations could be organised at set intervals throughout the day by someone skilled. Make sure any tools and footwear are clean before entering the planting area to prevent weed invasion. Pick up the appropriate plant list for your 'area' - this is the '*Main Valley Floor under shelter*' plant list.

## PLANTING

Pick up the plants by the container, not the foliage and go and find the appropriate area or ground condition for each plant. See the notes on the plant schedule to double check what the particular conditions are that your plant likes.

If the plants are supplied in long narrow root trainers, don't separate each plant from the RT (root-trainer) 'book' yet as the roots will dry, killing the plant. Take the whole RT book and mass plant the four plants in one group at the spacings suggested on the list for each species (approximately).

Dig each hole at least twice the size of the plant's container in all directions. Shatter the sides and bottom of the planting hole (on the high bony ridgelets) to help the roots spread out and down.

Tease out the roots if they are compacted or root bound. Roots should be loose. Expose the longer roots and cut back with secateurs. If plants are seriously root-bound, consider discarding or returning them to the plant supplier as they will not grow well. Fill the bottom third of the hole with loose soil. Place plant gently in and pack soil firmly and evenly around the roots. Firm down in layers to prevent air gaps. Don't put stones back in the hole - only soil.

In areas permanently wet, leave the top of the root mass at or above the existing ground surface level.

But the most important thing is to set the plant so that the soil level comes to the same point on the stem as it was when it came out of it's container.

**MULCHING**

Mulch with a minimum of 10cm of bark chips, manuka slash, newspaper (weighted down with bark chips), woollen mats, non-rubberised carpet underlay or any biodegradable material. Don't mulch on wet soils or in areas prone to waterlogging.


Don't let the mulch build up against the stem.

For shrubs and trees, you need to mulch a 1 metre diameter circle for each plant to prevent grass and weeds encroaching.

**PEST CONTROL**

To stop rabbits and hares eating or damaging the young plants, either spray on a suitable natural and biodegradable repellent, especially around the stem and spread in an area at least 30cm radius on the ground around the plant. This will need to be re-applied regularly as over time rain will wash it away.

Or use a rabbit sleeve on plants with an upright growth habit. Coprosmas and kowhai are particularly prone to rabbit damage. Drive 3 or 4 stakes firmly in around the plant to hold the plastic sleeve away from the plant, allowing it to breathe. Pin the sleeve down with bent no'8 wire to stop rabbits etc nosing under by lifting the sleeve. Remove these after 3 years or when the plant has grown tall enough that it won't be targeted.

Monitor pests in the planted areas and their surroundings - possums, rabbits, hares, mustelids. Regularly trap and shoot with care.

**PLANT MAINTENANCE**

Stake the plant to support and/or to mark it. For the first 1-2 years, the plant may not be visible above surrounding weed and grass growth making the plants hard to spot when checking needs to be done. It will also help to spot new plants and the clearing seeing a group of stakes.

Regularly maintain. Replace any plants that die as long as you know what has killed it. Keep weeds away from the base of each new plant. With close rather than far spacings, the plants will soon merge together, preventing light from striking the ground, allowing weeds to germinate. This maintenance will need to be done on a six monthly basis for the first two years or until the area is self maintaining.

Do regular fence checks (generally around the perimeter of the valley and road boundaries) to make sure stock hasn't caused damage and gained access to the planted areas. This needs to be carried out on an ongoing basis indefinitely.

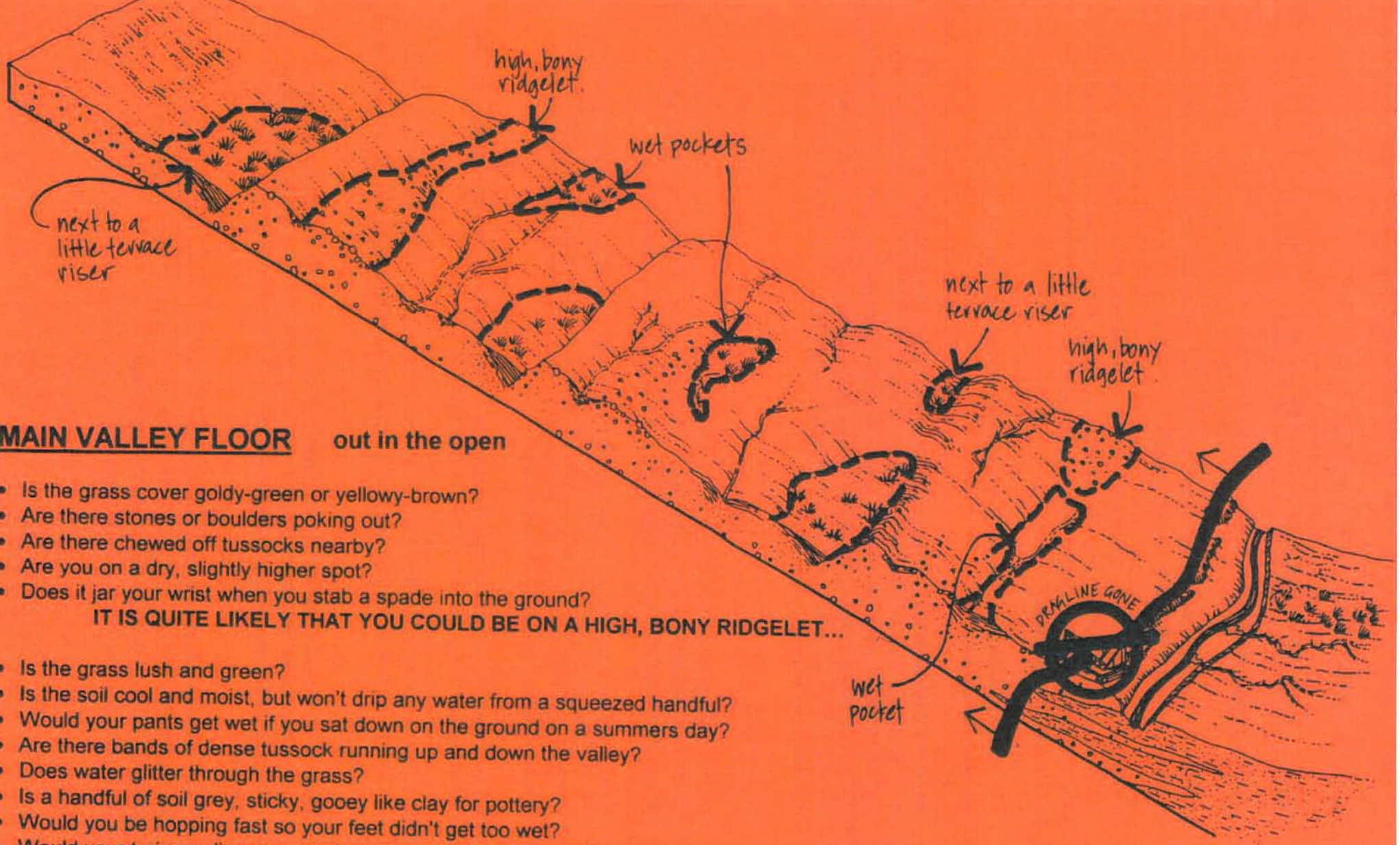
Once the forest nuclei has become established, birds will be attracted to the fruit and berries and take over the job of 'spreading' the plants through other parts of the manuka forest and greater valley. Sit back and look at the forest you have helped create, bringing back the birds and other animals, providing enjoyment for many generations to come.

# MAIN VALLEY FLOOR PLANT LIST

## under shelter

| | Botanical name | Common name | PLANT TOLERANCES: dry/high, bony ridgelet | moist/wet pockets | wind | sun | shade | berry/fruit | nectar | USES: kai | rongoa | nurse plants | plant spacings (in metres) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **TALL TREES** | | | | | | | | | | | | |
| ● | *Carpodetus serratus* | putaputaweta/marbleleaf | | ✓ | | 1/2 | ✓ | B | | | | | 5 |
| • | *Dacrycarpus dacrydioides* | kahikatea | | ✓ | | ✓ | 1/2 | B | | K | R | | 8 |
| • | *Elaeocarpus hookerianus* | pokaka | | ✓ | | ✓ | 1/2 | B | | K | | | 6 |
| ● | *Nothofagus menziesii* | silver beech | ✓ | | | 1/2 | 1/2 | | | | | | 4 |
| ● | *Nothofagus solandri var. cliffortioides* | mountain beech | ✓ | | | 1/2 | 1/2 | | | | | | 4 |
| ● | *Plagianthus regius* | manatu/lowland ribbonwood | | ✓ | ✓ | ✓ | 1/2 | B | | | | | 5 |
| ● | *Podocarpus hallii* | Halls or thin barked totara | | ✓ | 1/2 | ✓ | 1/2 | B | N | K | R | | 8 |
| • | *Prumnopitys taxifolia* | matai | | ✓ | ✓ | ✓ | 1/2 | B | | K | R | | 8 |
| | **TREES AND SHRUBS** | | | | | | | | | | | | |
| • | *Aristotelia serrata* | mako/makomako/wineberry | | ✓ | | 1/2 | 1/2 | B | | K | R | | 2 |
| • | *Carpodetus serratus* | putaputaweta/marbleleaf | | ✓ | | 1/2 | ✓ | B | | | | | 6 |
| • | *Coprosma linarifolia* | a coprosma | | ✓ | 1/2 | 1/2 | ✓ | B | N | | | | 1 |
| • | *Coprosma lucida* | karamu | ✓ | ✓ | ✓ | ✓ | ✓ | B | | K | R | | 2 |
| ● | *Coprosma propinqua* | mingimingi | ✓ | ✓ | ✓ | ✓ | ✓ | B | | K | | NP | 1 |
| ● | *Coprosma rotundifolia* | round-leaved coprosma | | ✓ | ✓ | ✓ | | B | | | | NP | 1 |
| ● | *Coprosma* sp. aff. *parviflora* | a coprosma | ✓ | ✓ | ✓ | ✓ | ✓ | B | | K | | NP | 1 |
| ● | *Cordyline australis* | Ti rakau/Ti/Ti kouka/cabbage tree | | ✓ | ✓ | ✓ | ✓ | B | N | K | R | NP | 3 |
| • P | *Coriaria sarmentosa* | tutu (poisonous) | ✓ | 1/2 | ✓ | ✓ | | | N | | R | NP | 2 |
| • | *Discaria toumatou* | matagouri | ✓ | 1/2 | ✓ | ✓ | | | N | | | | 2 |
| ● | *Fuchsia excorticata* | kotukutuku/tree fuchsia | | ✓ | | 1/2 | ✓ | B | N | K | R | | 5 |
| • | *Gaultheria macrostigma* | red snow berry | | | | | | B | | K | R | | 1 |
| ● | *Griselinia littoralis* | kapuka/broadleaf | | ✓ | ✓ | ✓ | ✓ | B | N | | R | | 3 |
| • | *Halocarpus bidwillii* | bog pine | | ✓ | ✓ | ✓ | | B | | | | | 3 |
| ● | *Hebe salicifolia* | kokomuka/koromiko | | ✓ | 1/2 | ✓ | 1/2 | | | | R | | 1 |
| • | *Leptospermum scoparium* | manuka | | ✓ | ✓ | ✓ | ✓ | | N | K | R | NP | 2 |
| • | *Melicope simplex* | poataniwha | | ✓ | ✓ | 1/2 | ✓ | B | | | | | 5 |
| • | *Muehlenbeckia axillaris* | dwarf pohuehue | | 1/2 | ✓ | ✓ | ✓ | B | | | | | 1 |
| • | *Myrsine divaricata* | weeping mapou | | ✓ | | ✓ | ✓ | B | | | | | 3 |
| • | *Olearia arborescens* | common tree daisy | | ✓ | 1/2 | ✓ | 1/2 | | | | | | 5 |
| ● | *Pittosporum eugenioides* | tarata/lemonwood | | ✓ | | ✓ | ✓ | B | | K | R | | 5 |
| ● | *Pittosporum tenuifolium* | rautawhiri/kohuhu/black mapou | | ✓ | ✓ | ✓ | ✓ | B | | K | | | 3 |
| • | *Pseudopanax* sp. aff. *colensoi* | three finger | 1/2 | 1/2 | 1/2 | ✓ | ✓ | | | | | | 3 |
| • | *Pseudowintera colorata* | horopito/peppertree/ramarama | | ✓ | 1/2 | ✓ | ✓ | B | | | R | | 3 |
| ● P | *Sophora microphylla* | South Island kowhai | | 1/2 | ✓ | ✓ | 1/2 | B | N | | R | | 5 |
| | **CLIMBERS** | | | | | | | | | | | | |
| • | *Clematis paniculata* | pua wananga/bush clematis | | | | ✓ | 1/2 | | N | | R | | – |
| • | *Parsonsia heterophylla* | native jasmine/kaihua | | 1/2 | ✓ | 1/2 | ✓ | | | | R | | – |
| | **GRASSES AND FLAX-LIKE PLANTS** | | | | | | | | | | | | |
| ● | *Astelia nervosa* | a lily | | ✓ | | 1/2 | ✓ | | N | | R | | 1 |
| • | *Carex capillaris* | a sedge | | ✓ | | ✓ | 1/2 | | | | | | 1 |
| | *Carex dipsacea* | a sedge | | ✓ | ✓ | ✓ | 1/2 | | | | | | 1 |
| ● | *Carex secta* | a sedge | | ✓ | | ✓ | 1/2 | | | | | | 1 |
| ○ | *Carex tenuiculmis* | a red sedge | | ✓ | ✓ | ✓ | 1/2 | | | | | | 1 |
| ● | *Phormium tenax* | harakeke/lowland flax | | ✓ | ✓ | ✓ | | | N | K | R | NP | 1·5 |
| | *Uncinia uncinata* | a hook grass | | ✓ | | | ✓ | | | | | | 0·5 |
| | **FERNS** | | | | | | | | | | | | |
| • | *Asplenium bulbiferum* | hen and chicken fern | | ✓ | | | ✓ | | | K | R | | 0·5 |
| • | *Blechnum discolor, B. procerum* | piupiu/crown fern, kiokio | | ✓ | | | ✓ | | | | | | 1 |
| • | *Blechnum fluviatile, B. penna-marina* | kiwakiwa, little hard fern | | ✓ | | ✓ | 1/2 | | | | R | | 0·5 |
| • | *Blechnum minus* | swamp fern, swamp kiokio | | ✓ | ✓ | ✓ | 1/2 | | | K | | | 0·5 |
| • | *Dicksonia fibrosa* | wheki-ponga/tree fern | | ✓ | | | ✓ | | | | | | 3 |
| • | *Histiopteris incisa* | mata/water fern | | ✓ | | 1/2 | ✓ | | | | | | 0·5 |
| • | *Microsorum diversifolium* | maratata/hounds tongue fern | ✓ | ✓ | | 1/2 | ✓ | | | K | | | 1 |
| • | *Polystichum vestitum* | prickly shield fern | | ✓ | | 1/2 | ✓ | | | | | | 0·5 |

○ = threatened species  P = poisonous plant  initially plant lots (●), plant some ( • )




## MAIN VALLEY FLOOR out in the open

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- Are there stones or boulders poking out?
- Are there chewed off tussocks nearby?
- Are you on a dry, slightly higher spot?
- Does it jar your wrist when you stab a spade into the ground?

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P L A N T I N G  G U I D E L I N E S

# MAIN VALLEY FLOOR out in the open

## SITE PREPARATION

It is best to be planting during either Autumn, late winter or early Spring when weather and ground conditions are moist.

Just after the plants have been delivered to the site and before planting, lay the different species out in groups of the same species. Keep organised. Keep plants in a shady, cool spot if possible, keep watered and make sure plants are put into the ground soon afterwards.

To create an effective nucleus, plant densely rather than spreading plants out around a larger area.

Before actually planting anything, make sure you know the correct techniques by asking someone more experienced to demonstrate planting. Demonstrations could be organised at set intervals throughout the day by someone skilled. Make sure any tools and footwear are clean before entering the planting area to prevent weed invasion. Pick up the appropriate plant list for your 'area' - this is the *'Main Valley Floor out in the open'* plant list.

## PLANTING

Pick up the plants by the container, not the foliage and go and find the appropriate area or ground condition for each plant. See the notes on the plant schedule to double check what the particular conditions are that your plants like.

If the plants are supplied in long narrow root trainers, don't separate each plant from the RT (root-trainer) 'book' yet as the roots will dry, killing the plant. Take the whole RT book and mass plant the four plants in one group at the spacings suggested on the list for each species (approximately).

If there is existing grass cover, remove the turf (screef) from the spot to dig the hole. Leave a bare 'target' patch of earth 1 metre square.

Dig each hole at least twice the size of the plant's container in all directions. Shatter the sides and bottom of the hole (on the high bony ridgelets) to help the roots spread out and down.

Tease out the roots if they are compacted or root bound. Roots should be loose. Expose the longer roots and cut back with secateurs. If plants are seriously root-bound, consider discarding or returning them to the plant supplier as they will not grow well.

Fill the bottom third of the planting hole with loose soil. Place plant gently in and pack soil firmly and evenly around the roots. Firm down in layers to prevent air gaps. Don't put stones back in the hole - only soil.

In areas such as wet pockets or spots next to little terrace risers, leave the top of the root mass at or above the existing ground surface level.

But the most important thing is to set the plant so that the soil level comes to the same point on the stem as it was when it came out of it's container.

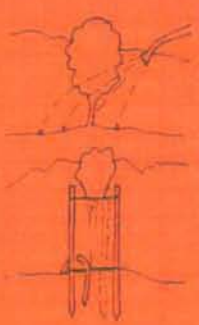
## MULCHING


Mulch with a minimum of 10cm of bark chips, newspaper (weighted down with bark chips), woollen mats, non-rubberised carpet underlay or any biodegradable material. Don't mulch on wet soils or in areas prone to waterlogging.

Make sure that any material that can catch the wind and blow is either weighted down or pinned down with bent no'8 wire 'staples' every half metre. Don't let the mulch build up against the stem.

For shrubs and trees, you need to mulch a 1 metre circle for each plant to prevent grass and weeds encroaching.

## PEST CONTROL



To stop rabbits and hares eating or damaging the young plants, either spray on a suitable natural and biodegradable repellent, especially around the stem and spread in an area at least 30cm radius on the ground around the plant. This will need to be re-applied regularly as over time rain will wash it away.
Or use a rabbit sleeve on plants with an upright growth habit. Coprosma and kowhai are particularly prone to rabbit damage. Drive 3 or 4 stakes firmly in around the plant to hold the plastic sleeve away from the plant, allowing it to breathe. Pin the sleeve down with bent no'8 wire to stop rabbits etc nosing under by lifting the sleeve. Remove these after 3 years or when the plant has grown tall enough that it won't be targeted. Leave grass long between different groups of plants - rabbits and hares don't like brushing through grass.

Monitor pests in the planted areas and their surroundings - possums, rabbits, hares, mustelids. Regularly trap and shoot with care.

## PLANT MAINTENANCE

Stake the plant to support and/or to mark it. For the first 1-2 years, the plant may not be visible above surrounding weed and grass growth making the plants hard to spot when checking needs to be done.

Regularly maintain. Replace any plants that die as long as you know what has killed it. Keep weeds away from the base of each new plant. With close rather than far spacings, the plants will soon merge together, preventing light from striking the ground, allowing weeds to germinate. This maintenance will need to be done on a six monthly basis for the first two years or until the area is self maintaining.

Do regular fence checks (generally around the perimeter of the valley and road boundaries) to make sure stock hasn't caused damage and gained access to the planted areas. This needs to be carried out on an ongoing basis indefinitely.

Once there is full canopy closure, the planted area can be 'beefed' up with interplanting in long term and special species appropriate to the microsite.

Sit back and look at the forest you have helped create, bringing back the birds and other animals, providing enjoyment for many generations to come.

# MAIN VALLEY FLOOR PLANT LIST
## out in the open

| Botanical name | Common name | PLANT TOLERANCES: dry/high, bony ridgelet | moist/wet pockets | wind | sun | shade | berry/fruit | nectar | kai | rongoa | nurse plants | plant spacings (in metres) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **TALL TREES** | | | | | | | | | | | | |
| ● *Carpodetus serratus* | putaputaweta/marbleleaf | | ✓ | | ½ | ✓ | B | | | | | 6 |
| • *Dacrycarpus dacrydioides* | kahikatea | | ✓ | | ✓ | ½ | B | | K | R | | 8 |
| • *Elaeocarpus hookerianus* | pokaka | | ✓ | | ✓ | ½ | B | | K | | | 6 |
| ● *Nothofagus* spp (refer full plant list) | silver and mountain beech | ✓ | | | ½ | ½ | | | | | | 4 |
| ● *Plagianthus regius* | manatu/lowland ribbonwood | | ✓ | ✓ | ✓ | ½ | B | | | | | 5 |
| ● *Podocarpus hallii* | Halls or thin barked totara | | ✓ | ½ | ✓ | ½ | B | N | K | R | | 8 |
| • *Prumnopitys taxifolia* | matai | | ✓ | ✓ | ✓ | ½ | B | | K | R | | 8 |
| **TREES AND SHRUBS** | | | | | | | | | | | | |
| • *Aristotelia serrata* | mako/makomako/wineberry | | ✓ | | ½ | ½ | B | | K | R | | 2 |
| • *Carpodetus serratus* | putaputaweta/marbleleaf | | ✓ | | ½ | ✓ | B | | | | | 6 |
| • *Coprosma linariifolia* | a coprosma | | ✓ | ½ | ½ | ✓ | B | N | | | | 1 |
| • *Coprosma lucida* | karamu | ✓ | ✓ | ✓ | ✓ | ✓ | B | | K | R | | 2 |
| • O *Coprosma obconica, C.wallii* | a coprosma | | ✓ | ✓ | ✓ | | B | | | | | 2 |
| ● *Coprosma propinqua,C. aff. parviflora* | mingimingi | ✓ | ✓ | ✓ | ✓ | ✓ | B | | K | | NP | 1 |
| • *Coprosma rigida* | a coprosma | ✓ | ½ | ½ | ½ | ½ | B | | | | NP | 1 |
| ● *Coprosma rotundifolia, C. rugosa* | round-leaved coprosma, a coprosma | | ✓ | ✓ | ✓ | | B | | | | NP | 1 |
| ● *Cordyline australis* | Ti rakau/Ti/Ti kouka/cabbage tree | | ✓ | ✓ | ✓ | ✓ | B | N | K | R | NP | 3 |
| • *Discaria toumatou* | matagouri | ✓ | ½ | ✓ | ✓ | | | N | | | | 2 |
| • *Dracophyllum longifolium* | inanga | ½ | ½ | ✓ | ✓ | ✓ | | | | | | 5 |
| ● *Fuchsia excorticata* | kotukutuku/tree fuchsia | | ✓ | | ½ | ✓ | B | N | K | R | | 5 |
| ● *Griselinia littoralis* | kapuka/broadleaf | | ✓ | ✓ | ✓ | ✓ | B | N | | R | | 3 |
| • *Halocarpus bidwillii* | bog pine | | ✓ | ✓ | ✓ | | B | | | | | 3 |
| • *Hebe odora* | hebe | | ✓ | ✓ | ✓ | | | | | | | 1 |
| ● *Hebe salicifolia* | kokomuka/koromiko | | ✓ | ½ | ✓ | ½ | | | | R | | 1 |
| • *Leptospermum scoparium* | manuka | | ✓ | ✓ | ✓ | ✓ | | N | K | R | NP | 2 |
| • *Melicope simplex* | poataniwha | | ✓ | ✓ | ½ | ✓ | B | | | | | 5 |
| • *Muehlenbeckia axillaris* | dwarf pohuehue | | ½ | ✓ | ✓ | ✓ | B | | | | | 1 |
| • *Myrsine australis* | mapou/red mapou | ✓ | | ✓ | ✓ | ✓ | B | | | R | | 3 |
| • *Myrsine divaricata* | weeping mapou | | ✓ | | ✓ | ✓ | B | | | | | 3 |
| • *Olearia arborescens* | common tree daisy | | ✓ | ½ | ✓ | ½ | | | | | | 5 |
| • O *Olearia fragrantissima, O. hectori* | fragrant tree daisy/olearia | ✓ | ½ | ✓ | ✓ | | | | | | | 5 |
| • *Pittosporum eugenioides* | tarata/lemonwood | | ✓ | | ✓ | ✓ | B | | K | R | | 5 |
| ● *Pittosporum tenuifolium* | rautawhiri/kohuhu/black mapou | | ✓ | ✓ | ✓ | ✓ | B | | K | | | 3 |
| • *Pseudopanax crassifolius, P.ferox* | horoeka/lancewood/ fierce lancewood | ✓ | ✓ | ✓ | ✓ | ½ | B | N | | | | 2 |
| ● *Pseudopanax* sp. aff. colensoi | three finger | ½ | ½ | ½ | ✓ | ✓ | | | | | | 3 |
| • *Pseudowintera colorata* | horopito/peppertree/ramarama | | ✓ | ½ | ✓ | ✓ | B | | | R | | 3 |
| ● P *Sophora microphylla* | South Island kowhai | | ½ | ✓ | ✓ | ½ | B | N | | R | | 5 |
| **CLIMBERS** | | | | | | | | | | | | |
| • *Clematis paniculata* | pua wananga/bush clematis | | | | ✓ | ½ | | N | | R | | – |
| • *Parsonsia heterophylla* | native jasmine/kaihua | | ½ | ✓ | ½ | ✓ | | | | R | | – |
| **GRASSES AND FLAX-LIKE PLANTS** | | | | | | | | | | | | |
| ● *Astelia nervosa* | a lily | | ✓ | | ½ | ✓ | | N | | R | | 1 |
| ● *Carex secta* | pukio/a sedge | | ✓ | | ✓ | ½ | | | | | | 1 |
| • *Carex* spp. | sedges | | ✓ | ✓ | ✓ | ½ | | | | | | 1 |
| ● *Chionochloa rubra* | red tussock | | ✓ | ✓ | ✓ | | | | | R | | 1 |
| ● *Cortaderia richardii* | toetoe | | ✓ | ✓ | ✓ | ✓ | | | | | NP | 2 |
| ● *Eleocharis acuta,E. gracilis* | a spike rush | | ✓ | | ✓ | | | | | | | 0·5 |
| ● *Juncus gregiflorus* | a rush/wiwi | | ✓ | ✓ | ✓ | | | | | R | | 0·5 |
| *Microlaena avenacea* | bush rice grass | ✓ | ✓ | ✓ | ½ | ✓ | | | | | | 0·5 |
| ● *Phormium tenax* | harakeke/lowland flax | | ✓ | ✓ | ✓ | | | N | K | R | NP | 1·5 |
| *Uncinia uncinata* | a hook grass | | ✓ | | | ✓ | | | | | | 0·5 |
| **FERNS** | | | | | | | | | | | | |
| • *Asplenium bulbiferum, A. richardii* | hen and chicken ferns | | ✓ | | | ✓ | | | K | R | | 0·5 |
| • *Blechnum discolor, B. procerum* | piupiu/crown fern, kiokio | | ✓ | | | ✓ | | | | | | 1 |
| • *Blechnum fluviatile, B. penna-marina* | kiwakiwa, little hard fern | | ✓ | | ✓ | ½ | | | | R | | 0·5 |
| • *Blechnum minus* | swamp fern, swamp kiokio | | ✓ | ✓ | ✓ | ½ | | | K | | | 0·5 |
| • *Dicksonia fibrosa* | wheki-ponga/tree fern | | ✓ | | | ✓ | | | | | | 3 |
| • *Histiopteris incisa* | mata/water fern | | ✓ | | ½ | ✓ | | | | | | 0·5 |
| • *Microsorum diversifolium* | maratata/hounds tongue fern | ✓ | ✓ | | ½ | ✓ | | | K | | | 1 |
| • *Polystichum vestitum* | prickly shield fern | | ✓ | | ½ | ✓ | | | | | | |
| • *Pteridium esculentum* | aruhe/bracken | | ✓ | | ½ | ✓ | | | | | | 0·5 |

O = threatened species  P = poisonous plant  initially plant lots (●), plant some ( • )

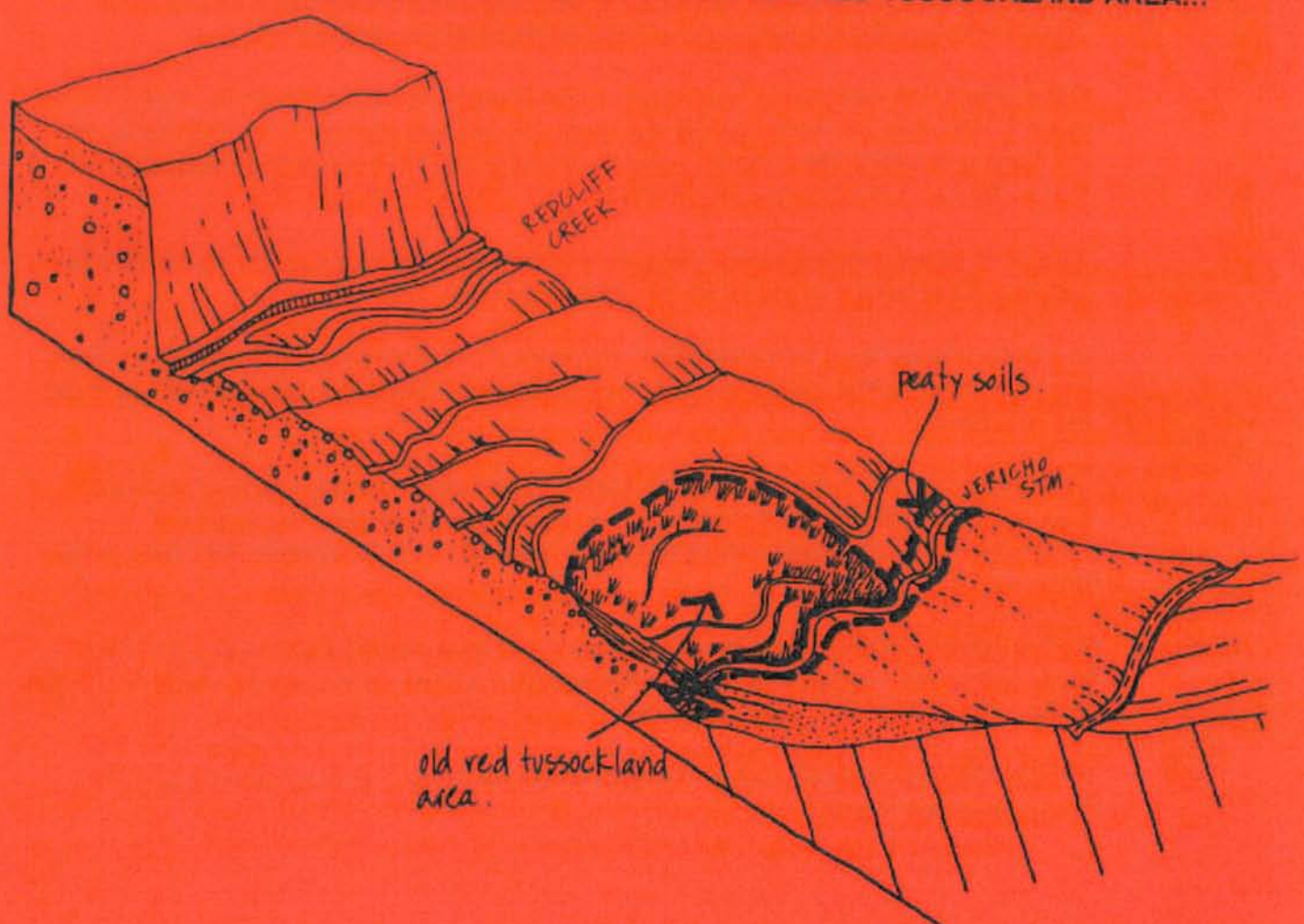
## LOWER RED TUSSOCK WETLAND

- Is the topsoil dark and moist, and the next layer chocolately brown in colour?
- Are you in sight of the Jericho Stream?
- Is there rotten wood buried or poking out?
- Have you tripped over any logs?
- If the Jericho Stream was dammed, would you get your feet wet?

**YOU MAY WELL BE ON PEATY SOIL,**
**PAST HOME TO A MIGHTY KAHIKATEA FOREST...**

- Is the grass lush and green?
- Is there a lot of red tussock around?
- Is the soil cool and moist, but won't drip any water from a squeezed handful?
- Would your pants get wet if you sat down on the ground on a summers day?
- Are there bands of dense tussock running up and down the valley?
- Does water glitter through the grass?
- Are there areas of standing water?
- Would it seem like the Jericho Stream should flow here, rather than take the diversion?
- Are you in a low lying or depressed area?
- Would it be quite easy to flood?
- Is a handful of soil grey, sticky, gooey like clay for pottery?
- Would you be hopping fast so your feet didn't get too wet?
- Would your trainers disappear under water as far as your ankle?
- Is it gumboot sucking strength?

**IF SO, YOU ARE PROBABLY IN AN OLD RED TUSSOCKLAND AREA...**



P L A N T I N G  G U I D E L I N E S

# LOWER RED TUSSOCK WETLAND

## SITE PREPARATION

It is best to be planting during either Autumn, late winter or early Spring when weather and ground conditions are moist.

Just after the plants have been delivered to the site and before planting, lay the different species out in organised groups of the same species. Keep them in a shady, cool spot if possible, keep watered and make sure they are put into the ground soon afterwards.

Before actually planting anything, make sure you know the correct techniques by asking someone more experienced to demonstrate planting. Demonstrations could be organised at set intervals throughout the day by someone skilled. Make sure any tools and footwear are clean before entering the planting area to prevent weed invasion. Pick up the appropriate plant list for your 'area'- this is the 'Lower Red Tussock Wetland'.

## PLANTING

Pick up the plants by the container, not the foliage and go and find the appropriate area or ground condition for each plant. See the notes on the plant schedule to double check what the particular conditions are that your plants like.

If the plants are supplied in long narrow root trainers, don't separate each plant from the RT (root-trainer) 'book' yet as the roots will dry, killing the plant. Take the whole RT book and mass plant the four plants in one group at the spacings suggested on the list for each species (approximately).

If there is existing grass cover, remove the turf (screef) from the spot to dig the hole. Leave a bare 'target' patch of earth 1 metre square.

Dig each hole at least twice the size of the plant's container in all directions. Shatter the sides and bottom of the hole (on any higher bony areas) to help the roots spread out and down.

Tease out the roots if they are compacted or root bound. Roots should be loose. Expose the longer roots and cut back with secateurs. If plants are seriously rootbound, consider discarding or returning them to the plant supplier as they will not grow well.

Fill the bottom third of the hole with loose soil. Place plant gently in and pack soil firmly and evenly around the roots. Firm down in layers to prevent air gaps. Don't put any stones back in the hole - only soil.

In areas permanently wet, leave the top of the root mass at or above the existing ground surface level.

But the most important thing is to set the plant so that the soil level comes to the same point on the stem as it was when it came out of it's container.

**MULCHING**


Mulch with a minimum of 10cm of bark chips, newspaper (weighted down with bark chips), woollen mats, non-rubberised carpet underlay or any biodegradable material. Don't mulch on wet soils or in areas prone to waterlogging.

Make sure that any material that can catch the wind and blow is either weighted down or pinned down with bent no'8 wire 'staples' every half metre. Don't let the mulch build up against the stem.


For shrubs and trees, you need to mulch a 1 metre diameter circle for each plant to prevent grass and weeds encroaching.

**PEST CONTROL**

To stop rabbits and hares eating or damaging the plants, either spray on a suitable natural and biodegradable repellent, especially around the stem and spread in an area at least 1 metre diameter on the ground around the plant. This will need to be re-applied regularly as over time rain will wash it away.

Or use a rabbit sleeve on plants with an upright growth habit. Drive 3 or 4 stakes firmly in around the plant to hold the plastic sleeve away from the plant, allowing it to breathe. Pin the sleeve down with bent no'8 wire to stop rabbits etc nosing under by lifting the sleeve. Remove these after 3 years or when the plant has grown tall enough that it won't be targeted. Leave the existing pasture grass long between the plants - rabbits and hares don't like brushing through grass.

Monitor pests in the planted areas and their surroundings - possums, rabbits, hares, mustelids. Regularly trap and shoot with care.

**PLANT MAINTENANCE**

Stake the plant to support and/or mark it. For the first 1-2 years, the plant may not be visible above surrounding weed and grass growth making the plants hard to spot when checking needs to be done.

Regularly maintain. Replace any plants that die as long as you know what has killed it. Keep weeds away from the base of each new plant. With close rather than far spacings, the plants will soon merge together, preventing light from striking the ground, allowing weeds to germinate. This maintenance will need to be done on a six monthly basis for the first two years or until the area is self maintaining.

Do regular fence checks (generally around the perimeter of the valley and road boundaries) to make sure stock hasn't caused damage and gained access to the planted areas. This needs to be carried out on an ongoing basis indefinitely.

Once there is full canopy closure, the planted area can be 'beefed' up with interplanting in long term and special species appropriate to the microsite.

Sit back and look at the forest you have helped create, bringing back the birds and other animals, providing enjoyment for many generations to come.

# LOWER RED TUSSOCK WETLAND PLANT LIST

| | Botanical name | Common name | PLANT TOLERANCES: moist ground | watery areas | wind | sun | shade | USES: berry/fruit | nectar | kai | rongoa | nurse plants | plant spacings (in metres) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **TREES AND SHRUBS** | | | | | | | | | | | | |
| ● | *Cordyline australis* | Ti rakau/Ti/Ti kouka/cabbage tree | ✓ | | ✓ | ✓ | ✓ | B | N | K | R | NP | 3 |
| • | *Halocarpus bidwillii* | bog pine | ✓ | | ✓ | ✓ | | B | | | | | 3 |
| | **GRASSES AND FLAX-LIKE PLANTS** | | | | | | | | | | | | |
| | *Baumea tenax* | a sedge | | | | | | | | | | | 1 |
| ● | *Carex secta* | pukio/a sedge | ✓ | ✓ | | ✓ | 1/2 | | | | | | 1 |
| • | *Carex spp.* (refer to full list) | sedges | ✓ | | ✓ | ✓ | 1/2 | | | | | | 1 |
| | *Carpha alpina* | a sedge | | | | | | | | | | | 1 |
| ● | *Chionochloa rubra* | red tussock | ✓ | | ✓ | ✓ | | | | | R | | 1 |
| ● | *Cortaderia richardii* | toetoe | ✓ | | ✓ | ✓ | ✓ | | | | | NP | 2 |
| ● | *Eleocharis acuta, E. gracilis* | spike rushes | ✓ | ✓ | | ✓ | | | | | | | 0·5 |
| ● | *Juncus gregiflorus* | a rush/wiwi | ✓ | ✓ | ✓ | ✓ | | | | | R | | 0·5 |
| | *Microlaena avenacea* | bush rice grass | ✓ | | ✓ | 1/2 | ✓ | | | | | | 0·5 |
| ● | *Phormium tenax* | harakeke/lowland flax | ✓ | ✓ | ✓ | ✓ | | | N | K | R | NP | 1·5 |
| | **FERNS** | | | | | | | | | | | | |
| • | *Asplenium richardii* | a fern | ✓ | | | | ✓ | | | K | R | | 0·5 |
| • | *Blechnum fluviatile* | kiwakiwa | ✓ | | | ✓ | 1/2 | | | | R | | 0·5 |
| • | *Blechnum minus* | swamp fern, swamp kiokio | ✓ | | ✓ | ✓ | 1/2 | | | K | | | 0·5 |
| • | *Blechnum penna-marina* | little hard fern | ✓ | | | ✓ | 1/2 | | | | R | | 0·5 |
| • | *Histiopteris incisa* | mata/water fern | ✓ | | | 1/2 | ✓ | | | | | | 0·5 |
| • | *Polystichum vestitum* | prickly shield fern | ✓ | | | 1/2 | ✓ | | | | | | 0·5 |

*initially plant lots (●), plant some ( • )*

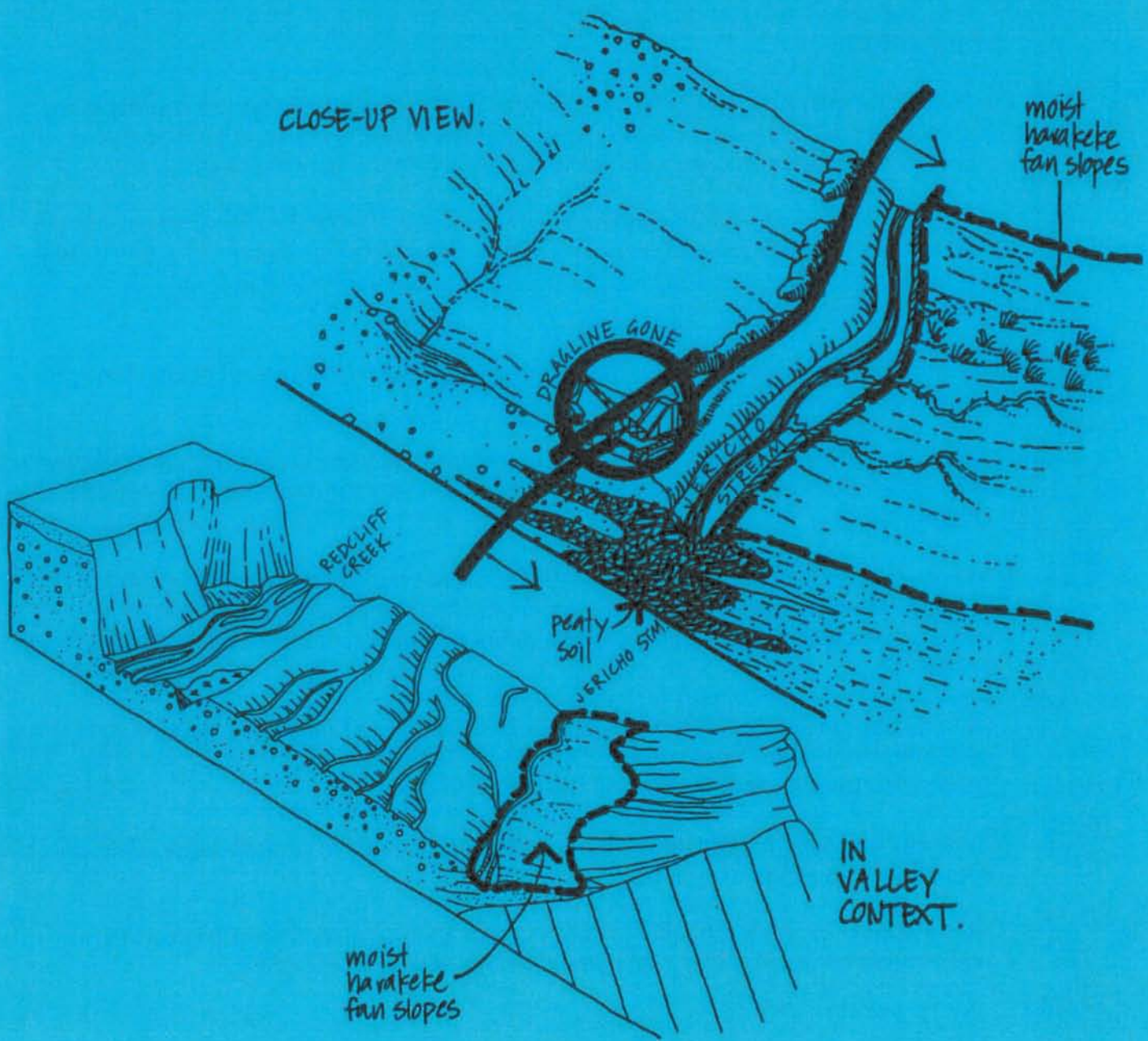
## WET SLOPES

- Is the topsoil dark and moist, and the next layer chocolately brown in colour?
- Are you in sight of the Jericho Stream?
- Is there rotten wood buried or poking out?
- Have you tripped over any logs?
- If the Jericho Stream was dammed, would you get your feet wet?

**YOU MAY WELL BE ON PEATY SOIL,**
**PAST HOME TO A MIGHTY KAHIKATEA FOREST...**

- Are you up on a gentle slope with views out to the north?
- Does water drip out of a squeezed slightly stony handful of soil?
- Is there lush green grass up on tufts? Is it squelchy below?
- Is there lots of harakeke and ti kouka to weave around?
- Would your feet get wet? Socks too?
- Would it suck off your gumboot?

**IF SO, YOU ARE MOST LIKELY ON THE MOIST HARAKEKE FAN SLOPES...**



P L A N T I N G  G U I D E L I N E S

# WET SLOPES

## SITE PREPARATION

It is best to be planting during either Autumn, late winter or early Spring when weather and ground conditions are moist.

Just after the plants have been delivered to the site and before planting, keep them in a shady, cool spot if possible, keep watered and make sure they are put into the ground soon afterwards. Keep organised.

Before actually planting anything, make sure you know the correct techniques by asking someone more experienced to demonstrate planting. Demonstrations could be organised at set intervals throughout the day by someone skilled. Make sure any tools and footwear are clean before entering the planting area to prevent weed invasion. Pick up the appropriate plant list for your 'area'. This is the '*Wet Slopes*' plant list.

## PLANTING

Pick up the plants by the container, not the foliage and go and find the appropriate area or ground condition for each plant. See the notes on the plant schedule to double check what the particular conditions are that the harakeke likes.

If the plants are supplied in long narrow root trainers, don't separate each plant from the RT (root-trainer) 'book' yet, as the roots will dry, killing the plant. Take the whole RT book and mass plant the four plants in one group at 1 metre spacings (approximately).

If there is existing grass cover, remove the turf (screef) from the spot to dig the hole. Leave a bare 'target' patch of earth 1 metre square.

Dig each hole at least twice the size of the plant's container in all directions. Shatter the sides and bottom of the hole (in stony spots) to help the roots spread out and down.

Tease out the roots if they are compacted or root bound. Roots should be loose. Expose the longer roots and cut back with secateurs. If plants are seriously root-bound, consider discarding or returning them to the plant supplier as they will not grow well.

Fill the bottom third of the planting hole with loose soil. Place plant gently in and pack soil firmly and evenly around the roots. Firm down in layers to prevent air gaps. Don't put any stones back in the hole - only soil.

In areas permanently wet, leave the top of the root mass at or above the existing ground surface level.

But the most important thing is to set the plant so that the soil level comes to the same point on the stem as it was when it came out of it's container.

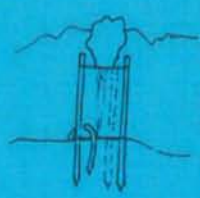
## MULCHING

If the harakeke is planted closely (one plant every metre) it is not necessary to mulch, as the plants are fast growing, and will quickly mass together suppressing the pasture grasses.


For shrubs and trees, you need to mulch a I metre diameter circle for each plant to prevent grass and weeds encroaching.

## PEST CONTROL

To stop rabbits and hares eating or damaging the young plants, either spray on a suitable natural and biodegradable repellent, especially around the stem and spread in an area at least 1 metre radius on the ground around the plant. This will need to be re-applied regularly as over time rain will wash it away.



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Monitor pests in the planted areas and their surroundings - possums, rabbits, hares, mustelids. Regularly trap and shoot with care.

## PLANT MAINTENANCE

Stake the plant to support and/or to mark it. For the first 1-2 years, the plant may not be visible above surrounding weed and grass growth making the plants hard to spot when checking needs to be done.

Regularly maintain. Replace any plants that die long as you know what has killed it. Keep weeds away from the base of each new plant. With close rather than far spacings, the plants will soon merge together, preventing light from striking the ground, allowing weeds to germinate. This maintenance will need to be done on a six monthly basis for the first two years or until the area is self maintaining.

Do regular fence checks (generally around the perimeter of the valley and road boundaries) to make sure stock hasn't caused damage and gained access to the planted areas. This needs to be carried out on an ongoing basis indefinitely.

Once the harakeke becomes thick and established, birds and wind will distribute fruit and seed amongst this sheltered environment providing more natural variation in shrub and forest cover. Ultimately, long term, the harakeke will be shaded out below full canopy closure, then the planted area can be 'beefed' up with interplanting in special species appropriate to the ground conditions.

Sit back and look at the forest you have helped create, bringing back the birds and other animals, providing enjoyment for many generations to come.

# WET SLOPES PLANT LIST

| | Botanical name | Common name | PLANT TOLERANCES: moist ground | wet areas | wind | sun | shade | berry/fruit | nectar | USES: kai | rongoa | nurse plants | plant spacings (in metres) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **TALL TREES** | | | | | | | | | | | | |
| ● | *Carpodetus serratus* | putaputaweta/marbleleaf | ✓ | | | 1/2 | ✓ | B | | | | | 6 |
| • | *Dacrycarpus dacrydioides* | kahikatea | ✓ | | | ✓ | 1/2 | B | | K | R | | 8 |
| • | *Elaeocarpus hookerianus* | pokaka | ✓ | | | ✓ | 1/2 | B | | K | | | 8 |
| ● | *Plagianthus regius* | manatu/lowland ribbonwood | ✓ | | ✓ | ✓ | 1/2 | B | | | | | 6 |
| ● | *Podocarpus hallii* | Halls or thin barked totara | ✓ | | 1/2 | ✓ | 1/2 | B | N | K | R | | 5 |
| • | *Prumnopitys taxifolia* | matai | ✓ | | ✓ | ✓ | 1/2 | B | | K | R | | 8 |
| | **TREES AND SHRUBS** | | | | | | | | | | | | 8 |
| • | *Aristotelia fruticosa* | mountain wineberry | ✓ | | | 1/2 | 1/2 | B | | | | | 2 |
| • | *Aristotelia serrata* | mako/makomako/wineberry | ✓ | | | 1/2 | 1/2 | B | | K | R | | 2 |
| • | *Carpodetus serratus* | putaputaweta/marbleleaf | ✓ | | | 1/2 | ✓ | B | | | | | 6 |
| • | *Coprosma linarifolia* | a coprosma | ✓ | | 1/2 | 1/2 | ✓ | B | N | | | | 1 |
| • | *Coprosma lucida* | karamu | ✓ | | ✓ | ✓ | ✓ | B | | K | R | | 2 |
| • O | *Coprosma obconica* | a coprosma | ✓ | | ✓ | ✓ | | B | | | | | 2 |
| ● | *Coprosma propinqua, C.*aff.*parviflora* | mingimingi | ✓ | | ✓ | ✓ | ✓ | B | | K | | NP | 1 |
| ● | *Coprosma rotundifolia, C. rugosa* | round-leaved coprosma, a coprosma | ✓ | | ✓ | ✓ | | B | | | | NP | 1 |
| ● | *Cordyline australis* | Ti rakau/Ti/Ti kouka/cabbage tree | ✓ | | ✓ | ✓ | ✓ | B | N | K | R | NP | 3 |
| ● | *Fuchsia excorticata* | kotukutuku/tree fuchsia | ✓ | | | 1/2 | ✓ | B | N | K | R | | 5 |
| ● | *Griselinia littoralis* | kapuka/broadleaf | ✓ | | ✓ | ✓ | ✓ | B | N | | R | | 3 |
| • | *Halocarpus bidwillii* | bog pine | ✓ | | ✓ | ✓ | | B | | | | | 3 |
| • | *Hebe odora* | hebe | ✓ | | ✓ | ✓ | | | | | | | 1 |
| ● | *Hebe salicifolia* | kokomuka/koromiko | ✓ | | 1/2 | ✓ | 1/2 | | | | R | | 1 |
| • | *Leptospermum scoparium* | manuka | ✓ | | ✓ | ✓ | ✓ | | N | K | R | NP | 2 |
| • | *Melicope simplex* | poataniwha | ✓ | | ✓ | 1/2 | ✓ | B | | | | | 5 |
| • | *Muehlenbeckia axillaris* | dwarf pohuehue | 1/2 | | ✓ | ✓ | ✓ | B | | | | | 1 |
| • | *Myrsine divaricata* | weeping mapou | ✓ | | | ✓ | ✓ | B | | | | | 3 |
| • | *Pittosporum eugenioides* | tarata/lemonwood | ✓ | | | ✓ | ✓ | B | | K | R | | 5 |
| ● | *Pittosporum tenuifolium* | rautawhiri/kohuhu/black mapou | ✓ | | ✓ | ✓ | ✓ | B | | K | | | 3 |
| • | *Pseudopanax crassifolius* | horoeka/lancewood | ✓ | ✓ | ✓ | ✓ | 1/2 | B | N | | | | 2 |
| • O | *Pseudopanax ferox* | horoeka/fierce/toothed lancewood | | | | ✓ | | B | N | | | | 2 |
| • | *Pseudowintera colorata* | horopito/peppertree/ramarama | ✓ | | 1/2 | ✓ | ✓ | B | | | R | | 3 |
| ● P | *Sophora microphylla* | South Island kowhai | 1/2 | | ✓ | ✓ | 1/2 | B | N | | R | | 5 |
| | **CLIMBERS** | | | | | | | | | | | | |
| • | *Clematis paniculata* | pua wananga/bush clematis | | | | ✓ | 1/2 | | N | | R | | – |
| • | *Parsonsia heterophylla* | native jasmine/kaihua | | 1/2 | ✓ | 1/2 | ✓ | | | | R | | – |
| | **GRASSES AND FLAX-LIKE PLANTS** | | | | | | | | | | | | |
| ● | *Astelia nervosa* | a lily | ✓ | | | 1/2 | ✓ | | N | | R | | 1 |
| ● | *Carex secta* | pukio/a sedge | ✓ | ✓ | | ✓ | 1/2 | | | | | | 1 |
| • | *Carex* spp. (refer full plant list) | sedges | ✓ | ✓ | ✓ | ✓ | 1/2 | | | | | | 1 |
| ● | *Chionochloa rubra* | red tussock | ✓ | ✓ | ✓ | ✓ | | | | | R | | 1 |
| ● | *Cortaderia richardii* | toetoe | ✓ | | ✓ | ✓ | ✓ | | | | | NP | 2 |
| ● | *Eleocharis acuta, E. gracilis* | a spike rushes | ✓ | ✓ | | ✓ | | | | | | | 0·5 |
| ● | *Juncus gregiflorus* | a rush/wiwi | ✓ | ✓ | ✓ | ✓ | | | | | R | | 0·5 |
| ● | *Phormium tenax* | harakeke/lowland flax | ✓ | ✓ | ✓ | ✓ | | | N | K | R | NP | 1·5 |
| | *Uncinia uncinata* | a hook grass | ✓ | | | | ✓ | | | | | | 0·5 |
| | **FERNS** | | | | | | | | | | | | |
| • | *Asplenium bulbiferum A. richardii* | hen and chicken ferns | ✓ | | | | ✓ | | | K | R | | 0·5 |
| • | *Blechnum discolor, B. procemum* | piupiu/crown fern, kiokio | ✓ | | | | ✓ | | | | | | 1 |
| • | *Blechnum fluviatile, B. penna-marina* | kiwakiwa, little hard fern | ✓ | | | ✓ | 1/2 | | | | R | | 0·5 |
| • | *Blechnum minus* | swamp fern, swamp kiokio | ✓ | | ✓ | ✓ | 1/2 | | | K | | | 0·5 |
| • | *Dicksonia fibrosa* | wheki-ponga/tree fern | ✓ | | | | ✓ | | | | | | 3 |
| • | *Histiopteris incisa* | mata/water fern | ✓ | | | 1/2 | ✓ | | | | | | 0·5 |
| • | *Microsorum diversifiolium* | maratata/hounds tongue fern | ✓ | | | 1/2 | ✓ | | | K | | | 1 |
| • | *Polystichum vestitum* | prickly shield fern | ✓ | | | 1/2 | ✓ | | | | | | 0·5 |
| • | *Pteridium esculentum* | aruhe/bracken | 1/2 | | ✓ | ✓ | 1/2 | | | K | R | | 1 |

O = *threatened species* P = *poisonous plant* *initially plant lots (●), plant some ( • )*

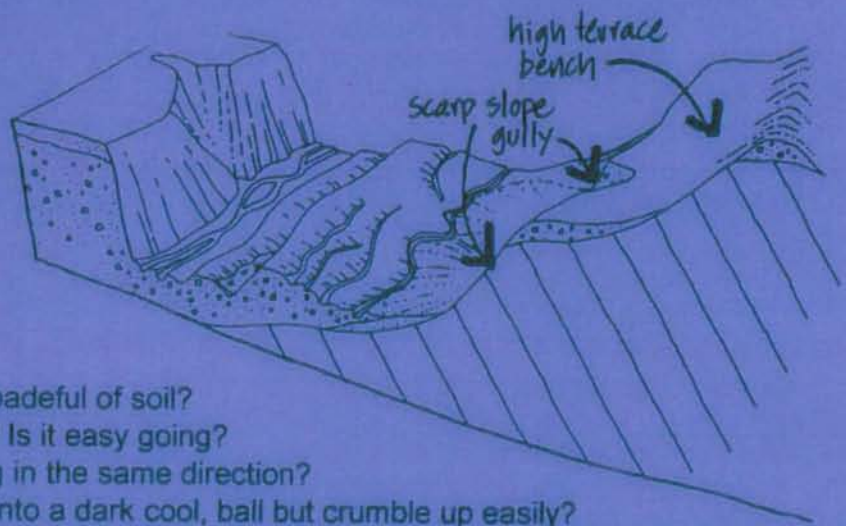
## SUNNY SLOPES

- Are you using your hands for balance while climbing up?
- Is it hot and dry, with not many places to stop and rest?
- Is the soil very light in colour, dusty?
- Are you surprised at how quick it is to get so high up?

**IT SOUNDS LIKE YOU ARE ON A SCARP SLOPE...**

- Have you reached the top of the steep climb, and discovered a wide, flat open bench?
- Are you down at the far eastern end overlooking the entire valley?
- Is there lots of prickly matagouri?
- Is it easy walking, almost flat?
- Great views in all directions?
- Is the soil stony, and quite dry?
- Are there little trickles twinkling out of the ground to form small streams?

**YOU ARE MOST PROBABLY ON THE HIGH TERRACE BENCH...**




- Are there many stones in a spadeful of soil?
- Is the ground firm to walk on? Is it easy going?
- Is the slope broad and sloping in the same direction?
- Does a handful of soil mould into a dark cool, ball but crumble up easily?
- Are you out in broad sunshine, in a grassy green paddock with great views out?

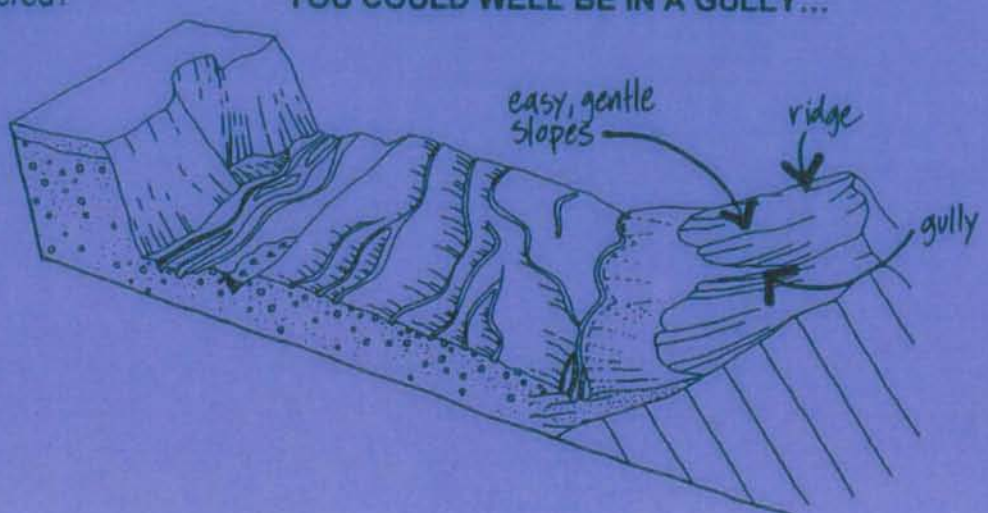
**IF SO, YOU ARE PROBABLY UP ON THE EASY, GENTLE SLOPES...**

- Are you out in broad sunshine, in a grassy green spur with great views out?
- Does the ground slope away on either side fairly steeply?
- Is the ground firm to walk on?

**YOU COULD BE UP ON A RIDGE...**

- Are there signs of water, or is it moist in the lowest point?
- Is there dense bush on the sides, far too dense to push through?
- Are there patches of lush bright green leafy plants and the odd ti kouka and harakeke?
- Does it feel sheltered?

**YOU COULD WELL BE IN A GULLY...**



P L A N T I N G  G U I D E L I N E S

# SUNNY SLOPES

## SITE PREPARATION

It is best to be planting during either Autumn, late winter or early Spring when weather and ground conditions are moist.

Find little clearings up on the hillsides that might make great picnic spots. It is best to plant around the edges among some existing shrubs, as they will provide shelter. You may need to prune these back a bit underneath to allow the new plants to grow.

Just after the plants have been delivered to the site and before planting, lay the different species out in organised groups of the same species. Keep plants in a shady, cool spot if possible, keep watered and make sure plants are put into the ground soon afterwards.

To create an effective nucleus, plant densely rather than spreading plants out around a larger area.

Before actually planting anything, make sure you know the correct techniques by asking someone more experienced to demonstrate planting. Demonstrations could be organised at set intervals throughout the day by someone skilled. Make sure any tools and footwear are clean before entering the planting area to prevent weed invasion. Pick up the appropriate plant list for your 'area' - this is the '*Sunny Slopes*' plant list.

## PLANTING

Pick up the plants by the container, not the foliage and go and find the appropriate area or ground condition for each plant. See the notes on the plant schedule to double check what the particular conditions are that your plants like.

If there is existing grass cover, remove the turf (screef) from the spot to dig the hole. Leave a bare 'target' patch of earth 1 metre square.

If the plants are supplied in long narrow root trainers, don't separate each plant from the RT (root-trainer) 'book' yet, as the roots will dry, killing the plant. Take the whole RT book and mass plant the four plants in one group at the spacings suggested on the list for each species (approximately).

Dig each hole at least twice the size of the plant's container in all directions. Shatter the sides and bottom of the hole where the soil is drier or more packed down, to help the roots spread out and down.

Tease out the roots if they are compacted or root bound. Roots should be loose. Expose the longer roots and cut back with secateurs. If plants are seriously root-bound, consider discarding or returning them to the plant supplier as they will not grow well.

Fill the bottom third of the planting hole with loose soil. Place plant gently in and pack soil firmly and evenly around the roots. Firm down in layers to prevent air gaps. Don't put any stones back in the hole - only soil.

In areas that are wet, perhaps by little seeps or in hollows, leave the top of the root mass at or above the existing ground surface level.

But the most important thing is to set the plant so that the soil level comes to the same point on the stem as it was when it came out of it's container.

**MULCHING**

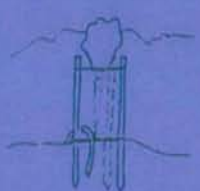
Mulch with a minimum of 10cm of bark chips, manuka slash, newspaper (weighted down with bark chips), woollen mats, non-rubberised carpet underlay or any biodegradable material.


For shrubs and trees, you need to mulch a 1 metre circle for each plant to prevent grass and weeds encroaching.

Don't let the mulch build up against the stem.

**PEST CONTROL**

To stop rabbits and hares eating or damaging the young plants, either spray on a suitable natural and biodegradable repellent, especially around the stem and spread in an area at least 30cm radius on the ground around the plant. This will need to be re-applied regularly as over time rain will wash it away.



Or use a rabbit sleeve on plants with an upright growth habit. Coprosmas and kowhai are particularly prone to rabbit damage. Drive 3 or 4 stakes firmly in around the plant to hold the plastic sleeve away from the plant, allowing it to breathe. Pin the sleeve down with bent no'8 wire to stop rabbits etc nosing under by lifting the sleeve. Remove these after 3 years or when the plant has grown tall enough that it won't be targeted.

Monitor pests in the planted areas and their surroundings - possums, rabbits, hares, mustelids. Regularly trap and shoot with care.

**PLANT MAINTENANCE**

Stake the plant to support and/or to mark it. For the first 1-2 years, the plant may not be visible above surrounding weed and grass growth making the plants hard to spot when checking needs to be done. It will also help to spot new plants under the already established vegetation.

Regularly maintain. Replace any plants that die, as long as you know what has killed it. Keep weeds away from the base of each new plant. With close rather than far spacings, the plants will soon merge together, preventing light from striking the ground, allowing weeds to germinate. This maintenance will need to be done on a six monthly basis for the first two years or until the area is self maintaining.

Do regular fence checks (generally around the perimeter of the valley and road boundaries) to make sure stock hasn't caused damage and gained access to the planted areas. This needs to be carried out on an ongoing basis indefinitely.

Once the hillslope picnic spot nuclei has become established, birds will be attracted to the fruit and berries and take over the job of 'spreading' the plants through other parts of the scrub and greater valley. Sit back and look at the forest you have helped create, bringing back the birds and other animals, providing enjoyment for many generations to come.

# SUNNY SLOPES
## PLANT LIST

| | Botanical name | Common name | PLANT TOLERANCES: dry/high, bony ridge | moist/wet gully or seep | wind | sun | shade | USES: berry/fruit | nectar | kai | rongoa | nurse plants | plant spacings (in metres) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **TREES AND SHRUBS** | | | | | | | | | | | | |
| • | *Aristotelia fruticosa* | mountain wineberry | 1/2 | ✓ | | 1/2 | 1/2 | B | | | | | 2 |
| • | *Aristotelia serrata* | mako/makomako/wineberry | 1/2 | ✓ | | 1/2 | 1/2 | B | | K | R | | 2 |
| • | *Carmichaelia virgata* | native broom | ✓ | 1/2 | ✓ | ✓ | | | | | | | 1 |
| • | *Coprosma lucida* | karamu | ✓ | ✓ | ✓ | ✓ | ✓ | B | | K | R | | 2 |
| • O | *Coprosma obconica, C. wallii* | a coprosma | ✓ | 1/2 | ✓ | ✓ | | B | | | | | 2 |
| ● | *Coprosma propinqua, C.aff.parviflora* | mingimingi, a coprosma | ✓ | ✓ | ✓ | ✓ | ✓ | B | | K | | NP | 1 |
| • | *Coprosma rigida* | a coprosma | ✓ | 1/2 | 1/2 | 1/2 | 1/2 | B | | | | NP | 1 |
| ● | *Coprosma rugosa* | a coprosma | 1/2 | ✓ | ✓ | ✓ | | B | | | | | 1 |
| ● | *Cordyline australis* | Ti rakau/Ti/Ti kouka/cabbage tree | ✓ | ✓ | ✓ | ✓ | 1/2 | | | | | | 1 |
| • P | *Coriaria sarmentosa* | tutu (poisonous) | | | | | | | N | | R | NP | 2 |
| • | *Corokia cotoneaster* | korokio | ✓ | | ✓ | ✓ | | B | N | | R | | 1 |
| • | *Discaria toumatou* | matagouri | ✓ | 1/2 | ✓ | ✓ | | | N | | | | 2 |
| • | *Dracophyllum longifolium* | inanga | 1/2 | 1/2 | ✓ | ✓ | ✓ | | | | | | 5 |
| • | *Gaultheria macrostigma* | red snow berry | | | | | | B | | K | R | | 1 |
| ● | *Griselinia littoralis* | kapuka/broadleaf | ✓ | ✓ | ✓ | ✓ | ✓ | B | N | | R | | 3 |
| • | *Halocarpus bidwillii* | bog pine | ✓ | ✓ | ✓ | ✓ | | B | | | | | 3 |
| • | *Hebe odora* | hebe | 1/2 | ✓ | ✓ | ✓ | | | | | | | 1 |
| ● | *Hebe salicifolia* | kokomuka/koromiko | 1/2 | ✓ | 1/2 | ✓ | 1/2 | | | | R | | 1 |
| • | *Leptospermum scoparium* | manuka | ✓ | ✓ | ✓ | ✓ | 1/2 | | N | K | R | NP | 2 |
| • | *Melicope simplex* | poataniwha | | ✓ | ✓ | 1/2 | ✓ | B | | | | | 5 |
| • | *Melicytus aff. alpinus* | porcupine shrub | ✓ | | ✓ | ✓ | | B | | | | | 1 |
| • | *Muehlenbeckia axillaris* | dwarf pohuehue | ✓ | 1/2 | ✓ | ✓ | ✓ | B | | | | | 1 |
| • | *Myrsine australis* | mapou/red mapou | ✓ | | ✓ | ✓ | ✓ | B | | | R | | 3 |
| • | *Myrsine divaricata* | weeping mapou | 1/2 | ✓ | | ✓ | ✓ | B | | | | | 3 |
| O | *Olearia fragrantissima, O. hectori* | fragrant tree daisy, olearia | ✓ | 1/2 | ✓ | ✓ | | | | | | | 5 |
| • | *Ozothamnus leptophylla* | cottonwood | ✓ | ✓ | ✓ | ✓ | | | | | | | 1 |
| • | *Pittosporum eugenioides* | tarata/lemonwood | | ✓ | | ✓ | ✓ | B | | K | R | | 5 |
| ● | *Pittosporum tenuifolium* | rautawhiri/kohuhu/black mapou | ✓ | ✓ | ✓ | ✓ | ✓ | B | | K | | | 3 |
| ● | *Podocarpus hallii* | Halls or thin barked totara | ✓ | ✓ | 1/2 | ✓ | 1/2 | B | N | K | R | | 8 |
| • | *Pseudopanax crassifolius, P. ferox* O | horoeka/lancewood, fierce lancewood | ✓ | ✓ | ✓ | ✓ | 1/2 | B | N | | | | 2 |
| ● | *Pseudopanax* sp. aff. colensoi | three finger | 1/2 | 1/2 | 1/2 | ✓ | ✓ | B | | | | | 3 |
| P | *Sophora microphylla* | South Island kowhai | ✓ | 1/2 | ✓ | ✓ | 1/2 | B | N | | R | | 5 |
| | **CLIMBERS** | | | | | | | | | | | | |
| • | *Clematis paniculata* | pua wananga/bush clematis | | | | ✓ | 1/2 | | N | | R | | - |
| • | *Parsonsia heterophylla* | native jasmine/kaihua | | 1/2 | ✓ | 1/2 | ✓ | | | | R | | - |
| | **GRASSES AND FLAX-LIKE PLANTS** | | | | | | | | | | | | |
| • | *Aciphylla aurea* | taramea/golden spaniard | ✓ | 1/2 | ✓ | ✓ | | B | | | R | | 1 |
| ● | *Carex flagellifera* | mania/a sedge | | ✓ | | ✓ | | | | | | | 1 |
| • | *Chionochloa rigida* | snow tussock | 1/2 | 1/2 | ✓ | ✓ | | | | | | | 0·5 |
| ● | *Cortaderia richardii* | toetoe | ✓ | ✓ | ✓ | ✓ | | | | | | NP | 2 |
| | *Microlaena avenacea* | bush rice grass | ✓ | ✓ | ✓ | 1/2 | ✓ | | | | | | 0·5 |
| ● | *Phormium tenax* | harakeke/lowland flax | ✓ | ✓ | ✓ | ✓ | | | N | K | R | NP | 1·5 |
| • | *Poa cita* | wi/silver tussock | ✓ | ✓ | ✓ | ✓ | | | | | | | 0·5 |
| • | *Poa colensoi* | blue tussock | ✓ | ✓ | ✓ | ✓ | | | | | | | 0·5 |
| | *Uncinia uncinata* | a hook grass | | ✓ | | | ✓ | | | | | | 0·5 |
| | **FERNS** | | | | | | | | | | | | |
| • | *Asplenium richardii* | a fern | | ✓ | | | ✓ | | | | | | 0·5 |
| • | *Blechnum minus* | swamp fern, swamp kiokio | | ✓ | ✓ | ✓ | 1/2 | | | K | | | 0·5 |
| • | *Blechnum penna-marina* | little hard fern | | ✓ | | ✓ | 1/2 | | | | | | 0·5 |
| • | *Lindsaea linearis* | a fern | | | | | | | | | | | 0·5 |
| • | *Polystichum vestitum* | prickly shield fern | | ✓ | | 1/2 | ✓ | | | | | | 0·5 |
| • | *Pteridium esculentum* | Aruhe/bracken | ✓ | 1/2 | ✓ | ✓ | 1/2 | | | K | R | | 1 |

O = threatened species  P = poisonous plant  initially plant lots (●), plant some (• )

# APPENDICES

*Reference:*
Certificate No. 190754.1

P.R. Vol. Folio
Transfer No.

Land and Deeds 73

No. 10A/385

# CERTIFICATE OF TITLE UNDER LAND TRANSFER ACT

This Certificate dated the 24th day of September one thousand nine hundred and ninety-one under the seal of the District Land Registrar of the Land Registration District of SOUTHLAND being a Certificate in lieu of Grant, WITNESSETH that LANDCORP FARMING LIMITED a duly incorporated company having its registered office at Wellington

is seised of an estate in fee-simple (subject to such reservations, restrictions, encumbrances, liens, and interests as are notified by memorials underwritten or endorsed hereon) in the land hereinafter described, delineated with bold black lines on the plan hereon, be the several admeasurements a little more or less, which said land was originally acquired by the abovenamed

as from the 9th day of May one thousand nine hundred and ninety-one under Section 24(1) State Owned Enterprises Act 1986

that is to say: All that parcel of land containing 445.5420 hectares more or less being Section 4 Survey Office Plan 11732 situated in Blocks XXIII and XXVI TAKITIMU SURVEY DISTRICT

DISTRICT LAND REGISTRAR

Interests as at Date of Issue:

Subject to Section 27B of the State Owned Enterprises Act 1986 (which provides for the resumption of land on the recommendation of the Waitangi Tribunal and which does not provide for third parties, such as the owner of the land, to be heard in relation to the making of any such recommendation)

Subject to:

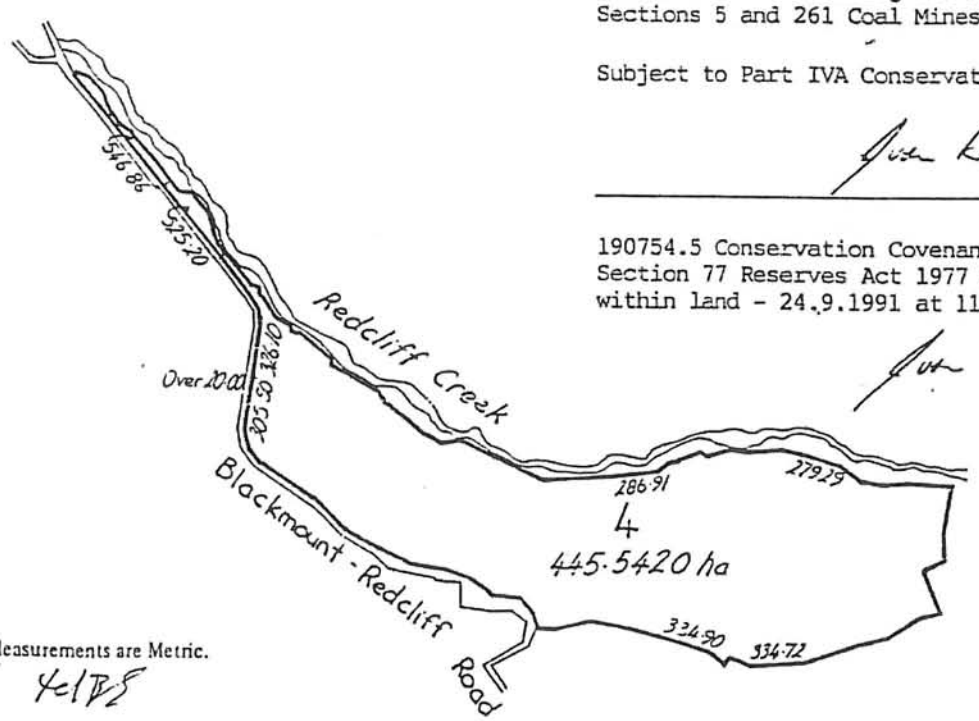
Section 3 Petroleum Act 1937
Section 8 Atomic Energy Act 1945
Section 3 Geothermal Energy Act 1953
Sections 6 and 8 Mining Act 1971
Sections 5 and 261 Coal Mines Act 1979

Subject to Part IVA Conservation Act 1987

D.L.R.

190754.5 Conservation Covenant pursuant to Section 77 Reserves Act 1977 over part within land - 24.9.1991 at 11.26 a.m.

D.L.R.




Measurements are Metric.

4/1/95

No. 10A/385

# CONSERVATION COVENANT

## (PURSUANT TO SEC.77 OF THE RESERVES ACT 1977)

**BETWEEN** Landcorp Farming Limited a duly incorporated company having its registered office in Wellington (hereinafter together with its successors and assigns called "The Landholder").

**AND**

**THE MINISTER OF CONSERVATION** (hereinafter referred to as "The Minister").

**WHEREAS:**

A. Section 77 of the Reserves Act 1977 provides that

(i) The Minister may agree with any owner or lessee of land that all or part of the land should be managed so as to preserve the natural environment or landscape amenity or wildlife or freshwater life or marine life habitat or historical value of the land;

(ii) The terms of such agreement may be recorded in a Conservation Covenant which is registered against the title to the land or the lease so as to bind the land or the lease and its owner or lessee to the performance of the terms of the agreement, in perpetuity or for such other period as the parties may agree;

B. The Landholder is registered as proprietor of an estate in fee simple subject however to such encumbrances, liens and interests as are notified by memoranda underwritten or endorsed thereon in all that piece of land situated in the Land Registration District of Southland containing 445.5420 hectares more or less being Section 4, Survey Office Plan 11732 and being all of the land so comprised and described in Certificate of Title Vol. [illegible] Folio [illegible] (Southland Registry). (Hereinafter referred to as "the land").

C. The Landholder has agreed to grant to the Minister a conservation covenant in respect of that land shown marked H on the diagram attached hereto (hereinafter referred to as "the Covenant Area") to preserve and protect the natural and historic resources of that area and in particular a stream.

**NOW THEREFORE** in consideration of the covenants and conditions hereinafter contained the Landholder **HEREBY GRANTS** to the Minister the conservation covenant to the end and intent that the covenant shall have effect in perpetuity **AND THESE PRESENTS WITNESS** that in pursuance of the agreement and by virtue of Sec.77 of the Reserves Act 1977 the Landholder and the Minister with intent so as to bind the land into whosoever's hands the same may come (but not so as to render the Landholder personally liable in damages for any breach of covenant committed after it shall have parted with all interest in the property in respect of which such breach shall occur) **MUTUALLY COVENANT** at all times to observe and perform the respective duties and obligations imposed in the restrictions, stipulations and agreements contained in the Schedule hereto.

## SCHEDULE

## RESTRICTIONS, STIPULATIONS AND AGREEMENTS

(1) NO act or thing shall be done or placed or permitted to remain upon the Covenant Areas which in the opinion of the Minister materially alters the actual appearance or condition of the Covenant Areas or which in the opinion of the Minister is prejudicial to the aim and purpose of this conservation covenant.

(2) THE Landholder shall not permit any change in the character of the topography of the Covenant Areas except as may be authorised in writing by the Minister.

(3) THE Landholder shall not permit any building of structures or hoardings or allow commercial development of the Covenant Areas except as may be authorised in writing by the Minister.

(4) THERE shall be no subdivision of the Covenant Areas, other than a subdivision to facilitate the disposal or better management of the Landholder's property in which case the Covenant Areas may be subdivided along with the land with the intent that the integrity of the Covenant Areas as a whole shall be preserved within the new titles to the subdivided areas. The full costs of subdivision (including preparation of any necessary documents) shall be met by the Landholder.

(5) THE Landholder shall not permit or suffer the placement, use or maintenance of any vehicle, trailer, caravan or similar object on the Covenant Areas.

(6) THE Landholder shall notify the Minister of any intention to mine the Covenant Areas for minerals, petroleum or any other substance or deposit; and shall not proceed with mining nor signify any concurrence in relation to mining without the previous written consent of the Minister.

(7) THE Landholder shall notify the Minister of any intention to erect utility transmission lines on the Covenant Areas and shall not signify any concurrence in relation to the proposed work without the written permission of the Minister.

(8) NO exotic planting or seed sowing shall occur within the Covenant Areas; and no bush, native trees or any indigenous plant shall be felled, removed or replaced by other species or by a different mixture of species within the Covenant Areas, except with the prior written consent of the Minister.

(9) THE Landholder shall not permit the accumulation of any rubbish or material which is unsightly or offensive on the Covenant Areas.

(10) THE Landholder shall manage areas contiguous to the Covenant Areas in a way that is as far as possible sympathetic with the water regime of the Covenant Areas.

(10A) THE Landholder shall use its best endeavours to prevent the drift of fertiliser or herbicide on to the Covenant Areas.

(11) THE Landholder shall not build any fences within the Covenant Areas other than those that may be necessary to delineate boundaries arising through a subdivision in terms of Clause 4; and shall keep all other fences, gates and other structures and improvements now erected or made within the Covenant Areas and required for management purposes by the Landholder in good repair order and condition at the Landholder's cost.

(12) THE Minister or where it is of mutual benefit, the Minister and the Landholder, shall keep all fences now erected or which may hereafter be erected on the boundaries of the Covenant Areas in good repair, order and condition.

(12A)For the purposes of Clause 12 mutual benefit to the Minister and the Landholder shall be deemed to exist where fencing is required for stock management by the Landholder. The cost of fencing which is of mutual benefit shall be borne equally between the Landholder and the Minister.

(12B)Where the natural boundary of part or the whole of the Covenant Areas would provide an adequate stock barrier the Landholder shall not be required to contribute to the fencing of that portion of the boundary which acts as an adequate stock barrier.

(13) THE Landholder shall not plough, dig, crop or burn or in any other manner wilfully destroy vegetation within the Covenant Areas, except as may be authorised in writing by the Minister.

(14) No person may develop any tracks or roads or use tracked or wheeled vehicles across the Covenant Areas without prior approval of the Minister, subject however to the Landholder being able to maintain and use any existing tracks or roads across or through the Covenant Areas.

(15) No person may graze animals in the Covenant Area, or allow entry into the Covenant Area by farmed or driven animals, unless grazing is authorised by the Minister.

(15A)It is hereby agreed that the landholder is authorised to have access across, access to water and to grave the Covenant Area.

(16) No person may disturb archaeological, historical or traditional cultural sites on the Covenant Areas.

(17) THE public shall have access to and across the Covenant Areas with the prior permission of the Landholder, the giving of which shall not be unreasonably withheld.

(18) NO easements or concessions may be granted in respect of the Covenant Areas without the prior approval of the Minister.

(19) ANY officer, agent or servant authorised in that behalf by the Minister may enter to and upon the Covenant Areas for the purpose of viewing the state and condition thereof or for the purpose of carrying out such work as may be necessary for the protection or maintenance of the Covenant Areas consistent with the aims and purposes expressed herein.

(20) THE Landholder may, subject to any other Act or Regulation applicable, permit recreational or commercial hunting of wild animals or game on the Covenant Areas subject to conditions agreed to between the Landholder and the Minister, but the Minister may prohibit hunting if it would prejudice the purpose of the covenant.

(21) THE Minister shall as far as possible ensure that the Covenant Areas are kept free from noxious plants, pests and vermin and in particular shall comply with the provisions of, and any notices given under, the Noxious Plants Act 1978 and the Agricultural Pests Destruction Act 1967.

(22) IT is recorded that Conservation Covenants under the Reserves Act 1977 are subject to sections 93 to 105 of that Act, as far as they are applicable, and they shall be read subject to this Agreement.

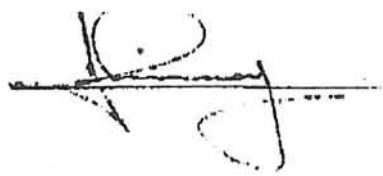
(23) THAT any consent, approval, authorisation or notice to be given by the Minister shall be sufficient if given in writing signed by the Regional Conservator for the Southland Conservancy, Department of Conservation and delivered or sent by post to the residential or official address of the Landholder or to the solicitor acting on behalf of the Landholder.

(24) THAT there be no mechanical alteration to the Flood Channel at the eastern boundary of the Covenant Area.

The Minister HEREBY ACCEPTS this conservation covenant subject to and together with the restrictions, stipulations and agreements set forth in the Schedule hereto.

IN WITNESS WHEREOF this covenent has been executed this 19th day of September 1991

SIGNED by the REGIONAL CONSERVATOR )
for the Southland Conservancy, )
Department of Conservation acting )
for and on behalf of the MINISTER )
OF CONSERVATION. )



in the presence of:

Witness

Occupation Protection Manager

Address Invercargill

SIGNED for and on behalf of ) LANDCORP FARMING LIMITED
LANDCORP FARMING LIMITED ) by its Attorney
as Grantor by its Attorney )
)

GERALD FRANCIS SOARES

In the presence of

Witness:

Occupation: Regional Accountant

Address: 192 Spey Street Invercargill

**CERTIFICATE OF NON-REVOCATION OF POWER OF ATTORNEY**

I, **GERALD FRANCIS BOANES** of Invercargill, Regional Manager

**HEREBY CERTIFY**

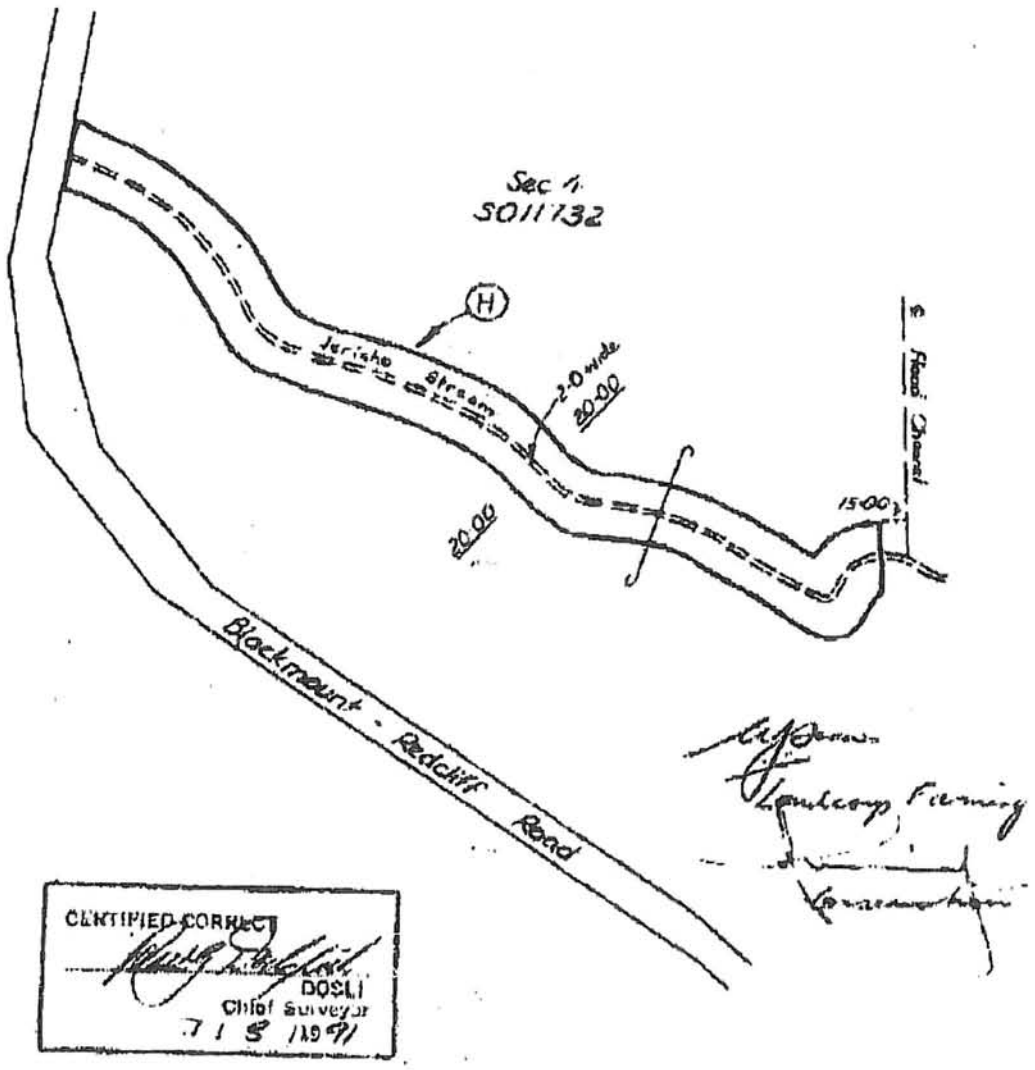
1. **THAT** by Deed dated 27th day of April 1989 a copy of which is deposited in the Land Registry Office at INVERCARGILL (Southland Registry) and there numbered 164752.1

   **LANDCORP FARMING LIMITED** at Wellington carrying on the business of land management appointed me its Attorney on the terms and subject to the conditions set out in the said Deed.

2. **THAT** at the date hereof I was a Regional Manager of **LAND CORPORATION LIMITED** at Invercargill.

3. **THAT** at the date hereof I have not received any notice or information of the revocation of that appointment by winding up or dissolution of the said **LANDCORP FARMING LIMITED** or otherwise.

**SIGNED** at Invercargill )
this 19th day of September 1991) G J Boanes




CERTIFIED CORRECT
DOSLI
Chief Surveyor
7 / 5 / 1997

Conservation Covenant pursuant to Section 77 Reserves Act 1977 over Section 4 SO 11732

Area - 1.1ha approx

Covenant defined on SO11732

# CONSERVATION COVENANT


DEPARTMENT OF SURVEY
AND LAND INFORMATION
INVERCARGILL

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## ACKNOWLEDGMENTS

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DOC
tel. (03) 214 4589
(mnieuwenhuyse@doc.govt.nz)
*re. plant pests on marginal strip*

Gail Tipa,
**Project Manager**