

## 10. TOKOROA ECOLOGICAL DISTRICT

### 10.1 Cochrane

#### Endeans Road Reserve

**Site No.:** 01007  
**Ecological Significance Category:** 1  
**Site Area Total (ha):** 720.6 (another 48.6 ha of this site lies outside CHH HBU boundaries)  
**Site Area within Tui block (ha):** 274.4  
**Grid Reference:** NZMS260 U16 750 347  
**Altitudinal Range (m asl):** 400-520  
**Ecological District:** Tokoroa  
**Bioclimatic Zone:** Lowland  
**Map Sheet (see Appendix 4):** 8, 9

Unit No.	Hydroclass	Vegetation and Habitat Type	Total Area (ha)
01	Terrestrial	Rimu-(matai)-(rewarewa)/tawa-kamahi-tawari/mahoe-pate forest	769.4

- Birds:**
- North Island robin, tui, silvereve, blackbird, magpie, fantail, pheasant, New Zealand kingfisher, grey warbler, chaffinch, pied tit, Eastern rosella, welcome swallow.
- Key Findings:**
- This site is contiguous with the Mokaihaha Ecological Area (administered by DOC) and a larger area of similar vegetation on private land.
  - Forms part of the largest example of indigenous vegetation in the Tokoroa Ecological District.
  - A good example of rimu-(matai)-(rewarewa)/tawa-kamahi-tawari forest on hill country.
  - A diverse range of forest birds are present (e.g. kereru, North Island robin, fantail, tui, pied tit, grey warbler).
  - Site provides a seasonal food source for kereru.
  - No invasive pest plants were recorded, although a detailed inventory was not undertaken.
  - Legal protection by way of covenant is being investigated for this site.
- General Condition:**
- Good - relatively intact canopy of mainly indigenous species, lacking invasive weeds, but some exotics present.
- Management:**
- Carry out possum control to 5% RTC to maintain an intact canopy and regenerating understorey (dieback noted on kamahi (*Weinmannia racemosa*) and whauwhaupaku (fivefinger; *Pseudopanax arboreus*)).
- May 2003 Management Assessment:**
- A high priority site for pest management due to its location adjacent to DOC reserve.
  - Possum-palatable species in the canopy showed dieback due to possum browse, and the site would benefit from co-ordinated possum control in conjunction with adjoining DOC reserve.

## MANGAKOTAHA STREAM

Site No.: K914

Ecological Significance Category: 2

Site Area Total (ha): 77.7

Site Area within Tui block (ha) 19.4

Grid Reference: U16 759371

Ecological District: Tokoroa

Bioclimatic Zone: Lowland

Map Sheet (see Appendix 4) 8, 9

Unit No.	Hydroclass	Vegetation and Habitat Type	Area (ha)
01	Terrestrial	Rimu-(miro) / tawa-tawari-tanekaha-(hinau)/ <i>Pittosporum colensoi</i> -kamahi-kapuka-wheki-lancewood/mingimingi forest	77.7

Birds: 

- Fantail, blackbird.

Key Findings: 

- Two large areas of modified primary podocarp-tawa forest and a small *Carex virgata* dominated wetland.
- One area is contiguous with a much larger area of indigenous forest administered by DOC, the other is situated around a gorge with a narrow wetland at the base.

Management Recommendations: 

- Subject to generic management recommendations.
- Ensure planting setback recommendations are adhered to.

## ONU KUTAUIRA STREAM FOREST

Site No. 01098

Ecological Significance Category 3

Area (ha) 28.6

Site Area within Tui block (ha) 15.4

Grid Reference U16 747330

Ecological District Tokoroa

Map Sheet (see Appendix 4) 8

Unit No.	Hydroclass	Vegetation and Habitat Type	Area (ha)
01	Terrestrial	( <i>Populus</i> sp.)/rimu-tawa-(miro)/tawa-kohuhu-mamaku/tawa-horoeka-kohuhu-rimu-mahoe-wheki-(tawari)/karamu-(koromiko)-(toru)/ <i>Cortaderia fulvida</i> forest	19.5
02	Riverine	( <i>Carex secta</i> )/open water	4.5
03	Riverine	Kohuhu-(wheki)/ <i>Cortaderia fulvida</i> tussockland	4.5

- Birds:**
- Grey warbler, fantail, New Zealand kingfisher, bellbird, silvereye, welcome swallow, blackbird, magpie, mallard duck.
- Key Findings:**
- Compact shaped wetland dominated by grey willow, but with an indigenous understorey.
  - Wetland habitat nationally has decreased substantially since 1840.
  - Although there is a greater presence of exotic species in Unit 04, the unit links the natural area to the Waikato River.
- Management Recommendations:**
- Manage environment weeds to maintain and enhance the indigenous cover.

### KRAFT ROAD

Site No.	01045
Ecological Significance Category	4
Area (ha)	1.6
Site Area within Tui block (ha)	1.4
Grid Reference	T16 448248
Ecological District	Tokoroa
Map Sheet (see Appendix 4)	5, 11

Unit No.	Hydroclass	Vegetation and Habitat Type	Area (ha)
01	Terrestrial	Rewarewa-kanuka-rimu/kamahi-kanuka-kohuhu-ponga-(radiata pine)-(kahikatea)-(kowhai)/mingimingi-Coprosma lucida-hangehange-(mahoe)-(horoeke)/wheki-(koromiko)/kowaowao-turutu forest	1.6

- Birds:**
- Welcome swallow, silvereye, grey warbler, fantail, bellbird, New Zealand kingfisher, pied tit, Australasian harrier, blackbird, house sparrow.
- Key Findings:**
- Steep slope on eastern bank of Waikato River dominated by kamahi forest with frequent emergent rewarewa and kanuka, and occasional kahikatea and kowhai towards river margin.
  - A very small site dominated by indigenous secondary vegetation.
  - Whilst this site does act as a protective buffer to the Waikato River it is very small and narrow.
- Management Recommendations:**
- Not a priority site for management.
  - Increase width of planting set back from the river at the next rotation.

- Birds:**
- Grey warbler, Australasian harrier, blackbird, Indian myna, greenfinch, house sparrow, song thrush.
- Key Findings:**
- A small grey willow dominated wetland dissected by roads.
  - A small narrow area of raupo is present to the east of Skinner Road.
  - Although small and with a willow canopy, the understorey of this wetland is predominantly indigenous.
  - Wetland is under-represented at a national level and therefore even small sites such as this are significant.
- Management Recommendations:**
- Establish an indigenous buffer between the wetland and plantation forest.
  - Not a priority site for management.

## 10.5 Te Ranga

### TE RANGA ROAD WETLAND

Site No.	01120
Ecological Significance Category	4
Area (ha)	0.5
Site Area within Tui block (ha)	0.5
Grid Reference	T16 625341
Ecological District	Tokoroa
Map Sheet (see Appendix 4)	7

Unit No	Hydroclass	Vegetation and Habitat Type	Area (ha)
01	Palustrine	Manuka/wheki-(karamu)/ <i>Cortaderia fulvida</i> - <i>Juncus gregiflorus</i> -manuka-kiokio-dead tree ferns-(grey willow)-(turutu)-(Himalayan honeysuckle)- <i>Baumea</i> sp./Yorkshire fog- <i>Lotus pedunculatus</i> -(kiokio)-(pate)-(blackberry) tussockland	0.5

- Birds:**
- Grey warbler, fantail.
- Key Findings:**
- Wetland dominated by *Cortaderia fulvida* (tostoe) with emergent manuka, wheki (*Dicksonia squarrosa*), and karamu.
  - Grey willow and blackberry are sparse.
  - Wetland habitat nationally has decreased substantially since 1840.
- Management Recommendations:**
- Establish indigenous buffer between wetland and plantation.

## 10.6 Tokoroa East-North

### PUKERIMU FOREST

Site No.: 01008  
Ecological Significance Category: 1  
Area (ha): 168.6 ha  
Site Area within Tui block (ha) 150.7  
Grid Reference: NZMS260 U16 712 277  
Altitudinal Range (m asl): 390-540  
Ecological District: Tokoroa  
Bioclimatic Zone: Lowland  
Map Sheet (see Appendix 4) 7, 8

Unit No.	Hydroclass	Vegetation and Habitat Type	Area (ha)
01	Terrestrial	Rewarewa-(matai)-(rimu)/kamahi-tawa-(rimu)-(tanekaha)-(kahikatea)-(toru)-(kanuka)/kohuhu-mamaku forest	87.8
02	Terrestrial	(Radiata pine)/kanuka-rewarewa-tanekaha-(rimu)/(bare rock) forest	66.7
03	Terrestrial	Radiata pine/kohuhu-wheki-(tutu)-(mapou) forest	3.6

#### Birds:

- Bellbird, silvereye, fantail, grey warbler, New Zealand kingfisher, pied tit, Indian myna, blackbird, chaffinch, pheasant, tui, North Island robin, yellowhammer.

#### Key Findings:

- The site extends over an altitudinal range of 150 m.
- A relatively large example of indigenous forest.
- The best representative example of secondary kanuka-rewarewa-tanekaha forest on plateau scarps in the Tokoroa Ecological District.
- Contains a good quality example of modified primary rewarewa-(matai-rimu)/kamahi-forest.
- Contiguous with the Pukerimu Ecological Area, a protected natural area of considerable conservation significance due to the presence of high quality podocarp forest and a threatened species - pua o te reinga (*Dactylanthus taylorii*) (DOC 1997).

- Includes an area of mature radiata pine with an indigenous understorey on a plateau.

#### Management:

- Undertake wild animal control (deer and possum sign seen at site). Control possums to 5% RTC.
- Monitor and control spread of radiata pines.
- Consider removing radiata pine from plateau. Trees are dispersing seed onto steep plateau scarps where control will be difficult.

## KANGAROO FOREST

Site No. 01006  
Ecological Significance Category 2  
Area (ha) 76.9  
Site Area within Tui block (ha) 5.5 ha  
Grid Reference T16 689284  
Ecological District Tokoroa

### Vegetation Types and Habitats

Unit No.	Hydroclass	Vegetation and Habitat Type	Area (ha)
01	Plateau scarp	Rimu-rewarewa-(matai-kahikatea-radiata pine)/tawa forest	56.6
02	Plateau scarp	(Radiata pine)/tanekaha-kohuhu-(kanuka-horoeka-toru)/bare rock forest	21.2

#### **Birds:**

- Sacred kingfisher, tui, pied tit, bellbird, silvereve, chaffinch, blackbird, eastern rosella, welcome swallow, grey warbler, song thrush, North Island robin, fantail, yellowhammer, Indian myna.

#### **Key Findings:**

- Representative example of secondary tanekaha forest on plateau scarp.
- Forest birds such as North Island robin, bellbird, pied tit, tui, grey warbler are present. Kereru (New Zealand pigeon) are likely to be residents.

#### **Management:**

- Monitor and restrict spread of wilding pines.
- Control possums to 5% RTC.

## TIKITIKI FOREST

Site No. 01005  
Ecological Significance Category 2  
Area (ha) 107.9  
Site Area within Tui block (ha) 83.8  
Grid Reference U16 722300  
Ecological District Tokoroa

Unit No.	Hydroclass	Vegetation and Habitat Type	Area (ha)
01	Terrestrial	Redwood/kohuhu-ti kouka-(mahoe wao)/toetoe-bracken shrubland	4.1
02	Terrestrial	(Rimu)-(rewarewa)/tawa-lancewood-kohuhu/wheki/ <i>Dicksonia</i> sp.-toetoe-Himalayan honeysuckle-(pate)-(supplejack) scrub	11.9
03	Terrestrial	Rewarewa-tawa-(rimu)-(matai)/tawa-kohuhu- <i>Dicksonia</i> sp. forest	40.6
04	Terrestrial	(Rimu)-(matai)-(rewarewa)/tawa-rewarewa-kamahi-(tawari)-(tanekaha) forest	12.3
05	Terrestrial	Kohuhu-(cabbage tree)/toetoe-bracken tussockland	0.4
06	Palustrine	Open Water	0.7

**Birds:**

- Tui, welcome swallow, fantail, grey warbler, bellbird, pied tit, house sparrow, eastern rosella, silvereye, sacred kingfisher, yellowhammer, kereru, harrier.

**Key Findings:**

- A relatively large forest/shrubland mosaic along the Tikitiki Stream gully, with a wide diversity of vegetation types including; logged rimu-matai-rewarewa-tawa forest, mixed scrub, kohuhu shrubland, and *Cortaderia fulvida* tussockland.
- A small open water body is present at the eastern end.
- Kereru (New Zealand pigeon) present and other birds typical of indigenous forest habitats (tui, bellbird, pied tit).
- Exotic frogs present.

**Management:**

- Continue wild animal control at site to maintain forest health including possums to 5% Residual Trap Catch (RTC) levels (or below) during spring-summer breeding season in order to maintain New Zealand pigeon productivity.

**GORILLA ROAD GULLY**

Site No.	NR106
Ecological Significance Category	3
Area (ha)	18.2 ha
Site Area within Tui block (ha)	18.1
Grid Reference	U16 747293
Ecological District	Tokoroa
Map Sheet (see Appendix 4)	8

Unit No.	Hydroclass	Vegetation and Habitat Type	Area (ha)
01	Terrestrial	Coprosma propinqua-kohuhu-lancewood-(radiata pine)/broom-bracken-blackberry-(harakeke)-(Cortaderia fulvida) shrubland	1.3
02	Palustrine	Grey willow/Coprosma propinqua-(radiata pine)-(lancewood)/harakeke-kiokio-wheki-ponga-broom-Carex secta treeland	2.1
03	Terrestrial	Kohuhu-lancewood-karamu-whauwhaupaku-(Coprosma propinqua)/wheki-kiokio-broom treeland	1.5
04	Palustrine	Carex secta-(harakeke)/spearwort tussockland	0.2

**Birds:**

- Fantail, kingfisher, grey warbler, yellowhammer, goldfinch, paradise duck, mallard duck, blackbird.

**Key Findings:**

- A small narrow stream with secondary indigenous forest along the margins with small areas of wetland dominated by *Carex* species and harakeke.
- Wetland habitat has decreased markedly since 1840 and now comprises <0.2% of the current landcover in the Atiamuri Ecological District (New Zealand Landcover Database 2001).

**Management**

**Recommendations:**

- Not a priority site for management.

11.3 Moose

**WAPITI ROAD WETLAND**

Site No.	01175
Ecological Significance Category	4
Area (ha)	3.8
Site Area within Tui block (ha)	3.8
Grid Reference	U16 796166
Ecological District	Atiamuri
Map Sheet (see Appendix 4)	15

Unit No.	Hydroclass	Vegetation and Habitat Type	Area (ha)
01	Palustrine	Cortaderia fulvida-raupo/Carex secta-Baumea rubiginosa tussockland	0.2
02	Palustrine	(Wilding pine)-grey willow-kohuhu-karamu-(wheki-ponga)/Carex geminata-Cortaderia fulvida-bracken-Carex secta-kiokio tussockland	2.8
03	Palustrine	(Grey willow)/karamu-kohuhu-(wheki)-(wheki-ponga)(ti kouka)-(buddleia) tussockland	0.6
04	Palustrine	Ti kouka-kohuhu/harakeke-Cortaderia fulvida/Carex geminata-bracken tussockland	0.2



**Birds:**

- Fernbird, swallow, fantail, blackbird, grey warbler.

**Key Findings:**

- A moderate sized wetland dominated by *Carex* species with *Baumea* and raupo locally dominant. Some exotic species, including grey willow, are present.
- The wetland is very narrow in places and is vulnerable to effects of harvesting.
- Wetland habitat has decreased markedly since 1840 and now comprises <0.2% of the current landcover in the Atiamuri Ecological District (New Zealand Landcover Database 2001), so any wetland area has ecological value.
- North Island fernbird present.
- Grey willow should be removed from the wetland, although this site is not a priority for management.

**Management****Recommendations:**

## 11.4 Taranui Baboon

**COACH ROAD/TARANUI ROAD**

Site No.	K475
Ecological Significance Category	3 (Units 01,02); 04 (Units 03,04,05)
Area (ha)	10.1
Site Area within Tui block (ha)	1.3
Grid Reference	U16 724136
Ecological District	Atiamuri
Map Sheet (see Appendix 4)	20

Unit No.	Hydroclass	Vegetation and Habitat Type	Area (ha)
01	Palustrine	Grey willow/ngawha- <i>Carex secta</i> - <i>Cortaderia fulvida</i> ( <i>Ranunculus</i> sp.)-(exotic grass) reedland	0.6
02	Palustrine	Grey willow- <i>Populus</i> sp.-(kohuhu)/harakeke-(karamu)-(wheki-ponga)/ <i>Carex geminata</i> -kiokio-(bracken)-(waewaekaka)-(Lepidosperma australe)-(Clematis quadribractiolata) tussockland	0.6
03	Palustrine	Grey willow- <i>Populus</i> sp./wheki-ponga)-(Coprosmia x cunninghamii)/harakeke-bracken-( <i>Cortaderia fulvida</i> )/ <i>Baumea rubiginosa</i> -bracken-kiokio-(karamu)-(Yorkshire fog)-(Baumea teretifolia) treeland	2.0
04	Palustrine	Grey willow/ <i>Carex secta</i> - <i>Cortaderia fulvida</i> -harakeke- <i>Carex geminata</i> -bracken-(kiokio)-(blackberry) treeland	2.5
05	Palustrine	Wheki-ponga/harakeke- <i>Cortaderia fulvida</i> -grey willow-(kohuhu)/bracken- <i>Carex secta</i> -( <i>Carex geminata</i> )-(blackberry)-(Himalayan honeysuckle) tussockland	4.4

- Birds:**
- Pukeko, sparrow, kingfisher, whitehead, grey duck (with ducklings), fantail, fernbird.
- Key Findings:**
- Compact shaped wetland supporting large areas of *Eleocharis sphacelata* reedland.
  - Units 03, 04, 05 are narrow, fragmented and quite degraded.
  - North Island fernbird present.
  - Although most of this site is quite degraded, wetland habitat has decreased markedly since 1840 and now comprises <0.2% of the current landcover in the Atiamuri Ecological District (New Zealand Landcover Database 2001).
- Management Recommendations:**
- This site would benefit from the establishment of a buffer zone.

### **BOB ROAD WETLAND**

Site No.	01155
Ecological Significance Category	3
Area (ha)	39.1
Site Area within Tui block (ha)	7.3
Grid Reference	U16 746183
Ecological District	Atiamuri
Map Sheet (see Appendix 4)	14

Unit No.	Hydroclass	Vegetation and Habitat Type	Area (ha)
01	Palustrine	(Kohuhu)-(radiata pine)-(Populus sp.)/(manuka)-(karamu)-(koromiko)-(Coprosma tayloriae)-(Populus sp.)-(Spanish heath)-(buddleia)/Cortaderia fulvida-Lepidosperma australe-Baumea rubiginosa-(Carex virgata)-(Carex secta)-(Juncus gregifforus)-(mairehau)/(Yorkshire fog)-(kiokio)-(Eleocharis sp.)-(swamp millet)-(lotus)/(moss)-(bare mud) tussockland	1.2
02	Palustrine	(Wilding pine)-grey willow-kohuhu-karamu-(wheki-ponga)/Carex geminata-Cortaderia fulvida-bracken-Carex secta-kiokio tussockland	14.0
03	Riverine	Kohuhu-mahoe wao-(ti kouka)-(radiata pine)-(Populus sp.)/(koromiko)-(wheki)-(karamu)-(buddleia)/Cortaderia fulvida-(harakeke) scrub	1.6
04	Palustrine	(ti kouka)-(wheki)/Cortaderia fulvida-(Carex virgata) tussockland	4.9
05	Palustrine	Grey willow-ti kouka-(kohuhu)-(wheki)/Himalayan honeysuckle-harakeke-(buddleia)/Cortaderia fulvida-Carex virgata/bracken-(blackberry) scrub	6.9
06	Palustrine	(Kohuhu)-(ti kouka)-(radiata pine)-(manuka)/harakeke-Cortaderia fulvida-(grey willow)-(karamu)-(Spanish heath)-(Himalayan honeysuckle)-(Scotch broom)/(Carex sp.)-(Carex geminata)/(bracken) flaxland	3.4
07	Palustrine	(Kohuhu)-tree fern trunks (dead)/Cortaderia fulvida-buddleia-(Carex virgata) tussockland	1.9
08	Palustrine	Kohuhu-(ti kouka)-(radiata pine)/harakeke-(Cortaderia fulvida)-(Carex virgata)-(Baumea rubiginosa)-(grey willow)/(kiokio)/(Yorkshire fog) flaxland	4.1

Unit No.	Hydroclass	Vegetation and Habitat Type	Area (ha)
09	Palustrine	(Raupo)-(grey willow)/ <i>Carex virgata</i> - <i>Carex geminata</i> - <i>(Cortaderia fulvida)</i> - <i>(Carex secta)</i> - <i>(Juncus sp.)</i> /open water- <i>(Azolla sp.)</i> tussockland	0.5
10	Terrestrial	Kohuhu/whēki-ponga-ti kouka-(whēki)-(pate)/ <i>Cortaderia fulvida</i> - <i>Carex secta</i> -harakeke-(karamu)/Yorkshire fog-kioklo-bracken-(foxglove) treeland	0.5

**Birds:**

- Paradise shelduck, North Island fernbird, pied tit, welcome swallow, myna, long-tailed cuckoo, fantail, spotless crane, grey warbler, silveryeye, chaffinch, greenfinch, blackbird, song thrush, New Zealand kingfisher, harrier, pheasant.

**Key Findings:**

- A large, convoluted wetland bisected by roading in several places.
- Wetland habitat has decreased markedly since 1840 and now comprises <0.2% of the current landcover in the Atiamuri Ecological District (New Zealand Landcover Database 2001).
- A mosaic of dominant species, with harakeke, *Carex*, and toetoe.
- Manuka, kohuhu, karamu (*Coprosma robusta*) and other typical indigenous colonising species are present on the periphery of the site in the drier places of the wetland.

**Management**

**Recommendations:**

- North Island fernbird and spotless crane are present.
- Long-tailed cuckoo recorded.
- Tree ferns appear to have been affected by herbicide.
- Avoid spraying herbicide over site.
- Create indigenous buffer.
- Not a high priority for weed control.

**LEN ROAD WETLAND**

Site No.	01154
Ecological Significance Category	4
Area (ha)	2.7
Site Area within Tui block (ha)	2.7
Grid Reference	U16 747153
Ecological District	Atiamuri
Map Sheet (see Appendix 4)	14

Unit No.	Hydroclass	Vegetation and Habitat Type	Area (ha)
01	Palustrine	Grey willow-(ti kouka)/grey willow- <i>Cortaderia fulvida</i> - <i>(Carex virgata)</i> /(kioklo) scrub	2.7

- Birds:**
- Fernbird, magpie, silvereye, New Zealand kingfisher, welcome swallow, grey warbler, Californian Quail, blackbird, Australasian harrier.
- Key Findings:**
- A fragmented wetland dominated by grey willow.
  - Although this wetland is induced and is fragmented, wetland habitat has decreased markedly since 1840 and now comprises <0.2% of the current landcover in the Atiamuri Ecological District (New Zealand Landcover Database 2001).
  - North Island fernbird present.
  - Exotic species are common, including blackberry, Himalayan honeysuckle, broom and buddleia.
- Management Recommendations:**
- Consider leaving a buffer strip around natural areas following harvesting in adjacent plantation, especially wetlands
  - Grey willow should be removed.

## 11.5 Tatua

### WAIPAPA STREAM GEOTHERMAL

<b>Site No.:</b>	01069
<b>Ecological Significance Category:</b>	1
<b>Area (ha):</b>	0.7 ha
<b>Site Area within Tui block (ha)</b>	0.7
<b>Grid Reference:</b>	NZMS260 T17 678009
<b>Altitudinal Range (m asl):</b>	280-320 m
<b>Ecological District:</b>	Atiamuri
<b>Bioclimatic Zone:</b>	Lowland
<b>Map Sheet (see Appendix 4)</b>	23

Unit No.	Hydroclass	Vegetation and Habitat Type	Area (ha)
01	Terrestrial	Karamu-whelki-ponga/kiokio-bracken treeland	0.7
02	Terrestrial	Kiokio-bracken- <i>Christella</i> sp. 'thermal' mixed fernland	0.0
03	Terrestrial	<i>Christella</i> sp. 'thermal' fernland	0.0

- Birds:**
- Whitehead, North Island robin, fantail, grey warbler and blackbird.
- Key Findings:**
- A good population (c.400 plants) of *Christella* sp. 'thermal', a species classified as At Risk-Declining, is present.
  - The site contains several hot springs and steam vents with hot water streams flowing into Waipapa Stream.
  - North Island robin and whitehead were recorded at the site.

**Management:**

- Monitor the population of *Christella* sp. 'thermal' at the site.
- Monitor and control spread of radiata pines.
- Avoid felling trees into geothermal vegetation.
- Avoid roadworks in natural area.
- Establish a complete and wider buffer (7-10 m) around geothermal vegetation.

**MOKAUTEURE STREAM/WAIPAPA STREAM MARGINS**

Site No.	01018
Ecological Significance Category	2 (Units 02, 03, 05, 06); 3 (Units 01, 07); 5b (Unit 04)
Area (ha)	76 ha (8 ha of this site lies outside the CHH HBU forest boundary)
Site Area within Tui block (ha)	11.1
Grid Reference	T17 673967
Ecological District	Atiamuri
Map Sheet (see Appendix 4)	19, 23, 27

Unit No.	Hydroclass	Vegetation and Habitat Type	Area (ha)
01	Terrestrial	Wheki-ponga-(rimu)-karamu-lancewood-buddleia-(totara)/blackberry/ <i>Carex secfa</i> forest	29.2
02	Palustrine	(Radiata pine)-crack willow-tutu-harakeke- <i>Cortaderia fulvida</i> flaxland	2.7
03	Palustrine	Crack willow/manuka-harakeke flaxland	10.3
04	Terrestrial	<i>Salix</i> sp./blackberry scrub	6.3
05	Terrestrial	( <i>Populus</i> sp.)-(radiata pine)/kohuhu-karamu-wheki-ponga/blackberry-Himalaya honeysuckle-buddleia-kiokio forest	4.4
06	Palustrine	Crack willow/ <i>Carex secfa</i> -harakeke flaxland	0.6
07	Terrestrial	(Radiata pine)-horoeke-mahoe-kama-hi-pate-wheki-ponga-karamu/kiokio/rarahu forest	15.8

**Birds:**

- Tui, robin, tui, North Island fernbird, whitehead, blackbird, song thrush, pipit, harrier, silvereye, shining cuckoo, pukeko, grey warbler, yellowhammer, bellbird, fantail. Potential crane habitat.

**Key Findings:**

- A relatively diverse array of vegetation and habitat types that range from open swampland, through broadleaved shrubland, and onto podocarp forest with young rimu, totara, and matai all emerging (Spring-Rice 1996).
- Part of this site has been identified as a Category 2 RAP (Tereina Road Swamp) in the Atiamuri Ecological District PNAP report (RAP No. 12; Spring-Rice 1996).
- Site act as a protective buffer to the Mokauteure Stream.
- Wetland and forest communities are under-represented in the Atiamuri Ecological District.
- North Island fernbird is present.

**Management:**

- Create a buffer between wetland areas and forestry operations (for Units 02, 03, 06).
- Retain indigenous vegetation alongside stream margins.