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APPENDICES

1. PLANT NAMES USED IN THE TEXT Scientific names, six letter codes & common names

SCIENTIFIC NAME	6-LETTER CODE	MAORI NAME	OTHER COMMON NAME
<i>Agathis australis</i>	AGAAUS	kauri	
<i>Alectryon excelsus</i>	ALEEXC	titoki	
<i>Alepis flavida</i>	ALEFLA		mistletoe
<i>Alseuosmia species</i>	ALSEUO		
<i>Aristotelia serrata</i>	ARISER	makomako	wineberry
<i>Ascarina lucida</i>	ASCLUC	hutu	
<i>Asplenium bulbiferum</i>	ASPBUL	mauku	hen & chickens fern
<i>Asplenium flaccidum</i>	ASPFLA	raukatauri	drooping spleenwort
<i>Asplenium oblongifolium</i>	ASBOBL		shining spleenwort
<i>Astelia species</i>	ASTELI		
<i>Beilschmiedia species</i>			
<i>Beilschmiedia tarairi</i>	BEITAR	taraire	
<i>Beilschmiedia tawa</i>	BEITAW	tawa	
<i>Blechnum fluviatile</i>	BLEFLU	kiwakiwa	ray water fern
<i>Blechnum chambersii</i>	BLECHA		lance fern
<i>Brachyglottis repanda</i>	BRAREP	rangiora	bushmans friend
<i>Carpodetus seratus</i>	CARSEP	putaputaweta	marble leaf
<i>Cassinia leptophylla</i>	CASLEP	tauhiu	cottonwood
<i>Clematis paniculata</i>	CLEPAN	puawananga	white clematis
<i>Clianthus species</i>			kaka beak
<i>Coprosma ciliata</i>	COPCIL		
<i>Coprosma foetidissima</i>	COPFOE	hupiro	stinkwood
<i>Coprosma grandifolia</i>	COPGRA	kanono	
<i>Coprosma lucida</i>	COPLUC	karamu	
<i>Coprosma pseudocuneata</i>	COPPSE		
<i>Coprosma repens</i>	COPREP	taupata	
<i>Coprosma rhamnoides</i>	COPRHA		
<i>Coprosma robusta</i>	COPROB	karamu	
<i>Coprosma rotundifolia</i>	COPROT		round leaved coprosma
<i>Coprosma species</i>	COPROS		
<i>Coprosma tenuifolia</i>	COPTEN		
<i>Cordyline species</i>	CORDYL		cabbage tree
<i>Coriaria aborea</i>	CORARB	tutu	
<i>Corynocarpus laevigatus</i>	CORLAE	karaka	
<i>Cyathea dealbata</i>	CYADEA	ponga	silver tree fern
<i>Cyathea medullaris</i>	CYAMED	mamaku	
<i>Cyathea smithii</i>	CYASMI	katote	soft tree fern
<i>Dacrydium dacrydioides</i>	DACCAC	kahikatea	white pine
<i>Dacrydium cupressinum</i>	DACCUP	rimu	red pine
<i>Dicksonia fibrosa</i>	DICFIB	wheki ponga	
<i>Dicksonia squarrosa</i>	DICSQU	wheki	rough tree fern
<i>Dysoxylum spectabile</i>	DYSSPE	kohekohe	
<i>Earina autumnalis</i>	EARAUT	raupeka	easter orchid
<i>Elaeocarpus dentatus</i>	ELADEN	hinau	
<i>Elaeocarpus hookerianus</i>	ELAHOO	pokaka	
<i>Elaeocarpus species</i>			
<i>Fuchsia excorticata</i>	FUCEXC	kotukutuku	tree fuchsia
<i>Fuchsia species</i>			
<i>Geniostoma rupestre</i>	GENRUP	hangehange	
<i>Griselinia littoralis</i>	GRILIT	papauma	broadleaf
<i>Griselinia species</i>			
<i>Hebe stricta</i>	HEBSTR		
<i>Hedycarya arborea</i>	HEDARB	porokaiwhiri	pigeonwood
<i>Histiopteris incisa</i>	HISINC	mata	water fern
<i>Hoheria species</i>			lacebark, ribbonwood
<i>Ileostylus micranthus</i>	ILEMIC		small flowered mistletoe
<i>Knightia excelsa</i>	KNIEXC	rewarewa	
<i>Kunzea ericoides</i>	KUNERI	kanuka	
<i>Laurelia novae-zelandiae</i>	LAUNOV	pukatea	
<i>Leucopogon fasciculatus</i>	LEUFAS	mingmingi	
<i>Libocedrus bidwillii</i>	LIBBID	kaikawaka	

SCIENTIFIC NAME	6-LETTER CODE	MAORI NAME	OTHER COMMON NAME
<i>Litsea calicaris</i>	LITCAL	mangeao	
<i>Lophomyrtus bullata</i>	LOPBUL	ramarama	
<i>Macropiper excelsum</i>	MACEXC	kawakawa	
<i>Melicope ternata</i>	MELTER	wharangi	
<i>Meliclytus ramiflorus</i>	MELRAM	mahoe	
<i>Metrosideros diffusa</i>	METDIF	akatea	white climbing rata
<i>Metrosideros excelsa</i>	METEXC	pohutukawa	
<i>Metrosideros fulgens</i>	METFUL		scarlet climbing rata
<i>Metrosideros robusta</i>	METROB	rata	northern rata
<i>Metrosideros species</i>	METROS		
<i>Metrosideros umbellata</i>	METUMB		southern rata
<i>Microlaena avenacea</i>	MICAVE		bush rice grass
<i>Muehlenbeckia australis</i>	MUEAUS	pohuehue	
<i>Myoporum species</i>			
<i>Myrsine australis</i>	MYRAUS	mapou	red matipo
<i>Myrsine divaricata</i>	MYRDIV		weeping matipo
<i>Myrsine salicina</i>	MYRSAL	toro	
<i>Neomyrtus pedunculata</i>	NEOPED	rohutu	
<i>Nestegis cunninghamii</i>	NECUN	maire	black maire
<i>Nestegis lanceolata</i>	NESLAN		white maire
<i>Nothofagus menziesii</i>	NOTMEN	tawhai	silver beech
<i>Nothofagus solandri var cliffortioides</i>	NOTCLI	tawhairauriki	mountain beech
<i>Nothofagus species</i>			beech
<i>Olearia rani</i>	OLERAN	heketara	
<i>Pennantia corymbosa</i>	PENCOR	kaiikomako	
<i>Peraxilla colensoi</i>	PERCOL	korukoru	mistletoe
<i>Peraxilla species</i>			mistletoe
<i>Peraxilla tetrapetala</i>	PERTET	pirirangi	mistletoe
<i>Phormium species</i>			flax
<i>Phyllocladus spp</i>			
<i>Pittosporum crassifolium</i>	PITCRA	karo	
<i>Pittosporum eugenioides</i>	PITEUG	tarata	lemonwood
<i>Pittosporum species</i>	PITPOS		
<i>Pittosporum tenuifolium</i>	PITTEN		
<i>Pittosporum umbellatum</i>	PITUMB	haekaro	
<i>Planchonella costata</i>	PLACOS	tawapou	
<i>Podocarpus hallii</i>	PODHAL		halls totara
<i>Podocarpus totara</i>	PODTOT	totara	lowland totara
<i>Polystichum vestitum</i>	POLVES		prickly shield fern
<i>Prumnopitys ferruginea</i>	PRUFER	miro	brown pine
<i>Prumnopitys taxifolia</i>	PRUTAX	matai	black pine
<i>Pseudopanax arboreus</i>	PSEARB		five finger
<i>Pseudopanax colensoi</i>	NEOCOL		mountain five finger
<i>Pseudopanax crassifolius</i>	PSECRA		lancewood
<i>Pseudopanax edgerleyi</i>	PSEEDG	rauakawa	
<i>Pseudopanax simplex</i>	PSESIM	haumakarua	seven finger
<i>Pseudowintera axillaris</i>	PSEAXI	horopito	lowland pepper tree
<i>Pseudowintera colorata</i>	PSECOL	horopito	alpine pepper tree
<i>Quintinia serrata</i>	QUISER	tawherowhero	
<i>Rhopalostylis sapida</i>	RHOSAP	nikau	
<i>Ripogonum scandens</i>	RIPSCA		supplejack
<i>Rubus cissoides</i>	RUBCIS		bush lawyer
<i>Rubus species</i>	RUBUS		bush lawyer
<i>Schefflera digitata</i>	SCHDIG	pate	
<i>Sophora species</i>		kowhai	
<i>Syzygium maire</i>	SYZMAI		swamp maire
<i>Tradescantia fluminensis</i>			wandering jew/willie
<i>Uncinia species</i>	UNCINI		hook grass
<i>Vitex lucens</i>	VITLUC	puriri	
<i>Weinmannia racemosa</i>	WEIRAC	kamahi	
<i>Weinmannia silvicola</i>	WEISIL	towai	

2. PLANT SPECIES BROWSED BY ANIMAL PESTS

The following lists are not exhaustive, but are based on information in the references listed.

The browse preference given below is indicative only as preference will vary with location & other species available.

Plants identified as palatable to possums

SCIENTIFIC NAME	COMMON NAME	BROWSE PREFERENCE	REFERENCE
<i>Alectryon excelsum</i>	titoki	High	(2), (4),(7)
<i>Aristotelia serrata</i>	wineberry	Med – High	(5), (12), (11)
<i>Asplenium bulbiferum</i>	hen & chicken fern	Low	(12)
<i>Beilschmiedia tawa</i>	tawa	Med – High	(2), (4), (3), (7),(8)
<i>Blechnum fluviatile</i>		Low	(12)
<i>Blechnum chambersii</i>		Low	(12)
<i>Brachyglottis repanda</i>	rangiora	Med	(7)
<i>Carpodetus seratus</i>	putaputaweta	Low	(12), (11)
<i>Clematis paniculata</i>		Low	(12)
<i>Coprosma foetidissima</i>		High	(9)
<i>Coprosma lucida</i>	karamu	Low – High	(5), (12)
<i>Coprosma repens</i>	taupata	High	(4), (5)
<i>Coprosma species</i>	large leaved coprosma	High	(11)
<i>Coriaria aborea</i>	tutu	Med	(7), (4)
<i>Cyathea medullaris</i>	mamaku	High	(3), (5), (8)
<i>Dacrydium cupressinum</i>	rimu	Low	(12)
<i>Dicksonia squarrosa</i>		Low	(12)
<i>Dysoxylum spectabile</i>	kohekohe		(3), (4), (5)
<i>Elaeocarpus dentata</i>	hinau	low	(7), (4)
<i>Elaeocarpus hookerianus</i>	pokaka	Med – High	(3), (5), (12),(11)
<i>Fuchsia excorticata</i>	tree fuchsia	High	(2), (4), (3), (5), (12), (7), (9),(11)
<i>Griselinia littoralis</i>	broadleaf	Low	(12)
<i>Hoheria species</i>	ribbonwood	High	(5)
<i>Libocedrus bidwillii</i>	kaikawaka	Low – High	(5), (12)
<i>Melicope ternata</i>	wharangi	High	(5)
<i>Meliclytus ramiflorus</i>	mahoe	Med	(2), (5), (7), (9), (11)
<i>Metrosideros diffusa</i>	pohutukawa	Low	(12)

SCIENTIFIC NAME	COMMON NAME	BROWSE PREFERENCE	REFERENCE
<i>Metrosideros excelsa</i>	pohutukawa	High	(4), (5)
<i>Metrosideros fulgens</i>	scarlet rata vine	Med	(2), (7)
<i>Metrosideros robusta</i>	northern rata	High	(2), (8), (4), (7), (3)
<i>Metrosideros umbellata</i>	southern rata		(4), (5), (12), (9)
<i>Muehlenbeckia australis</i>			(7)
<i>Myrsine australis</i>		Low	(12)
<i>Myrsine salicina</i>	toro	High	(2)
<i>Nestegis cunninghamii</i>	black maire	Low	(11)
<i>Nestegis lanceolata</i>	white maire		(4)
<i>Nothofagus species</i>		Low	(5), (12)
<i>Peraxilla species</i>	mistletoe	High	(5)
<i>Pittosporum umbellatum</i>		High	(5)
<i>Podocarpus hallii</i>	Hall's totara	High	(4), (5), (12), (9), (11)
<i>Polystichum vestitum</i>	prickly shield fern	Low	(12)
<i>Pseudopanax arboreus</i>	five finger	High	(4), (5), (12), (7), (2)
<i>Pseudopanax colensoi</i>	mountain five finger	Med	(12)
<i>Pseudopanax crassifolius</i>	lancewood	Med	(12)
<i>Pseudopanax edgerleyi</i>	raukawa	High	(5)
<i>Pseudopanax simplex</i>	haumakaroa, seven finger	High	(9), (12), (11)
<i>Pseudopanax species</i>		High	(9)
<i>Ripogonum scandens</i>	supplejack	Med	(2)
<i>Rubus cissoides</i>	bush lawyer	Med	(12)
<i>Rubus species</i>	bush lawyer	Med – High	(7), (9), (11)
<i>Schefflera digitata</i>	pate	Med – High	(5), (12)
<i>Syzygium maire</i>	swamp maire		(4)
<i>Uncinia species</i>	hook grass	Low	(12)
<i>Weinmannia racemosa</i>	kamahi	High	(2), (4), (5), (12), (7), (8), (9), (11)

Plants identified as unpalatable to possums

SCIENTIFIC NAME	COMMON NAME	REFERENCE
<i>Agathis australis</i>	kauri	(5)
<i>Beilschmiedia tarairi</i>	tarairi	(5)
<i>Cyathea dealbata</i>	silver tree fern	(8)
<i>Cyathea smithii</i>	smiths tree fern	(8)
<i>Dacrydium cupressinum</i>	rimu	(11)
<i>Griselinia littoralis</i>	broadleaf	(11)
<i>Hedycarya arborea</i>	pigeonwood	(8)
<i>Laurelia novae-zelandiae</i>	pukatea	Brockie 1993, (8)
<i>Phyllocladus spp</i>		(11)
<i>Pseudowintera colorata</i>	pepper tree	(11)
<i>Quintinia serrata</i>		(11)
<i>Prumnopitys taxifolia</i>	matai	(11)

REFERENCES

- 1 Allen et al 1984
- 2 Allen et al 1997
- 3 Atkinson 1992
- 4 Atkinson et al 1995
- 5 Batcheler & Cowan 1988
- 6 Blaschke 1992
- 7 Brockie 1992
- 8 Campbell 1990
- 9 Coleman et al 1985
- 10 Mitchell et al 1987
- 11 Nugent et al 1997
- 12 Wardle 1984

Plants identified as palatable to deer and goats

SCIENTIFIC NAME	COMMON NAME	PALATABLE TO	BROWSE PREFERENCE	REFERENCE
<i>Aseuomia macrophylla</i>		Goat		(6)
<i>Aristolelia serrata</i>	wineberry	Deer	Med	(11)
<i>Asplenium bulbiferum</i>	hen & chicken fern	Deer & Goat	High	(1), (12), (7), (10)
<i>Astelia species</i>		Deer	Med	(12)
<i>Beilschmiedia tawa</i>	tawa	Deer	Med	(1)
<i>Carpodetus seratus</i>	putaputaweta	Deer & Goat	Med-High	(1), (7), (11)
<i>Coprosma ciliata</i>		Deer	Med	(12)
<i>Coprosma foetidissima</i>		Deer	Med	(12)
<i>Coprosma grandifolia</i>		Deer & Goat	High	(1), (6), (10)
<i>Coprosma lucida</i>	karamu	Deer & Goat	High	(12), (6)
<i>Coprosma pseudocuneata</i>		Deer	Med	(12)
<i>Coprosma rhamnoides</i>		Deer	Med	(12)
<i>Coprosma robusta</i>		Goat	High	(6)
<i>Coprosma species</i>	large leaved coprosma species	Deer & Goat	High	(12), (7), (11)
<i>Coprosma tenuifolia</i>		Goat	High	(10)
<i>Dicksonia squarrosa</i>		Goat	High	(10)
<i>Elaeocarpus dentata</i>	hinau	Goat	Med	(6)
<i>Elaeocarpus hookerianus</i>	pokaka	Deer	Med	(11)
<i>Fuchsia excorticata</i>	tree fuchsia	Deer & Goat	High	(12), (6), (11)
<i>Geniostoma rupestre</i>	hangehange	Deer & Goat	High	(1), (6)
<i>Griselinia littoralis</i>	broadleaf	Deer & Goat	High	(7), (10), (11), (12)
<i>Hebe stricta</i>		Goat	Med	(6)
<i>Hedycarya arborea</i>	pigeonwood	Goat	High	(6)
<i>Hoheria</i>	ribbonwood	Goat	High	(7)
<i>Macropiper excelsum</i>	kawakawa	Goat	High	(7)
<i>Melicotys ramiflorus</i>	mahoe	Deer & Goat	High	(1), (6), (7), (10), (11)
<i>Metrosideros fulgens</i>	scarlet rata vine	Goat	High	(7)
<i>Myrsine australis</i>		Deer & Goat	Med	(12), (6)
<i>Myrsine divaricata</i>		Deer	High	(12)
<i>Nestegis cunninghamii</i>	black maire	Deer	Low	(11)
<i>Nothofagus menziesii</i>	silver beech	Deer	Med	(12)
<i>Nothofagus solandri var cliffortioides</i>	mountain beech	Deer	Med	(12)
<i>Nothofagus species</i>		Deer	Low	(1)
<i>Pittosporum tenuifolium</i>		Deer	Med	(1)
<i>Polystichum vestitum</i>	prickly shield fern	Deer & Goat	Med - High	(12), (7)
<i>Pumnpitys ferruginea</i>	miro	Deer	low	(11)
<i>Pumnpitys taxifolia</i>	matai	Deer	low	(11)
<i>Pseudopanax arboreus</i>	five finger	Deer	High	(1), (12), (7), (11)
<i>Pseudopanax colensoi</i>	mountain five finger	Deer	High	(12)
<i>Pseudopanax crassifolius</i>	lancewood	Deer	Med-High	(12), (11)
<i>Pseudopanax edgerleyi</i>	raukawa	Goat	High	(7)
<i>Pseudopanax simplex</i>	haumakaroa, seven finger	Deer & Goat	High	(1), (7), (11)
<i>Pseudopanax species</i>		Deer	High	(12)
<i>Quintinia serrata</i>		Deer	low	(11)
<i>Ripogonum scandens</i>	supplejack	Deer & Goat	High	(1), (10)
<i>Rubus species</i>	bush lawyer	Deer	Med	(11)
<i>Schefflera digitata</i>	pate	Deer & Goat	Med-High	(12), (7), (10)
<i>Weinmannia racemosa</i>	kamahi	Deer & Goat	High	(12), (6), (7), (10), (11)
	drooping & shining spleenworts	Goat	High	(7)

Plants identified as unpalatable to deer or goats

SCIENTIFIC NAME	COMMON NAME	UNPALATABLE TO	REFERENCE
<i>Blechnum fluviatile</i>		Goat	(10)
<i>Cassinia leptophylla</i>	tauhinu	Goat	(7)
<i>Cyathea dealbata</i>	silver tree fern	Goat	(7)
<i>Cyathea smithii</i>	Smith's tree fern	Goat	(7), (10)
<i>Cyathodes fasciculata</i>		Deer	(1)
<i>Dacrydium cupressinum</i>	rimu	Deer	(11)
<i>Dicksonia fibrosa</i>	wheki tree fern	Goat	(7)
<i>Histiopteris incisa</i>		Goat	(7)
<i>Kunzea ericoides</i>	kanuka	Goat	(7)
<i>Microlaena avenacea</i>	bush rice grass	Goat	(10)
<i>Phyllocladus spp</i>		Deer	(11)
<i>Podocarpus hallii</i>	Hall's totara	Deer	(11)
<i>Pseudowintera axillaris</i>	horopito	Goat	(7)
<i>Pseudowintera colorata</i>	pepperwood, horopito	Deer & Goat	(1), (7), (11)
<i>Uncinia species</i>	hook grass	Deer & Goat	(1), (10)

REFERENCES

- Allen et al 1984
- Allen et al 1997
- Atkinson 1992
- Atkinson et al 1995
- Batcheler & Cowan 1988
- Blaschke 1992
- Brockie 1992
- Campbell 1990
- Coleman et al 1985
- Mitchell et al 1987
- Nugent et al 1997
- Wardle 1984

3. FRUITING AND FLOWERING NATIVE PLANT SPECIES USED BY NATIVE BIRDS

Flowers

PLANT SPECIES	bellbird	brown creeper	brown kiwi	fantail	grey warbler	kaka	kea	kereru	kokako	rifleman	silvereye	tomtit	tui	weka	yellow crowned parakeet	yellowhead	REFERENCE
<i>Aleusosmia species</i>	x												x				(3)
<i>Aristolelia serrata</i>								x									(4)
<i>Beilschmiedia species</i>	x													x			(3)
<i>Clianthus species</i>	x													x			(3)
<i>Coprosma foetidissima</i>								x			x						(5)
<i>Coprosma rotundifolia</i>				x													(5)
<i>Cordyline species</i>	x												x				(3)
<i>Dysoxylum spectabile</i>	x													x			(1), (3)
<i>Earina autumnalis</i>						x											(5)
<i>Elaeocarpus dentatus</i>	x												x				(1), (3)
<i>Fuchsia excorticata</i>	x					x	x	x			x		x				(1),(3), (5), (4)
<i>Geniostoma rupestre</i>	x												x				(1)
<i>Knightia excelsa</i>	x												x				(1), (3)
<i>Kunzea ericoides</i>	x																(1)
<i>Metrosideros excelsa</i>	x												x				(1)
<i>Metrosideros fulgens</i>	x												x				(1)
<i>Metrosideros robusta</i>	x												x				(1)
<i>Metrosideros species</i>	x												x				(3)
<i>Metrosideros umbellata</i>	x					x	x				x		x				(5)
<i>Myoporum species</i>	x												x				(3)
<i>Nothofagus menziesii</i>						x					x						(5)
<i>Peraxilla species</i>	x					x		x			x		x				(5), (3)
<i>Phormium species</i>	x												x				(1), (3)
<i>Pittosporum crassifolium</i>	x												x				(1)
<i>Pittosporum eugenoides</i>	x												x				(1)
<i>Pittosporum species</i>	x												x				(3)
<i>Pittosporum tenuifolium</i>	x												x				(1)
<i>Pseudopanax arboreus</i>	x												x				(1)
<i>Pseudopanax species</i>	x												x				(3)
<i>Sophora species</i>	x												x				(1), (3)
<i>Vitex lucens</i>	x												x				(1), (3)
<i>Weinmannia racemosa</i>	x					x					x		x				(1), (5)

Fruit

<i>Alectryon excelsus</i>								x	x				x				(6), (2), (4)
<i>Aristolelia fruticosa</i>	x												x				(6)
<i>Aristolelia serrata</i>	x							x			x						(5), (4)
<i>Ascarina lucida</i>	x			x							x	x					(5)
<i>Beilschmiedia tarairi</i>								x									(2), (4)
<i>Beilschmiedia tawa</i>								x									(2), (4)

Fruit

PLANT SPECIES	bellbird	brown creeper	brown kiwi	fantail	grey warbler	kaka	kea	kereru	kokako	riffeman	silveryeye	tomtit	tui	weka	yellow crowned parakeet	yellowhead	REFERENCE
<i>Carpodetus serratus</i>	x				x						x	x					(5)
<i>Coprosma foetidissima</i>	x		x		x			x			x				x		(5)
<i>Coprosma grandifolia</i>	x							x					x				(6), (4)
<i>Coprosma lucida</i>	x							x					x				(5), (4)
<i>Coprosma robusta</i>	x							x					x				(6), (4)
<i>Coprosma rotundifolia</i>											x						(6), (5)
<i>Coprosma species</i>	x	x						x			x	x					(5), (4)
<i>Coriaria aborea</i>	x							x			x						(6), (5)
<i>Corynocarpus laevigatus</i>								x									(2), (4)
<i>Dacrycarpus dacrydioides</i>	x							x			x		x				(6), (5), (4)
<i>Dacrydium cupressinum</i>	x					x		x		x	x	x			x		(5), (4)
<i>Dysoxylum spectabile</i>								x	x								(2), (4)
<i>Elaeocarpus dentatus</i>			x					x	x					x			(2), (4)
<i>Elaeocarpus hookerianus</i>	x							x									(4), (5)
<i>Fuchsia excorticata</i>	x			x				x			x						(6), (5), (4)
<i>Geniostoma rupestre</i>								x									(4)
<i>Griselinia littoralis</i>					x			x								x	(5)
<i>Griselinia species</i>								x									(4)
<i>Hedycarya arborea</i>	x				x			x	x				x	x			(5), (2), (4)
<i>Ileostylus micranthus</i>	x												x				(6)
<i>Litsea calicaris</i>								x	x								(2), (4)
<i>Lophomyrtus bullata</i>								x									(4)
<i>Macropiper excelsum</i>	x							x					x				(6), (4)
<i>Melicytus ramiflorus</i>	x							x					x				(6), (4)
<i>Muehlenbeckia australis</i>	x												x				(6)
<i>Myrsine australis</i>	x							x			x						(5)
<i>Myrsine divaricata</i>	x										x						(5)
<i>Neomyrtus pedunculata</i>	x										x						(5)
<i>Nestegis cunninghamii</i>								x	x					x			(2)
<i>Pennantia corymbosa</i>								x									(5)
<i>Peraxilla species</i>	x				x						x						(5)
<i>Planchonella costata</i>								x									(2)
<i>Podocarpus hallii</i>	x					x					x	x		x			(6), (5)
<i>Prumnopitys ferruginea</i>	x					x		x	x				x	x			(5), (2), (4)
<i>Prumnopitys taxifolia</i>								x	x				x	x			(6), (2)
<i>Pseudopanax arboreus</i>	x												x				(6)
<i>Pseudopanax colensoi</i>													x				(5)
<i>Pseudopanax crassifolius</i>	x	x			x	x		x			x	x					(5)
<i>Pseudopanax edgerleyi</i>	x			x		x				x	x	x	x				(5)
<i>Pseudopanax simplex</i>	x	x			x			x		x	x	x					(5)
<i>Pseudowintera colorata</i>	x							x			x						(5)
<i>Rhopalostylis sapida</i>			x					x	x								(2)
<i>Ripogonum scandens</i>	x					x		x	x		x		x				(6), (5), (2)
<i>Schefflera digitata</i>								x			x		x				(5)
<i>Syzygium maire</i>								x									(2)
<i>Vitex lucens</i>								x									(2)

REFERENCES

- 1 Castro & Robertson 1997
- 2 Clout & Hay 1989
- 3 Craig et al 1981
- 4 McEwen 1978
- 5 O'Donnell & Dilks 1994
- 6 Williams & Karl 1996

4. FLOWERING & FRUITING PERIODS FOR SOME PLANT SPECIES

from Payton et al 1999

SPECIES	AREA & INFORMATION SOURCE									
		NZ	NZ	North-land	Central North Island	Wellington	Canterbury	West-land	Stewart Island	
	(a)	1	3,(b)	4	5	6	7	8	9	
EMERGENT TREES										
<i>Metrosideros robusta</i>	Northern rata	Fl Fr	Nov-Jan Dec-Jan	Nov-Jan	Dec-Feb Jan-Apr	Dec-Jan	May			
<i>Podocarpus totara</i> & <i>P. hallii</i>	Lowland totara & Hall's totara	(c) (d)		Sep-Oct Apr-May	Jan-Dec	Dec Jan-Dec	Oct-Dec Feb-May	Jan-Jun	Feb-Aug	
CANOPY TREES										
<i>Alectro excelsus</i>	Titoki	Fl Fr	Oct-Dec Oct-Dec	Oct-Nov						
<i>Beilschmiedia tawa</i>	Tawa	Fl Fr	Sep-Dec Oct-Feb	Sep-Nov	Nov-Dec Jan-Dec	Dec-Feb Dec-May				
<i>Dysoxylum spectabile</i>	Kohekohe	Fl Fr	Mar-Jun Apr-Aug	Apr-May Jul-Aug	May-Jul Jan-Dec	Apr-Jul Aug-Feb				
<i>Elaeocarpus dentatus</i>	Hinau	Fl Fr	Oct-Feb Dec-May	Oct-Feb	Nov-Dec Jan-Jul	Oct-Jan Dec-Jun	Nov-Apr Mar-Aug			
<i>Elaeocarpus hookerianus</i>	Pokaka	Fl Fr	Oct-Jan Nov-Mar						Feb-Jun	Jan Mar
<i>Melicytus ramiflorus</i>	Mahoe	Fl Fr	Nov-Feb Nov-Mar	Sep-Apr Feb-Jun	Oct-Mar	Oct-Mar Nov-Jun	Oct-Apr Nov-Jul	Dec-Jan Jan-Jul	Feb-Aug	
<i>Metrosideros excelsa</i>	Pohutukawa	Fl Fr	Dec-Jan Jan-Feb	Dec-Jan						
<i>Metrosideros umbellata</i>	Southern rata	Fl Fr	Nov-Mar Dec-Apr	Nov-Jan					Oct-Feb	Nov-Feb Mar-May
<i>Weinmannia racemosa</i>	Kamaha	Fl Fr	Dec-Jan Jan-Apr	Nov-Jan		Oct-Jan Dec-Mar	Sep-May		Sep-Feb	Oct-Dec Jan-Apr
<i>Weinmannia silvicola</i>	Towai	Fl Fr	Sep-Dec Nov-Feb	Sep-Dec	Jan-Aug Dec-Oct					
SUBCANOPY TREES & SHRUBS										
<i>Aristotelia serrata</i>	Wineberry	Fl Fr	Sep-Dec Nov-Jan	Sep-Dec Jan-Feb	Oct-Nov Nov-Mar	Oct-Dec Nov-May	Oct-Nov	Nov-Dec Dec-Mar	Sep-Dec Jan-Apr	Nov Jan-Mar
<i>Fuchsia excorticata</i>	Fuchsia	Fl Fr	Aug-Dec Sep-Feb	Aug-Dec Dec-Mar	Jun-Nov Jul-Feb	Sep-Apr Oct-May		Sep-Jan Dec-Aug	Jul-Dec Dec-Feb	Jul-Dec Dec-Apr
<i>Myrsine salicina</i>	Toro	Fl Fr	Aug-Jan Sep-May		Jul-Sept Oct					
<i>Olearia rani</i>	Heketara	Fl Fr	Aug-Nov Nov-Jan	Sep-Oct	Sep-Nov Nov-Dec	Nov-Dec Jan-Feb	Oct-Apr Jan			
<i>Pennantia corymbosa</i>	Kaikomako	Fl Fr	Nov-Feb Jan-May	Sep-Oct Feb-May		Nov-Feb Jan-May	Nov-Dec Mar	Dec-Jan Jan-Apr	Nov-Dec Feb-Apr	Dec-Jan
<i>Pseudopanax aboreus</i>	Five finger	Fl Fr	Jun-Aug Aug-Feb	Jun-Aug	Feb-Sep Jan-Dec	Jul-Dec Jan-Dec	Dec-Feb	Jul-Nov Jan-Dec		
<i>Pseudopanax colensoi</i>	Mountain five finger	Fl Fr	Jan-Mar Jun-Mar						Sep-Dec Dec-Oct	Jan-Dec Jan-Dec
<i>Pseudopanax crassifolius</i>	Lancewood	Fl Fr	Jan-Apr Jan-Apr	Jan-Apr	Mar-May Mar-Oct	Mar Mar-Jan		Dec-Feb Jan-Oct	Jan-Feb Apr-Oct	Feb Jan-Dec

SPECIES		AREA & INFORMATION SOURCE								
			NZ	NZ	North-land	Central North Island	Wellington	Canterbury	West-land	Stewart Island
		(a)	1	3,(b)	4	5	6	7	8	9
<i>Pseudopanax edgerleyi</i>	Raukawa	Fl Fr	Nov-Mar Nov-Mar		Nov-Dec Jan-Mar	Dec-Feb Jan-Dec			Feb-Oct	Nov-Feb Feb-Mar
<i>Pseudopanax simplex</i>	Haumakaroa	Fl Fr	Jun-Mar Jun-Mar						Dec-Feb Apr-Dec	Dec-Feb Jan-Dec
<i>Schefflera digitata</i>	Pate	Fl Fr	Feb-Mar Feb-Mar	Jan-Mar	Mar-Apr Mar-Aug	Dec-Mar Jan-Oct	Mar-Aug	Dec-Jan Jan-Sep	Jan-Dec	Feb-Mar Mar
LIANES (VINES)										
<i>Metrosideros fulgens</i>	Scarlet climbing rata	Fl Fr	Feb-Jun Oct-Dec	Feb-Jun	Mar-Aug Mar-Feb		Jan-Dec Jan-Oct		Jan-Dec	
<i>Ripogonum scandens</i>	Supplejack	Fl Fr	Dec-Jan (2) Jan-Dec (2)	Oct-Nov Jan-Dec	Oct-Dec Jan-Dec	Nov-Feb Jan-Dec	Dec-Apr Jan-Dec		Jan-Dec	Dec-Feb Jan-Dec
EPIPHYTES										
<i>Alepis flavida</i>	Mistletoe	Fl Fr	Dec-Feb Jan-Jun							
<i>Peraxilla colensoi</i>	Mistletoe/ korukoru	Fl Fr	Nov-Feb Dec-Mar	Oct-Jan					Nov-Mar Feb-Aug	
<i>Peraxilla tetrapetala</i>	Mistletoe/ pirirangi	Fl Fr	Oct-Jan Dec-Feb	Oct-Jan					Nov-Feb Feb-Jun	

Fl = flowers

Fr = Fruit (unripe & ripe)

b ripe fruit only

c male cones

d female cones

1 Allan 1961

2 Moore & Edgar 1970

3 Salmon 1967

4 Best & Bellingham 1991

5 Leathwick 1984

6 Brockie 1992

7 Burrows 1994

8 O'Donnell & Dilks 1994

9 Wilson 1982.

5. EXPECTED VALUES FOR SOME INDICATOR MEASUREMENTS

The following table provides a general guide on the levels of measurement that may be provided by some indicators in forest ecosystems. Actual measurements can vary widely in relation to the features of a particular forest ecosystem.

These figures must not be used to imply what are appropriate levels for a particular forest area. That is something that will depend on factors such as conservation values, carrying capacity and management objectives.

VARIABLE	LOW	MODERATE	HIGH	MEASUREMENT METHOD
Possum trap catch (% trap catch)	5	10-15	30 –50	NPCA trap catch protocol
Possum density (no / ha)	1	4-6	8-12	Trap to extinction
Deer density (no / km ²)	2	5	15	Population estimates from pellet survey and population modelling.
Goat kill / man day	0.5	1	4-5	Professional hunter results.
Mouse tracking frequency (%)	5	25	40	Tracking tunnel lines
Rat tracking frequency (%)	30	60	90	Tracking tunnel lines
Stoat tracking frequency (%)	0	5-10	15	Tracking tunnel lines
Bird density (number of individuals/ha – all species)	1	5-10	20-40	From slow walk transects and territory mapping studies.

6. RANDOM NUMBERS

91	30	23	34	33	02	13	62	28	14	64	25	40	41	55	99	63	79
50	19	30	38	66	05	91	92	69	66	91	61	45	97	29	86	61	89
76	22	73	86	70	40	48	41	16	72	54	68	60	88	60	07	47	13
68	73	47	88	35	94	12	49	88	44	47	59	56	52	39	89	30	02
30	02	29	95	13	68	94	34	51	12	08	99	44	79	85	83	91	04
28	05	96	40	36	78	82	95	78	77	23	46	39	70	78	79	55	42
85	23	22	91	40	60	30	08	36	44	60	83	74	94	86	77	06	55
27	89	45	44	99	44	24	67	05	16	59	74	58	03	04	21	41	50
91	23	91	98	68	39	27	79	77	27	36	83	82	25	92	33	06	13
49	03	19	87	98	06	24	46	98	81	49	55	79	11	29	39	58	28
04	07	34	24	80	82	42	56	99	94	87	12	24	41	82	06	88	04
60	04	47	80	40	19	91	39	27	97	42	51	07	13	77	55	68	38
83	38	93	07	01	22	80	36	25	79	30	77	72	88	75	77	59	39
50	54	04	54	02	94	52	03	84	58	32	91	41	70	15	11	02	05
67	49	39	71	53	74	07	38	01	64	32	27	46	41	18	64	73	28
49	56	66	62	47	08	43	58	19	10	89	43	90	15	64	98	33	59
31	58	39	43	67	47	70	73	01	28	11	55	00	87	35	77	01	36
63	14	85	71	76	32	99	69	04	14	03	74	29	54	24	58	92	20
43	20	73	35	84	94	46	69	84	42	70	39	42	21	54	60	36	58
12	89	93	45	49	34	56	41	94	97	14	50	51	46	14	44	53	25
43	50	13	00	81	09	95	28	39	31	66	46	95	08	55	91	52	84
71	72	38	05	54	29	37	19	04	49	50	94	47	51	32	40	39	48
19	70	39	73	31	79	78	98	89	57	57	02	68	81				

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