

THE VEGETATION AND FLORA OF SAWPIT CREEK,

WADI NIMRIN, CONWAY FLAT

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Sawpit Creek is one of several small streams that drain the eastern slopes of the Hawkeswood Range between the Conway and Waiau rivers, North Canterbury. It occupies a small coastal catchment rising from sea level to about 610 m (Trig 0), and it runs through a farm called "Wadi Nimrin" in the district known as Conway Flat. Access to the area is provided by State Highway I and a secondary road from the Conway bridge. However, permission to walk this creek is needed from the owner of "Wadi Nimrin" Mr. M.C. Tom Macfarlane.

Sawpit Creek, like neighbouring streams, rises in the largely tussock and scrub-covered tops of the Hawkeswood Range, composed mainly of grey-wackes of Jurassic age. From these tops the streams descend rapidly downhill through youthful, bushclad gullies and meander across the terraces and fans of younger sediments in deeply incised, narrow, wooded channels. The distance travelled overall is only about 5 kilometres, but there is a variety of habitats offered: cliffs, rock outcrops, waterfalls, oxbows, small alluvial terraces and floodplains, colluvium, and others.

Nearly every stream channel in the district is still more or less wooded, some quite thickly, and it is apparent that at one time, before European settlement began, the greater part of the now-farmed hill and terrace landscape was also forested. The stumps of an extensive coastal forest, destroyed about 8000 years ago, can still be seen at low tide on the beach between Sawpit Creek and Ploughman Creek, the next stream south, and testify to a long history of forest cover in this region, and also to continuing geological activity. Samples of stumps belong to Podocarpus totara, P. spicatus, Lophomyrtus obcordata, Leptospermum ericoides and L. scoparium, species still present in the area.

The region does not receive much rainfall, probably not more than 1000 mm per annum, and drought conditions occur frequently in summer. But the coast is relatively frost free and the narrow stream channels enjoy the best local climatic conditions. The soils of these channels are also young and fertile, usually well drained and irrigated, in contrast to the drought-prone, moderately fertile yellow-grey earths of the surrounding terraces and lower hillslopes.

The vegetation of Sawpit Creek and other streams nearby can be classified into four of the eight forest and shrubland associations described for the Seaward Kalkoura Range by Wardle (1971). Coastal scrub-hardwood forest occupies a fair proportion of the sides of the narrow channels cut through the terraces and fans. The channel bottoms are dominated by remnants of mixed-podocarp forest, and Leptospermum forest and scrub is prominent on the drier flanks and terrace edges. Mixed scrub-hardwood forest clothes the upper reaches of these streams on the hillslopes.

The coastal scrub-hardwood forest of Sawpit Creek varies in height and composition, with Melicytus ramiflorus, Myoporum laetum, Alectryon excelsus, Dodonaea viscosa, Pseudopanax arboreus and Sophora microphylla

as important canopy trees, and Coprosma crassifolia and Macropiper excelsum as prominent shrubs. Dominant canopy trees in the taller, mixed podocarp forest are Podocarpus spicatus, P. totara and Elaeocarpus dentatus, while other prominent trees include Hoheria angustifolia, Sophora microphylla, Alectryon excelsus, Hedycarya arborea and Melicytus ramiflorus. Ripogonum scandens and two species of Metrosideros are important climbers. As its name suggests, Sawpit Creek has been logged in the past, and in places burnt, and many of the large native conifers have been removed.

Leptospermum ericoides is easily the dominant tree in the Leptospermum forest and scrub association, while Pseudopanax arboreus, Melicytus ramiflorus and Griselinia littoralis are the main small trees of the mixed scrub-hardwood forest.

A check list of species in Sawpit Creek is set out below and is interesting to compare with the more detailed lists prepared for the Seaward Kaikoura Range by Wardle (1971). Sawpit Creek is one of the northernmost remnants of coastal forest in Canterbury and it is also useful to compare the species there with those with southern limits recorded elsewhere along this coast, especially to the north (e.g. Burrows 1969, 1972) and to the south (e.g. Kelly 1972 and Mason 1969). On our list we indicate those species which reach their southern limit somewhere along the North Canterbury coast, and those that reach their southern limit on Banks Peninsula (Dodonaea viscosa also reaches Kaitorete (Ellesmere) Spit). The absolute southern limits of the former group remain to be established.

Nearly all these coastal forest remnants have been more or less logged, partly burnt, and continuously open to animal grazing and browsing. Only a few have been fenced, but there is a growing awareness of their value for nature as well as water and soil conservation and many owners are interested in fencing off suitable areas. The choice is not always straightforward, as the streams are the main source of stock water for farm animals, and may even dry up in the lower reaches during a summer drought.

These coastal forest communities in North Canterbury are being systematically examined by Botany Division, DSIR.

Check List of Plants

Sawpit Creek, Wadi Nimrin, Conway Flat

- * Species with southern limits in North Canterbury
- ** Species with southern limits on Banks Peninsula

Ferns and fern allies:

* <u>Adiantum cunninghamii</u>	<u>Cyathea dealbata</u>
* <u>Arthropteris tenella</u>	<u>Dicksonia squarrosa</u>
<u>Asplenium bulbiferum</u> ssp <u>gracillimum</u>	<u>Grammitis billardieri</u>
<u>A. colensoi</u> Hook.f.	<u>Histiopteris incisa</u>
<u>A. flabellifolium</u>	<u>Hypolepis rufobarbata</u>
<u>A. flaccidum</u>	<u>H. tenuifolia</u>
<u>A. lucidum</u>	<u>Lastreopsis glabella</u>
<u>A. terrestre</u>	** <u>L. velutina</u>
<u>A. colensoi</u> x <u>bulbiferum</u>	<u>Pellaea falcata</u>

Ferns and fern allies Continued:

- | | | |
|--------------------------|----|----------------------------|
| A. lucidum x bulbiferum | | P. rotundifolia |
| Azolla rubra | | Phymatosorus diversifolius |
| Blechnum "capense" | * | P. scandens |
| B. chambersii | | Polystichum richardii |
| B. fluviatile | | P. vestitum |
| B. minus (R.Br.) Ettings | | Pteridium aquilinum |
| B. penna-marina | ** | Pteris tremula |
| B. "procerum" | | Pyrrosia serpens |
| B. "capense" x B. sp. | | Thelypteris pennigera |
| ("Green Bay species") | | |
| ** Cheilanthes distans | | |

Trees and Shrubs:

A. Native

- | | |
|-----------------------------|-------------------------|
| ** Alectryon excelsus | ** Hedycarya arborea |
| Aristotelia serrata | Helichrysum aggregatum |
| Carmichaelia robusta (s.l.) | Hoheria angustifolia |
| Carpodetus serratus | Hymenanthera alpina |
| Cassinia (aff. leptophylla) | Leptospermum ericoides |
| Coprosma areolata | L. scoparium |
| C. crassifolia | Lophomyrtus obcordata |
| C. propinqua | ** Macropiper excelsum |
| C. rhamnoides | Melicope simplex |
| C. robusta | Melicytus ramiflorus |
| C. rotundifolia | Muehlenbeckia complexa |
| C. robusta x propinqua | Myoporum laetum |
| Cordyline australis | Myrsine australis |
| Coriaria arborea | Olearia paniculata |
| Corokia cotoneaster | Paratrophis microphylla |
| Cyathodes fasciculata | Pennantia corymbosa |
| C. juniperina | Pittosporum eugenioides |
| Dacrycarpus dacrydioides | P. tenuifolium |
| Discaria toumatou | Podocarpus spicatus |
| ** Dodonaea viscosa | P. totara |
| * Elaeocarpus dentatus | Pseudopanax arboreus |
| E. hookerianus | P. crassifolius |
| Fuchsia excorticata | Schefflera digitata |
| Griselinia littoralis | ** Solanum aviculare |
| * Hebe hulkeana | Sophora microphylla |
| H. salicifolia | Urtica ferox |
| H. traversii | |

B. Adventive or Planted

- | | |
|-------------------|---------------------|
| Acacia dealbata | Pinus radiata |
| Coprosma repens | Prunus cerasifera |
| Cytisus scoparius | Rosa rubiginosa |
| Lupinus arboreus | Salix fragilis |
| | Phytolacca octandra |

Woody Climbers and Parasites:

* Calystegia turgiorum	Parsonsia heterophylla
* Freycinetia banksii	Ripogonum scandens
Ileostylus micranthus	Rubus australis
Metrosideros diffusa	R. cissoides
* M. perforata	R. schmidelioides
Muehlenbeckia australis	R. squarrosus
Parsonsia capsularis	Tupeia antarctica

Grasses and Like Plants:

A. Native

Astelia fragrans	Notodanthonia clavata
Carex secta	N. racemosa
C. virgata	Phormium tenax
Dichelachne crinita	Poa breviglumis
Echinopogon ovatus	P. imbecilla
Juncus gregiflorus	Scirpus nodosus
Lemna sp.	Uncinia leptostachya
Libertia ixioides	U. uncinata
Microlaena stipoides	

B. Adventive or Planted

Agropyron repens	Hordeum murinum
Agrostis tenuis	Juncus articulatus
Anthoxanthum odoratum	J. bufonius
Bromus catharticus	Lolium perenne
Cynosurus cristatus	Phleum pratense
Dactylis glomerata	Poa annua
Holcus lanatus	

Herbs:

A. Native

Acaena anserinifolia	Haloragis erecta
Apium australe	Helichrysum filicaule
Australina pusilla	Hydrocotyle americana
Cardamine debilis	H. moschata
Coriaria sarmentosa	H. novae-zelandiae
Cotula coronopifolia	Nertera depressa
C. dioica	Oxalis exilis
C. perpusilla	Ranunculus hirtus
Dichondra repens	Samolus repens
Epilobium ciliatum	Senecio glomeratus
E. nummularifolium	S. minimus
E. rotundifolium	S. quadridentatus
Galium propinquum	Stellaria parviflora
Gnaphalium luteo-album	Urtica incisa
Gnaphalium sp.	Wahlenbergia gracilis

B. Adventive or Planted

Acaena ovina	Phytolacca octandra
Achillea millefolium	Plantago lanceolata
Anagallis arvensis	P. major
Atriplex hastata	Polycarpon tetraphyllum
Bellis perennis	Polygonum aviculare
Callitriche stagnalis	P. hydropiper
Capsella bursa-pastoris	Prunella vulgaris
Carduus pycnocephalus	Ranunculus repens
Cerastium holosteoides	R. rivularis
Chenopodium album	R. sceleratus
Chrysanthemum leucanthemum	Raphanus raphanistrum
C. parthenium	Rumex acetosella
Cirsium arvense	R. crispus
C. vulgare	Sagina procumbens
Coronopus didymus	Senecio jacobaea
Crepis capillaris	S. vulgaris
Digitalis purpurea	Silene gallica
Echium vulgare	Silybum marianum
Erigeron sp.	Sisymbrium officinale
Erodium cicutarium	Solanum nigrum
Euphorbia peplus	Sonchus asper
Foeniculum vulgare	S. oleraceus
Galium aparine	Stellaria media
Geranium molle	Taraxacum officinale
Leontodon taraxacoides	Trifolium dubium
Lepidium ruderales	T. pratense
Linum marginale	T. repens
Malva neglecta	T. striatum
Marrubium vulgare	T. subterraneum
Medicago arabica	Verbascum thapsus
M. sativa	V. virgatum
Mycelis muralis	Veronica persica
Myosotis caespitosa	Vicia angustifolia
Nasturtium officinale	V. hirsuta
Nepeta cataria	V. sativa
Orobancha minor	

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