

# FLORA OF THE COX RIVER CATCHMENT, ARTHUR'S PASS NATIONAL PARK

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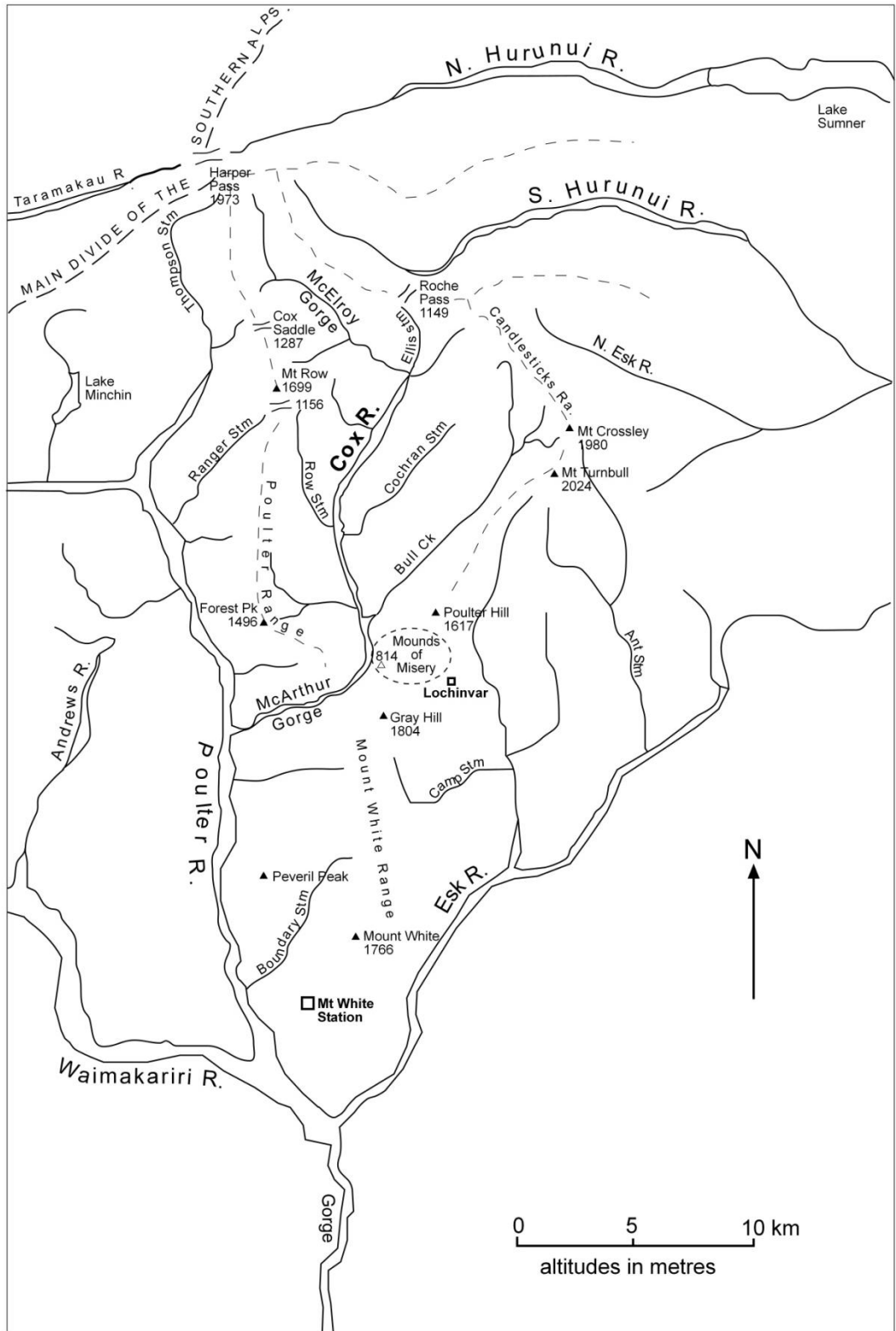
A checklist of the vascular flora of Arthur's Pass National Park was compiled 26 years ago (Burrows 1986) and revised and re-issued in 2007 (with substantial assistance from Bryony Macmillan and other Canterbury Botanical Society members) (Burrows et al. 2006–2007). A 9,000 ha addition to Arthur's Pass National Park at its northeast corner, the Cox River catchment, was made in July 1994.

The present article briefly describes the Cox area and lists the native plants that have been recorded for this extensive block. I compiled the list from data gathered during short trips: to the Mounds of Misery area in summer 1978; to the Middle Cox Valley on 18 April 1986; and to the middle and upper valley, with Aaron Wilton and Matt Todd during 11-14 January 1995. More botanising will undoubtedly add additional species to the list.

The Cox is a large tributary of the Poulter River and is one of the most inaccessible parts of the Park. On foot it can be approached up the McArthur Gorge from the Poulter, or over high passes from the upper Poulter or the upper North and South Branches of the Hurunui River. On foot, by horseback or four-wheel drive vehicle, a long trip from Mt White Station in the Waimakariri wends its way up the Esk Valley to Lochinvar, at the Mounds of Misery, a low pass into the Cox (Fig. 1, page 3).

The tributary streams of the Cox River rise on: the Poulter Range (W); a very short stretch of the upper North Hurunui, near Harper Pass (N); the ridge shared with the South Hurunui (NE); and the Candlesticks Range (E), as well as the slopes of Gray Hill (N end of Mt White Range) (S). The lowest part of the Cox Valley (555 m) is where the river reaches the Poulter Valley. The highest point is Mt Turnbull (2,024 m) on the Candlesticks. The rocks in the valley appear to be uniform Triassic sandstone and argillite, with rare volcanic intrusions (Gregg 1964).

Two extensive gorges guard the valley: the McArthur, between the Mounds of Misery and the Poulter, and the McElroy in the main upper valley, above Ellis Creek. These gorge tracts can be easily traversed only when river flow is low. Several waterfalls occur in the McElroy Gorge.



**Figure 1** The Cox River catchment and surrounding topography.

Much of the vegetation cover in the Cox Valley is beech forest, composed mainly of mountain beech, with a scattering of silver and red beech. However, around the Mounds of Misery – Bull Ck forest has been burnt off (as much as 150 years ago), and there is much kanuka, manuka and matagouri scrub and weedy short tussock grassland on the valley floor and

sides. On the Poulter Range, above treeline, there is a continuous cover of snow tussock and some patchy carpet grass. On the Candlesticks side the higher slopes have scattered snow tussock, screes and rocky ridges. The head of the valley near the Main Divide is floored with some red tussock and extensive cushion bog. Despite a long history of cattle and sheep grazing and inroads by deer and chamois, much of the Cox Valley remains in a relatively undisturbed condition.

The flora of the Cox Valley is a mixture of species of the very high rainfall zone near Harper Pass and plants found in the drier zone of the middle Esk and Poulter Valleys. There is also a flora element of species that occur more abundantly in the mountains of southern central Nelson and Marlborough provinces. The Candlesticks Range probably has a distinctive alpine flora. It is yet to be thoroughly explored, but G. McSweeney (pers. comm.) has some information on it. The floristic list below (Table 1, page 5) includes some species that are restricted to tarns, such as the very stable, small Lake Grace and the ephemeral ponds present on the Mounds of Misery (an ancient moraine dump). Otherwise most other species are widespread.

Those unfamiliar with the Arthur's Pass National Park flora need to delve into Burrows et al. (2007) to get the hang of what to expect. The wet climate and Nelson-Marlborough elements are noted in the list below.

### **Acknowledgement**

Thanks to Tom Williams, Ranger at Arthur's Pass National Park for information on the date of the addition of the Cox area to the Park and its size.

### **References**

- Burrows CJ 1986. Botany of Arthur's Pass National Park, South Island, New Zealand. 1. History of botanical studies and checklist of the vascular flora. *New Zealand Journal of Botany* 24: 9–68.
- Burrows C and members of the Canterbury Botanical Society 2006–2007. Vascular plants of Arthur's Pass National Park, South Island, New Zealand. *Canterbury Botanical Society Journal* 40: 5–116.
- Gregg DR 1964. Sheet 18 Hurunui (1<sup>st</sup> Edition). Geological Map of New Zealand 1:250,000. Wellington, DSIR.

**Table 1** Vascular plants in the Cox River catchment, Arthur's Pass National Park.

**Trees**

*Dracophyllum traversii*<sup>1</sup>  
*Griselinia littoralis*  
*Hoheria glabrata*  
*Nothofagus fusca*  
*N. menziesii*  
*N. solandri* var. *cliffortioides*

**Shrubs** (including dwarf species)

Conifers

*Halocarpus bidwillii*  
*H. biformis*<sup>1</sup>  
*Lepidothamnus laxifolius*<sup>1</sup>  
*Phyllocladus alpinus*  
*Podocarpus acutifolius*<sup>1</sup>  
*P. nivalis*  
*P. nivalis* x *P. hallii*

Flowering Plants

*Acrothamnus (Cyathodes) colensoi*  
*Archeria traversii*<sup>1</sup>  
*Brachyglottis bidwillii*  
*Carmichaelia australis*  
*C. odorata*  
*C. uniflora*  
*Coprosma atropurpurea*  
*C. cheesemanii*  
*C. ciliata*<sup>1</sup>  
*C. depressa*<sup>1</sup>  
*C. dumosa*  
*C. linariifolia*  
*C. microcarpa*  
*C. perpusilla*  
*C. petriei*

Flowering Plants continued

*C. propinqua*  
*C. pseudocuneata*  
*C. rugosa*  
*Corokia cotoneaster*  
*Cyathodes pumila*  
*Discaria toumatou*  
*Dracophyllum kirkii*  
*D. longifolium*<sup>1</sup>  
*D. pronum*  
*D. uniflorum*  
*Exocarpos bidwillii*  
*Gaultheria antipoda*  
*G. crassa*  
*G. depressa* var. *depressa*  
*G. parvula (Pernettya nana)*  
*Haastia pulvinaris*<sup>2</sup>  
*Hebe brachysiphon*  
*H. canterburiensis*  
*H. epacridea*  
*H. glaucophylla*  
*H. macrantha*<sup>1</sup>  
*H. odora*  
*H. pinguifolia*  
*H. subalpina*  
*Helichrysum intermedium*  
*Kunzea ericoides*  
*Leptecophylla (Cyathodes) juniperina*  
*Leptospermum scoparium*  
*Leucopogon (Cyathodes) fraseri*  
*Melicytus alpinus*  
*Muehlenbeckia axillaris*  
*Myrsine divaricata*  
*M. nummularia*

### Flowering Plants continued

*Olearia arborescens*  
*O. avicenniifolia*  
*O. colensoi*<sup>1</sup>  
*O. lacunosa*<sup>1</sup>  
*O. lacunosa* x *avicenniifolia*  
*O. nummularifolia*<sup>1</sup>  
*Ozothamnus leptophyllus* both “*Cassinia fulvida*” and “*C. vauvilliersii*” forms  
*Parahebe decora*  
*P. linifolia*  
*P. lyallii*  
*Pentachondra pumila*  
*Pimelea oreophila* ssp. *oreophila*  
*P. prostrata* ssp. *prostrata*  
*P. mesoa*  
*P. oreophila* x *P. mesoa*  
*Pittosporum anomalum*  
*P. divaricatum*  
*Pseudopanax colensoi*  
*Raukava simplex*<sup>1</sup>  
*Raoulia eximia*  
*R. mammillaris*  
*Traversia baccharoides*<sup>2</sup>

### **Vines**

*Clematis marata*  
*Rubus cissoides*  
*R. schmidelioides*  
*R. squarrosus*

### **Herbs**

#### Dicotyledons

*Acaena caesiiglauca*  
*A. inermis*  
*Aciphylla aurea*  
*A. colensoi*<sup>2</sup>

### **Herbs** continued

*A. scott-thompsonii*  
*A. cf. similis*  
*Anaphalioides (Helichrysum) bellidioides*  
*Anisotome aromatica*  
*A. filifolia*  
*A. pilifera*  
*Brachyglottis (Senecio) bellidioides*  
*Cardamine debilis* complex  
*Celmisia angustifolia*  
*C. armstrongii*<sup>1</sup>  
*C. bellidioides*  
*C. discolor*  
*C. glandulosa*<sup>1</sup>  
*C. gracilentata*  
*C. laricifolia*  
*C. semicordata*<sup>1</sup>  
*C. sessiliflora*  
*C. spectabilis*  
*C. verbascifolia*  
*Colobanthus strictus*  
*Coriaria angustissima*  
*C. sp. cf. plumosa*  
*C. sarmentosa*  
*Craspedia* sp.  
*Dolichoglottis lyallii*  
*D. scorzoneroides*  
*Donatia novaezelandiae*<sup>1</sup>  
*Drosera arcturi*  
*D. spatulata*<sup>1</sup> (and see page 57)  
*Epilobium melanocaulon*  
*E. microphyllum*  
*Euchiton audax*  
*Euphrasia laingii*  
*Galium perpusillum*  
*Gentianella cf. bellidifolia*

**Herbs continued**

*G. corymbifera*  
*G. grisebachii*  
*G. impressinerva*<sup>2</sup>  
*Geranium sessiliflorum*  
*Geum cockaynei*  
*G. uniflorum*  
*Gingidia decipiens*  
*G. montana*  
*Gonocarpus aggregatus*  
*G. micranthus*  
*Gunnera dentata*  
*G. monoica*  
*Haastia recurva*  
*H. sinclairii*  
*Helichrysum filicaule*  
*Hydrocotyle novae-zeelandiae*  
*H. sulcata*  
*Leptinella dendyi*  
*L. dioica*  
*L. pyrethrifolia*  
*L. squalida*  
*Leucogenes grandiceps*  
*Lobelia angulata*  
*L. macrodon*  
*Mazus radicans*  
*Mentha cunninghamii*  
*Microseris scapigera*  
*Montia calycina*  
*M. fontana*  
*Myosotis australis*  
*M. forsteri*  
*Myriophyllum triphyllum*  
*Notothlaspi rosulatum*  
*Oreomyrrhis colensoi*  
*O. ramosa*  
*Ourisia macrocarpa*<sup>1</sup>  
*O. macrophylla* ssp. *lactea*

*Oxalis lactea*  
*Plantago spathulata*  
*P. triandra*  
*Pseudognaphalium luteoalbum*  
*Ranunculus glabrifolius*  
*R. insignis*<sup>2</sup>  
*R. multiscapus*  
*R. lyallii*  
*R. reflexus*  
*Raoulia glabra*  
*R. grandiflora*  
*R. haastii*  
*R. subsericea*  
*R. tenuicaulis*  
*Rumex flexuosus*  
*Scleranthus uniflorus*  
*Senecio wairauensis*  
*Stackhousia minima*  
*Stellaria gracilentia*  
*S. roughii*  
*Taraxacum magellanica*  
*Urtica incisa*  
*Viola cunninghamii*  
*V. filicaulis*  
*Vittadinia australis*  
*Wahlenbergia albomarginata*

**Monocotyledons**

*Aporostylis bifolia*<sup>1</sup>  
*Astelia nervosa*  
*Bulbinella angustifolia*  
*Carpha alpina*  
*Chionochloa australis*<sup>2</sup>  
*C. conspicua*<sup>1</sup>  
*C. flavescens*  
*C. pallens*  
*C. rigida*  
*C. rubra*

Monocotyledons continued

*Carex coriacea*  
*C. diandra*  
*C. dissita*  
*C. echinata*  
*C. flaviformis*  
*C. gaudichaudiana*  
*C. secta*  
*C. sinclairii*  
*C. wakatipu*  
*Eleocharis acuta*  
*Elymus solandri*  
*Festuca novae-zelandiae*  
*Gastrodia cunninghamii*  
*Herpolirion novae-zelandiae*  
*Hierochloe redolens*  
*Hymenochilus (Pterostylis) mutica*  
*Juncus edgariae*  
*Lachnagrostis* sp.  
*Lemna minor*  
*Luzula rufa*  
*Nematoceras (Corybas) macranthum*  
*Oreobolus pectinatus*  
*O. strictus*<sup>1</sup>  
*Phormium cookianum*  
*Poa breviculmis*  
*P. cita*  
*P. cockayneana*  
*P. colensoi*  
*P. lindsayi*  
*P. novae-zelandiae*  
*Potamogeton cheesemanii*

*Prasophyllum colensoi*  
*Pyrrhanthera exigua*  
*Rytidosperma gracile*  
*R. nigricans*  
*R. setifolium*  
*Schoenus pauciflorus*  
*Simpliglottis (Chiloglottis) cornuta*  
*Stegostyla (Caladenia) lyallii*  
*Trisetum antarcticum*  
*Uncinia nervosa*  
*U. rubra*  
*U. uncinata*

**Ferns, Lycopods**

*Asplenium richardii*  
*A. trichomanes*  
*Blechnum fluviatile*  
*B. montanum*  
*B. penna-marina*  
*Gleichenia dicarpa*<sup>1</sup>  
*Histiopteris incisa*  
*Hymenophyllum multifidum*  
*H. villosum*  
*Hypolepis millefolium*  
*Lycopodium fastigiatum*  
*L. scariosum*  
*L. varium*  
*Microsorium pustulatum*  
*Polystichum vestitum*  
*Pteridium esculentum*  
*Sticherus cunninghamii*<sup>1</sup>

<sup>1</sup> Wet climate species, near Main Divide.

<sup>2</sup> Part of Nelson-Marlborough element.