

# NSW Vegetation Classification - Vegetation ID

## Vegetation Community ID 295

**Common Name:** Robertson's Peppermint - Broad-leaved Peppermint - Norton's Box - stringybark shrub-fern open forest of the NSW South Western Slopes and South Eastern Highland Bioregions

**Scientific Name:** *Eucalyptus robertsonii* subsp. *robertsonii* - *Eucalyptus nortonii* - *Eucalyptus macrorhyncha* / *Acacia dealbata* - *Hibbertia obtusifolia* - *Platylobium formosum* subsp. *formosum* - *Cassinia aculeata* / *Pteridium esculentum* - *Poa sieberiana* - *Microlaena stipoides* var. *stipoides* - *Stellaria pungens*

**Veg. Comm. ID.:** 295 **Original Entry:** J.S. Benson 28/03/2006

**Photo 1:** ID295a\_DX28427.jpg Robertson's Peppermint (*Eucalyptus robertsonii*) - Ribbon Gum (*Eucalyptus viminalis*) - Broad-leaved Peppermint (*Eucalyptus dives*) open forest on red clay on sheltered slopes, Bogandyera Nature Reserve, [AGD66 35°54.728'S 147°53.160'E], 4/5/2006, Jaime Plaza.



**Photo 2:** ID295b\_DX28671.jpg Robertson's Peppermint (*Eucalyptus robertsonii*) - Red Stringybark (*Eucalyptus macrorhyncha*) - Broad-leaved Peppermint (*Eucalyptus dives*) open forest grading into Brittle Gum (*Eucalyptus mannifera*) open forest with grassy ground cover, northern Bogandyera Nature Reserve, [AGD66 35°49.081'S 148°00.240'E], 6/5/2006, Jaime Plaza.



**Photo 3:** ID295c\_DX27914.jpg Robertson's Peppermint (*Eucalyptus robertsonii*) - Red Stringybark (*Eucalyptus macrorhyncha*) - Norton's Box (*Eucalyptus nortonii*) tall open forest on lower slopes, Weriboldera SCA, Tumut, [AGD66 35°22.710'S 148°14.237'E], 30/04/06, Jaime Plaza.



**Characteristic Vegetation:** (Quantitative Data)

**Trees:** *Eucalyptus robertsonii* subsp. *robertsonii*; *Eucalyptus dives*; *Eucalyptus nortonii*; *Eucalyptus macrorhyncha*; *Eucalyptus mannifera* subsp. *mannifera*; *Eucalyptus bicostata*.

**Shrubs/Vines/Epiphytes:** *Acacia dealbata*; *Platylobium formosum* subsp. *formosum*; *Acrotriche serrulata*; *Acacia rubida*; *Cassinia arcuata*; *Pimelea linifolia* subsp. *linifolia*; *Hibbertia obtusifolia*; *Olearia erubescens*; *Daviesia latifolia*; *Acrotriche divaricata*; *Acacia melanoxylon*; *Cassinia longifolia*; *Dodonaea viscosa* subsp. *spatulata*; *Goodia lotifolia* var. *lotifolia*; *Lomatia myricoides*; *Leucopogon virgatus*.

**Ground Cover:** *Pteridium esculentum*; *Stellaria pungens*; *Poa sieberiana* var. *sieberiana*; *Poa sieberiana* var. *cyanophylla*; *Senecio tenuiflorus*; *Plantago varia*; *Geranium solanderi* var. *solanderi*; *Ranunculus lappaceus*; *Acaena novae-zelandiae*; *Hydrocotyle laxiflora*; *Euchiton gymnocephalus*; *Cynoglossum suaveolens*; *Viola betonicifolia*; *Asperula conferta*; *Arthropodium milleflorum*; *Daucus glochidiatus*; *Lagenifera stipitata*; *Craspedia variabilis*; *Wahlenbergia stricta* subsp. *stricta*; *Gonocarpus tetragynus*; *Asplenium flabellifolium*; *Luzula densiflora*; *Lomandra multiflora* subsp. *multiflora*; *Microlaena stipoides* var. *stipoides*; *Elymus scaber* var. *scaber*; *Austrodanthonia eriantha*; *Oxalis perennans*; *Pteridium esculentum*; *Clematis aristata*; *Viola hederacea*; *Dichondra repens*; *Galium migrans*; *Galium propinquum*; *Glycine tabacina*; *Glycine clandestina*; *Rubus parvifolius*; *Billardiera scandens* var. *scandens*; *Dianella revoluta* var. *revoluta*; *Poranthera microphylla*; *Hardenbergia violacea*; *Senecio prenanthoides*; *Joycea pallida*; *Blechnum nudum*; *Dichondra repens*; *Rumex brownii*; *Lomandra longifolia*; *Veronica calycina*.

**Weed Species:** *Hypericum perforatum*; *Trifolium dubium*; *Vulpia myuros*; *Cirsium vulgare*; *Centaureum erythraea*; *Aira elegantissima*; *Rubus discolor*.

**Weediness:** Low (<5%) with <10% cover.

**Threatened Plants:** None known.

**Threatened Fauna:** Not assessed.

**Mean Species Richness:** 35 +/- 5 spp (vegetation group 17 in Gellie & Fanning 2004 in 20 x 20 m plots).

**Rainforest Structure (Webb):** Not applicable.

**Structure (WH):** Open Forest.

**Height Class (WH):** Very Tall.

**Vegetation Description:** Very tall open forest dominated by Robertson's Narrow-leaved Peppermint (*Eucalyptus robertsonii*) mostly with Red Stringybark (*Eucalyptus macrorhyncha*) and less often with Norton's Box (*Eucalyptus nortonii*) or Brittle Gum (*Eucalyptus mannifera*). Grades into Eurabbie (*Eucalyptus bicostata*) dominated forest (ID307) in gullies and on protected slopes. Shrubs are sparse and include *Acacia dealbata*, *Acacia rubida*, *Olearia erubescens*, *Cassinia arcuata*, *Hibbertia obtusifolia*, *Pimelia linifolia* and the decumbent *Acrotriche serrulata*. The ground cover is most often dense, dominated by grasses, ferns and forbs. Grass species include *Poa sieberiana* var. *sieberiana*, *Poa sieberiana* var. *cyanophylla*, *Elymus scaber*, *Microlaena stipoides* and *Austrodanthonia eriantha*. Forb species include *Stellaria pungens*, *Galium migrans*, *Senecio tenuiflorus*, *Plantago varia*, *Geranium solanderi* var. *solanderi*, *Ranunculus lappaceus*, *Acaena novae-zelandiae*, *Hydrocotyle laxiflora*, *Euchiton gymnocephalus*, *Cynoglossum suaveolens*, *Viola betonicifolia*, *Arthropodium milleflorum* and *Lagenifera stipitata*. The rush *Luzula densiflora* may be present along with the mat-rush *Lomandra multiflora* subsp. *multiflora*. The tall fern Bracken (*Pteridium esculentum*) is often a dominant. Occurs on deep brown to loamy clay soils including red and brown podsols derived from granite, metamorphic and sedimentary rocks on flats and sheltered southern and eastern aspects in hill or mountain landform patterns in the southern portion of the NSW South-western Slopes Bioregion and south-western edge of the South Eastern Highlands Bioregion. The main threats are over-logging, clearing for pine plantations and inappropriate fire regimes, otherwise this community is generally in good condition and well represented in reserves.

**Level of Classification:** Association.

**Classification Confidence Level:** High.

**Formation Group:** *Eucalyptus* Tall Wet Forests of the Tablelands and Western Slopes.

**State Veg Map (Keith 2004):** Southern Tableland Wet Sclerophyll Forests.

**State Landscape (Mitchell 2002):** Not Assessed.

**NVIS Major Veg Sub-Groups:** *Eucalyptus* forests with a grassy understorey.

**Forest Type (RN 17):** 111 - Peppermint (P).

**Authority(s):** (Quantitative Data). Includes vegetation group 17 in Gellie & Fanning (2004) and vegetation group 9 in EcoGIS (2005). Similar and may include Vegetation Group 93 in Gellie (2005). Excludes Eurabbie (*Eucalyptus bicostata*)-dominated areas that are recorded as ID307.

**Interstate Equivalent(s):** Victoria:.

**Mapped/Modelled:** Current extent partly mapped or modelled.

**Plot Sampling:** Adequate.

**Mapping Info:** Mapped and plot sampled in conservation reserves around Tumut and the upper Murray River by Gellie & Fanning (2004)

and EcoGIS (2006).

**Climate Zone:** Temperate: no dry season (warm summer).

**IBRA Bioregion (v6):** NSW South-western Slopes (>70%); South Eastern Highlands (1-30%).

**IBRA Sub-Region:** Bondo (1-30%); Upper Slopes (>70%).

**Botanical Division:** South Western Slopes (SWS) (>70%).

**Local Govt. Areas:** Greater Hume (1-30%); Tumbarumba (1-30%); Tumut (1-30%).

**CMAs:** Murray (30-70%); Murrumbidgee (1-30%).

**MD Basin:** Yes.

**Substrate Mass:** Alluvium; Plutonic rocks; Sedimentary rocks.

**Lithology:** Alluvial loams and clays; Granite; Metamorphic rock (unidentified).

**Great Soil Group:** Brown podzolic soil; Grey-brown podzolic soil; Red podzolic soil.

**Soil Texture:** Loam.

**Landform Patterns:** Hills; Mountains.

**Landform Elements:** Gully; Hillslope.

**Land Use:** Grazing; Nature Conservation; Timber Production.

**Impacts of European Settlement:** Younger age class over most of distribution.

**Pre-European Extent:** 30000 ha  $\pm$ 50%. Estimated from extant vegetation maps: part range.

**Pre-European Extent Comments:** Restricted to the southern south western slopes region on hills west of the Kosciusko region.

**Current Extent:** 18000 ha  $\pm$ 50% or 60%  $\pm$  70% of pre-European extent remaining.

**Current Extent Comments:** (Estimated from mapped extant vegetation: part range). Some areas have been cleared for grazing and pine plantation.

**Conservation Reserves:** Woomargama NP 6240 (E2); Werboldera SCA 118 (E1); Bogandyera NR 892 (M); Courabyra NR 50 (E3); Kosciuszko NP 5000 (E3); Carabost FR 900 (E4); Woomargama SCA 1720 (E1); Mundaroo FR 500 (E4).

**Reserves Total Area:** 15420 ha.

**No. Representatives in Reserves:** 8

**Protected Area Explanation:** Woomargama NP, Woomargama SCA and Werboldera SCA areas from vegetation group 17 in Gellie & Fanning (2004) with Eurabbie dominated excluded. Courabyra also from veg. group 17 but estimate only. Bogandyera NR from vegetation group 9 in EcoGIS (2005). Kosciuszko NP coarse estimate - this need review of Euc robertsonii forest types in this reserve. Carabost FR coarse estimate loosley based on Thomas et al. (2000) - requires checking. Mundaroo FR estimate - requires checking.

**Secure Property Agreements:** None.

**Secure PAs Total Area:** 0 ha.

**No. Representatives in Secure Property Agreements:** 0

**Protected Current Extent:** 85.66% 15420 ha  $\pm$  30%.

**No. Representatives in Protected Areas:** 8

**Protected Pre-European Extent:** 51.4% which is adequately protected across distribution.

**Common in 1750:** Code 1a: >25% of pre-European extent in protected areas (>10,000 ha).

**Key Sites for Protection:** Well sampled in current protected area system. May be threatened by pine plantation expansion around Tumut. Need to assess similar vegetation in Kosciuszko National Park.

**Degree of Fragmentation:** Contiguous stands with high connectivity with >60% extent remaining and low edge to area ratio.

**Recoverability:** Healthy, structure and composition intact. Insignificant indicators of degradation. Likely to continue in good health if maintained.

**Variation & Disturbance:** Species variation occurs depending on aspect, slope and fire regime. Shrubs are more abundant in protected sites where fire is less prevalent.

**Fire Regime:** Unknown, but it is likely that occasional bushfires burn this community in the order of every 20-50 years.

**Adjoining Communities:** Grades into Ribbon Gum TOF, Eurabbie very tall open forest (ID307) in gullies and on sheltered slopes. Grades into Broad-leaved Sally woodland (ID285) on swampy ground in valleys. Grades upslope and shares many species with Brittle Gum (Eucalyptus mannifera) - Broad-leaved Peppermint (Eucalyptus dives) open forest on drier sites with shallower soils of soils of lower fertility.

**Threatening Processes:** While some areas have been cleared, logging and replacement of native forest with exotic pines remain threats to this community. Some areas may be burnt too frequently. Listed as Near Threatened due to expansion of pine plantations where it occurs.

**Threatening Process List:** Clearing for pine plantations; Forestry activities including logging; Inappropriate fire regimes; Soil erosion, water: gully, tunnel, landslips.

**Threat Category:** Least Concern.

**Threat/Protected Area Code:** LC/1a

**Threat Criteria:** 4; 5.

**Planning Controls:**

**Planning and Management:** Manage fire regimes and prevent clearing of native forests for pine plantations.

**Listed Under Legislation:** None.

**Recovery Plan:** Doesn't exist and not required.

**Reference List:** (340; 350; 353; 163). Gellie, N. & Fanning, M. (2004) Final report of vegetation ecosystems in new and existing conservation reserves, south west slopes region 2002-2004, version 3. Report to NSW Department of Environment and Conservation: Queanbeyan; EcoGIS (2005) Vegetation of the Upper Murray reserves: Report to NSW Department of Environment and Conservation (DEC Upper Murray Area, Snowy Mountains Region: Khancoban); Gellie, N.J.H. (2005) Native vegetation of the Southern Forests: South-east Highlands, Australian Alps, South-west Slopes and SE Corner bioregions. Cunninghamia 9(2): 219-254; Thomas, V., Gellie, N. & Harrison, T. (2000) Forest ecosystem classification and mapping for the southern CRA region. Volume 2 Appendices. (Department of Urban Affairs and Planning: Sydney).

# NSW Vegetation Classification - Vegetation ID

## Vegetation Community ID 300

**Common Name:** Ribbon Gum - Narrow-leaved (Robertson's) Peppermint montane fern - grass tall open forest on deep clay loam soils in the upper NSW SWS Bioregion and western Kosciuszko escarpment

**Scientific Name:** *Eucalyptus viminalis* - *Eucalyptus robertsonii* subsp. *robertsonii* / *Acacia dealbata* - *Cassinia aculeata* - *Lomatia myricoides* / *Pteridium esculentum* - *Acaena novae-zelandiae* - *Poa meionectes* - *Stellaria pungens*

**Veg. Comm. ID.:** 300 **Original Entry:** J.S. Benson 18/04/2006

**Photo 1:** ID300a\_DX28449.jpg *Eucalyptus viminalis* - *Eucalyptus robertsonii* tall open forest on fire trail to Mount Ikes, Bogandyera Nature Reserve, near Tumbarumba, [AGD66 35°53.916'S 147°56.433'E], 4/5/2006, Jaime Plaza.



**Photo 2:** ID300b\_DX28484.jpg *Eucalyptus viminalis* tall open forest on top of Mount Ikes in Bogandyera Nature Reserve, [AGD66 35°53.899'S 147°56.947'E], 4/5/2006, Jaime Plaza.



**Photo 3:** ID300\_DX28351.jpg Montane Ribbon Gum (*Eucalyptus viminalis*) - Broad-leaved Peppermint (*Eucalyptus dives*) - Norton's Box (*Eucalyptus nortonii*) open forest on granite southern slope, Jingellic Nature Reserve, [AGD66 35°53.844'S 147°48.458'E], 3/5/2006, Jaime Plaza.



**Characteristic Vegetation:** (Combination of Quantitative Data and Qualitative Estimate)

**Trees:** *Eucalyptus viminalis*; *Eucalyptus robertsonii* subsp. *robertsonii*; *Eucalyptus dives*.

**Shrubs/Vines/Epiphytes:** *Acacia dealbata*; *Cassinia aculeata*; *Lomatia myricoides*; *Platylobium formosum* subsp. *formosum*; *Acrotriche serrulata*; *Senecio velleioides*; *Tetralochea ciliata*; *Coprosma quadrifida*; *Coprosma hirtella*; *Acacia melanoxylon*.

**Ground Cover:** *Pteridium esculentum*; *Acaena novae-zelandiae*; *Poa meionectes*; *Stellaria pungens*; *Polystichum proliferum*; *Lagenifera stipitata*; *Senecio* sp. *E*; *Rubus parvifolius*; *Luzula densiflora*; *Luzula flaccida*; *Plantago varia*; *Wurmbea dioica* subsp. *dioica*; *Viola betonicifolia*; *Dianella revoluta* var. *revoluta*; *Dianella tasmanica*; *Stackhousia monogyna*; *Wahlenbergia stricta* subsp. *stricta*; *Microlaena stipoides* var. *stipoides*; *Austrofestuca eriopoda*; *Elymus scaber* var. *scaber*; *Hypericum gramineum*; *Glycine clandestina*; *Oxalis perennans*; *Geranium solanderi* var. *solanderi*; *Hydrocotyle laxiflora*; *Viola hederacea*; *Galium propinquum*; *Cynoglossum suaveolens*; *Galium gaudichaudii*; *Asperula scoparia*; *Acaena echinata*; *Drosera auriculata*; *Daucus glochidiatus*; *Glycine clandestina*; *Clematis aristata*; *Viola hederacea*; *Gonocarpus tetragynus*.

**Weed Species:** *Hypochaeris radicata*; *Rubus discolor*.

**Weediness:** Low (<5%) with <10% cover.

**Threatened Plants:** Not assessed.

**Threatened Fauna:** Not assessed.

**Mean Species Richness:** Not assessed.

**Rainforest Structure (Webb):** Not applicable.

**Structure (WH):** Open Forest.

**Height Class (WH):** Tall; Very Tall.

**Vegetation Description:** Tall to very tall open forest dominated by Ribbon Gum (*Eucalyptus viminalis*) with Robertson's Peppermint (*Eucalyptus robertsonii*) and occasionally Broad-leaved Peppermint (*Eucalyptus dives*). The shrub layer may be very sparse after fire or mid-dense if not burnt for decades. It includes *Acacia dealbata*, *Cassinia aculeata*, *Lomatia myricoides*, *Platylobium formosum* subsp. *formosum*, *Acrotriche serrulata*, *Senecio velleioides*, *Coprosma quadrifida*, *Coprosma hirtella* and *Acacia melanoxylon*. Ferns may be abundant and *Polystichum proliferum* may be common. Bracken Fern (*Pteridium esculentum*) may be abundant in regularly burnt sites. The ground cover includes grasses such as *Poa meionectes*, *Microlaena stipoides* var. *stipoides*, *Austrofestuca eriopoda* and *Elymus scaber* var. *scaber*. Forbs include *Stellaria pungens*, *Lagenifera stipitata*, *Senecio* sp. *E*, *Plantago varia*, *Acaena novae-zelandiae*, *Viola betonicifolia*, *Dianella revoluta* var. *revoluta*, *Dianella tasmanica*, *Hydrocotyle laxiflora* and *Dichondra repens*. The rushes *Luzula densiflora* or *Luzula flaccida* may be common. The climbers *Glycine clandestina* and *Clematis aristata* may be present. Occurs on deep red-brown loam soils derived from granite and sedimentary substrates on sheltered hillslopes in a mountain landform pattern in elevations between 700 and 1150 m on the south-western edge of the south Eastern Highlands Bioregion including in Kosciuszko National Park and in the southern Upper Slopes sub-region of the NSW South-western Slopes Bioregion including a patch on Mount Ikes in Boogandjera Nature Reserve where a pure stand of *Eucalyptus viminalis* occurs on the summit. A restricted community with some areas having been cleared but not threatened overall due to its occurrence in reserves, state forests and on steep hillsides or otherwise rugged terrain.

**Level of Classification:** Association.

**Classification Confidence Level:** High.

**Formation Group:** *Eucalyptus* Tall Wet Forests of the Tablelands and Western Slopes.

**State Veg Map (Keith 2004):** Southern Tableland Wet Sclerophyll Forests.

**State Landscape (Mitchell 2002):** Not Assessed.

**NVIS Major Veg Sub-Groups:** *Eucalyptus* tall open forests and open forests with ferns, herbs, sedges or wet tussock grassland.

**Forest Type (RN 17):** 131 - Peppermint-Mountain/Manna (P); 159 - Mountain/Manna Gum (P).

**Authority(s):** (Quantitative Data). Includes vegetation group 18 in Gellie & Fanning (2004) and vegetation group 10 in EcoGIS (2005). Includes Vegetation Group 82 that is widespread at higher altitudes in the SHE Bioregion in Kosciuszko NP. Checked in Benson (1999-2009).

**Interstate Equivalent(s):** Victoria: may be similar to EVC 29: Damp Forest.

**Mapped/Modelled:** Current extent partly mapped or modelled.

**Plot Sampling:** Adequate.

**Mapping Info:** modelled by Gellie (2005) over range. Mapped in some reserves by Gellie & Fanning (2004) and EcoGIS (2005) but not on private land or state forests as of 2006.

**Climate Zone:** Montane: no dry season (mild summer).

**IBRA Bioregion (v6):** South Eastern Highlands (>70%); NSW South-western Slopes (1-30%); Australian Alps (1-30%).

**IBRA Sub-Region:** Bondo (30-70%); Murrumbateman (1-30%); Upper Slopes (1-30%); NSW Alps (1-30%).

**Botanical Division:** South Western Slopes (SWS) (1-30%); Southern Tablelands (ST) (>70%).

**Local Govt. Areas:** Tumbarumba (30-70%); Tumut (1-30%); Yass Valley (1-30%); Gundagai (1-30%).

**CMAs:** Murray (30-70%); Murrumbidgee (30-70%).

**MD Basin:** Yes.

**Substrate Mass:** Plutonic rocks; Sedimentary rocks.

**Lithology:** Granite; Granodiorite; Sedimentary rock (unidentified).

**Great Soil Group:** Brown earth; Krasnozem; Red-brown earth.

**Soil Texture:** Clay loam; Loam.

**Landform Patterns:** Mountains.

**Landform Elements:** Hillcrest; Hillslope.

**Land Use:** Grazing; Nature Conservation; Timber Production.

**Impacts of European Settlement:** Younger age class over most of distribution.

**Pre-European Extent:** 100000 ha  $\pm$ 30%. Modelled from sound site or polygon data.

**Pre-European Extent Comments:** Estimate from modeling in Gellie (2005) - most of this community occurs in the SHE Bioregion but outliers occur to the west in the NSW South-western Slopes Bioregion.

**Current Extent:** 80000 ha  $\pm$ 30% or 80%  $\pm$  50% of pre-European extent remaining.

**Current Extent Comments:** (Modelled from sound site data over unclassified map of extant vegetation). Gellie (2005) estimates that about 100,000 ha remains. Some areas have been cleared for grazing and pine plantations.

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**Conservation Reserves:** Bogandyera NR 148 (E1); Jingellic NR 100 (E1); Kosciuszko NP 69000 (E2).

**Reserves Total Area:** 69248 ha.

**No. Representatives in Reserves:** 3

**Protected Area Explanation:** Bogandyera and Jingellic NR areas from EcoGIS (2005). The large area in Kosciuszko NP is estimated from Gellie (2005) - this needs checking. Also, possibly in Black Andrew and Downing NR areas in the SEH Bioregion, therefore this protected status may change.

**Secure Property Agreements:** None.

**Secure PAs Total Area:** 0 ha.

**No. Representatives in Secure Property Agreements:** 0

**Protected Current Extent:** 86.56% 69248 ha ± 30%.

**No. Representatives in Protected Areas:** 3

**Protected Pre-European Extent:** 69.24% which is adequately protected across distribution.

**Common in 1750:** Code 1a: >25% of pre-European extent in protected areas (>10,000 ha).

**Key Sites for Protection:** Well sampled in reserves and mostly in good condition. Some areas in Bago State Forest may warrant protection.

**Degree of Fragmentation:** Contiguous stands with high connectivity with >60% extent remaining and low edge to area ratio.

**Recoverability:** Healthy, structure and composition intact. Insignificant indicators of degradation. Likely to continue in good health if maintained.

**Variation & Disturbance:** Varies with altitude and management history. Areas at higher altitude contains some different shrubs such as Coprosma compared to areas on the upper slopes. Post fire species composition and shrub density would be substantially different than long unburnt sites.

**Fire Regime:** Most areas are rarely burnt due to their location on sheltered slopes. Natural fire may occur every 30 to 70 years, often during droughts. Some areas are burnt more regularly.

**Adjoining Communities:** Grades into Robertson's Peppermint - Norton's Box and Broad-leaved Peppermint open forest on less sheltered slopes on the slopes and into Mountain Gum very tall forest in Kosciuszko National Park.

**Threatening Processes:** The location of this community on steep sheltered slopes means that it is relatively intact, however, some areas have been cleared for grazing and pine plantations and the latter remains a threat to some stands. Logging has size classes in state forests and on some private land. Some stands have been cleared through road and transmitter construction on mountain tops. Climate change (lower rainfall, higher temps) could affect this montane community.

**Threatening Process List:** Clearing for pine plantations; Forestry activities including logging; Inappropriate fire regimes; Road construction.

**Threat Category:** Least Concern.

**Threat/Protected Area Code:** LC/1a

**Threat Criteria:** 4; 5; 1.

**Planning Controls:**

**Planning and Management:** Prevent intensive logging. Prevent too-frequent burning. Control localised Blackberry infestations.

**Listed Under Legislation:** None.

**Recovery Plan:** Doesn't exist and not required.

**Reference List:** (350; 340; 308; 353). EcoGIS (2005) Vegetation of the Upper Murray reserves: Report to NSW Department of Environment and Conservation (DEC Upper Murray Area, Snowy Mountains Region: Khancoban); Gellie, N. & Fanning, M. (2004) Final report of vegetation ecosystems in new and existing conservation reserves, south west slopes region 2002-2004, version 3. Report to NSW Department of Environment and Conservation: Queanbeyan; Benson, J.S. (1999-2006) Unpublished field note books recording species at various locations in western NSW. (Royal Botanic Gardens and Domain Trust: Sydney); Gellie, N.J.H. (2005) Native vegetation of the Southern Forests: South-east Highlands, Australian Alps, South-west Slopes and SE Corner bioregions. *Cunninghamia* 9(2): 219-254.