

Grey Box – Grey Gum Wet Sclerophyll Forest in the NSW North Coast Bioregion

Introduction

These guidelines provide background information to assist landholders to identify remnants of Grey Box - Grey Gum Wet Sclerophyll Forest in the NSW North Coast Bioregion (known here as Grey Box – Grey Gum Wet Forest). For more detailed information, refer to the NSW Scientific Committee's Determination Advice at www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=20115

What is an endangered ecological community?

An ecological community is a unique and naturally occurring assemblage of plants and animals. The presence of an ecological community can be determined by factors such as soil type, position in the landscape, climate and water availability, all of which influence species composition.. An endangered ecological community (EEC) is an ecological community listed under the *Threatened Species Conservation Act 1995* as being at risk of extinction unless threats affecting these areas are managed and reduced.

What is Grey Box – Grey Gum Wet Forest?

Grey Box - Grey Gum Wet Forest typically has a tall open canopy of eucalypts, predominantly *Eucalyptus moluccana* (grey box) and *Eucalyptus propinqua* (grey gum) with complex understorey layers comprising a diverse range of rainforest trees and shrubs, vines, ferns and herbs. The form and composition of the ground, shrub and canopy layers may vary depending on the intensity, characteristics and time since past disturbance events including fire, logging, and complete or partial clearing.

Where is Grey Box – Grey Gum Wet Forest found?

Grey Box - Grey Gum Wet Forest occurs mainly within the Woodenbong and far western Richmond/Tweed subregions of the NSW North Coast Bioregion. It occurs on escarpment slopes and foothills, most commonly 200–500 m in elevation, where annual rainfall exceeds approximately 1000 mm and is more concentrated in summer. Grey Box - Grey



Grey Box - Grey Gum Wet Forest – with dense, diverse understorey of rainforest species
Photograph: P Kendall & B Snelson



Potential occurrence of Grey Box - Grey Gum Wet Sclerophyll Forest

Gum Wet Forest generally occurs on relatively fertile soils derived from a range of igneous (including acid volcanic, basic volcanic and intrusive igneous) or fine-grained sedimentary rocks. Grey Box - Grey Gum Wet Forest is currently known from the local government areas of Kyogle and Tenterfield, but may occur elsewhere within the NSW North Coast Bioregion.

Why is it important?

Grey Box - Grey Gum Wet Sclerophyll Forest has been extensively cleared and is now found in only about 30–40% of its original area of distribution. It has undergone changes in structure, including the loss of older hollow-bearing trees, as a consequence of timber harvesting. Much of the community is now regrowth due to past logging or clearing. It is estimated that over half of the remaining areas have moderately high to very high levels of disturbance. A number of threatened species occur within, or may use habitat resources associated with, Grey Box - Grey Gum Wet Forest. The threatened species that have been recorded in Grey Box - Grey Gum Wet Forest include little bentwing-bat (*Miniopterus australis*), koala (*Phascolarctos cinereus*), tinospora vine (*Tinospora smilacina*) and wompoo fruit-dove (*Ptilinopus magnificus*). The loss of hollow-bearing trees, which provide important roosting and breeding habitat for many fauna species, as a result of timber harvesting and clearing, and other disturbances such as firewood collection, have severely degraded these areas. The 'loss of hollow-bearing trees' and 'removal of dead wood and dead trees' are both listed as Key Threatening Processes under the *Threatened Species Conservation Act 1995*.

Description of the community

The tree layer

Grey Box - Grey Gum Wet Forest is typically dominated by an open tree canopy of grey box (*Eucalyptus moluccana*) and small-fruited grey gum (*Eucalyptus propinqua*, sometimes referred to as *E. punctata*) and, less commonly, a grey gum (*E. biturbinata*, sometimes included in *E. punctata*), grey ironbark (*E. siderophloia*) and hoop pine (*Araucaria cunninghamii*). Mature stands of the community are typically tall open-forest or open-forest with a complex, multi-layered understorey, while regrowth stands or recently disturbed stands may take on the structure of a low closed forest or scrub, or may have a simplified understorey, depending on the nature of, and time since, disturbance.

The shrub layer

The understorey typically includes diverse and dense layers of rainforest trees and shrubs including orangebark (*Maytenus bilocularis*), guioa (*Guioa semiglauc*), red kamala (*Mallotus philippensis*), smooth psychotria (*Psychotria daphnoides*), large mock-olive (*Notelaea longifolia*) and celery wood (*Polyscias elegans*). Vines, including water vine (*Cissus antarctica*), native derris (*Derris involuta*), wait-a-while (*Smilax australis*), large-leaved staff vine (*Celastrus subspicatus*), wonga vine (*Pandorea pandorana*) and scrambling lily (*Geitonoplesium cymosum*) commonly grow over and amongst the understorey shrubs and trees.



Breynia oblongifolia Photograph: P Richards



Rasp fern (*Doodia aspera*) Photograph: P Richards

The ground layer

The ground cover comprises graminoid herbs, including slender flat-sedge (*Cyperus gracilis*), red-fruited saw sedge (*Gahnia aspera*), ottochloa (*Ottochloa gracillima*) and spiny-headed mat-rush (*Lomandra longifolia*), and ferns, including rasp fern (*Doodia aspera*) and sickle fern (*Pellaea falcata*).

Variation in the community

Mature stands of the community are typically tall open-forest or open-forest with a complex, multi-layered understorey, while regrowth stands or recently disturbed stands may take on the structure of a low closed forest or scrub, or may have a simplified understorey, depending on the nature of, and time since, disturbance.

Characteristic species

A list of canopy trees and understorey plants that characterise Grey Box - Grey Gum Wet Forest is provided in the table below. Not all the species listed need to occur at any one site for it to be considered Grey Box - Grey Gum Wet Forest and there may also be additional species that are not included in the table. The species present at any site will be influenced by the size of the site, recent rainfall or drought conditions and by its disturbance history.

<i>Abutilon oxycarpum</i>	<i>Acacia irrorata</i>
<i>Acacia maidenii</i>	<i>Acronychia oblongifolia</i>
<i>Alchornea ilicifolia</i>	<i>Alectryon subcinereus</i>
<i>Alectryon tomentosus</i>	<i>Alphitonia excelsa</i>
<i>Alyxia ruscifolia</i>	<i>Araucaria cunninghamii</i>
<i>Arytera divaricata</i>	<i>Breynia oblongifolia</i>
<i>Bridelia exaltata</i>	<i>Celastrus subspicatus</i>
<i>Cissus antarctica</i>	<i>Cordyline petiolaris</i>
<i>Croton insularis</i>	<i>Croton verreauxii</i>
<i>Cupaniopsis parvifolia</i>	<i>Cyperus gracilis</i>
<i>Derris involuta</i>	<i>Dianella caerulea</i>
<i>Diospyros australis</i>	<i>Diospyros pentamera</i>
<i>Doodia aspera</i>	<i>Drypetes deplanchei</i>
<i>Elaeodendron australe</i>	<i>Eucalyptus biturbinata</i>
<i>Eucalyptus moluccana</i>	<i>Eucalyptus propinqua</i>
<i>Eucalyptus siderophloia</i>	<i>Euroschinus falcatus</i>
<i>Gahnia aspera</i>	<i>Geijera latifolia</i>
<i>Geitonoplesium cymosum</i>	<i>Gossia bidwillii</i>
<i>Guioa semiglauca</i>	<i>Hibiscus heterophyllus</i>
<i>Imperata cylindrica</i>	<i>Jagera pseudorhus</i>
<i>Jasminum volubile</i>	<i>Lepidosperma laterale</i>
<i>Lomandra longifolia</i>	<i>Lophostemon confertus</i>
<i>Maclura cochinchinensis</i>	<i>Mallotus philippensis</i>
<i>Maytenus bilocularis</i>	<i>Myrsine variabilis</i>
<i>Notelaea longifolia</i>	<i>Ottochloa gracillima</i>
<i>Pandorea pandorana</i>	<i>Pellaea falcata</i>
<i>Pittosporum multiflorum</i>	<i>Pittosporum revolutum</i>
<i>Polyscias elegans</i>	<i>Psychotria daphnoides</i>
<i>Psydrax odorata</i> subsp. <i>buxifolia</i>	<i>Pyrrosia rupestris</i>
<i>Rauwenhoffia leichhardtii</i>	<i>Smilax australis</i>
<i>Solanum stelligerum</i>	<i>Tetrastigma nitens</i>



Acronychia oblongifolia Photograph: P Richards



Breynia oblongifolia Photograph: P Richards



Scrambling lily Photograph: P Richards

How can I identify areas of Grey Box - Grey Gum Wet Forest?

The following are key characteristics to help identify an area of Grey Box - Grey Gum Wet Forest.

- Is the site on the escarpment slopes and foothills of north-eastern NSW 200–500 m in elevation?
- Does the site occur on relatively fertile igneous, volcanic or sedimentary substrates and receive over approximately 1000 mm of rain annually, mostly during summer?
- Does the canopy contain a mix of grey box and grey gum with a shrubby understorey?

If you answer yes to the above questions, your site is likely to consist of Grey Box - Grey Gum Wet Sclerophyll Forest. Where difficulties arise with decisions on whether particular sites are Grey Box - Grey Gum Wet Forest, expert advice may be needed.

What does this mean for Private Native Forestry on my property?

As a listed EEC under the *Threatened Species Conservation Act 1995*, Grey Box - Grey Gum Wet Forest has significant conservation value and some activities will require consent or approval. In addition, the community can contain threatened species. Please contact the Department of Environment, Climate Change and Water for further information.

Determining the conservation value of remnants

The degree of disturbance (i.e. condition) of many remnants can vary, from almost pristine to highly modified. It is important to note that even small patches or areas that have had past disturbance such as clearing, or fire are still considered to be important remnants of Grey Box - Grey Gum Wet Forest and meet the criteria to be an EEC. Where difficulties arise with decisions on whether particular sites are Grey Box - Grey Gum Wet Forest, expert advice may be needed.

Retaining mature native vegetation or EECs for conservation purposes may attract incentive funding. Funding is allocated to landholders by the local Catchment Management Authority (CMA) according to the priorities set out in their Catchment Action Plan and strategies. For more information contact your local CMA or email: info@nativevegetation.nsw.gov.au



Red-fruited saw sedge (*Gahnia aspera*) Photograph: P Richards



Sickle fern (*Pellaea falcata*) Photograph: P Richards



Elaeodendron australe Photograph: P Richards

For further assistance

This and other EEC guidelines are available on the DECCW website at threatenedspecies.environment.nsw.gov.au/tsprofile/home_tec.aspx or <http://www.environment.nsw.gov.au/pnf/eecfieldidguidelines.htm>

The resources listed below also provide information on NSW plants, native vegetation and EECs.


- Botanic Gardens Trust plant identification assistance:
www.rbg Syd.nsw.gov.au/plant_info/identifying_plants/
- Department of Environment, Climate Change and Water threatened species profiles:
www.threatenedspecies.environment.nsw.gov.au/tsprofile/home_species.aspx
- Information on bioregions of New South Wales:
www.environment.nsw.gov.au/bioregions/Bioregions.htm
- NSW Scientific Committee Determinations:
www.environment.nsw.gov.au/committee/ListofScientificCommitteeDeterminations.htm
- Forestry Commission of NSW (1989) *Forest types in New South Wales. Research note 17*. Forestry Commission of New South Wales, Sydney.
- Harden, G (ed.) (1990–2002) *Flora of NSW, volumes 1–4*. University of NSW Press, Kensington NSW.
- Moreland, DT (1996) *Soil landscapes of the Murwillumbah – Tweed Heads 1:100,000 map sheet*. Department of Land and Water Conservation, Sydney.
- National Parks and Wildlife Service (1999) *Forest ecosystem classification and mapping for the upper and lower north east Comprehensive Regional Assessment*. Report to Resource and Conservation Division, Department of Urban Affairs and Planning, Sydney.



Grey Box – rough bark on lower trunk
Photograph: P Richards



Grey Box - Grey Gum Wet Forest – with dense, diverse understorey of rainforest species. Photograph: P Kendall & B Snelson



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