

Appendix B. Site Photos



Figure 5. Groundcover in Stringybark Woodland proposed landfill pit impact area



Figure 6. Groundcover in Stringybark Woodland proposed offset groundcover area



Figure 7. Dense regrowth in Stringybark Woodland offset area



Figure 8. Cleared grassland in proposed landfill pit impact area



Figure 9. Proposed landfill pit impact area in Stringybark Woodland. The area is dominated by mature regrowth with few remnant mature emergent trees.



Figure 10. Log piles in the Stringybark Woodland of the proposed landfill pit impact area



Figure 11. Blackberry shrubs (noxious weed) in the log piles within the Stringybark Woodland proposed landfill pit impact area

Appendix C. Flora Species Recorded On-Site

Table 1. Flora species observed in the study area on 3 April 2005, 15 October 2005 and 18 September 2006

V=Vulnerable Species (TSC act and EPBC Act); R=ROTAP species; TSR=Travelling Stock Reserve;
 *= introduced species, **= exotic species listed as noxious weeds for the Armidale Dumaresq LGA.

Status	Scientific name	Common name	Study site	TSR
Trees				
	<i>Acacia filicifolia</i>	Fern-leaved Wattle	✓	✓
	<i>Allocasuarina littoralis</i>	Black She-oak	✓	
	<i>Banksia integrifolia</i> subsp. <i>monticola</i>	Banksia		✓
	<i>Angophora floribunda</i>	Rough-barked Apple		✓
	<i>Eucalyptus blakelyi</i>	Blakelys Red Gum	✓	✓
	<i>Eucalyptus bridgesiana</i>	Apple-topped Box		✓
	<i>Eucalyptus caliginosa</i>	New England Stringybark	✓	✓
R	<i>Eucalyptus elliptica</i>	Bendemeer White Gum		✓
	<i>Eucalyptus melliodora</i>	Yellow Box	✓	✓
V	<i>Eucalyptus nicholii</i>	Narrow-leaved Black Peppermint		✓
	<i>Exocarpus cuppresiformis</i>	Native Cherry		✓
Shrubs				
	<i>Acacia dawsonii</i>	Poverty Wattle		✓
	<i>Acacia ulicifolia</i>	Prickly Moses	✓	✓
	<i>Bursaria spinosa</i> subsp. <i>spinosa</i>	Blackthorn	✓	✓
	<i>Cassinia laevis</i>	Cough Bush	✓	✓
	<i>Cassinia quinquefaria</i>	Cough Bush	✓	✓
*	<i>Crataegus monogyna</i>	Hawthorn	✓	✓
	<i>Cryptandra amara</i>	Bitter Cryptandra		✓
	<i>Cryptandra propinqua</i>	Cryptandra		✓
	<i>Daviesia genistifolia</i>	Broom Bitter Pea	✓	✓
	<i>Daviesia latifolia</i>	Broad-leaved Bitter Pea	✓	✓
	<i>Dillwynia sieberi</i>	Spiny Parrot Pea		✓
	<i>Grevillea juniperina</i>	Juniper-leaved Grevillea		✓
	<i>Hibbertia linearis</i>	Guinea Flower	✓	
	<i>Hibbertia obtusifolia</i>	Guinea Flower	✓	✓
	<i>Hibbertia riparia</i>	Guinea Flower	✓	✓
	<i>Hovea linearis</i>	Hovea		✓
	<i>Indigofera australis</i>	Hill Indigo	✓	✓
	<i>Jacksonia scoparia</i>	Dogwood	✓	✓
	<i>Lespedeza juncea</i> subsp. <i>sericea</i>	Chinese Lespedeza		✓
	<i>Lissanthe strigosa</i>	Peach Heath	✓	✓
	<i>Maytenus silvestris</i>	Narrow-leaved Orangebark		✓
	<i>Melichrus urceolatus</i>	Urn Heath		✓
	<i>Olearia viscidula</i>	Sticky Daisy Bush		✓
	<i>Phyllanthus virgatus</i>	Small Spurge	✓	

Status	Scientific name	Common name	Study site	TSR
	<i>Pimelea curviflora</i> var. <i>divergens</i>	Curved Riceflower	✓	✓
	<i>Pultenaea microphylla</i>	Spreading Bush-Pea	✓	✓
**	<i>Rosa rubiginosa</i>	Sweet Briar	✓	✓
**	<i>Rubus fruticosus</i> s.l.	Blackberry	✓	✓
	<i>Rubus parvifolius</i>	Native Raspberry	✓	✓
Vines/climbers				
	<i>Glycine clandestina</i>	Glycine	✓	✓
	<i>Glycine tabacina</i>	Variable Glycine	✓	✓
	<i>Hardenbergia violacea</i>	Purple Twining-Pea		✓
Mistletoes				
	<i>Amyema micquellii</i>	Mistletoe		✓
	<i>Amyema pendulum</i>	Drooping Mistletoe	✓	✓
Grasses				
	<i>Aristida ramosa</i>	Purple Wiregrass	✓	✓
	<i>Aristida vagans</i>	Wiregrass	✓	✓
	<i>Austrodanthonia laevis</i>	Wallaby Grass	✓	✓
	<i>Austrodanthonia racemosa</i>	Slender Wallaby Grass	✓	✓
	var. <i>racemosa</i>			
	<i>Austrodanthonia richardsonii</i>	Wallaby Grass	✓	
	<i>Austrostipa rudis</i>	Tall Speargrass	✓	✓
	<i>Austrostipa scabra</i> subsp. <i>scabra</i>	Rough Speargrass	✓	✓
	<i>Bothriochloa decipiens</i>	Red-leg Grass	✓	
	<i>Bothriochloa macra</i>	Red-leg Grass	✓	✓
*	<i>Briza minor</i>	Quivering Grass	✓	
	<i>Chloris ventricosa</i>	Tall Chloris	✓	
*	<i>Chloris virgata</i>	Feathertop Rhodes Grass	✓	
	<i>Cymbopogon refractus</i>	Barb-wire Grass	✓	✓
	<i>Cynodon dactylon</i>	Couch	✓	
	<i>Dichelachne micrantha</i>	Slender Plume Grass	✓	✓
	<i>Echinopogon caespitosus</i>	Hedgehog Grass	✓	✓
	var. <i>caespitosus</i>			
*	<i>Eleusine tristachya</i>	Goose Grass	✓	
	<i>Elymus scaber</i>	Wheat Grass	✓	✓
*	<i>Enneapogon nigricans</i>	Niggerheads	✓	
**	<i>Eragrostis curvula</i>	African Lovegrass	✓	✓
	<i>Eragrostis leptostachya</i>	Small Lovegrass	✓	✓
	<i>Eragrostis molybdea</i>	Lovegrass	✓	✓
	<i>Lachnagrostis avenaceus</i>	Blown Grass	✓	✓

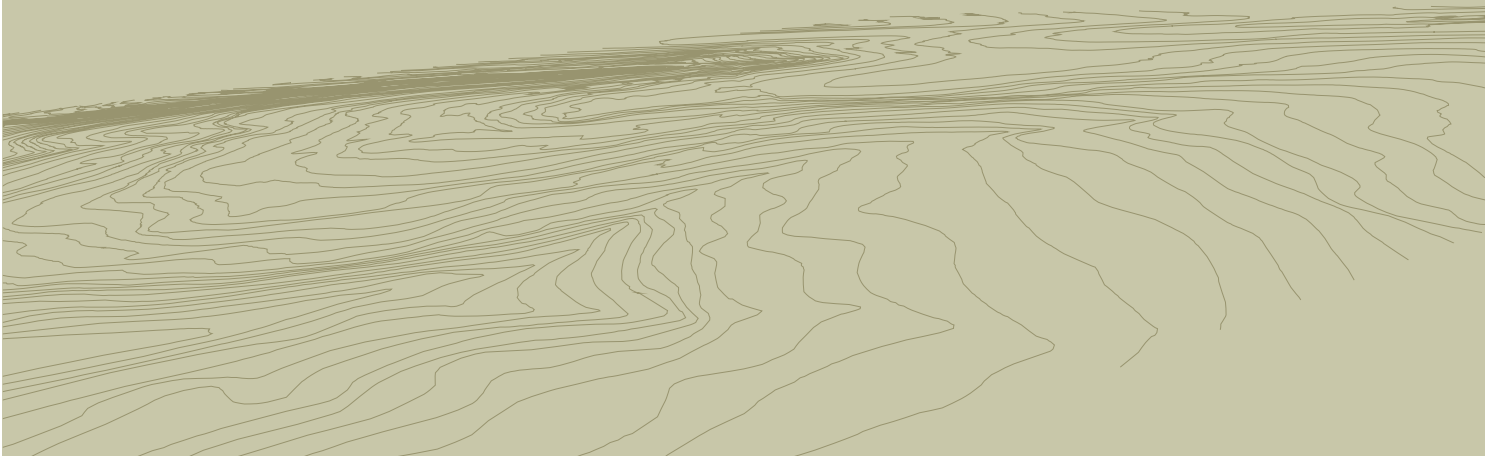
Status	Scientific name	Common name	Study site	TSR
	<i>Microlaena stipoides</i> var. <i>stipoides</i>	Meadow Rice Grass	✓	✓
	<i>Panicum effusum</i>	Hairy Panic	✓	✓
*	<i>Paspalum dilatatum</i>	Paspalum	✓	
	<i>Paspalum distichum</i>	Water Couch	✓	
	<i>Pennisetum allopecuroides</i>	Swamp Foxtail	✓	
	<i>Poa sieberiana</i>	Snow Grass	✓	✓
*	<i>Setaria gracilis</i>	Pigeon Grass	✓	
	<i>Sarga leiocladum</i>	Native Sorghum	✓	✓
	<i>Sporobolus creber</i>	Slender Rat's Tail Grass	✓	✓
	<i>Themeda australis</i>	Kangaroo Grass	✓	✓
Herbs				
	<i>Acaena ovina</i>	Sheep's Burr		✓
*	<i>Acetosella vulgaris</i>	Wood Sorrel	✓	✓
	<i>Ajuga australis</i>	Austral Bugle		✓
*	<i>Anagallis arvensis</i>	Scarlet Pimpernell	✓	✓
	<i>Asperula conferta</i>	Woodruff	✓	✓
*	<i>Aster subulatus</i>	Wild Aster	✓	✓
	<i>Bidens subalternans</i>	Greater Beggar's Ticks		✓
	<i>Brachycome nova-anglica</i>	New England Brachycome		✓
	<i>Brunoniella australis</i>	Blue Trumpet		✓
	<i>Bulbine bulbosa</i>	Bulbine Lily		✓
	<i>Calotis cuneifolia</i>	Purple Burr-daisy	✓	✓
	<i>Calotis lappulacea</i>	Tangled Burr-daisy	✓	
	<i>Carex appressa</i>	Tall Sedge	✓	✓
	<i>Carex breviculmis</i>	A Small Sedge		✓
*	<i>Centaurium erythraea</i>	Common Centaury	✓	✓
	<i>Centella asiatica</i>	Pennywort	✓	
	<i>Centipeda minima</i>	Spreading Sneezeweed	✓	
	<i>Cheilanthes distans</i>	Hairy Mulga Fern	✓	
	<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>	Poison Mulga Fern	✓	✓
	<i>Chrysocephalum apiculatum</i>	Clustered Everlasting	✓	✓
*	<i>Cirsium vulgare</i>	Spear Thistle	✓	✓
*	<i>Conyza bonariensis</i>	Flaxleaf Fleabane	✓	✓
	<i>Craspedia canens</i>	Grey Billy-buttons		✓
	<i>Crassula sieberiana</i>	Australian Stonecrop		✓
	<i>Cymbonotus lawsonianus</i>	Bear's Ear	✓	✓
	<i>Cynoglossum australe</i>	Native forget-me-not		✓
*	<i>Cyperus eragrostis</i>	Umbrella Sedge	✓	✓
	<i>Cyperus gracilis</i>	Slender Sedge	✓	✓
	<i>Cyperus lhotskyanus</i>	Sedge	✓	

Status	Scientific name	Common name	Study site	TSR
	<i>Cyperus sanguinolentus</i>	Sedge		✓
	<i>Cyperus sphaeroideus</i>	Sedge	✓	✓
	<i>Desmodium brachypodum</i>	Large Tick-trefoil	✓	✓
	<i>Desmodium gunnii</i>	Tick-trefoil	✓	✓
	<i>Desmodium varians</i>	Slender Tick-trefoil	✓	✓
	<i>Dianella revoluta</i> var. <i>vinosa</i>	Flax Lily		✓
	<i>Dichondra</i> sp. A	Kidney Weed	✓	✓
	<i>Dipodium</i> sp.	Hyacinth Orchid		✓
	<i>Diuris chrysantha</i>	Donkey Orchid		✓
	<i>Elatine gratioloides</i>	Waterwort	✓	
	<i>Eleocharis acuta</i>	Spikerush	✓	✓
	<i>Euchiton sphaericus</i>	Cudweed	✓	✓
	<i>Fimbristylis dichotoma</i>	Common Fringe-sedge	✓	✓
*	<i>Gamochaeta spicata</i>	Spiked Cudweed	✓	✓
	<i>Geranium solanderi</i> var. <i>solanderi</i>	Native Geranium	✓	✓
	<i>Goodenia hederacea</i> subsp. <i>hederacea</i>	Ivy Goodenia	✓	✓
	<i>Goodenia pinnatifida</i>	Goodenia	✓	✓
	<i>Haloragis heterophylla</i>	Raspwort	✓	✓
	<i>Hydrocotyle laxiflora</i>	Stinking pennywort		✓
	<i>Hypericum gramineum</i>	Small St. John's Wort	✓	✓
*	<i>Hypochaeris radicata</i>	Catsear	✓	✓
	<i>Hypolepis glandulifera</i>	Downy Ground-fern	✓	
	<i>Isolepis</i> sp.	Small Clubrush	✓	✓
	<i>Juncus filicaulis</i>	Rush		✓
	<i>Juncus planifolius</i>	Broad Rush		✓
	<i>Juncus</i> sp.	Rush	✓	✓
	<i>Juncus usitatus</i>	Rush	✓	✓
*	<i>Lepidium africanum</i>			✓
	<i>Leptorhynchus squamatus</i>	Yellow Buttons		✓
	<i>Lomandra filiformis</i>	Slender Mat-rush	✓	✓
	<i>Lomandra longifolia</i>	Spiny Mat-rush		✓
	<i>Mentha diemenica</i>	Pennyroyal	✓	✓
	<i>Opercularia hispida</i>	Hairy Stinkweed		
	Orchid - ground	unknown sp, rosette lvs		✓
	<i>Oxalis exilis</i>	Soursob	✓	✓
*	<i>Paronychia brasiliana</i>	Chilean Whitlow Wort	✓	✓
	<i>Pellaea falcata</i>	Sickle Fern	✓	
	<i>Persicaria lapathifolia</i>	Knotweed	✓	
	<i>Persicaria prostrata</i>	Spreading Knotweed	✓	✓
*	<i>Petrorhagia nanteulii</i>			✓
*	<i>Phytolacca octandra</i>	Inkweed	✓	

Status	Scientific name	Common name	Study site	TSR
	<i>Plantago gaudichaudii</i>	Slender Plantain		✓
*	<i>Plantago lanceolata</i>	Lamb's Tongue	✓	✓
	<i>Podolepis</i> sp.	Copper Daisy		✓
*	<i>Polygonum aviculare</i>	Wireweed	✓	
	<i>Poranthera microphylla</i>	A Euphorb		✓
	<i>Ranunculus lappaceus</i>	Common Buttercup		✓
	<i>Ranunculus pumilio</i>	Small Buttercup	✓	
	<i>Rumex brownii</i>	Swamp Dock	✓	✓
*	<i>Sanguisorba minor</i>	Salad Burnet		✓
	<i>Scleranthus biflorus</i>	Knawel		✓
	<i>Senecio gunnii</i>	A senecio		✓
	<i>Stackhousia monogyna</i>	Creamy Candles	✓	✓
*	<i>Taraxacum officinale</i>	Dandelion		✓
*	<i>Trifolium campestre</i>	Hop Clover	✓	
*	<i>Trifolium repens</i>	White Clover		✓
	<i>Triptilodiscus pygmaeus</i>	Small Sunray	✓	
	<i>Typha orientalis</i>	Broad-leaved Cumbungi		✓
	<i>Urtica incisa</i>	Stinging Nettle	✓	✓
*	<i>Urtica urens</i>	Stinging Nettle	✓	
*	<i>Verbascum thapsus</i>	Great Mullein	✓	
*	<i>Verbascum virgatum</i>	Green Mullein		✓
*	<i>Verbena bonariensis</i>	Purple Top	✓	✓
	<i>Veronica plebeia</i>	Trailing Speedwell		✓
	<i>Viola betonicifolia</i>	Native Violet		✓
	<i>Vittadinia muelleri</i>	Dissected Fuzzweed		✓
	<i>Vulpia bromoides</i>	Squirrel Tail Fescue		
	<i>Wahlenbergia communis</i>	Bluebell	✓	✓
**	<i>Xanthium spinosum</i>	Bathurst Burr	✓	
Aquatic plants				
	<i>Ottelia ovalifolia</i>	Swamp Lily	✓	
	<i>Vallisneria gigantea</i>	Ribbonweed	✓	

ARMIDALE REGIONAL LANDFILL

Environmental Assessment





ARMIDALE REGIONAL LANDFILL

Environmental Assessment Publications

Volume 1

Main Document

Volume 2

- Appendix A Director-General's Requirements, 2005 and 2008; and Government Consultation
- Appendix B AECOM, 2006: Armidale Regional Landfill Environmental Management Plan (Draft)
- Appendix C Maunsell AECOM, 2004: Regional Landfill Siting Study Final Report
- Appendix D EA Systems, 2006: Hydrogeological Study

Volume 3

- Appendix E EA Systems, 2009: Flora and Fauna Assessment
- Appendix F RCA Australia, 2007: Hydrogeological Investigation
- Appendix G AECOM, 2010: Landfill Concept Design Drawings
- Appendix H EA Systems, 2009: Biodiversity Offset Management Plan

Volume 4

- Appendix I AECOM, 2010: Landfill Liner Literature Review and Hydrogeological (Leachate) Assessment
- Appendix J NSW Department of Public Works and Services, 2002: Landfill Siting Study, Aerial Photographic Survey
- Appendix K EA Systems, 2006: Preliminary Contaminated Site Investigations
- Appendix L EA Systems, 2006: Salinity Assessment
- Appendix M PM Ashley, 2006: Geological Report on proposed Armidale Dumaresq Council landfill site, with emphasis on investigation of a possible geological fault
- Appendix N PM Ashley, 2005: Report on Geological Logging of Diamond Drill Core from the Proposed Armidale Landfill Site
- Appendix O Holmes Air Sciences, 2009: Air Quality Assessment Report
- Appendix P AECOM, 2010: Greenhouse Gas Inventory
- Appendix Q AECOM, 2010: Armidale Regional Landfill Noise Impact Assessment
- Appendix R Archaeological Surveys & Reports Pty Ltd, 2009: The Archaeological Investigation For Sites Of Indigenous Cultural Significance For Part 3A Approval New England Regional Landfill Waterfall Way, East of Armidale, Northern Tablelands NSW