

Gwydir River

4. Management Suggestions

Management of this location is extremely difficult. There is no current regulation of visitor usage except for signage on the type and number of fish that may be caught. The study area is very long and narrow and as such has a high edge to area ratio. Any location that can allow access to vehicles has tracks and entry to the river side occurs at numerous locations. In addition a Telstra line with its associated access track occurs along the entire length of the area investigated between the river and the Bingara/Copeton Road. Some control needs to occur as significant environmental change has already occurred. However it is acknowledged that extensive changes to visitor activity would both be costly and also likely to cause backlash from those used to doing as they have in the past. It is recognised that riverside camping is important for the local economy. However its unchecked usage is likely to cause the river side to be 'loved to death'. By their very nature recreational activities often contribute to the decline of the environment that attracts people in the first place. It is important that any management activities ensure a balance between the conflicting interests of visitors and the environment they come to visit. A sustainable recreation strategy needs to be put into place that incorporates the restoration of existing degraded sites and the prevention of further damage and the planning for recreation areas and allowable activities. Effective sustainable recreation requires managing visitor behaviour, partnership with the community and long-term commitment from government. It is understood that any improvements or capital works on the site implies a duty of care by council and that this will need to be taken into consideration when management actions are being considered. For this reason education and behaviour modification may be the most appropriate methods available to council. However, for long term and continued improvement some on ground improvements and capital works are likely to be required in the long term.

It is suggested that a strategy be implemented that is both progressive and adaptive due to local concerns. Some suggested management actions that may be considered include:

- A survey of visitor type and characteristics. Where are these visitors from, their type of camping styles and what they have chosen this location. A better understanding of visitor type and requirements will better enable appropriate targeting of facilities or management actions. A survey may also include reactions to suggested management actions. Surveys probably need to be on-going to assess usage change and what is and isn't working with changes imposed.

Gwydir River

- Any development within threatened communities including along within the floodplain area (Fisheries Act) will require consent.
- Identification of major stakeholders.
- A public information program using local newspapers, council newsletters, flyers, web site development, presentations to local based associations and clubs and education packages for local schools. Such information should include the importance of the river environment and also what may occur if continued degradation occurs. Such programs should include guidance to recreation users about current and potential impacts of various types of activities and mitigating actions. The programs should encourage behavioural change and engender a stewardship approach to the river side and its environment.
- Records kept of visitor numbers and season of visitation.
- Placement of garbage disposal points. Particularly during high visitation periods. This may include the temporary placement of skips.
- A survey of worse affected areas by weeds. Prioritisation and weed management plan. Not all weeds will need control, some locations are likely to be too far gone for appropriate actions to be taken however some weeds or locations maybe manageable.
- Signage on issues or good camping practice/rules of usage/codes of conduct. Potential introduction of fines for significant breaches if allowable. Placement of signage will allow visitors to become aware of appropriate behaviour and will minimise ecological damage and maximise long term sustainability. It is frequently the lack of behaviour that causes inappropriate behaviour.
- Control of track usage. Though a difficult issue this is highly important. This may include passive means such as signage and education but is likely to require blocking of some tracks and their rehabilitation.
- Rehabilitation of some locations and no access zones. This may involve passive means such as signage and education or blocking of access.
- Regulation of camping zones. Camping should be restricted to designated areas. This allows impacts to be managed, facilities to be targeted and areas to be rehabilitated with removal of visitor impact. Zones should be designated for recreation use, rehabilitation, weed control and environmentally sensitive areas. Camping zones may need to be rotated.
- Provision of firewood either via council placement of the allowance or promotion of local groups or individuals to provide this service.
- Continued evaluation of actions.

Gwydir River

- Investigation of areas of potential best areas of public usage (e.g. Sunnyside) and review of weather usage should be maintained in a single location or moved at times to allow recovery.
- Suggested methods to reduce cold-water pollution include:
 - Artificial de-stratification by mechanical mixing of the water column
 - Surface water pumps
 - Trunnions (pipes hinged at the outlet so that the free end can be position to draw water from different levels in the water column).
 - Draft tube mixers
 - Submerged curtains
 - Stilling basins

References

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- Cannon, G., Cannon, M., Harding, W, McCosker, R., Spinner, B, Steenbeeke, G and Watson, G. (2003) Vegetation of the Ballata, Gravesend, Horton and Boggabri 1:100 000 Map Sheets, New South Wales. Unpublished report to the NSW Department of Land and Water Conservation.

Gwydir River

Appendix A: Checklist of flora species noted within the study area

* denotes introduced taxa. Note: this represent only opportunistic recordings and species found within flora survey sites it is not a comprehensive list of species from the site.

Fern & Fern Allies

Adiantaceae

Cheilanthes distans (R.Br.) Mett. Hairy Rock Fern

Cheilanthes sieberi Kunze

subsp. *sieberi* Narrow Rock Fern

Marsileaceae

Marsilea drummondii A.Braun. Common Nardoo

Gymnosperm

Cupressaceae

Callitris glaucophylla Joy Thomps. & L.A.S.Johnson White Cypress Pine

Pinaceae

**Pinus radiata* D.Don Radiata Pine

Monocotyledon

Amaryllidaceae

Crinum flaccidum Herb. Darling Lily, Macquarie Lily

Gwydir River

Anthericaceae

- Arthropodium milleflorum* (DC.) J.F.Macbr.....Vanilla Lily
Tricoryne elatior R.Br.....Yellow Autumn-lily

Commelinaceae

- Commelina cyanea* R.Br.....Scurvy Weed
**Tradescantia fluminensis* Vell.....Wandering Jew

Cyperaceae

- Carex inomitata* K.R.Thiele.....Sedge
Carex inversa R.Br.....Knob Sedge
**Cyperus aggregatus* (Willd.) Endl.....Sedge
**Cyperus eragrostis* Vahl.....Umbrella Sedge
Cyperus gracilis R.Br.....Sedge
Cyperus vaginatus R.Br.....Stiff Flat Sedge
Schoenoplectus validus (Vahl) A.Love & D.Love.....Sedge
Scleria mackaviensis Boeck.....White Head Sedge

Juncaceae

- Juncus usitatus* L.A.S.Johnson.....Common Rush

Lomandraceae

- Lomandra longifolia* Labill.....Spiny-headed Mat-rush

Gwydir River

Lomandra multiflora (R.Br.) Britten

subsp. *multiflora* Many-flowered Mat-rush

Luzuriagaceae

Eustrephus latifolius R.Br. ex Ker Gawl. Wombat Berry

Phormiaceae

Dianella caerulea Sims Rough Flax Lily

Dianella revoluta R.Br.

var. *revoluta* Spreading Flax Lily

Poaceae

**Aira cupaniana* Guss. Silvery Hairgrass

Aristida caput-medusae Domin Many-headed Wiregrass

Aristida holathera Domin

var. *holathera* Erect Kerosene Grass

Aristida personata Henrard Purple Wiregrass

Austrostipa scabra (Lindl.) S.W.L.Jacobs & J.Everett

subsp. *scabra* Rough Speargrass

Austrostipa verticillata (Nees ex Spreng.) S.W.L.Jacobs & J.Everett Slender Bamboo Grass

Bothriochloa bladhii S.T.Blake

subsp. *bladhii* Forest Bluegrass

Bothriochloa macra (Steud.) S.T.Blake Red Grass

**Bromus brevis* Steud. Brome

**Bromus catharticus* Vahl Prairie Grass

**Bromus diandrus* Roth Great Brome

Gwydir River

| | |
|---|--------------------------|
| * <i>Bromus inermis</i> Leyss. | Awnless Brome |
| <i>Chloris truncata</i> R.Br. | Windmill Grass |
| <i>Cymbopogon refractus</i> (R.Br.) A.Camus | Barbed Wire Grass |
| <i>Cynodon dactylon</i> (L.) Pers. | Couch, Bermuda Grass |
| * <i>Dactylis glomerata</i> L. | Cocksfoot |
| <i>Dichanthium sericeum</i> S.T.Blake subsp. <i>sericeum</i> | Queensland Bluegrass |
| <i>Dichelachne micrantha</i> (Cav.) Domin | Short-haired Plumegrass |
| <i>Digitaria ammophila</i> Hughes..... | Silky Umbrella Grass |
| <i>Digitaria brownii</i> (Roem. & Schult.) Hughes..... | Cotton Panic Grass |
| <i>Digitaria divaricatissima</i> (R.Br.) Hughes | Spreading Umbrella Grass |
| <i>Echinopogon caespitosus</i> C.E.Hubb. var. <i>caespitosus</i> | Tufted Hedgehog Grass |
| <i>Echinopogon ovatus</i> (G.Forst.) P.Beauv..... | Forest Hedgehog Grass |
| <i>Enneapogon gracilis</i> (R.Br.) P.Beauv..... | Slender Nineawn |
| <i>Enneapogon nigricans</i> (R.Br.) P.Beauv..... | Niggerheads |
| <i>Eragrostis brownii</i> (Kunth) Nees | Brown's Lovegrass |
| * <i>Eragrostis curvula</i> (Schrud.) Nees..... | African Lovegrass |
| <i>Eragrostis elongata</i> (Willd.) J.Jacq..... | Clustered Lovegrass |
| <i>Eragrostis leptostachya</i> Steud. | Paddock Lovegrass |
| <i>Eragrostis parviflora</i> (R.Br.) Trin. | Weeping Lovegrass |
| <i>Eriochloa pseudoacrotricha</i> (Stapf ex Thell.) J.M.Black | Early Spring Grass |
| <i>Festuca asperula</i> Vickery | Graceful Fescue |
| * <i>Festuca pratensis</i> Huds..... | Meadow Fescue |
| * <i>Hyparrhenia hirta</i> (L.) Stapf | Coolatai Grass |

Gwydir River

| | |
|---|--------------------------|
| <i>Imperata cylindrica</i> | |
| var. <i>major</i> (Nees) C.E.Hubb | Blady Grass |
| * <i>Melinis repens</i> (Willd.) Zizka | Red Natal Grass |
| <i>Microlaena stipoides</i> (Labill.) Druce | |
| var. <i>stipoides</i> | Weeping Meadow Grass |
| <i>Oplismenus aemulus</i> (R.Br.) Roem. & Schult. | Creeping Beard Grass |
| <i>Panicum buncei</i> F.Muell. ex Benth. | Panic |
| <i>Panicum simile</i> Domin | Two Colour Panic |
| <i>Paspalidium constrictum</i> (Domin) C.E.Hubb. | Knottybutt Grass |
| * <i>Paspalum dilatatum</i> Poir. | Paspalum |
| <i>Phragmites australis</i> (Cav.) Trin ex Steud. | Common Reed |
| <i>Poa sieberiana</i> Spreng. | Snow Grass |
| * <i>Rostraria cristata</i> (L.) Tzelev | Annual Cat's Tail |
| <i>Rytidosperma racemosum</i> | |
| var. <i>obtusatum</i> (Benth.) Connor & Edgar | Wallaby Grass |
| <i>Rytidosperma racemosum</i> (R.Br.) Connor & Edgar | |
| var. <i>racemosum</i> | Wallaby Grass |
| * <i>Setaria parviflora</i> (Poir.) Kerguelen | Pigeon Grass |
| <i>Sporobolus creber</i> De Nardi | Slender Rat's Tail Grass |
| <i>Sporobolus elongatus</i> R.Br. | Slender Rat's Tail Grass |
| <i>Sporobolus mitchellii</i> (Trin.) C.E.Hubb. ex S.T.Blake | Rats tail Couch |
| <i>Themeda triandra</i> Forssk. | Kangaroo Grass |
| <i>Tripogon loliiformis</i> (F.Muell.) C.E.Hubb. | Five Minute Grass |
| <i>Urochloa foliosa</i> (R.Br.) R.D.Webster | Leafy Panic |
| * <i>Vulpia muralis</i> (Kunth) Nees | Fescue |

Gwydir River

Xanthorrhoeaceae

Xanthorrhoea johnsonii A.T.Lee.....Grasstree

Dicotyledon

Acanthaceae

Brunoniella australis (Cav.) Bremek.....Blue Trumpet

Rostellularia adscendens (R.Br.) R.M.Barker
subsp. *adscendens*.....Pink Justicia

Amaranthaceae

Alternanthera denticulata R.Br.....Joyweed

**Alternanthera pungens* KunthKhaki-weed

**Gomphrena celosioides* Martius.....Gomphrena Weed

**Guileminea densa* (Schult.) Mog.....Small Mat-weed

Nyssanthus diffusa R.Br.Barbwire Weed

Amygdalaceae

**Prunus persica* (L.) Batsch.....Peach, Nectarine

Anacardiaceae

**Schinus areira* L.....Pepper Tree

Apiaceae

**Ammi majus* L.....Bishop's Weed

Gwydir River

| | |
|---|----------------------------|
| <i>Centella asiatica</i> (L.) Urb..... | Pennywort |
| * <i>Ciclospermum leptophyllum</i> (Pers.) Sprague..... | Slender Celery |
| * <i>Conium maculatum</i> L..... | Hemlock |
| <i>Daucus glochidiatus</i> (Labill.) Fisch., C.A.Mey. & Ave-Lall..... | Native Carrot |
| * <i>Foeniculum vulgare</i> Mill. | Fennel |
| Apocynaceae | |
| <i>Alstonia constricta</i> F.Muell. | Quinine Bush |
| <i>Carissa ovata</i> R.Br..... | Currant bush |
| <i>Parsonsia eucalyptophylla</i> F.Muell. | Gargaloo |
| Asclepiadaceae | |
| * <i>Gomphocarpus fruticosus</i> (L.) R.Br. | Narrow-leaved Cotton Bush |
| <i>Marsdenia viridiflora</i> R.Br..... | Native Pear |
| Asteraceae | |
| * <i>Bidens pilosa</i> L. | Cobbler's Pegs, Pitchforks |
| * <i>Bidens subalternans</i> DC. | Greater Beggar's Ticks |
| <i>Calotis cuneifolia</i> R.Br. | Purple Burr-daisy |
| <i>Calotis lappulacea</i> Benth. | Yellow Burr-daisy |
| <i>Cassinia quinquefaria</i> R.Br..... | Rosemary Cassinia |
| * <i>Centaurea solstitialis</i> L..... | St Barnaby's Thistle |
| <i>Chrysocephalum semipapposum</i> (Labill.) Steetz | Yellow Buttons |
| * <i>Cirsium vulgare</i> (Savi) Ten. | Spear Thistle |
| * <i>Conyza bonariensis</i> (L.) Cronq. | Flaxleaf Fleabane |

Gwydir River

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|--|----------------------------|
| <i>Cymbonotus lawsonianus</i> Gaudich. | Bears-ears |
| * <i>Dittrichia graveolens</i> (L.) Greuter | Stinkwort |
| <i>Euchiton sphaericus</i> (Willd.) Holub | Cudweed |
| * <i>Gamochaeta purpurea</i> (L.) Cabrera | Cudweed |
| <i>Glossocardia bidens</i> (Redtz.) Veldkamp. | Cobbler's Tack |
| * <i>Hypochaeris radicata</i> L. | Catsear, Flatweed |
| * <i>Lactuca serriola</i> L. | Prickly Lettuce |
| <i>Olearia elliptica</i> DC. | Daisy Bush |
| <i>Senecio quadridentatus</i> Labill. | Cotton Fireweed |
| <i>Sigesbeckia australiensis</i> D.L.Schulz | Sigesbeckia |
| * <i>Sonchus oleraceus</i> L. | Common Sowthistle |
| * <i>Taraxacum officinale</i> Weber | Dandelion |
| * <i>Torilis nodosa</i> (L.) Gaertn. | Knotted Hedge-parsley |
| <i>Vittadinia cuneata</i> | |
| var. <i>hirsuta</i> N.T.Burb. | Fuzzweed |
| <i>Vittadinia dissecta</i> | |
| var. <i>hirta</i> N.T.Burb. | New Holland Daisy |
| <i>Vittadinia muelleri</i> N.T.Burb. | Fuzzweed |
| <i>Vittadinia sulcata</i> N.T.Burb. | Fuzzweed |
| * <i>Xanthium occidentale</i> Bertol. | Noogoora Burr, Cockle Burr |
| * <i>Xanthium orientale</i> L. | Californian Burr |
| Boraginaceae | |
| * <i>Buglossoides arvensis</i> (L.) I.M.Johnston | Sheep-weed |
| <i>Cynoglossum australe</i> R.Br. | Austral Hounds Tongue |

Gwydir River

**Heliotropium amplexicaule* Vahl.....Blue Heliotrope

Brassicaceae

**Hirschfeldia incana* (L.) Lagr.-FossatHairy Brassica, Buchan Weed

**Lepidium africanum* (Burman f.) DC.Peppercress

**Lepidium bonariense* L.Peppercress

Rorippa eustylis (F.Muell.) L.A.S.JohnsonRiver Cress

Rorippa laciniata (F.Muell.) L.A.S.JohnsonRiver Cress

Cactaceae

**Opuntia aurantiaca* Lindl.....Tiger Pear

**Opuntia stricta* (Haw.) Haw.

var. *stricta*.....Common Prickly Pear

Campanulaceae

Wahlenbergia communis Carolin.....Tufted Bluebell

Wahlenbergia gracilentia Loth.....Annual Bluebell

Caryophyllaceae

**Cerastium glomeratum* Thuill.....Mouse-ear Chickweed

**Paronychia brasiliensis* DC.....Brazilian Whitlow

**Petrorhagia nanteuilii* (Burnat) P.W.Ball & HeywoodProliferous Pink

**Polycarpon tetraphyllum* (L.) L.....Four-leaved Allseed

Scleranthus biflorus (G.Forst. & Forst.f.) Hook.f.....Knawel

Gwydir River

Casuarinaceae

Casuarina cunninghamiana Miq. River Oak

Celastraceae

Cassine australis (Vent.) Kuntze Red Olive Plum

Chenopodiaceae

Einadia hastata (R.Br.) A.J.Scott Berry Saltbush

Einadia nutans

 subsp. *linifolia* (R.Br.) Paul G.Wilson Climbing Saltbush

Einadia nutans (R.Br.) A.J.Scott

 subsp. *nutans* Climbing Saltbush

Einadia polygonoides (Murr) Paul G.Wilson Fishweed

Einadia trigonos (Roem. & Schult.) Paul G.Wilson Fishweed

Maireana microphylla (Moq.) Paul G. Wilson Eastern Cottonbush

Chloanthaceae

Spartothamnella juncea (A.Cunn. ex Walp.) Briq. Bead Bush

Convolvulaceae

**Cuscuta campestris* Yunc. Golden Dodder

Dichondra repens Forst. & Forst.f. Kidney Weed

Dichondra sp. A. Kidney Weed

Evolvulus alsinoides (L.) L. Evolvulus

Gwydir River

Dilleniaceae

Hibbertia obtusifolia DC.....Grey Guinea Flower

Euphorbiaceae

Beyeria viscosa (Labill.) Miq.....Sticky Spurge

Breynia cernua (Poir.) Muell.Arg.Coffee Bush

Chamaesyce drummondii (Boiss.) D.C.HassallCaustic Weed

**Euphorbia peplus* L.Petty Spurge, Radium Plant

Phyllanthus carpentariae Muell.Arg.Carpentaria Spurge

Phyllanthus subcrenulatus F.Muell.Creek Spurge

Phyllanthus virgatus G.Forst.....Wiry Spurge

Fabaceae

Acacia deanei (R.T.Baker) M.B.Welch, Coombs & McGlynn

subsp. *deanei*.....Green Wattle, Deane's Wattle

Acacia decora Reichb.....Western Golden Wattle

Acacia implexa Benth.Hickory Wattle

Acacia leiocalyx (Domin) Pedley

subsp. *leiocalyx*.....Curracabah

Acacia neriifolia A.Cunn. ex Benth.....Silver Wattle

Acacia paradoxa DC.....Kangaroo Thorn, Thorny Wattle

Desmodium brachypodium A.Gray.....Large Tick Trefoil

Desmodium varians (Labill.) Endl.....Slender Tick Trefoil

Glycine canescens F.J.Herm.Silky Glycine

Glycine tabacina (Labill.) Benth.Variable Glycine

Gwydir River

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|---|--------------------|
| <i>Indigofera linnaei</i> Ali..... | Birdsville Indigo |
| * <i>Senna occidentalis</i> (L.) Link. | Coffee Senna |
| <i>Swainsona galegifolia</i> (Andrews) R.Br. | Smooth Darling Pea |
| <i>Zornia dyctiocarpa</i> DC. | |
| subsp. <i>dyctiocarpa</i> | Zornia |

Fumariaceae

| | |
|---|---------------|
| * <i>Fumaria muralis</i> Sond. Ex W.Koch. | |
| subsp. <i>muralis</i> | Wall Fumitory |

Gentianaceae

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|---|----------------|
| <i>Schenkia spicata</i> (L.) G.Mans. | Spike Centaury |
|---|----------------|

Geraniaceae

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|-----------------------------------|-----------------|
| <i>Geranium solanderi</i> Carolin | |
| var. <i>solanderi</i> | Native Geranium |

Lamiaceae

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|--------------------------------------|------------------|
| <i>Ajuga australis</i> R.Br. | Australian Bugal |
| * <i>Lamium amplexicaule</i> L. | Dead Nettle |

Lauraceae

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|---|----------------|
| * <i>Cinnamomum camphora</i> (L.) Nees..... | Camphor Laurel |
|---|----------------|

Lobeliaceae

| | |
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| <i>Lobelia purpurascens</i> (R.Br.) E.Wimm. | Whiteroot |
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Gwydir River

Malvaceae

- Abutilon oxycarpum* (F.Muell.) F.Muell. ex Benth. Straggly Lantern Bush
- Hibiscus sturtii* Hook.
var. *sturtii* Hill Hibiscus
- **Malvastrum americanum* (L.) Torr. Spiked Malvastrum
- Malvastrum coromandelianum* (L.) Garcke Prickly Malvestrum
- **Modiola caroliniana* (L.) G.Don Red-flowered Mallow
- **Pavonia hastata* Cav. Pink Pavonia
- Sida corrugata* Lindl. Corrugated Sida
- **Sida rhombifolia* L. Sida

Martyniaceae

- **Proboscidea louisiana* (Mill.) Thell. Purple-flowered Devil's Claw

Meliaceae

- Melia azederach* L. White Cedar
- Owenia acidula* F.Muell. Gruie Apple, Colane

Menispermaceae

- Stephania japonica*
var. *discolor* (Blume) Forman Snake Vine

Moraceae

- **Ficus carica* L. Fig

Gwydir River

Myrtaceae

| | |
|---|--------------------------|
| <i>Angophora floribunda</i> (Sm.) Sweet | Rough-barked Apple |
| <i>Callistemon viminalis</i> (Sol. ex Gaertn.) G.Don ex Loudon..... | Weeping Bottlebrush |
| <i>Eucalyptus albens</i> Benth..... | White Box |
| <i>Eucalyptus camaldulensis</i> Dehnh. | River Gum, River Red Gum |
| <i>Eucalyptus crebra</i> F.Muell. | Narrow-leaved Ironbark |
| <i>Eucalyptus dealbata</i> A.Cunn. ex Schauer | Tumbledown Red Gum |
| <i>Eucalyptus melanophloia</i> F.Muell..... | Silver-leaved Ironbark |
| <i>Eucalyptus melliodora</i> A.Cunn. ex Schauer | Yellow Box |
| <i>Melaleuca bracteata</i> F.Muell..... | Black Tea-tree |

Nyctaginaceae

| | |
|--|---------|
| <i>Boerhavia dominii</i> Meikle & Hewson | Tarvine |
|--|---------|

Oleaceae

| | |
|--|----------------------|
| <i>Jasminum lineare</i> R.Br. | Desert Jasmine |
| <i>Jasminum suavisissimum</i> Lindl..... | Small-leaved Jasmine |
| <i>Notelaea microcarpa</i> R.Br. var. <i>microcarpa</i> | Native Olive |

Onagraceae

| | |
|---|----------|
| * <i>Oenothera rosea</i> L'Her ex Aiton | Primrose |
|---|----------|

Oxalidaceae

| | |
|--|-------------|
| * <i>Oxalis brasiliensis</i> Lodd..... | Wood Sorrel |
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Gwydir River

Oxalis perennans Haw. Wood Sorrel

Papaveraceae

**Argemone ochroleuca* Sweet

subsp. *ochroleuca* Mexican Poppy

Pittosporaceae

Bursaria spinosa Cav. Native Blackthorn

Plantaginaceae

Plantago varia R.Br. Variable Plantain

Polygonaceae

**Polygonum aviculare* L. Wireweed

Rumex brownii Campd. Swamp Dock

**Rumex crispus* L. Curled Dock

Portulacaceae

Portulaca filifolia F.Muell. Pigweed

Portulaca oleracea L. Pigweed, Purslane

Portulaca pilosa L. Pigweed

Primulaceae

**Anagallis arvensis* L. Scarlet or Blue Pimpernel

Gwydir River

Proteaceae

Grevillea robusta A.Cunn. ex R.Br.....Silky Oak

Ranunculaceae

Clematis microphylla DC.

var. *microphylla*Small-leaved Clematis

Rhamnaceae

Alphitonia excelsa (Fenzl) Reisseck ex Benth.....Red Ash

Rosaceae

**Rosa rubiginosa* L.....Sweet Briar

**Rubus anglocandicans* A.Newton.....Blackberry

Rubiaceae

Galium migrans Ehrend. & McGillivrayBedstraw

Galium propinquum A.Cunn.Bedstraw

Psydrax odoratum (Forst.f.) S.T.Reynolds & R.J.F.Hend.Iamboto

**Richardia brasiliensis* GomesWhite Eye, Mexican Clover

Rutaceae

Geijera parviflora Lindl.Wilga

Salicaceae

**Salix fragilis* L.Crack Willow

Gwydir River

Santalaceae

Exocarpos cupressiformis Labill. Cherry Ballart

Sapindaceae

Alectryon subdentatus (F.Muell. ex Benth.) Radlk. Rosewood

Dodonaea viscosa

subsp. *angustifolia* (L.f.) J.G.West Hop Bush

Scrophulariaceae

**Verbascum virgatum* Stokes Twiggy Mullein, Green Mullein

**Veronica arvensis* L. Wall Speedwell

Veronica calycina R.Br. Hairy Speedwell

Solanaceae

Solanum amblymerum Dunal ex A.DC. Nightshade

**Solanum nigrum* L. Black-berry Nightshade

Solanum parvifolium R.Br. Nightshade

Stackhousiaceae

Stackhousia muricata Lindl. Stackhousia

Sterculiaceae

Brachychiton populneus (Schott & Endl.) R.Br.

subsp. *populneus* Kurrajong

Gwydir River

Thymelaeaceae

Pimelea neo-anglica Threlfall New England Rice Flower

Urticaceae

Urtica incisa Poir. Stinging Nettle

Verbenaceae

**Phyla canescens* (Kunth) Greene Lippia

**Verbena bonariensis* L. Purpletop

**Verbena caracasana* Kunth Purpletop

Verbena gaudichaudii (Briquet) P.W.Michael Purpletop

Violaceae

Viola caleyana G.Don Violet

Gwydir River

Appendix B: Location of full floristic survey sites.

| Site | Date | Zone | Datum | Easting | Northing | Altitude |
|------|------------|------|-------|------------|--------------|----------|
| 1 | 27/12/2012 | 56 | 94 | 272,349.00 | 6,688,582.00 | 303 |
| 2 | 27/12/2012 | 56 | 94 | 272,340.00 | 6,688,502.00 | 309 |
| 3 | 27/12/2012 | 56 | 94 | 271,826.00 | 6,688,533.00 | 303 |
| 4 | 27/12/2012 | 56 | 94 | 271,653.00 | 6,688,672.00 | 299 |
| 5 | 27/12/2012 | 56 | 94 | 271,811.00 | 6,688,671.00 | 298 |
| 6 | 27/12/2012 | 56 | 94 | 271,677.00 | 6,688,723.00 | 300 |
| 7 | 27/12/2012 | 56 | 94 | 271,809.00 | 6,688,728.00 | 299 |
| 8 | 27/12/2012 | 56 | 94 | 271,562.00 | 6,688,693.00 | 308 |
| 9 | 27/12/2012 | 56 | 94 | 271,505.00 | 6,689,188.00 | 298 |
| 10 | 27/12/2012 | 56 | 94 | 271,460.00 | 6,689,216.00 | 302 |
| 11 | 27/12/2012 | 56 | 94 | 271,752.00 | 6,689,187.00 | 298 |
| 12 | 27/12/2012 | 56 | 94 | 271,852.00 | 6,689,054.00 | 298 |
| 13 | 27/12/2012 | 56 | 94 | 271,638.00 | 6,689,122.00 | 305 |
| 14 | 27/12/2012 | 56 | 94 | 271,394.00 | 6,689,690.00 | 297 |
| 15 | 27/12/2012 | 56 | 94 | 271,272.00 | 6,689,974.00 | 296 |
| 16 | 27/12/2012 | 56 | 94 | 270,990.00 | 6,690,469.00 | 297 |
| 17 | 27/12/2012 | 56 | 94 | 270,168.00 | 6,690,979.00 | 293 |
| 18 | 27/12/2012 | 56 | 94 | 269,167.00 | 6,691,456.00 | 302 |
| 19 | 31/12/2012 | 56 | 94 | 269,180.00 | 6,691,566.00 | 322 |
| 20 | 31/12/2012 | 56 | 94 | 269,136.00 | 6,691,590.00 | 326 |
| 21 | 31/12/2012 | 56 | 94 | 269,131.00 | 6,691,941.00 | 309 |
| 22 | 31/12/2012 | 56 | 94 | 269,081.00 | 6,691,940.00 | 311 |
| 23 | 31/12/2012 | 56 | 94 | 269,036.00 | 6,692,257.00 | 312 |
| 24 | 31/12/2012 | 56 | 94 | 269,079.00 | 6,692,287.00 | 300 |
| 25 | 31/12/2012 | 56 | 94 | 268,726.00 | 6,692,767.00 | 306 |
| 26 | 31/12/2012 | 56 | 94 | 268,760.00 | 6,692,809.00 | 299 |
| 27 | 31/12/2012 | 56 | 94 | 268,991.00 | 6,692,529.00 | 297 |
| 28 | 31/12/2012 | 56 | 94 | 267,964.00 | 6,693,482.00 | 303 |
| 29 | 31/12/2012 | 56 | 94 | 267,972.00 | 6,693,852.00 | 303 |

Gwydir River

| | | | | | | |
|----|------------|----|----|------------|--------------|-----|
| 30 | 31/12/2012 | 56 | 94 | 267,995.00 | 6,694,218.00 | 295 |
| 31 | 31/12/2012 | 56 | 94 | 267,822.00 | 6,694,445.00 | 299 |
| 32 | 31/12/2012 | 56 | 94 | 267,586.00 | 6,694,450.00 | 299 |
| 33 | 31/12/2012 | 56 | 94 | 267,764.00 | 6,694,205.00 | 326 |
| 34 | 31/12/2012 | 56 | 94 | 267,883.00 | 6,694,086.00 | 320 |
| 35 | 31/12/2012 | 56 | 94 | 267,908.00 | 6,694,051.00 | 317 |
| 36 | 31/12/2012 | 56 | 94 | 270,919.00 | 6,690,404.00 | 308 |

Gwydir River

Appendix C: Aboriginal and early settler plant use.

| Taxon | General Use | Poison | Agricultural Use | Physiology | Notes |
|--------------------------------|--|---------|---|---|--|
| <i>Acacia decora</i> | The gum is edible. | Poison? | Honey. | | Ornamental. |
| <i>Acacia implexa</i> | Poison. | Poison? | Fodder, Gum, Timber, Fuel, Honey. | C3. Drought tolerant. Intolerant of waterlogging, salinity and wind. | |
| <i>Acacia leiocalyx</i> | | | Honey. | | |
| <i>Acacia paradoxa</i> | | Poison? | | | Ornamental. |
| <i>Aira cupaniana</i> | | | Fodder. | | |
| <i>Ajuga australis</i> | | | Fodder. | | Ornamental. |
| <i>Alphitonia excelsa</i> | Timber, poison, medicinal, honey, miscellaneous. Leaves used to wrap meat. May be used to create red-brown or yellow- orange dyes. | | Fodder. Used for cabinet work, fencing & house stumps. When exposed the wood turns a orange to red colour. | | Food plant for several butterfly larvae, fruit eaten by various birds and fruit bat. Pollination by honeybee and native bees. |
| <i>Alstonia constricta</i> | | Poison. | Fodder. | | Medicinal. |

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| Taxon | General Use | Poison | Agricultural Use | Physiology | Notes |
|----------------------------------|-----------------------------|---------|----------------------------------|--|---|
| <i>Alternanthera denticulata</i> | | | Fodder. | | Weed. |
| <i>Alternanthera pungens</i> | | | Fodder. | | Weed, shelter. Prickly burrs harmful or troublesome to humans and stock. |
| <i>Artemisia majus</i> | | Poison. | | | Weed, ornamental. |
| <i>Anagallis arvensis</i> | | Poison. | Fodder. | | Weed, poisonous to horses, cattle, sheep, birds, dogs, rabbits and guinea pigs. |
| <i>Angophora floribunda</i> | | | Fodder. Important pollen source. | C3. Drought tolerant. Intolerant of wind, waterlogging and salinity. | Tertiary sand coloniser, by seed propagation. Garden & shade plant. Bee attractant. Firewood, timber. |
| <i>Argemone ochroleuca</i> | | Poison. | | | Suspected of poisoning humans and fowls. Honey (pollen), weed. |
| <i>Aristida holathera</i> | | | Fodder. | | Shelter, sand dune stabiliser. |
| <i>Aristida personata</i> | | | | | Host plant of common army worm. |
| <i>Arthropodium milleflorum</i> | Roots eaten raw or roasted. | | Fodder, moderate forage. | | |

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Gwydir River

| Taxon | General Use | Poison | Agricultural Use | Physiology | Notes |
|---------------------------------|--|---------|-------------------------------|------------|---|
| <i>Austrostipa verticillata</i> | | | Rarely observed to be grazed. | | |
| <i>Beyeria viscosa</i> | | Poison? | | | Reputedly poisonous to livestock. |
| <i>Bidens pilosa</i> | | | | | Honey, weed, medicinal. Seed burrs troublesome to clothing and wool. Medicinal uses in South Africa. |
| <i>Bidens subalternans</i> | | | | | Weed. |
| <i>Boerhavia dominii</i> | Outer flesh of the roots edible. | | | | Weed. |
| <i>Bothriochloa bladhii</i> | | | Fodder. | | Strongly aromatic. |
| <i>Bothriochloa macro</i> | | | Fodder. | | Valuable coloniser of disturbed and degenerated areas. Seeding stems avoided by stock, widespread in overgrazed paddocks. |
| <i>Brachychiton populneus</i> | Young roots can be boiled & taste like turnips. Seeds are edible & can make a beverage. Leaves also edible. Inner bark pulled off in strips used for dilly | | | | |

Gwydir River

| Taxon | General Use | Poison | Agricultural Use | Physiology | Notes |
|-------------------------|---|---------|--|---|---|
| | bags, nets etc. | | | | |
| <i>Breynia cernua</i> | | | | C3. Wind tolerant, drought intolerant, intolerant of waterlogging and salinity. | Tertiary sand coloniser. Cosmopolitan species, on the back dune. Shelter. |
| <i>Bromus</i> | | | Fodder. | | Pollen known to cause allergy in humans. |
| <i>catharticus</i> | | | | | |
| <i>Bromus diandrus</i> | | | Moderate to good quality forage in early stages. | | Weed. Spear-like awns cause injury and losses in lambs. |
| <i>Brunoniella</i> | | | Fodder. | | Reported good sheep herbage. |
| <i>australis</i> | | | | | |
| <i>Buglossoides</i> | | Poison? | | | |
| <i>arvensis</i> | | | | | |
| <i>Bursaria spinosa</i> | Medicinal. Used for production of Aesculin (suntan lotions). | | Fodder. | | Useful honey plant. |
| <i>Callistemon</i> | | | | | Honey, ornamental. |
| <i>vinimalis</i> | | | | | |
| <i>Callitris</i> | Used as splints, moulded when wet and then dries in place | | Used for building construction, fencing | | Resistant to termite attack. |
| <i>glaucochylla</i> | | | | | |

Gwydir River

| Taxon | General Use | Poison | Agricultural Use | Physiology | Notes |
|---------------------------------|---|---------|--|------------|---|
| | holding limb in place. Because so flammable was used by Aborigines for torches by which to spear fish at night. | | posts & telegraph poles. | | |
| <i>Calotis cuneifolia</i> | | | Useful forage. Barbed seeds prolific and troublesome to sheep and fleece. | | Honey, weed. |
| <i>Carex inversa</i> | | | Supplies limited amount of fair quality forage. | | Weed. |
| <i>Carissa ovata</i> | | Poison? | Fodder. | | Weed. |
| <i>Casuarina cunninghamiana</i> | Used in tanning & dying. Leaves may also be used. | | Fodder. Used for axe handles, heads of spirit casks, bullock yokes. | | Timber used for ornamental turnery and fuel. Gums, Honey (pollen), shelter, ornamental. |
| <i>Centaurea solstitialis</i> | | Poison? | Yields pale high quality honey. | | Honey, weed. Declared noxious in Vic, WA, part NT. |
| <i>Cerastium vulgare</i> | | | | | Weed. |
| <i>Cheilanthes</i> | | Poison? | | | |

Gwydir River

| Taxon | General Use | Poison | Agricultural Use | Physiology | Notes |
|----------------------------------|-------------|---------|--|------------|---|
| <i>distans</i> | | | | | |
| <i>Chellanthus sieberi</i> | | Poison? | | | |
| <i>Chloris truncata</i> | | Poison? | Widespread, valuable, warm-season grass. | | Shelter. Useful for grassing waterways. Seed eaten by Stubble Quail. Resilient in mowed areas. |
| <i>Ciclospermum leptophyllum</i> | | | Fodder. | | Weed. Reported to taint milk. |
| <i>Cinnamomum camphora</i> | | | Crop. | | Weed, ornamental. |
| <i>Cirsium vulgare</i> | | | | | Honey, weed, miscellaneous. Fleshy roots laced with strychnine formerly sold as rabbit bait. Noxious in Vic, Tas, SA, part of NT. |
| <i>Commelina cyanea</i> | | | | C3. | Used as a cooked green vegetable by early settlers to combat scurvy. |
| <i>Conium maculatum</i> | | Poison. | | | Weed. Fruits and vegetative parts contain highly poisonous alkaloids. Declared noxious in Vic, Tas, SA, ACT and part of NT. |
| <i>Conyza</i> | | | | | Weed. |

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Gwydir River

| Taxon | General Use | Poison | Agricultural Use | Physiology | Notes |
|-------------------------------|-------------|---------|---|--------------------|--|
| <i>bonariensis</i> | | | | | |
| <i>Crinum flaccidum</i> | | Poison? | Leaves grazed sparingly by cattle. | | Bulbs 'yield a fair arrowroot', used as a substitute for flour. Ornamental. |
| <i>Cuscuta campestris</i> | | Poison? | Fodder, lightly grazed and suspected stock poison. | | Weed. Causes serious losses in crops. |
| <i>Cymbonotus lawsonianus</i> | | | | | Weed, medicinal. |
| <i>Cymbopogon refractus</i> | Medicinal. | | Heavily grazed when young, unpalatable when mature. | | Shelter. |
| <i>Cynodon dactylon</i> | | Poison. | Grazed without ill effect. Some forms contain HCN. | C3. Wind tolerant. | Secondary sand coloniser. Tertiary sand coloniser, by transplants. Pollen known to cause asthma in humans. Food plant of Australian Shelduck. Plumed Whistling Duck, Freckled Duck & butterfly larvae. |
| <i>Cynoglossum australe</i> | | | Fodder. | | Grows on sand dunes, headlands, on the back dune. |
| <i>Cyperus aggregatus</i> | | | | C4 | |

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Gwydir River

| Taxon | General Use | Poison | Agricultural Use | Physiology | Notes |
|-------------------------------|--|---------|---|--|--|
| <i>Cyperus eragrostis</i> | | | Grazed to some extent, particularly when young. | C3 | Serious weed of rice crops, lawns and gardens; obstructs irrigation channels. |
| <i>Cyperus gracilis</i> | | | | C3 | Weed. |
| <i>Cyperus vaginatus</i> | | | | C3 | |
| <i>Dactylis glomerata</i> | | | Fodder, Honey. | | Pollen known to cause allergy in humans. |
| <i>Daucus gluchidiatus</i> | Tuber edible. | | Fodder. | | Weed. |
| <i>Desmodium brachypodium</i> | | Poison? | | | |
| <i>Desmodium varians</i> | | | Fodder. | | |
| <i>Dianella caerulea</i> | Fruits & roots edible. Stems can be pounded to make a fibre. | Poison? | | C3. Wind tolerant, drought tolerant, tolerant of salinity, intolerant of waterlogging. | Secondary sand coloniser. Tertiary sand coloniser by transplants, propagation by seed. Ornamental. |
| <i>Dianella revoluta</i> | Fruits & roots edible. Stems can be pounded to make a fibre. | | | | Pollinated by native bees. |

Gwydir River

| Taxon | General Use | Poison | Agricultural Use | Physiology | Notes |
|----------------------------------|-------------|---------|--|--|--|
| <i>Dichanthium sericeum</i> | | | Highly palatable and productive fodder. | | Sheep sometimes reported to rarely graze this species. Tolerates moderate grazing. |
| <i>Dichelachne micrantha</i> | | | Fodder. | | |
| <i>Dichondra repens</i> | | | Fodder. | C3. Wind intolerant, drought intolerant, tolerant of waterlogging, intolerant of salinity. | Tertiary sand coloniser. Gums, weed. |
| <i>Digitaria amnophila</i> | | | Fodder, drought resistant. | | |
| <i>Digitaria brownii</i> | | | Readily eaten by stock, valuable fodder. | | |
| <i>Digitaria divaricatissima</i> | | | Useful and palatable forage, drought resistant. | | |
| <i>Dittrichia graveolens</i> | | Poison. | Fodder. Rarely grazed. Taints meat & dairy products. | | Weed. Causes dermatitis in humans. Produces prolific fluffy seeds. |

Gwydir River

| Taxon | General Use | Poison | Agricultural Use | Physiology | Notes |
|------------------------------------|---------------|---------|---|------------|----------------------------------|
| <i>Echinopogon caespitosus</i> | | | Causes stock death at seeding stage. | | Food plant for butterfly larvae. |
| <i>Echinopogon ovatus</i> | | Poison | Fodder, low forage value. | | Young plants poisonous to stock. |
| <i>Einadia hastata</i> | Edible fruit. | | | | |
| <i>Einadia nutans</i> | Edible fruit. | | | | |
| <i>Einadia polygonoides</i> | | Poison? | Palatable fodder, taints milk. Cattle poison and suspected cause of jaundice. | | |
| <i>Einadia trigonos</i> | | Poison? | | | |
| <i>Enneapogon gracilis</i> | | | Has some forage value. | | |
| <i>Enneapogon nigricans</i> | | | Fodder. Susceptible to overgrazing. | | |
| <i>Eragrostis brownii</i> | | | Fodder. | | Seed eaten by Finches. |
| <i>Eragrostis</i> | | | Fodder. | | |

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Gwydir River

| Taxon | General Use | Poison | Agricultural Use | Physiology | Notes |
|-----------------------|--------------------------------|--------|----------------------|------------|---------------------------------------|
| <i>curvula</i> | | | | | |
| <i>Eragrostis</i> | | | Fodder. | | |
| <i>leptostachya</i> | | | Moderately palatable | | |
| <i>Eragrostis</i> | | | when young. | | |
| <i>parviflora</i> | | | Valuable forage | | |
| <i>Eriochloa</i> | | | plant, palatable and | | Seed eaten by Stubble Quail. |
| <i>pseudocrotrich</i> | | | nutritious to stock. | | |
| <i>a</i> | | | | | |
| <i>Eucalyptus</i> | | | Fodder, Timber, | | Seed eaten by Gang-gangs. Nectar |
| <i>albens</i> | | | Honey, Fuel. | | eaten by Little Lorikeet. Blossoms by |
| | | | | | Grey-headed & Little Red Flying |
| | | | | | Foxes. Browsed by Koala and cattle. |
| <i>Eucalyptus</i> | Medicinal. Used for bridges, | | Gum, Timber, Fuel, | | Termite resistant. |
| <i>camaldulensis</i> | wharves, heavy construction, | | Oil. | | |
| | railway sleepers, fence posts, | | | | |
| | paving blocks. | | | | |
| <i>Eucalyptus</i> | | | Gums, Timber, | | Blossoms eaten by Grey-headed |
| <i>crebra</i> | Timber. | | Honey. Resistant to | | Flying Fox. |
| | | | termite attack. | | |
| <i>Eucalyptus</i> | | | Valued for Honey | | Blossoms eaten by Grey-headed |
| <i>dealbata</i> | | | and Pollen. | | Flying Fox. |

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Gwydir River

| Taxon | General Use | Poison | Agricultural Use | Physiology | Notes |
|---------------------------------|--|---------------------------------|--|------------|---|
| <i>Eucalyptus melanophloia</i> | | | Gum, Timber, Honey. | | Pollinated by insects. Prolific flowering every 2nd yr. Irregular flowering related to rainfall. |
| <i>Eucalyptus melliodora</i> | | | Gum, Fuel, Honey. Major source of honey, regarded as the best among eucalypts. | | Blossoms eaten Grey Headed Flying Fox. Seed by Gang Gang & Crimson Rosella. Important food for Fuscous & Regent Honeyeaters. |
| <i>Euphorbia peplus</i> | | Poison. | | | Weed, medicinal, ornamental. Poisonous to humans, stock and poultry. Used as remedy for warts. |
| <i>Eustrephus latifolius</i> | Tubers are sweet and edible. | | | | Pollinated by honeybees, small beetles. |
| <i>Evolvulus alsinoides</i> | Stems, leaves and roots reputed to be remedy for fever and dysentery. | | Moderately palatable fodder. | | |
| <i>Exocarpos cupressiformis</i> | Succulent yellow to red pedicel of fruit edible. Food, timber, gums, ornamental. | Foliage reputed to be poisonous | | | Small fly (Diptera) feeds on flowers. Fruit eaten by Black-faced Cuckoo-shrike. Seed eaten by Aust. King Parrot, Crimson Rosella. Host to |

Gwydir River

| Taxon | General Use | Poison | Agricultural Use | Physiology | Notes |
|-------------------------------|---|----------------------------|--|------------|--|
| | | to stock and horses. | | | parasitic shrub <i>Viscum articulatum</i> . Host plant of Cerambycid beetle. Food plant of various butterfly & moth larvae. |
| <i>Festuca asperula</i> | | | Fodder. | | |
| <i>Festuca pratensis</i> | | | Fodder, used in pasture seed mixtures. | | |
| <i>Foeniculum vulgare</i> | | | Food, Oil, Honey. | | |
| <i>Geijera parviflora</i> | Seeds can be ground into a flour. The husks can make you ill though. Timber used for boomerangs. | | Fodder, Gum, Honey. | | Ornamental. |
| <i>Geranium solanderi</i> | Roots can be roasted & eaten. | | | | |
| <i>Glycine canescens</i> | | | Fodder. | | |
| <i>Glycine tabacina</i> | Taproot has liquorice flavour and was chewed by Aborigines. | Poison? | Fodder. | | |
| <i>Gomphocarpus</i> | | Poison. | | | Ornamental. |

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Gwydir River

| Taxon | General Use | Poison | Agricultural Use | Physiology | Notes |
|--------------------------------------|--|---------|--|------------|--------------------------------------|
| <i>fruticosus</i> | | | | | |
| <i>Gomphrena celosioides</i> | | Poison. | Horses have been known to develop a form of the staggers. | | Weed. |
| <i>Grevillea robusta</i> | Used extensively in cabinet making, joinery & panelling, once used for tallow casks, butter kegs, & milk buckets. | | | | |
| <i>Guilleminea densa</i> | | | | | Weed. |
| <i>Heliotropium amplexicaule</i> | | Poison. | Fodder. Contains toxic alkaloids - suspected cause of toxaemic jaundice in sheep. Low in palatability. Honey deteriorates. | | |
| <i>Hibbertia obtusifolia</i> | | Poison? | Fodder. | | |
| <i>Hirschfeldia incana</i> | | | Edible to stock when young. May taint | | Persistent weed of disturbed ground. |

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Gwydir River

| Taxon | General Use | Poison | Agricultural Use | Physiology | Notes |
|-----------------------------|-------------|---------|--|--|---|
| <i>Hyparrhenia hirta</i> | | | meat and milk. | | Can be used for fodder if constantly managed by generally unpalatable with age reducing productivity of pastures. Aggressive coloniser. |
| <i>Hypochaeris radicata</i> | | | Fodder. | C3. Wind tolerant, drought tolerant, intolerant of waterlogging, intolerant of salinity. | Secondary & tertiary sand coloniser. Cosmopolitan species, on the backdune. Honey, weed. |
| <i>Imperata cylindrica</i> | | | Fodder, grazed when young. | | Food plant for butterfly larvae. |
| <i>Indigofera linnei</i> | | Poison. | | | |
| <i>Jasminum lineare</i> | | | Fodder, readily browsed by sheep and goats. | | Ornamental. |
| <i>Lactuca serriola</i> | | Poison? | Fodder. | | |
| <i>Lamium amplexicaule</i> | | Poison. | Causes staggers in horses, sheep and cattle. | | |

Gwydir River

| Taxon | General Use | Poison | Agricultural Use | Physiology | Notes |
|------------------------------|---|---------|--|---|--|
| <i>Lepidium bonariense</i> | | | Taints butter of dairy cows, and pig meat. | | |
| <i>Lomandra longifolia</i> | Leaf bases edible & taste like peas. Leaves used for baskets. Flowers edible. | Poison? | Not observed to be grazed by stock, but suspected of causing a type of paralysis in stock. | C3. Tolerant of wind, drought and salinity. Intolerant of waterlogging. | Secondary & tertiary sand coloniser. Wind barrier. Propagation by transplants and seed. Bee & mammal attractant. |
| <i>Lomandra multiflora</i> | | Poison? | Suspected of poisoning sheep. | | Food for butterflies. |
| <i>Malvastrum americanum</i> | | Poison? | | | |
| <i>Marsilea drummondii</i> | Sporocarps collected by Kooris and ground to flour, mixed with water for dough. Bruised & boiled. | Poison. | Low-grade fodder. | | |
| <i>Melaleuca bracteata</i> | | | Honey. Oil can be used in insecticides such as pyrethrum sprays to increase potency. | | Ornamental. |
| <i>Melia azederach</i> | Poison. Bruised bark and leaves | Poison. | Fruit poisonous to | | Ornamental. |

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Gwydir River

| Taxon | General Use | Poison | Agricultural Use | Physiology | Notes |
|-----------------------------|---|---------|--|------------|---|
| | used as a fish poison. Used as a cabinet timber for decorative panelling. | | pigs and probably poultry. | | |
| <i>Melinis repens</i> | | | | | Pollen known to cause allergy in humans. |
| <i>Microlaena stipoides</i> | | | | | One of the few Australian native grasses that provide forage during the critical winter early spring period. Valuable for stock in dry times. Food plant for butterfly larvae. Finches eat seeds. |
| <i>Modiola caroliniana</i> | | Poison? | Suspected cause of nervous disorders in sheep, cattle and goats. | | |
| <i>Nyssanthus diffusa</i> | | | | | Minor weed of usually wet wastelands. |
| <i>Oenothera rosea</i> | | | | | Ornamental. |
| <i>Opismenus aemulus</i> | | | Fodder. | | |
| <i>Owenia acidula</i> | Food. | | Gums | | |

Gwydir River

| Taxon | General Use | Poison | Agricultural Use | Physiology | Notes |
|--|---|---------|---|---|---|
| <i>Oxalis</i> <i>brasiliensis</i> | | | | | Ornamental. |
| <i>Oxalis perennans</i> | | | | | Ornamental. |
| <i>Panicum buncei</i> | | | Fodder. | | |
| <i>Panicum simile</i> | | | Fodder. | | |
| <i>Parsonsia</i> <i>eucalyptophylla</i> | | Poison? | Often eaten by sheep and cattle as drought fodder. Suspected sheep poison at certain times. | | |
| <i>Paspalum</i> <i>constrictum</i> | | | Very palatable to stock. Susceptible to preferential grazing. | Drought resistant. | |
| <i>Paspalum</i> <i>dilatatum</i> | | Poison. | Heavy producer of palatable fodder. Ingested fungus may poison livestock. | Withstands heavy grazing and drought. Frost tender. | Fungus attacks seed, causing ergot. Sticky exudate harmful to humans. Pollen known to cause allergies in humans. Food plant of Pacific Black Duck & butterfly larvae. |
| <i>Pavonia hastata</i> | | | | | Ornamental. |
| <i>Phragmites</i> <i>australis</i> | Used by aborigines in Victoria for making bags or baskets. | | Young growth relatively palatable | Susceptible to sea- strength salinity. | |

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Gwydir River

| Taxon | General Use | Poison | Agricultural Use | Physiology | Notes |
|--------------------------------|--|---------|---|------------|---|
| <i>Pimelea neo-anglica</i> | | Poison. | to stock. Useful forage plant. Fibre. | | |
| <i>Pinus radiata</i> | | | Timber, Honey. | | Ornamental. Traditional Christmas tree. |
| <i>Plantago varia</i> | Leaves are edible. | | | | |
| <i>Poa sieberiana</i> | | | Fodder. | | |
| <i>Polycarpon tetraphyllum</i> | | | | | Cosmopolitan. Weed. |
| <i>Polygonum aviculare</i> | Yields a blue dye similar to indigo. | | Young plants are eaten fairly readily by stock. Causes dermatitis in horses and sheep. Honey. | | |
| <i>Portulaca filifolia</i> | | Poison? | Probably palatable to stock. | | |
| <i>Portulaca oleracea</i> | Eaten by aborigines and settlers as raw or cooked vegetable. Seeds ground to meal, made into cakes or bread. | Poison. | Very palatable to stock, readily eaten. Nitrates and oxalates toxic. Poisonous to | | |

Gwydir River

| Taxon | General Use | Poison | Agricultural Use | Physiology | Notes |
|--------------------------------|--|---------|--|---|---|
| <i>Pratia purpurascens</i> | | | sheep and cattle. | C3. Intolerant of wind, drought and salinity. Tolerant of waterlogging. | Tertiary sand coloniser, propagation by transplants. Garden plant. Cosmopolitan species, on the backdune. Weed. |
| <i>Proboscidia louisianica</i> | | | Causes injury to the feet and jaws of sheep and other animals. | | Seeds from the green fruits are eaten by cockatoos. |
| <i>Prunus persica</i> | | Poison. | Food. Honey. | | Ornamental. |
| <i>Psyrax odoratum</i> | Food. | Poison? | Fodder. | | |
| <i>Richardia brasiliensis</i> | | | | | Ornamental. Food plant of a butterfly larvae <i>Hypolimnas bolina nerina</i> . |
| <i>Rosa rubiginosa</i> | Rose hips can be eaten, may be made into jam. Petals can be used in jams & salads. | | Foliage grazed by stock. | | Weed. Declared noxious in ACT, Vic, Tas, part NT. |
| <i>Rostellaria adscendens</i> | | | Moderately palatable fodder. | | Ornamental. |
| <i>Rumex brownii</i> | Leaves and midrib can be | Poison. | | | Weed. |

Gwydir River

| Taxon | General Use | Poison | Agricultural Use | Physiology | Notes |
|-------------------------|--|---------|--|------------|---|
| | steamed or boiled & used as a substitute for silver beet. Thick yellow taproot can be ground, roasted & used as a coffee substitute. | | | | |
| <i>Rumex crispus</i> | | Poison. | Green fruits are occasionally eaten by cattle. Oxalate poisonous; cause of dermatitis in horses and sheep. | | Weed. |
| <i>Salix fragilis</i> | Ornamental. | | | | Exotic. Only male plants in Australia. Mostly hybrids with <i>S. alba</i> var. <i>vitellina</i> . Among the three most common willows in Australia and has spread aggressively in many rivers especially in Tasmania. Base of branches breaks easily with an audible crack. |
| <i>Schenkia spicata</i> | | | Fodder. | | Weed. |
| <i>Schinus areira</i> | | | Fodder. | | Food, gums, honey, weed, medicinal, |

Gwydir River

| Taxon | General Use | Poison | Agricultural Use | Physiology | Notes |
|-------------------------------|---|---------|---|--|--|
| <i>Schoenoplectus validus</i> | Food. Rhizomes edible after pounding and baking. | | | | shelter. |
| <i>Senecio quadridentatus</i> | | Poison. | Fodder. | Drought resistant. | Weed. |
| <i>Setaria parviflora</i> | | | Fodder | C4 | Young plants palatable to livestock. Bristles on the inflorescence of mature plants injure mouths of cattle. |
| <i>Sida corrugata</i> | | Poison? | Valuable forage plant. Suspected cause of paralysis in sheep. | | |
| <i>Sida rhombifolia</i> | Medicinal | Poison. | Crop. Awmed fruits reported to kill humans and fowls. | | |
| <i>Solanum nigrum</i> | Edible but vary in flavour from aniseed to tomato or tamarillo flavour. | Poison? | | | |
| <i>Sonchus oleraceus</i> | Food. Eaten as a vegetable. | Poison? | Fodder. Suspected cause of photo- | C3. Wind intolerant, drought intolerant, | Cosmopolitan species, on the backdune. Juice used medicinally. |

Gwydir River

| Taxon | General Use | Poison | Agricultural Use | Physiology | Notes |
|------------------------------|--|---------|---|--|--|
| <i>Sporobolus elongatus</i> | | | sensitisation in cattle. Readily grazed by stock. | intolerant of waterlogging and salinity. | Weed. |
| <i>Sporobolus elongatus</i> | | | Fodder. | | |
| <i>Sporobolus mitchellii</i> | | | Has some grazing value; often not utilised by stock when more palatable plants are available. | | |
| <i>Stephania japonica</i> | Lengths of pounded stem thrown into water to stupefy fish. | Poison? | Suspected stock poison. | C3. Wind tolerant. Intolerant of drought, waterlogging and salinity. | Tertiary sand coloniser. Grows on sand dunes, headlands and in swamps, on foredune and backdune. |
| <i>Swainsona galeifolia</i> | Seeds are edible. | Poison. | Fodder, Honey. | | Ornamental. |
| <i>Taraxacum officinale</i> | | | Honey. | | |
| <i>Themeda triandra</i> | | | Very palatable, heavily grazed in eastern NSW. | | Food plant of butterfly larvae. Will not tolerate continuous grazing. Very palatable when young but only |

Gwydir River

| Taxon | General Use | Poison | Agricultural Use | Physiology | Notes |
|---------------------------------|----------------------------------|-------------------------|--|------------|-------|
| <i>Tricoryne elatior</i> | | | Eaten by stock but lacks bulk. | | |
| <i>Tripogon loliformis</i> | | | Should be utilised quickly. Quite palatable. | | |
| <i>Urtica incisa</i> | Young shoots edible when boiled. | Painful when contacted. | | | |
| <i>Verbascum virgatum</i> | | | Seeds reputed to injure fowls. | | |
| <i>Verbena bonariensis</i> | | Poisonous ? | Fodder. | | |
| <i>Vittadinia cuneata</i> | | | Fodder. | | |
| <i>Wahlenbergia communis</i> | | | Fodder, palatable to stock. | | |
| <i>Wahlenbergia gracilentia</i> | | | Provides palatable forage in cooler | | |

Gwydir River

| Taxon | General Use | Poison | Agricultural Use | Physiology | Notes |
|-------------------------------|---|---------|------------------|------------|---|
| <i>Xanthium orientale</i> | | Poison. | months. | | |
| <i>Xanthorrhoea johnsonii</i> | Aboriginal people collected nectar for food, dried flower stalks for fishing spears and fire making, trunk a source of resin. | | Honey. | | Blossoms eaten by Grey Headed Flying Fox. |

Gwydir River

Appendix D: Fire response of flora species.

| Taxon | Response | Germination | Diaspore | Dispersal | 1 Juv | 2 Juv | Longevity | Notes |
|-------------------------------|--------------------|--|----------|---------------------------|-------|-------|-----------|---|
| <i>Abutilon oxycarpum</i> | Resprouter | Fire stimulates recruitment | | | 2-4 | | 4-10 | Killed by fire. Annual pioneer species. |
| <i>Acacia deanei</i> | Obligate Seeder | | Seed | | | | | Killed by high intensity crown fire with high after fire germination from seed bank at Tinkrameanah. |
| <i>Acacia decora</i> | Obligate Seeder | | Seed | | 2-4 | | | |
| <i>Acacia implexa</i> | Resprouter | Reproduction by sexual means, reproducing by seed propagation between 1-5 years. | Seed | Dispersed by expulsion | 2-4 | | 5-30 | Stems killed, resprout from base or root suckers. Prominent in soil seed bank in gaps. Present throughout gaps in unburnt Rf communities. Root bud suckers. 20-60% stems killed low intensity fire all killed by high. No protected vegetative buds. |
| <i>Acacia leiocalyx</i> | Resprouter | | Seed | | | | | |
| <i>Acacia paradoxa</i> | | | Seed | | | | | |

Gwydir River

| Taxon | Response | Germination | Diaspore | Dispersal | 1 Juv | 2 Juv | Longevity | Notes |
|----------------------------------|--------------------|---|--|---|-------|-------|-----------|--|
| <i>Aira cupaniana</i> | Obligate Seeder | 1yr after fire | Fruit (indehiscent 1 seeded) | Adhesive to animals & wind dispersed. | <1 | | | Seedlings in burnt and unburnt sites 1yr after fire - not noted before fire. |
| <i>Ajuga australis</i> | Resprouter | | Fruit (indehiscent 1 seeded) | Erect flowering stems become horizontal at maturity, allowing short distance gravity dispersal of se | | | | Grows rapidly after fire. |
| <i>Alectryon subdentatus</i> | Resprouter | | | Diaspore: fruit. Coloniser species, although seen on edges can also occur as mature specimens in | 4-8 | | | |
| <i>Alphitonia excelisa</i> | Resprouter | Very slow, 8 months for 70% germ. Fracturing hard coat reduces dormancy. 30-70% viable after 15-20 y | Fruit (Dry indehiscent 1 seeded) | | 4-9 | | | Facultative resprouter. Survive 100% scorch - basal sprouts. |

Gwydir River

| Taxon | Response | Germination | Diaspore | Dispersal | 1 Juv | 2 Juv | Longevity | Notes |
|----------------------------------|-----------------|--|----------------------------------|--|-------|-------|-----------|--|
| <i>Alternanthera denticulata</i> | Obligate Seeder | | | gully rainforest. | 1 | | | Probably killed |
| <i>Alternanthera pungens</i> | Obligate Seeder | Soil stored seed bank. | | | 1 | | | |
| <i>Ammi majus</i> | | | | | | | 1-2 | |
| <i>Anagallis arvensis</i> | Resprouter | | | | 1-2 | | | Probably killed. |
| <i>Angophora floribunda</i> | Resprouter | No dormancy mechanism, germinates without special treatment. Growth rate slow. Coloniser, open sites | Seed | No special morphology. Probably wind-dispersed locally ie 20m. | 5-8 | | 100+ | Resprouts from epicormic shoots. Prolific stem suckering at Tinkrameannah. |
| <i>Argemone ochroleuca</i> | Obligate Seeder | | | | 1 | | | Probably killed. |
| <i>Aristida caput-medusae</i> | Variable | | Fruit (Dry indehiscent 1 seeded) | Adhesive fruit, animal dispersed. | | | | Killed by high intensity crown fire at Tinkrameannah. |
| <i>Aristida</i> | Resprouter | | Fruit (Dry) | Adhesive fruit, | | | | |

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Gwydir River

| Taxon | Response | Germination | Diaspore | Dispersal | 1 Juv | 2 Juv | Longevity | Notes |
|---------------------------------|-----------------|-------------|----------------------------------|---|-------|-------|-----------|---|
| <i>holathera</i> | | | indehiscent 1 seeded | animal dispersed. | | | | |
| <i>Aristida personata</i> | Resprouter | | Fruit (Dry indehiscent 1 seeded) | Adhesive fruit, animal dispersed. | 1-2 | | | |
| <i>Arthropodium milleflorum</i> | Resprouter | | | | | | | First recorded 1m after fire in grassy & wet forests. Cover value similar in areas burnt by high & low intensity fires. |
| <i>Austrostipa scabra</i> | Resprouter | | Fruit (Dry indehiscent 1 seeded) | Adhesive, animal dispersed. | | | | |
| <i>Austrostipa verticillata</i> | Resprouter | | Fruit (Dry indehiscent 1 seeded) | Adhesive, animal dispersed. | 1-2 | | | |
| <i>Beyeria viscosa</i> | Obligate Seeder | | | | 3-5 | | | |
| <i>Bidens pilosa</i> | Resprouter | | | Diaspore: fruit, animal dispersed (eg. on human | 18wks | | 1yr | Probably killed, vigorous recruitment from seed after high-intensity fire, most likely from soil-stored seed. Mature fruit within |

Gwydir River

| Taxon | Response | Germination | Diaspore | Dispersal | 1 Juv | 2 Juv | Longevity | Notes |
|-------------------------------|-----------------|--|----------------------------------|--|-------|-------|-----------|--|
| <i>Boerhavia dominii</i> | Obligate Seeder | | | clothing). | 1-2 | | | 18wks of high intensity fire. |
| <i>Bothriochloa bladhii</i> | Resprouter | | Fruit (Dry indehiscent 1 seeded) | Adhesive, by animals. Wind & mud on cars. | | | | |
| <i>Bothriochloa macra</i> | Resprouter | | Fruit (Dry indehiscent 1 seeded) | Adhesive, by animals. Wind & mud on cars. | | | | Flowers when competition from other vegetation is removed by burning, grazing or mowing. |
| <i>Brachychiton populneus</i> | Resprouter | | | | 4-9 | | | |
| <i>Breynia cernua</i> | Resprouter | Soil stored seed bank, germinates easily, 1-7wks, and grows quickly. Reproduction. sexual, by seed 1-5yrs. | Fruit (Fleshy Red) | Probably bird dispersed; seed, ant-dispersed. | 3-5 | < 1yr | 5-30 | From ground level suckering. Mature fruit within 1yr of high intensity fire. Resprouts below ground. |
| <i>Bromus brevis</i> | Obligate Seeder | | Fruit (Dry indehiscent 1 seeded) | Diaspore adhesive, animal, wind & water dispersed. | <2 | | <2 | |

Gwydir River

| Taxon | Response | Germination | Diaspore | Dispersal | 1 Juv | 2 Juv | Longevity | Notes |
|-----------------------------------|--------------------|-------------|--|--|-------|-------|-----------|--|
| <i>Bromus catharticus</i> | Resprouter | | Fruit (Dry indehiscent 1 seeded) | Diaspore adhesive, animal, wind & water dispersed. | | | | Some plants flowering within 39 weeks of high intensity fire. |
| <i>Bromus diandrus</i> | Obligate Seeder | | Fruit (Dry indehiscent 1 seeded) | Diaspore adhesive, animal, wind & water dispersed. | <1 | | <1 | Some flowering 41 weeks after high intensity fire. |
| <i>Bromus inermis</i> | Obligate Seeder | | Fruit (Dry indehiscent 1 seeded) | Diaspore adhesive, animal, wind & water dispersed. | | | | |
| <i>Brunoniella australis</i> | Resprouter | | | | | < 1yr | | At ground level, flower within 1 month of fire, probably fire dependent on removal from competition |
| <i>Buglossoides arenensis</i> | | | Fruit (Mericaip) | | <1 | | 1 | |

Gwydir River

| Taxon | Response | Germination | Diaspore | Dispersal | 1 Juv | 2 Juv | Longevity | Notes |
|---------------------------------|-----------------|-------------------------------|-----------------|-----------------------------|-------|-------|-----------|--|
| <i>Bursaria spinosa</i> | Resprouter | | | | 3-5 | | | |
| <i>Callitris glaucochylla</i> | Obligate Seeder | | | | | | | Found to resprout after moderate intensity fire in small populations within the Pilliga. |
| <i>Calotis cuneifolia</i> | Obligate Seeder | | | | | | | Probably killed |
| <i>Carex incomitata</i> | Resprouter | | | | | | | |
| <i>Carex inversa</i> | Resprouter | | | | | | | |
| <i>Cassine australis</i> | | Reproduction by sexual means. | Fruit (fleshy) | By animals. | | | 30+ | |
| <i>Cassinia quinqueforia</i> | Obligate Seeder | | Fruit (plumose) | Probably wind-dispersed. | | | | |
| <i>Casuarina cunninghamiana</i> | Obligate Seeder | | Seed (winged) | | | | | Killed by fire |
| <i>Centaurea solstitialis</i> | Obligate Seeder | | | | | | | |
| <i>Chamaesyce drummondii</i> | Obligate Seeder | | | | | | | |
| <i>Cheilanthes distans</i> | Resprouter | | Spores | Wind dispersed. Probably no | 1-2 | | | Facultative resprouter. |

Gwydir River

| Taxon | Response | Germination | Diaspore | Dispersal | 1 Juv | 2 Juv | Longevity | Notes |
|---------------------------------------|--------------------|--|--------------------------------------|--|-------|-------|-----------|--|
| <i>Chelidonium sieberi</i> | Resprouter | | Spores | Wind- dispersed. Probably no dormancy mechanism. | 1-2 | | | Facultative resprouter. |
| <i>Chloris truncata</i> | Resprouter | Viability decreases 12- 30 m in storage. Total germination in 36 days. 30-40% germination of wild seed. Light assists germination. | Seed (dry indigenous 1 seeded) | Wind, adhesion to animals & mud on cars. | 1 | | 2-3 | Flowers opportunistically in response to rain. |
| <i>Chryscephalum semipapposum</i> | Resprouter | | | | 1 | | | Resprouts from rootstock suckers and lateral roots, no seedlings 1 yr after fire |
| <i>Ciclospermum leptophyllum</i> | Obligate Seeder | | | | 1 | | | |
| <i>Cinnamomum camphora</i> | | Seed viability 70% in first year, rapidly | | In moist, sheltered, | 7 | | 100+ | Roots reshoot after burning. Flowering in less than 2 yrs after |

Gwydir River

| Taxon | Response | Germination | Diaspore | Dispersal | 1 Juv | 2 Juv | Longevity | Notes |
|-----------------------------|-----------------|--|----------------|---|-------|-------|-----------|---|
| | | decreasing in 2nd year. Germination over 4-20wks. | | often low light sites. Diaspore: fruit. Animal, bird and water dispersed. | | | | high intensity fire. Establishes in forest sites in absence of fire. |
| <i>Cirsium vulgare</i> | Obligate Seeder | Seedlings in burnt and unburnt sites 1yr after fire. Appears after disturbance, probably soil-stored | | Seed dispersed by wind. Diaspore: fruit, wind-dispersed. Also animal and water dispersed. | 1 | 2 | | Post burn seed coloniser. Obligate seed regenerator - therophyte. Possibly resprouter after high intensity fire, flower buds within 26 wks. Seedlings recorded <1yr after fire, prob. post-fire dispersal |
| <i>Clematis microphylla</i> | Obligate Seeder | | Fruit (achene) | Wind dispersed. | | | | |
| <i>Commelina cyanea</i> | Resprouter | Reproduction both sexual and vegetative means, reproducing by seed propagation in first year. | | Seeds dispersed by expulsion. | 1-2 | | <5 | Obligate seeder and basal resprouter. Survives 100% leaf scorch. |
| <i>Conium</i> | | | | Diaspore: | | | 1-2 | |

Gwydir River

| Taxon | Response | Germination | Diaspore | Dispersal | 1 Juv | 2 Juv | Longevity | Notes |
|-----------------------------------|--------------------|---|--|---|-------|-------|------------|--|
| <i>maculatum</i> | | | | mericarp. Animal, water and vegetative dispersal.. | | | | |
| <i>Conyza bonariensis</i> | Obligate seeder | Coloniser of disturbed sites. | | Diaspore: fruit, wind-dispersed locally and probably long distance. | <1 | | 1 | 100% scorch kills - no seed stored in burnt area. Probably killed, fruit within 15wks of high intensity fire. Possibly resprouts after low intensity fire. |
| <i>Cymbonotus lawsonianus</i> | Resprouter | | | Diaspore adhesive, animal dispersed & wind. | 1 | <1 | | Fruiting within 7 m of high intensity fire. Killed by high intensity crown fire and germination from seed at Tinkrameanah. |
| <i>Cymbopogon refractus</i> | Variable | | Fruit (dry indehiscent 1 seeded) | Dispersed by wind & mud on cars, animal, water & vegetatively. | 1 | | Indefinite | |
| <i>Cynodon dactylon</i> | Resprouter | Reproduction sexual and vegetative. Reproducing by seed propagation between 1-5yrs. | Fruit (dry indehiscent 1 seeded) | | | | | |

Gwydir River

| Taxon | Response | Germination | Diaspore | Dispersal | 1 Juv | 2 Juv | Longevity | Notes |
|-------------------------------|-----------------|---------------------------------|----------------------------------|--|-------|-------|-----------|---|
| <i>Cynoglossum australe</i> | Resprouter | | Fruit (mericarp) | Seedling recruitment possibly related to soil disturbance. Seeds dispersed by animals. | 1 | | <5 | |
| <i>Cyperus eragrostis</i> | Resprouter | | | | | | | |
| <i>Cyperus gracilis</i> | Obligate Seeder | | | | | | | |
| <i>Dactylis glomerata</i> | Resprouter | | Fruit (dry indehiscent 1 seeded) | On mud on cars. | | | | |
| <i>Daucus gluchidiatus</i> | Obligate Seeder | | | | <1 yr | | | Seedlings recorded < 1yr after fire |
| <i>Desmodium brachypodium</i> | Resprouter | Soil stored seed bank | | | | | | pers. obs. |
| <i>Desmodium varians</i> | Variable | Probably soil-stored seed bank. | | Diaspore: 1-seeded | 1-2 | <1 yr | | Flowering within 11 wks of high intensity fire. Resprouter. Killed by |

Gwydir River

| Taxon | Response | Germination | Diaspore | Dispersal | 1 Juv | 2 Juv | Longevity | Notes |
|---------------------------------|------------|---|--|--|-------|-------|-----------|---|
| | | | | segments, shed at maturity. Adhesive. | | | | high intensity crown fire at Tinkrameanah. |
| <i>Dionella caerulea</i> | Resprouter | Reproduction both sexual and vegetative, reproducing by seed propagation in the first year. | Fruit (Blue Berry) | Seeds dispersed by animals. | 2-3 | | 5-30 | Regenerates after crown fire or partial burn by resprouting below ground. |
| <i>Dionella revoluta</i> | Resprouter | Germination takes approx. 2 yrs. Seeds should be smoked for 1 hr. Viability of fresh seed 80%. | Fruit (Blue Berry) | Vertebrates | 2-3 | 2 | | Resprouter from rhizome after high intensity crown fire at Tinkrameanah. |
| <i>Dichanthium sericeum</i> | Resprouter | Seed dormancy up to 60%. Optimum germination 20-30C, 50-80% for seed 6-12 m old. Substantially reduced after 4-5 years. Total germ.16 | Fruit (dry indehiscent 1 seeded) | | | | 3-4 | Seed matures intermittently. Rapid recruitment in wet warm conditions. |

Gwydir River

| Taxon | Response | Germination | Diaspore | Dispersal | 1 Juv | 2 Juv | Longevity | Notes |
|----------------------------------|------------|---|----------------------------------|--|-------|-------|-----------|---|
| <i>Dichelachne micrantha</i> | Resprouter | days. | Fruit (dry indehiscent 1 seeded) | Stolons. Diaspore: seed, no special dispersal morphology. Dispersed in mud on cars. | 1 | | | |
| <i>Dichondra repens</i> | Variable | Reproduction both sexual and vegetative means. Reproducing by seed propagation in the first year. | | | 1 | | <5 | Resprouter (7091), Obligate Seeder (NFR). Did not flower within 9m of intense autumn fire. Probably resprouts from stolons. |
| <i>Dichondra sp. A</i> | Resprouter | | | | 1 | | | |
| <i>Digitaria amnophila</i> | Resprouter | | Fruit (dry indehiscent 1 seeded) | | | | | |
| <i>Digitaria brownii</i> | Resprouter | | Fruit (dry indehiscent 1 seeded) | Diaspore adhesive, animal dispersed. | | | | |
| <i>Digitaria divaricatissima</i> | Resprouter | | Fruit (dry indehiscent 1 | | | | | |

Gwydir River

| Taxon | Response | Germination | Diaspore | Dispersal | 1 Juv | 2 Juv | Longevity | Notes |
|--------------------------------|-----------------|-------------|----------------------------------|---|-------|-------|-----------|---|
| <i>Dittrichia graveolens</i> | | | seeded) | Wind-dispersed. Fluffy seeds dispersed by wind water and stock. | <1 | | 1 | |
| <i>Dodonaea viscosa</i> | Obligate Seeder | | | | 3-5 | | | Killed by high intensity crown fire but prolific after fire seedling germination at Tinkameannah. |
| <i>Echinopogon caespitosus</i> | Resprouter | | Fruit (dry indehiscent 1 seeded) | Diaspore adhesive. | 1 | <1 | | Found after high intensity fire. |
| <i>Echinopogon ovatus</i> | Resprouter | | Fruit (dry indehiscent 1 seeded) | Diaspore adhesive, animal dispersed. | | | | Survive 100% scorch. Root suckers. |
| <i>Einodia hastata</i> | Obligate Seeder | | | | 1 | | | |
| <i>Enneapogon gracilis</i> | Resprouter | | Fruit (dry indehiscent 1 | | 1 | | | |

Gwydir River

| Taxon | Response | Germination | Diaspore | Dispersal | 1 Juv | 2 Juv | Longevity | Notes |
|--------------------------------|-----------------|-----------------------------------|----------------------------------|--|-------|-------|-----------|--|
| <i>Enneapogon nigricans</i> | Resprouter | Total germination approx. 8 days. | Fruit (dry indehiscent 1 seeded) | | | | | Flowers in response to rain. |
| <i>Eragrostis brownii</i> | Resprouter | | Fruit (dry indehiscent 1 seeded) | No particular mechanism for dispersal. | | | | Flowers in summer in response to fire. |
| <i>Eragrostis curvula</i> | Resprouter | | Fruit (dry indehiscent 1 seeded) | In mud on cars. No particular mechanism for dispersal. | | | | Seedlings grow rapidly after summer rain. Spring burning promotes rapid growth to full maturity in early summer. |
| <i>Eragrostis elongata</i> | Obligate Seeder | | Fruit (dry indehiscent 1 seeded) | | <1 | | <1 | Flowers in summer in response to rain. |
| <i>Eragrostis leptostachya</i> | Resprouter | | Fruit (dry indehiscent 1 seeded) | | | | | Flowering within 2 m of high intensity fire. |
| <i>Eragrostis parviflora</i> | Obligate Seeder | | Fruit (dry indehiscent 1 seeded) | No particular mechanism for dispersal. In mud on cars. | <1 | | <1 | Flowers in response to rain. |

Gwydir River

| Taxon | Response | Germination | Diaspore | Dispersal | 1 Juv | 2 Juv | Longevity | Notes |
|----------------------------------|-----------------|---|----------------------------------|---------------------------------------|-------|-------|-----------|---|
| <i>Eriochloa pseudocrotricha</i> | Resprouter | | Fruit (dry indehiscent 1 seeded) | Possible coloniser of bare sites. | 1 | | | |
| <i>Eucalyptus albens</i> | Resprouter | No dormancy. | Seed | Dispersed locally by wind or gravity. | 4-7 | | 100+ | |
| <i>Eucalyptus camaldulensis</i> | Resprouter | No dormancy. | Seed | Dispersed locally by wind or gravity. | | | | |
| <i>Eucalyptus crebra</i> | Resprouter | No soil stored seed bank. Recruitment not fire related. | Seed | Dispersed locally about 20 m. | | | 100+ | |
| <i>Eucalyptus dealbata</i> | Resprouter | No dormancy mechanism. | Seed | Dispersed locally. | | | | |
| <i>Eucalyptus melanophloia</i> | Resprouter | No dormancy. | Seed | Dispersed locally. | | | | |
| <i>Eucalyptus melliodora</i> | Resprouter | No dormancy. | Seed | Dispersed locally. | 5-9 | | 100+ | Seedlings remarkable tolerance for being burnt. |
| <i>Euchiton sphaericus</i> | Obligate Seeder | | Fruit | Coloniser. | <1 | | 1-2 | Probably killed by fire |
| <i>Euphorbia peplus</i> | | | Seed | Dispersed in | 2-3m | | 6m | Probably killed by high intensity |

Gwydir River

| Taxon | Response | Germination | Diaspore | Dispersal | 1 Juv | 2 Juv | Longevity | Notes |
|---------------------------------|-----------------|--------------------------------------|----------------------------------|--|-------|-------|-------------|---|
| <i>Eustrephus latifolius</i> | Resprouter | | Seed | mud on cars and in garden refuse. | 3-5 | 3 m | | fire. Seedlings seen, fruiting within 9 weeks. Germinates prolifically following fire near developed areas. |
| <i>Evolvulus alsinoides</i> | Obligate Seeder | | | Bird dispersed. | | | | Facultative resprouter. |
| <i>Exocarpos cupressiformis</i> | Resprouter | Hard seed is difficult to germinate. | Fruit. | Limited root suckering. Hemi-parasite on roots of other plants, commonly eucalypts but also other species. | 5-9 | | Indefinite. | Facultative resprouter. Fire resistant increaser. Survives 100% scorch by root suckers and basal sprouts. Resprouts with numerous suckers from lateral roots and from rootstock. Seedlings recorded <1y after fire. |
| <i>Festuca asperula</i> | Resprouter | | Fruit (dry indehiscent 1 seeded) | | | | | |
| <i>Festuca pratensis</i> | | | Fruit (dry) | No particular | | | | |

Gwydir River

| Taxon | Response | Germination | Diaspore | Dispersal | 1 Juv | 2 Juv | Longevity | Notes |
|-------------------------------|--------------------|------------------------|--------------------------|---|-------|-------|-----------|--|
| <i>Fumaria muralis</i> | | | indehiscent 1 seeded) | mechanism for dispersal. | <1 | | <1 | |
| <i>Galium migrans</i> | Obligate Seeder | | | | | | | |
| <i>Galium propinquum</i> | Resprouter | | Seed | Seed with tiny hooks presumably for dispersal by attachment to animals. Vegetative spread. | | | | Facultative resprouter. |
| <i>Geranium solanderi</i> | Obligate Seeder | | | | 1-2 | | | |
| <i>Glossocardia biden</i> | Resprouter | | | | | | | Probably resprouts from ground level after low intensity fires: pers obs |
| <i>Glycine canescens</i> | Resprouter | | | | | | | |
| <i>Glycine tabacina</i> | Resprouter | Soil-stored seed bank. | | No particular | 1-3 | | | pers.obs. Resprouter from basal |

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Gwydir River

| Taxon | Response | Germination | Diaspore | Dispersal | 1 Juv | 2 Juv | Longevity | Notes |
|----------------------------------|-----------------|-------------------------------|------------------|---|-------|-------|-----------|---|
| <i>Gomphocarpus fruticosus</i> | Obligate Seeder | | | mechanism for dispersal. | | | | sprouts. Survives 100% scorch. Probably resprouts from above ground level (taxon B). |
| <i>Grevillea robusta</i> | | | Seed | | | | | |
| <i>Guilleminea densa</i> | | | Seed | | | | | |
| <i>Heliotropium amplexicaule</i> | | | Fruit (mericarp) | Shed at maturity. Regrows from taproot in spring. | | | | |
| <i>Hibbertia obtusifolia</i> | Variable | Within 1yr after fire (7020). | Seed | Seedlings within 1 yr | 1-2 | | | Resprout from suckers of roots and lateral root stock. Soil seed bank. Fire resistant increaser. Resprout from high intensity fire at Tinkrameanah. |
| <i>Hibiscus sturtii</i> | | | Seed | | | | | |
| <i>Hirschfeldia incana</i> | | | | Winter-spring growing. | | | <5 | |

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Gwydir River

| Taxon | Response | Germination | Diaspore | Dispersal | 1 Juv | 2 Juv | Longevity | Notes |
|-----------------------------|------------|--|----------------------------------|--------------------|-------|-------|------------|---|
| <i>Hyperbaenia hirta</i> | Resprouter | | Fruit (dry indehiscent 1 seeded) | Wind & vehicles. | | | | Encouraged by regular burning. |
| <i>Hypochoeris radicata</i> | Variable | Decreased after burning. Seedlings up within 1yr of fire. | Seed | Dispersed by wind. | | | <5 | Obligate seeder - minor regeneration. Post burn seed coloniser. Facultative root resprouter. Fire resistant decreaser. Killed by high intensity crown fire and recovery by seed germination at Tinkraeanah. |
| <i>Imperata cylindrica</i> | Resprouter | No germination after application of smoke for 1 hr. May become dormant after low intensity fire. | Fruit (dry indehiscent 1 seeded) | Wind. | 1 | <1 | Indefinite | Survives 100% scorch - root suckers. Absent from infrequently burnt sites. Stimulated by fire. Flowers prolifically within weeks of burning. Can be eliminated by regular mowing. |
| <i>Jasminum lineare</i> | Resprouter | | | | | | | |
| <i>Jasminum suavisimum</i> | Resprouter | | | | 2-4 | | | |
| <i>Juncus usitatus</i> | Resprouter | | | | 1-2 | | | Obligate resprouter. |
| <i>Lomandra</i> | Resprouter | Reproduction sexual, | Seed | Ant adapted | 2-3 | 1 | 5-30 | Obligate Seeder (E). Facultative |

Gwydir River

| Taxon | Response | Germination | Diaspore | Dispersal | 1 Juv | 2 Juv | Longevity | Notes |
|----------------------------------|------------|--|------------------------------|----------------------------------|-------|-----------|-----------|--|
| <i>longifolia</i> | | reproducing by seed propagation between 1-5 yrs. | | elaiosome. | | | | and obligate resprouter. Clonal decreaser. Survives 100% scorch - root suckers. Fire resistant increaser. Clonal decreaser. |
| <i>Lomandra multiflora</i> | Resprouter | Seed viability 96%. Smoke increases germination. | Seed | Ant adapted elaiosome. | | 2yrs 1 | | Facultative and obligate resprouter. Fire resistant increaser. Obligate root resprouter. veg. regeneration. Absent from infrequently burnt sites. |
| <i>Marsdenia viridiflora</i> | Resprouter | | Seed | | | | | |
| <i>Marsilea drummondii</i> | | | Sporocarp | | | | | |
| <i>Melaleuca bracteata</i> | Resprouter | No soil stored seed bank. | Seed | Gravity & water dispersed. | 4-7 | | | |
| <i>Melia azederach</i> | Resprouter | | | | 3-6 | | | |
| <i>Melinis repens</i> | Resprouter | | Lazarides & Hince (1993). | | 1 | <1 | | Fruit produced 19-26 weeks after high intensity fire. |
| <i>Microlaena</i> | Resprouter | Total germination 25 | Fruit (dry) | No particular | 1 | <1 | | Flowers at anytime of the year. |

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Gwydir River

| Taxon | Response | Germination | Diaspore | Dispersal | 1 Juv | 2 Juv | Longevity | Notes |
|--------------------------------|--------------------|---|---|--|-------|-------|------------|---|
| <i>stipoides</i> | | days. Little dormancy. Germination slow if under 10C and develop slowly. | indehiscent 1 seeded). | mechanism for dispersal. | | | | |
| <i>Modiola caroliniana</i> | Obligate Seeder | | | | 1 | | | |
| <i>Natelaea microcarpa</i> | Resprouter | | | | 3-6 | | | |
| <i>Nyssanthus diffusa</i> | Obligate Seeder | | | | 1-2 | | | |
| <i>Olearia elliptica</i> | Obligate Seeder | | Fruit | | | | | |
| <i>Opilsenus aemulus</i> | Obligate Seeder | | Fruit (dry indehiscent 1 seeded). | No special dispersal morphology. Coloniser of bare shady sites. | 1 | <1 | Indefinite | Flowering 5 m after high intensity fire. |
| <i>Opuntia aurantiaca</i> | Resprouter | | | Stem- segments dispersed by | | | | |

Gwydir River

| Taxon | Response | Germination | Diaspore | Dispersal | 1 Juv | 2 Juv | Longevity | Notes |
|-------------------------------|-----------------|---|---------------|---|-------|-------|-----------|---|
| | | | | floods along stream banks. | | | | |
| | | | | Vegetative. | | | | |
| | | | | Stem fragments dispersed by animals, water, wind. Seeds bird-dispersed. | 3 | | | |
| <i>Opuntia stricta</i> | Resprouter | Germinate at any time, bristled seeds vulnerable in exposed situations. | Seed | | | | | |
| <i>Oxalis</i> | Resprouter | | | | | | | |
| <i>brasilensis</i> | Resprouter | | | | | | | Resprouter. Minor Obligate seeder. Seedlings not flowered within 9m of autumn fire. |
| <i>Oxalis perennans</i> | Variable. | | | | | | | |
| <i>Panicum buncei</i> | Resprouter | | Inflorescence | | | | | |
| <i>Panicum simile</i> | Resprouter | | Inflorescence | | | <1 | | Fruit within 4 m of high intensity fire. Resprouting after crown fire at Tinkrameannah. |
| <i>Paronychia brasiliiana</i> | Obligate Seeder | | | | 1 | | | |
| <i>Parsonia</i> | Resprouter | | | | | | | |

Gwydir River

| Taxon | Response | Germination | Diaspore | Dispersal | 1 Juv | 2 Juv | Longevity | Notes |
|-------------------------------------|-----------------------------------|---|--|--|-------|-------|------------|---|
| <i>eucalyptophylla</i> | | | | | | | | |
| <i>Paspalidium constrictum</i> | Resprouter | | Inflorescence | | | | | |
| <i>Paspalum dilatatum</i> | Resprouter | | Inflorescence | Adhesive for dispersal. In mud on cars. | | <1 | Indefinite | Fruit within 4 m of high intensity fire. |
| <i>Pavonia hastata</i> | Resprouter | | | | 2-3 | | | |
| <i>Petrophagia nanteuillii</i> | Obligate Seeder | | Seed | No particular dispersal morphology. Dispersed in mud on cars. | <1 | | 1 | Probably killed. |
| <i>Phragmites australis</i> | Resprouter | Germination in NSW low but consistent. Germination only occurs in a narrow range of habitats. | Fruit (dry indehiscent 1 seeded) | Spreads extensively by horizontal rhizomes. Dies back after frosts. | 1-2 | <2 | Indefinite | |
| <i>Phyllanthus carpentariae</i> | Resprouter, Obligate Seeder | From soil stored seed bank and amphicarpic capsules on rootstock | Seed | Explosive | 1-2 | <1 | | Will withstand repeated burning and resprout from rootstock in Northern Australia. Found to |

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Gwydir River

| Taxon | Response | Germination | Diaspore | Dispersal | 1 Juv | 2 Juv | Longevity | Notes |
|--------------------------------|-----------------|-----------------------------|----------------------------------|--------------------------|-------|-------|-----------|--|
| <i>Phyllanthus suberulatus</i> | Resprouter | From soil stored seed bank | Seed | Explosive | | < 1yr | | germinate prolifically after fire and fruiting within 1 yr post fire at Yetman. |
| <i>Phyllanthus virgatus</i> | Variable | From soil stored seed bank | Seed | Explosive | <1 yr | < 1yr | | Will resprout and flower within 6 m of fire. Killed by crown fire & germination from seed at Tinkrameanah. |
| <i>Pimelea neo-anglica</i> | Resprouter | | | | 2-4 | | | |
| <i>Plantago varia</i> | Resprouter | | | | | | | Facultative resprouter. Recorded 1 month after fire in grassy forest. |
| <i>Poa sieberiana</i> | Resprouter | | Fruit (dry indehiscent 1 seeded) | | 1-2 | | | Facultative resprouter. No mortality when grazed and burnt. |
| <i>Polycarpon tetraphyllum</i> | Obligate Seeder | Reproduced by sexual means. | | Seeds dispersed by wind. | 1 | | 1 | |
| <i>Portulaca filifolia</i> | Obligate Seeder | | | | | | | |

Gwydir River

| Taxon | Response | Germination | Diaspore | Dispersal | 1 Juv | 2 Juv | Longevity | Notes |
|---------------------------------|-----------------|---|----------------|--|-------|-------|-----------|---------------------------------------|
| <i>Portulaca oleracea</i> | Obligate Seeder | | | | | | | |
| <i>Pratia purpurascens</i> | Resprouter | Reproduction both sexual and vegetative, reproducing by seed propagation in first year. | | Seeds dispersed by expulsion. | | | <5 | Resprouter after high intensity fire. |
| <i>Probooscidea louisianica</i> | | | Fruit | Hardy, summer-growing, even in low rainfall areas. | <1 | | <1 | |
| <i>Prunus persica</i> | | | Fruit | Dispersed by car passengers. | | | 25-60 | |
| <i>Psyrax odoratum</i> | Resprouter | | | | 3-6 | | | |
| <i>Richardia brasiliensis</i> | | | | | <1y | | <1y | |
| <i>Rorippa laciniata</i> | Obligate Seeder | | | | | | | |
| <i>Rosa rubiginosa</i> | Obligate | | Fruit (fleshy) | Bird dispersed. | | | | |

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Gwydir River

| Taxon | Response | Germination | Diaspore | Dispersal | 1 Juv | 2 Juv | Longevity | Notes |
|-------------------------------------|--------------------|-------------|--|--|-------|-------|-----------|--|
| | Seeder | | Red) | Coloniser of previously cleared land. | | | | |
| <i>Rostellularia adscendens</i> | Obligate Seeder | | | | 1 | | | |
| <i>Rostraria cristata</i> | Obligate Seeder | | Fruit (dry indehiscent 1 seeded) | | <1 | | <1 | |
| <i>Rubus anglocandicans</i> | | | Infructescence | | | | | |
| <i>Rumex brownii</i> | Resprouter | | | | | <5m | | Resprouted after high intensity fire. |
| <i>Rumex crispus</i> | Resprouter | | | | | | | Resprouted after high intensity fire. |
| <i>Rytidosperma racemosum</i> | Resprouter | | Fruit (Dry indehiscent 1 seeded) | Adhesive, animal dispersed & wind dispersed. | | | | |
| <i>Salix fragilis</i> | | | | Disperses and multiplies | | | | |

Gwydir River

| Taxon | Response | Germination | Diaspore | Dispersal | 1 Juv | 2 Juv | Longevity | Notes |
|-----------------------------------|--------------------|---|--|--|-------|-------|-----------|---|
| <i>Schenkia spicata</i> | Obligate Seeder | | | readily from broken branches. | | | | |
| <i>Scleranthus biflorus</i> | Obligate Seeder | | | No particular dispersal morphology. | | | | |
| <i>Scleria mockoviensis</i> | Obligate Seeder | | | | | | | |
| <i>Senecio quadridentatus</i> | Obligate Seeder | Germination fire related. Germination 95%. | Fruit (achene) | Probably wind- dispersed. Recruitment fire-related. | < 1yr | | 1-2 | Killed, recruitment fire related. Therophyte. Seedlings recorded <1yr after fire. |
| <i>Setaria parviflora</i> | Resprouter | Freshly harvested seeds dormant but germinate readily in spring. | Fruit (dry indehiscent 1 seeded) | No particular mechanism for dispersal. In mud on cars. Grows best when surrounded by | <1 | <1 | | Flowering within 10 w of high intensity fire. |

Gwydir River

| Taxon | Response | Germination | Diaspore | Dispersal | 1 Juv | 2 Juv | Longevity | Notes |
|-----------------------------------|---------------------|-------------|--|---|-------|-------|-----------|---|
| | | | | dominant plants. | | | | |
| <i>Sida corrugata</i> | Obligate Seeder | | | | | | | |
| <i>Solanum</i> | Obligate Seeder | | | | | | | |
| <i>amblymerum</i> | Seeder | | | | | | | |
| <i>Solanum nigrum</i> | Obligate Seeder | | | | 1-2 | | | |
| <i>Sonchus oleraceus</i> | Obligate Seeder. | | | Seeds dispersed by wind. | 1 | | 1-2 | |
| <i>Spartothamnella juncea</i> | Resprouter | | | | 2-3 | | | |
| <i>Sporobolus creber</i> | Resprouter | | Fruit (dry indehiscent 1 seeded) | No particular morphology for dispersal. | 1 | <1 | | Flowering within 4 m of high intensity fire. |
| <i>Sporobolus elongatus</i> | Resprouter | | Fruit (dry indehiscent 1 seeded) | No particular morphology for dispersal. | 1 | | | |
| <i>Sporobolus mitchellii</i> | Resprouter | | Fruit (dry indehiscent 1 | | | | | |

Gwydir River

| Taxon | Response | Germination | Diaspore | Dispersal | 1 Juv | 2 Juv | Longevity | Notes |
|------------------------------|-----------------|---|----------------------------------|--|-------|-------|------------|--|
| <i>Stockhousia muricata</i> | Resprouter | | seeded) | | | | | |
| <i>Stephania japonica</i> | Resprouter | Reproduction both sexual and vegetative, by seed propagation in first year. | | Seeds dispersed by animals. | 2-3 | | <5 | Facultative resprouter - from base after high intensity fire. |
| <i>Swainsona galegifolia</i> | Obligate Seeder | | | | 1-2 | | | |
| <i>Taraxacum officinale</i> | | | Fruit (achene) | Wind-dispersed many kilometres. | | | | Probably resprouted. Flowering within 11 wks and fruiting within 25 wks of high intensity fire. |
| <i>Themeda triandra</i> | Resprouter | Primary dormancy usually breaks slowly with storage up to 12 m or more. To break dormancy, seeds need cold 4C for at least 1 month. Total germination 100 days. | Fruit (dry indehiscent 1 seeded) | Dispersal by adhesion, also by gravity. Coloniser of bare clay banks & slopes. | 1 | 1 | Indefinite | Non-clonal decreaser. Soil seed bank. Survives 100% scorch - root suckers. Flowers in response to rain & temperature. Flowers c. 12 after high intensity fire. |

Gwydir River

| Taxon | Response | Germination | Diaspore | Dispersal | 1 Juv | 2 Juv | Longevity | Notes |
|---------------------------------|--------------------|---|-----------------------------|----------------------------|-------|-------|-----------|--|
| <i>Tricornyne elatior</i> | Resprouter | fresh seed : 0% germination. 76% initial viability. | | | 1-2 | | | Facultative resprouter. Veg. regrowth. Survives 100% scorch - basal sprouts. soil stored seed. |
| <i>Tripogon loliiformis</i> | Obligate Seeder | | | | | | | |
| <i>Urtica incisa</i> | Resprouter | | | | 2-3 | | | Prolific after fire, eg. Tasmania. |
| <i>Verbena bonariensis</i> | Obligate Seeder | | | | 1 | | | |
| <i>Veronica arvensis</i> | Obligate Seeder | | | | 1 | | | |
| <i>Veronica calycina</i> | Resprouter | | | | 1-2 | | | |
| <i>Vitodinia cuneata</i> | Resprouter | | | | | | | |
| <i>Vitodinia dissecta</i> | Obligate Seeder | | | | | | | |
| <i>Vitodinia muelleri</i> | Obligate Seeder | | | | | | | |
| <i>Vitodinia sulcata</i> | Obligate Seeder | | | | | | | |
| <i>Vulpia muralis</i> | Obligate Seeder | | Fruit (dry indehiscent 1 | Adhesive for dispersal. | <1 | | <1 | |

Gwydir River

| Taxon | Response | Germination | Diaspore (seeded) | Dispersal | 1 Juv | 2 Juv | Longevity | Notes |
|---------------------------------|-----------------|-----------------------------------|----------------------|---|-------|-------|-----------|---|
| <i>Wahlenbergia communis</i> | Obligate Seeder | Soil-stored seed bank. Coloniser. | | Diaspore: seed. Wind-dispersed. No particular dispersal morphology. | 3-6m | | | Killed, flowers within 15 wks, flower and fruit 10 months high intensity fire |
| <i>Wahlenbergia gracilentia</i> | Obligate Seeder | | | | 1 | | <1 | Not recorded in unburnt quadrats, but were present in the long unburnt areas and in burnt quadrats they were uncommon & rare. |
| <i>Xanthorrhoea johnsonii</i> | Resprouter | | | | 6-12 | | | |

Gwydir River

Appendix E: Occurrence in Community & Life History.

* GWR1 River Red Gum – River Oak; GWR2 Rough-barked Apple – Yellow Box – White Cypress; GWR3 White Pine – Silver Ironbark – White Box; GWR4 White Pine – Silver Ironbark – Tumbledown Gum; GWR5 Silver Ironbark – Quinine Bush – Wilga; GWR6 White Pine – River Red Gum.

| Species | Height M | GWR1 | GWR2 | GWR3 | GWR4 | GWR5 | GWR6 | Herbs | Liases | Vines | Low Shrubs | Low Tree | Med Shrubs | Med Tree | Tall Shrubs |
|----------------------------------|----------|------|------|------|------|------|------|-------|--------|-------|------------|----------|------------|----------|-------------|
| <i>Abutilon oxycarpum</i> | | 1 | 0 | 1 | 0 | 1 | 0 | | | | x | | | | |
| <i>Acacia deanei</i> | | 1 | 0 | 1 | 0 | 1 | 0 | | | | | | x | | |
| <i>Acacia decora</i> | | 0 | 0 | 1 | 1 | 1 | 1 | | | | | | x | | |
| <i>Acacia implexa</i> | | 1 | 0 | 1 | 0 | 1 | 0 | | | | | | | | x |
| <i>Acacia leiocalyx</i> | | 1 | 0 | 1 | 1 | 1 | 1 | | | | | | x | | |
| <i>Aira cupaniana</i> | 0.5 | 1 | 0 | 0 | 0 | 0 | 0 | x | | | | | | | |
| <i>Alga australis</i> | | 1 | 0 | 1 | 1 | 0 | 1 | x | | | | | | | |
| <i>Alectryon subdentatus</i> | | 0 | 0 | 0 | 0 | 1 | 0 | | | | | x | | | |
| <i>Alphitonia excelsa</i> | | 1 | 0 | 0 | 0 | 1 | 0 | | | | | x | | | |
| <i>Alstonia constricta</i> | | 0 | 0 | 0 | 0 | 1 | 0 | | | | | | | | x |
| <i>Alternanthera denticulata</i> | | 1 | 0 | 0 | 0 | 0 | 0 | x | | | | | | | |
| <i>Alternanthera pungens</i> | | 1 | 0 | 0 | 0 | 0 | 0 | x | | | | | | | |
| <i>Amni majus</i> | | 0 | 1 | 0 | 0 | 0 | 0 | x | | | | | | | |
| <i>Anagallis arvensis</i> | | 1 | 0 | 1 | 0 | 0 | 1 | x | | | | | | | |
| <i>Angophora floribunda</i> | | 1 | 1 | 0 | 0 | 1 | 0 | | | | | | | x | |
| <i>Argemone ochroleuca</i> | | 1 | 0 | 0 | 0 | 0 | 1 | x | | | | | | | |
| <i>Aristida holathera</i> | 0.6 | 0 | 0 | 0 | 0 | 0 | 1 | x | | | | | | | |
| <i>Aristida personata</i> | 1.2 | 1 | 1 | 0 | 1 | 1 | 1 | x | | | | | | | |
| <i>Arthropodium milleflorum</i> | 1.2 | 0 | 0 | 0 | 0 | 1 | 0 | x | | | | | | | |
| <i>Austrostipa scabra</i> | 0.6 | 0 | 1 | 1 | 1 | 1 | 1 | x | | | | | | | |
| <i>Austrostipa verticillata</i> | 2 | 1 | 1 | 1 | 0 | 1 | 0 | x | | | | | | | |

Gwydir River

| Species | Height M | GW1 | GW2 | GW3 | GW4 | GW5 | GW6 | Herbs | Lianes Vines | Low Shrubs | Low Tree | Med Shrubs | Med Tree | Tall Shrubs |
|---------------------------------|----------|-----|-----|-----|-----|-----|-----|-------|-----------------|---------------|-------------|---------------|-------------|-------------|
| <i>Beyeria viscosa</i> | | 0 | 0 | 1 | 0 | 1 | 0 | | | x | | | | |
| <i>Bidens pilosa</i> | | 1 | 1 | 1 | 0 | 1 | 1 | x | | | | | | |
| <i>Bidens subalternans</i> | | 1 | 1 | 1 | 0 | 1 | 1 | x | | | | | | |
| <i>Boerhaavia dominii</i> | | 1 | 0 | 1 | 0 | 1 | 1 | x | | | | | | |
| <i>Boerhaavia budihi</i> | 1 | 1 | 0 | 0 | 0 | 0 | 0 | x | | | | | | |
| <i>Boerhaavia macro</i> | 1 | 0 | 1 | 0 | 0 | 0 | 0 | x | | | | | | |
| <i>Brachychiton populneus</i> | | 1 | 0 | 1 | 0 | 1 | 0 | | | x | | | | |
| <i>Bryonia cernua</i> | | 0 | 0 | 1 | 0 | 1 | 1 | | | x | | | | |
| <i>Bryonia brevis</i> | 0.6 | 1 | 1 | 0 | 0 | 0 | 0 | x | | | | | | |
| <i>Bryonia catharticus</i> | 1 | 1 | 0 | 0 | 0 | 0 | 0 | x | | | | | | |
| <i>Bryonia diandrus</i> | 1 | 1 | 0 | 0 | 0 | 0 | 0 | x | | | | | | |
| <i>Bryonia laetis</i> | 1 | 0 | 1 | 0 | 0 | 0 | 0 | x | | | | | | |
| <i>Brunonella australis</i> | | 0 | 0 | 1 | 1 | 1 | 0 | x | | | | | | |
| <i>Bursaria spinosa</i> | | 1 | 1 | 1 | 0 | 0 | 0 | | | | x | | | |
| <i>Callistemon viminalis</i> | | 1 | 0 | 0 | 0 | 0 | 0 | | | | x | | | |
| <i>Callitris glaucophylla</i> | 20 | 1 | 1 | 1 | 1 | 1 | 1 | | | | | x | | |
| <i>Colotis cuneifolia</i> | | 0 | 0 | 1 | 0 | 0 | 0 | x | | | | | | |
| <i>Colotis lappulacea</i> | | 0 | 1 | 1 | 0 | 1 | 1 | x | | | | | | |
| <i>Carex inornata</i> | 0.9 | 1 | 0 | 0 | 0 | 0 | 0 | x | | | | | | |
| <i>Carex inversa</i> | 0.5 | 1 | 0 | 1 | 1 | 1 | 1 | x | | | | | | |
| <i>Carissa ovata</i> | | 1 | 0 | 1 | 0 | 1 | 0 | | x | | | | | |
| <i>Casipine australis</i> | | 0 | 0 | 0 | 0 | 0 | 1 | 0 | | | | x | | |
| <i>Casipine quinquefolia</i> | | 0 | 0 | 1 | 1 | 1 | 0 | | | x | | | | |
| <i>Casuarina cunninghamiana</i> | | 1 | 0 | 0 | 0 | 0 | 0 | | | | | | x | |
| <i>Centaurea solstitialis</i> | | 0 | 1 | 0 | 0 | 0 | 0 | x | | | | | | |
| <i>Cenella asiatica</i> | | 1 | 0 | 0 | 0 | 0 | 0 | x | | | | | | |
| <i>Chamaecyparis drummondii</i> | | 1 | 0 | 0 | 0 | 0 | 0 | x | | | | | | |

Gwydir River

| Species | Height M | GWR1 | GWR2 | GWR3 | GWR4 | GWR5 | GWR6 | Herbs | Lianes Vines | Low Shrubs | Low Tree | Med Shrubs | Med Tree | Tall Shrubs |
|-----------------------------------|----------|------|------|------|------|------|------|-------|-----------------|---------------|-------------|---------------|-------------|-------------|
| <i>Chelanthus distans</i> | 0.3 | 0 | 0 | 0 | 0 | 1 | 1 | x | | | | | | |
| <i>Chelanthus sieberi</i> | 0.35 | 1 | 0 | 1 | 1 | 1 | 1 | x | | | | | | |
| <i>Chloris truncata</i> | 0.5 | 1 | 0 | 1 | 1 | 0 | 0 | x | | | | | | |
| <i>Chryscephalum semipapposum</i> | | 1 | 1 | 1 | 0 | 0 | 0 | x | | | | | | |
| <i>Ciclospermum leptophyllum</i> | | 1 | 1 | 1 | 0 | 0 | 0 | x | | | | | | |
| <i>Cirsium vulgare</i> | | 1 | 1 | 1 | 0 | 0 | 0 | x | | | | | | |
| <i>Clematis microphylla</i> | | 0 | 0 | 1 | 0 | 1 | 1 | | x | | | | | |
| <i>Cornelina cyanea</i> | 0.2 | 1 | 1 | 1 | 0 | 0 | 0 | x | | | | | | |
| <i>Conium maculatum</i> | | 1 | 0 | 0 | 0 | 0 | 0 | x | | | | | | |
| <i>Conyza bonariensis</i> | | 1 | 1 | 1 | 0 | 0 | 0 | x | | | | | | |
| <i>Crinum flaccidum</i> | 0.75 | 0 | 1 | 1 | 1 | 0 | 0 | x | | | | | | |
| <i>Gymnopogon refractus</i> | 1 | 1 | 0 | 1 | 1 | 1 | 1 | x | | | | | | |
| <i>Gynodon dactylon</i> | 0.3 | 1 | 0 | 0 | 0 | 0 | 0 | x | | | | | | |
| <i>Gynolossus australe</i> | | 1 | 0 | 0 | 0 | 0 | 0 | x | | | | | | |
| <i>Gyperus aggregatus</i> | 0.6 | 1 | 1 | 1 | 0 | 0 | 1 | x | | | | | | |
| <i>Gyperus eripostis</i> | 0.9 | 1 | 0 | 0 | 1 | 0 | 1 | x | | | | | | |
| <i>Gyperus gracilis</i> | 0.4 | 1 | 1 | 1 | 1 | 1 | 1 | x | | | | | | |
| <i>Dactylis glomerata</i> | 1.4 | 1 | 0 | 0 | 0 | 0 | 0 | x | | | | | | |
| <i>Daucus glaberrimus</i> | | 0 | 0 | 1 | 0 | 0 | 0 | x | | | | | | |
| <i>Desmodium brachypodium</i> | | 1 | 0 | 1 | 0 | 1 | 0 | x | | | | | | |
| <i>Desmodium varians</i> | | 1 | 0 | 1 | 1 | 1 | 0 | | x | | | | | |
| <i>Dianella caerulea</i> | 1 | 0 | 0 | 1 | 1 | 0 | 0 | x | | | | | | |
| <i>Dianella revoluta</i> | 1 | 1 | 0 | 0 | 0 | 0 | 0 | x | | | | | | |
| <i>Dichanthium sericeum</i> | 1.2 | 0 | 1 | 1 | 1 | 0 | 1 | x | | | | | | |
| <i>Dichelachne micrantha</i> | 1.2 | 1 | 1 | 1 | 1 | 0 | 0 | x | | | | | | |
| <i>Dichondra repens</i> | | 1 | 0 | 0 | 0 | 0 | 0 | x | | | | | | |
| <i>Dichondra sp. A</i> | | 1 | 1 | 1 | 0 | 1 | 1 | x | | | | | | |

Gwydir River

| Species | Height M | GW1 | GW2 | GW3 | GW4 | GW5 | GW6 | Herbs | Lianes | Vines | Low Shrubs | Low Tree | Med Shrubs | Med Tree | Tall Shrubs |
|----------------------------------|----------|-----|-----|-----|-----|-----|-----|-------|--------|-------|------------|----------|------------|----------|-------------|
| <i>Digitaria amnephila</i> | 0.8 | 0 | 0 | 0 | 0 | 0 | 1 | x | | | | | | | |
| <i>Digitaria brownii</i> | 0.8 | 1 | 0 | 1 | 1 | 0 | 0 | x | | | | | | | |
| <i>Digitaria divaricatissima</i> | 0.8 | 1 | 1 | 1 | 0 | 0 | 1 | x | | | | | | | |
| <i>Dodonaea viscosa</i> | | 1 | 0 | 1 | 0 | 1 | 1 | | | | x | | | | |
| <i>Echinopogon caespitosus</i> | 1.5 | 1 | 0 | 0 | 0 | 0 | 0 | x | | | | | | | |
| <i>Echinopogon ovatus</i> | 1.2 | 1 | 1 | 1 | 0 | 0 | 0 | x | | | | | | | |
| <i>Einadia hastata</i> | | 1 | 1 | 1 | 0 | 1 | 0 | | | | x | | | | |
| <i>Einadia nutans</i> | | 1 | 0 | 1 | 0 | 1 | 0 | x | | | | | | | |
| <i>Einadia polygonoides</i> | | 1 | 0 | 1 | 1 | 1 | 0 | x | | | | | | | |
| <i>Einadia trigonos</i> | | 0 | 0 | 0 | 1 | 0 | 0 | x | | | | | | | |
| <i>Emeopogon gracilis</i> | 0.7 | 0 | 0 | 0 | 0 | 1 | 0 | x | | | | | | | |
| <i>Emeopogon nigricans</i> | 0.5 | 0 | 0 | 0 | 1 | 0 | 1 | x | | | | | | | |
| <i>Eragrostis brownii</i> | 0.6 | 1 | 0 | 0 | 0 | 0 | 0 | x | | | | | | | |
| <i>Eragrostis curvula</i> | 1 | 1 | 0 | 0 | 0 | 0 | 0 | x | | | | | | | |
| <i>Eragrostis elongata</i> | 0.8 | 0 | 0 | 1 | 0 | 0 | 0 | x | | | | | | | |
| <i>Eragrostis leptostachya</i> | 1 | 1 | 0 | 1 | 0 | 0 | 0 | x | | | | | | | |
| <i>Eragrostis parviflora</i> | 1.1 | 1 | 0 | 0 | 0 | 0 | 0 | x | | | | | | | |
| <i>Eriochloa pseudocrotitcho</i> | 1 | 0 | 0 | 1 | 0 | 0 | 0 | x | | | | | | | |
| <i>Eucalyptus albens</i> | | 0 | 0 | 1 | 0 | 0 | 0 | | | | | | x | | |
| <i>Eucalyptus camadulensis</i> | | 1 | 1 | 1 | 0 | 0 | 1 | | | | | | x | | |
| <i>Eucalyptus crebra</i> | | 0 | 0 | 0 | 0 | 1 | 0 | | | | | | x | | |
| <i>Eucalyptus dealbata</i> | | 0 | 0 | 0 | 1 | 0 | 0 | | | | x | | | | |
| <i>Eucalyptus melanophloia</i> | | 0 | 0 | 1 | 1 | 1 | 0 | | | | | | x | | |
| <i>Eucalyptus melliodora</i> | | 0 | 1 | 1 | 0 | 0 | 0 | | | | | | | x | |
| <i>Euciton sphaericus</i> | | 0 | 0 | 1 | 0 | 0 | 0 | x | | | | | | | |
| <i>Euphorbia pepus</i> | | 1 | 0 | 0 | 0 | 0 | 0 | x | | | | | | | |
| <i>Eustrephus latifolius</i> | 6 | 0 | 0 | 0 | 0 | 1 | 0 | | x | | | | | | |

Gwydir River

| Species | Height M | GW1 | GW2 | GW3 | GW4 | GW5 | GW6 | Herbs | Lianes Vines | Low Shrubs | Low Tree | Med Shrubs | Med Tree | Tall Shrubs |
|----------------------------------|----------|-----|-----|-----|-----|-----|-----|-------|-----------------|---------------|-------------|---------------|-------------|-------------|
| <i>Evolvulus alsinoides</i> | | 0 | 0 | 0 | 1 | 0 | 1 | x | | | | | | |
| <i>Exocarpos cupressiformis</i> | | 0 | 0 | 0 | 0 | 1 | 0 | | | | | x | | |
| <i>Festuca asperula</i> | 0.9 | 1 | 0 | 0 | 0 | 0 | 0 | x | | | | | | |
| <i>Festuca pratensis</i> | 1.4 | 1 | 1 | 0 | 0 | 0 | 0 | x | | | | | | |
| <i>Ficus carica</i> | 5 | 1 | 0 | 0 | 0 | 0 | 0 | | | | x | | | |
| <i>Gallium migraus</i> | | 1 | 0 | 0 | 0 | 0 | 1 | x | | | | | | |
| <i>Gallium prostratum</i> | | 0 | 0 | 1 | 0 | 1 | 0 | x | | | | | | |
| <i>Gomphoceta purpurea</i> | | 1 | 0 | 0 | 0 | 0 | 0 | x | | | | | | |
| <i>Geigeria parviflora</i> | | 1 | 1 | 1 | 0 | 1 | 0 | | | | x | | | |
| <i>Geranium solanderi</i> | | 1 | 0 | 1 | 1 | 0 | 0 | x | | | | | | |
| <i>Glossocardia bidentis</i> | | 0 | 0 | 1 | 1 | 0 | 1 | x | | | | | | |
| <i>Glycine tabacina</i> | | 1 | 0 | 1 | 1 | 1 | 1 | | x | | | | | |
| <i>Gomphocarpus fruticosus</i> | | 1 | 0 | 0 | 1 | 0 | 1 | | | x | | | | |
| <i>Gomphreno celosoides</i> | | 1 | 0 | 1 | 0 | 0 | 1 | x | | | | | | |
| <i>Heliotropium amplexicaule</i> | | 1 | 1 | 1 | 0 | 1 | 1 | x | | | | | | |
| <i>Hibbertia obtusifolia</i> | | 1 | 0 | 0 | 0 | 0 | 1 | | | x | | | | |
| <i>Hibiscus sturtii</i> | | 0 | 0 | 1 | 0 | 1 | 0 | | | x | | | | |
| <i>Hirschfeldia incana</i> | | 1 | 1 | 0 | 0 | 0 | 0 | x | | | | | | |
| <i>Hypochaeris hirta</i> | 1.2 | 1 | 0 | 1 | 1 | 1 | 1 | x | | | | | | |
| <i>Hypochaeris radicata</i> | | 1 | 0 | 1 | 0 | 0 | 0 | x | | | | | | |
| <i>Imperata cylindrica</i> | 1.2 | 1 | 0 | 0 | 0 | 0 | 0 | x | | | | | | |
| <i>Indigofera linnei</i> | | 0 | 0 | 0 | 0 | 0 | 1 | x | | | | | | |
| <i>Jasminum lineare</i> | | 1 | 0 | 1 | 0 | 1 | 0 | | x | | | | | |
| <i>Jasminum suavisimum</i> | | 1 | 0 | 1 | 0 | 0 | 0 | | | x | | | | |
| <i>Juncus usitatus</i> | 1.1 | 1 | 0 | 0 | 0 | 0 | 0 | x | | | | | | |
| <i>Lactuca serriola</i> | | 1 | 1 | 1 | 0 | 0 | 0 | x | | | | | | |
| <i>Lamium amplexicaule</i> | | 1 | 0 | 0 | 0 | 0 | 0 | x | | | | | | |

Gwydir River

| Species | Height M | GW1 | GW2 | GW3 | GW4 | GW5 | GW6 | Herbs | Liars | Vines | Low | Low | Med | Med | Tall |
|-----------------------------------|----------|-----|-----|-----|-----|-----|-----|-------|-------|-------|-----|-----|-----|-----|------|
| <i>Lepidium africanum</i> | | 1 | 0 | 0 | 0 | 0 | 0 | x | | | | | | | |
| <i>Lepidium bonariense</i> | | 0 | 1 | 0 | 0 | 0 | 0 | x | | | | | | | |
| <i>Lomandra longifolia</i> | 1 | 1 | 0 | 0 | 0 | 0 | 0 | x | | | | | | | |
| <i>Lomandra multiflora</i> | 1 | 1 | 0 | 1 | 0 | 1 | 0 | x | | | | | | | |
| <i>Maireana microphylla</i> | | 0 | 1 | 1 | 0 | 0 | 0 | | | | x | | | | |
| <i>Makvastum americanum</i> | | 0 | 0 | 1 | 0 | 0 | 0 | x | | | | | | | |
| <i>Makvastum coronadellianum</i> | | 1 | 1 | 1 | 0 | 0 | 0 | x | | | | | | | |
| <i>Marsdenia viridiflora</i> | | 0 | 0 | 0 | 0 | 1 | 0 | | x | | | | | | |
| <i>Marsilea drummondii</i> | 0.3 | 1 | 0 | 1 | 0 | 0 | 0 | x | | | | | | | |
| <i>Melaleuca bracteata</i> | | 1 | 0 | 0 | 0 | 0 | 0 | | | | | x | | | |
| <i>Melaleuca azedarach</i> | | 1 | 0 | 0 | 0 | 0 | 0 | | | | | | | x | |
| <i>Microlophos stipoides</i> | 0.7 | 1 | 1 | 1 | 0 | 1 | 0 | x | | | | | | | |
| <i>Modiola caroliniana</i> | | 1 | 0 | 0 | 0 | 0 | 0 | | | | x | | | | |
| <i>Notelaea microcarpa</i> | | 1 | 1 | 1 | 1 | 1 | 0 | | | | | | | x | |
| <i>Oenothera rosea</i> | | 0 | 1 | 0 | 0 | 0 | 0 | | | | x | | | | |
| <i>Olearia elliptica</i> | | 0 | 0 | 1 | 1 | 1 | 0 | | | | | | | | |
| <i>Opismenus aemulus</i> | 0.3 | 1 | 0 | 0 | 0 | 0 | 0 | x | | | | | | | |
| <i>Opuntia aurantiaca</i> | | 1 | 1 | 1 | 0 | 1 | 1 | | | | | | | | |
| <i>Opuntia stricta</i> | | 1 | 0 | 0 | 0 | 0 | 1 | | | | x | | | | |
| <i>Oxalis brasiliensis</i> | | 1 | 0 | 0 | 0 | 0 | 0 | x | | | | | | | |
| <i>Oxalis perennans</i> | | 1 | 1 | 1 | 1 | 0 | 0 | x | | | | | | | |
| <i>Panicum simile</i> | 0.7 | 0 | 0 | 1 | 1 | 1 | 1 | x | | | | | | | |
| <i>Paronychia brasiliensis</i> | | 1 | 0 | 1 | 0 | 0 | 0 | x | | | | | | | |
| <i>Paronychia eucalyptophylla</i> | | 0 | 0 | 0 | 0 | 1 | 0 | | | x | | | | | |
| <i>Paspalum constrictum</i> | 0.6 | 0 | 0 | 0 | 1 | 1 | 1 | x | | | | | | | |
| <i>Paspalum dilatatum</i> | 2 | 1 | 1 | 1 | 0 | 0 | 0 | x | | | | | | | |
| <i>Pavonia hastata</i> | | 1 | 1 | 1 | 0 | 1 | 0 | | | | x | | | | |

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Gwydir River

| Species | Height M | GW1 | GW2 | GW3 | GW4 | GW5 | GW6 | Herbs | Lianes Vines | Low Shrubs | Low Tree | Med Shrubs | Med Tree | Tall Shrubs |
|---------------------------------|----------|-----|-----|-----|-----|-----|-----|-------|-----------------|---------------|-------------|---------------|-------------|-------------|
| <i>Petrorhagia nanteuillii</i> | | 1 | 1 | 1 | 1 | 0 | 0 | x | | | | | | |
| <i>Phyla canescens</i> | | 1 | 0 | 0 | 0 | 0 | 0 | x | | | | | | |
| <i>Phyllanthus carpentariae</i> | | 0 | 0 | 0 | 0 | 1 | 0 | | | | | | | |
| <i>Phyllanthus subcrenatus</i> | | 1 | 0 | 0 | 0 | 0 | 0 | | | x | | | | |
| <i>Phyllanthus virgatus</i> | | 1 | 0 | 1 | 1 | 1 | 1 | | | | | | | |
| <i>Pimelea neo-anglica</i> | | 1 | 0 | 1 | 0 | 1 | 0 | | | x | | | | |
| <i>Plantago varia</i> | | 1 | 0 | 0 | 0 | 0 | 0 | x | | | | | | |
| <i>Poa sieberiana</i> | 1 | 1 | 1 | 0 | 1 | 0 | 0 | x | | | | | | |
| <i>Polygonum aviculare</i> | | 1 | 0 | 0 | 0 | 0 | 0 | x | | | | | | |
| <i>Portulaca filifolia</i> | | 1 | 0 | 0 | 0 | 0 | 1 | x | | | | | | |
| <i>Portulaca oleracea</i> | | 1 | 0 | 0 | 0 | 0 | 0 | x | | | | | | |
| <i>Portulaca pilosa</i> | | 0 | 0 | 0 | 0 | 0 | 1 | x | | | | | | |
| <i>Prunus persica</i> | | 1 | 0 | 0 | 0 | 0 | 0 | | | | x | | | |
| <i>Psidium odoratum</i> | | 1 | 0 | 0 | 0 | 1 | 0 | | | | | x | | |
| <i>Richardia brasiliensis</i> | | 1 | 0 | 0 | 0 | 0 | 0 | x | | | | | | |
| <i>Rorippa eustylis</i> | | 1 | 0 | 0 | 0 | 0 | 0 | x | | | | | | |
| <i>Rosa rubiginosa</i> | | 1 | 0 | 0 | 0 | 0 | 0 | | | x | | | | |
| <i>Rostelularia odscendens</i> | | 0 | 0 | 1 | 1 | 1 | 0 | x | | | | | | |
| <i>Rumex brownii</i> | | 1 | 1 | 0 | 0 | 0 | 0 | x | | | | | | |
| <i>Rumex crispus</i> | | 1 | 0 | 0 | 0 | 0 | 0 | x | | | | | | |
| <i>Rydosperma racemosum</i> | 0.6 | 1 | 1 | 1 | 1 | 1 | 1 | x | | | | | | |
| <i>Schenkia spicata</i> | 0.4 | 1 | 0 | 1 | 0 | 0 | 0 | x | | | | | | |
| <i>Schinus oreia</i> | | 0 | 0 | 1 | 0 | 0 | 0 | | | | | | | x |
| <i>Scleranthus biflorus</i> | | 1 | 0 | 0 | 0 | 0 | 0 | x | | | | | | |
| <i>Scirpus mackenziesii</i> | 0.3 | 1 | 0 | 0 | 0 | 1 | 0 | x | | | | | | |
| <i>Senecio quadridentatus</i> | | 1 | 1 | 0 | 0 | 0 | 0 | x | | | | | | |
| <i>Setaria parviflora</i> | 1.2 | 1 | 1 | 1 | 0 | 0 | 0 | x | | | | | | |

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Gwydir River

| Species | Height M | GW1 | GW2 | GW3 | GW4 | GW5 | GW6 | Herbs | Lianes Vines | Low Shrubs | Low Tree | Med Shrubs | Med Tree | Tall Shrubs |
|----------------------------------|----------|-----|-----|-----|-----|-----|-----|-------|-----------------|---------------|-------------|---------------|-------------|-------------|
| <i>Sida corrugata</i> | | 1 | 0 | 0 | 0 | 0 | 0 | | | x | | | | |
| <i>Sida rhombifolia</i> | | 1 | 1 | 1 | 0 | 0 | 0 | | | x | | | | |
| <i>Sigesbeckia australiensis</i> | | 0 | 0 | 1 | 0 | 0 | 0 | x | | | | | | |
| <i>Solanum amblynerum</i> | | 1 | 0 | 1 | 0 | 1 | 0 | | | x | | | | |
| <i>Solanum nigrum</i> | | 1 | 1 | 1 | 0 | 0 | 0 | | | x | | | | |
| <i>Solanum parvifolium</i> | | 0 | 0 | 0 | 0 | 1 | 0 | | | x | | | | |
| <i>Sorbus olivaceus</i> | | 1 | 0 | 1 | 0 | 0 | 0 | x | | | | | | |
| <i>Spartothamellus juncea</i> | | 0 | 0 | 1 | 0 | 1 | 0 | | | x | | | | |
| <i>Sporobolus creber</i> | 1.3 | 1 | 0 | 0 | 0 | 0 | 1 | x | | | | | | |
| <i>Sporobolus elongatus</i> | 1 | 1 | 0 | 0 | 0 | 0 | 0 | x | | | | | | |
| <i>Sporobolus mitchellii</i> | 1 | 1 | 0 | 0 | 0 | 0 | 0 | x | | | | | | |
| <i>Stachytia muricata</i> | | 0 | 0 | 0 | 1 | 0 | 0 | x | | | | | | |
| <i>Swainsona galeifolia</i> | | 1 | 0 | 0 | 0 | 0 | 1 | | | x | | | | |
| <i>Themeda triandra</i> | 1.2 | 1 | 0 | 0 | 0 | 0 | 1 | x | | | | | | |
| <i>Tradescantia fluminensis</i> | 0.2 | 1 | 1 | 1 | 0 | 0 | 0 | x | | | | | | |
| <i>Tricoryne elatior</i> | 0.4 | 0 | 0 | 1 | 0 | 0 | 0 | x | | | | | | |
| <i>Triopogon laevis</i> | 0.4 | 0 | 0 | 0 | 0 | 0 | 1 | x | | | | | | |
| <i>Urochloa foliosa</i> | 1 | 1 | 0 | 0 | 0 | 1 | 0 | x | | | | | | |
| <i>Urtica incisa</i> | | 1 | 1 | 1 | 0 | 1 | 0 | x | | | | | | |
| <i>Verbascum virgatum</i> | | 1 | 0 | 1 | 1 | 0 | 1 | x | | | | | | |
| <i>Verbena bonariensis</i> | | 1 | 0 | 1 | 0 | 1 | 1 | x | | | | | | |
| <i>Verbena caracasana</i> | | 1 | 0 | 1 | 0 | 0 | 0 | x | | | | | | |
| <i>Verbena goudichaudii</i> | | 1 | 0 | 0 | 0 | 0 | 0 | x | | | | | | |
| <i>Veronica calycina</i> | | 0 | 0 | 0 | 0 | 1 | 0 | x | | | | | | |
| <i>Viola calycina</i> | | 1 | 0 | 0 | 0 | 0 | 0 | x | | | | | | |
| <i>Vittadinia cuneata</i> | | 0 | 1 | 0 | 0 | 0 | 0 | x | | | | | | |
| <i>Vittadinia discreta</i> | | 0 | 0 | 1 | 0 | 0 | 0 | x | | | | | | |

| Gwydir River | | | | | | | | | | | | | |
|---------------------------|----------|------|------|------|------|------|------|-------|-----------------|---------------|-------------|---------------|-------------|
| Species | Height M | GWR1 | GWR2 | GWR3 | GWR4 | GWR5 | GWR6 | Herbs | Lianes Vines | Low Shrubs | Low Tree | Med Shrubs | Med Tree |
| Vittadinia muelleri | | 0 | 0 | 1 | 1 | 0 | 0 | x | | | | | |
| Vittadinia sulcata | | 0 | 0 | 0 | 0 | 1 | 0 | x | | | | | |
| Vulpia muralis | 0.5 | 1 | 0 | 0 | 0 | 0 | 0 | x | | | | | |
| Wahlenbergia communis | | 1 | 1 | 1 | 1 | 1 | 1 | x | | | | | |
| Wahlenbergia gracilentia | | 0 | 0 | 0 | 0 | 0 | 1 | x | | | | | |
| Wahlenbergia occidentalis | | 1 | 0 | 0 | 0 | 0 | 0 | x | | | | | |
| Xanthium orientale | | 1 | 0 | 0 | 0 | 0 | 0 | x | | | | | |
| Xanthorrhoea johnsonii | 5 | 1 | 0 | 0 | 0 | 0 | 1 | x | | | | | |
| Zornia dyctiocarpa | 0.1 | 0 | 0 | 1 | 0 | 0 | 0 | x | | | | | |

Acknowledgements

Thanks to Glen Pereira (Building and Services Director) of the Gwydir Shire Council.

Cr John Coulton

Tourism and Economic Development Consultant

The Mayor advised the meeting that he had received feedback that the community is concerned that the current work being undertaken by the consultant to develop strategies for both Tourism and Economic Development will not lead to any action, as this has occurred in the past.

Cr Catherine Egan

2017 Community Meetings

Cr Egan requested information about the next round of community meetings to be held during March and possibly into April.

The meeting was advised that a draft schedule of meetings (dates, time and places) will be circulated for comment.

Cr John Coulton

'King of Bingara' Indigenous Rugby League Knock-out

The Mayor advised the meeting that there will be a Rugby League knock-out competition on Saturday 16th September 2017 at Gwydir Oval, with a re-burial ceremony for the remains of the King of Bingara on the day before, followed by an event at the Roxy that night.

Cr Frances Young

Essential Energy Street Tree Trimming

Cr Young raised her concern about the lack of professionalism being exhibited by the contract tree trimmers being used by Essential Energy.

The meeting was advised that this was a persistent problem as the appropriate standard that should be applied was not enforced or followed.

The issue will be followed up with Essential Energy.

Cr Jim Moore

Stop Signs - corner of Stephen and Hope Streets, Warialda

Cr Moore advised the meeting that he has been informed that two

This is page number 278 of the minutes of the Community Services and Planning Committee held on Thursday 9 February 2017

Chairman

residents who had received traffic infringement notices for failing to stop at the subject corner have challenged the notice on the basis that the signs are not at the required height, and won.

The staff advised that this matter would be investigated.

Cr John Coulton

Letters of congratulations for recently promoted members of NSW Parliament

The Mayor requested that letters of congratulations be sent to Mr Adam Marshall MP, Mrs Melinda Pavey MP, Mrs Gabrielle Upton MP and Mrs Sarah Mitchell MLC on their recent appointments to Ministerial positions.

The meeting was advised that the letters will be prepared for the Mayor's signature.

Meeting closed 11.47 am