

'WETLAND WEEDS AND THEIR CONTROL'

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Wetland Weeds of southern Western Australia, and Their Control

Greg Keighery

INTRODUCTION

Wetlands in southern and arid Western Australia are very prone to weed invasion and suffer very deleterious effects by these weeds. There are several reasons for this: Wetlands are usually naturally disturbed (eg: by floods), which aids weed invasion. Wetlands have a longer growing season, and often more open areas than surrounding vegetation, which aids weed establishment and spread. Wetlands are very prone to nutrient enrichment, which disadvantages many native species at the expense of weeds. Many wetlands are isolated in a sea of exotic plants, with very narrow edges of native plants, which aids invasion by the weeds propagules after disturbance.

BACKGROUND

In the south west of Western Australia, the area from Geraldton to Esperance, Keighery (1995) recorded 3 Ferns, 3 Conifers, and 231 species of flowering plants occurring as weeds in reasonably intact wetlands. Although many more weeds can be found on creek or river banks, this listing is confined to species recorded within the area affected by waterlogging in winter, that is the wetland proper and not its surrounds. This is still a large proportion of the 558 species of weeds recorded from bushland in the whole of Western Australia.

In the Bunbury to Albany area there are currently 206 weeds, comprising 2 Ferns, 204 species of flowering plants recorded as weeds from wetlands. The weeds of this region, the wettest area of south Western Australia, are essentially the same as those of south Western Australia and most of those missing are probably unrecorded at present rather than absent.

In the south west the vast majority of these weed species (187 in total) are emergent plants recorded from freshwater rivers, creeks, swamps and clay based ponds. Only 13 species are submerged or floating aquatics and all of these are from fresh water. About 20 weeds are presently only recorded from drains running through natural wetlands. Only 27 species can cope with saline wetlands. A list of the weeds recorded from wetlands in this area is given in Table 1.

Types of Wetlands and their weeds

Saline Wetlands

There are no known submerged or floating aquatics in saline wetlands that are weeds.

In the margins of Estuarine Areas there are six major weeds *Carex divisa*, *Gladiolus undulatus*, *Arundo donax* (Bamboo), *Paspalum vaginatum* (Salt Water Couch - has been considered native), *Polypogon maritimus* and *P. monspeliensis* (Beardgrasses) and *Atriplex prostrata* (Hastate Orache).

Mud Flats

Currently there are few weeds of this habitat, but there is one in Eastern Australia, a grass *Spartina anglica* (Rice Grass), which could prove to be a major weed in this area if it was introduced.

Salt Marshes

Saltmarshes are resistant to weeds, except when they are grazed for long periods which encourages invasion by Barleygrasses (*Hordeum geniculatum* and *H. marinum*.)

Saline lakes

Again there are few weeds of this habitat, perhaps only *Paralophis incurva* (Coast Barbrgrass). It would appear that some species such as Sharp Rush (*Juncus acutus*) and Puccinella (*P. ciliata*) normally found in the wheatbelt are spreading into the south west.

Freshwater Wetlands

Submerged or Floating Aquatics

There are six floating aquatics recorded in freshwater wetlands in the area, Most are localised to a few riverine situations, except for *Callitriche stagnalis*. The aquatics include plants such as Water Hyacinth, Waterlilies, Strap Weed, Parrots Feather and Hydrocotyle. Once established they are difficult to eradicate.

Seepages and Springs

Intact freshwater seepages and springs are resistant to weed invasion, but disturbed areas are invaded by Watercress (*Rorripa nasturtium-aquaticum*), *Samolus valerandii*, *Isolepis prolifer*, and Babys Tears (*Soleriolia soleirolii*).

Rivers, Creeks, Swamps or Clay Ponds

This is where the vast majority of weeds occur. The most serious weeds include Arum Lilies (*Zantedeschia aethiopica*), Three Cornered Garlic (*Allium triquetrum*), *Hesperantha falcata*, *Sparaxis bulbifera*, Watsonia (*Watsonia bulbifera*), Pampas Grass (*Cortaderia selloana*), Couch (*Cynodon dactylon*), Buffalo Grass (*Stenotaphrum secundatum*), Kikuyu (*Pennisetum clandestinum*), Oxalis species and Blackberries (*Rubus* species).

Because of the variability of these wetlands, ranging from rivers to swamps and clay based ponds the worst weeds vary greatly between these. Local wetlands also vary greatly in their major weeds because of their individual past history of use and abuse.

Control

Nearly all of the wetland weeds encountered between Bunbury and Albany are also found near Perth and a discussion on effects and control methods can be found in Dixon and Keighery (1995). Brief notes on control measures are given in Table 1.

REFERENCES

Keighery, G.J. (1995) How Many Weeds? in Invasive Weeds and Regenerating Ecosystems in Western Australia, Ed. G. Burke, published by the Institute for Science and Technology Policy, Murdoch University, pages.71-101.

Dixon, I.R and Keighery, G.J.(1995) Weeds and their Control, in Managing Perth's Bushland, Eds: Scheltema, M and Harris, J., published by Greening Western Australia, West Perth, pages. 26-144.

TABLE ONE
WEEDS OF WETLANDS: BUNBURY TO ALBANY

KEY

Families listed in alphabetical order of under the major groupings of Ferns, Gymnosperms, Monocotyledons then Dicotyledons.

Genera and species listed alphabetically as are the species in each genus. The scientific name of each taxon commences the individual listing, followed by common names.

Notation

- # weeds not covered in Managing Urban Bushland Book
- Scientific names of taxa known to be major wetland weeds are shown in **bold**.
- Common names in brackets.
- Those taxa known to have been introduced as garden subjects are listed as garden escapes. If the taxon spreads by vegetative means, not seed this method is then given (as such taxa are usually easier to eradicate by chemicals).
- A brief description of habitats, areas affected by these weeds is then given.
- Brief notes are then given on control methods. Glyph. = glyphosate

FERNS

Salvinia molesta- Ornamental wetlands, fragmentation, Harvey River, eradicated, declared plant contact APB

Sphaeropteris cooperi (Tree Fern)- Garden escape, creeks, probably not worth controlling.

FLOWERING PLANTS

MONOCOTYLEDONS

ALLIACEAE (Onions)

Allium triquetrum (Three Cornered Garlic)- Garden escape, potentially serious weed of creeklines, difficult to weed, wipe or spray Glyph. 1:50.

ALISMATACEAE

#*Alisma lanceolata*- Weed of Drains, Harvey area, dig up, cut off flowers.

ARACEAE

#*Alocasia macrorrhizos*- Garden escape, rhizomes, drains in Albany, grub out.

Pistia stratiotes (Water Lettuce)- Garden escape, aquatic, fragmentation, ornamental lakes, rake up.

Zantedeschia aethiopica (Arum Lily)- Serious weed, agriculture, creeks, grub out, cut off flowers, spray/wipe Glyph. 1:100.

ASPARAGACEAE

Asparagus officinalis (Asparagus)- Garden escape, very disturbed creeks, grub out.

Myrsiphyllum asparagoides (Bridal Creeper)- Garden escape, widespread serious weed, grub out, contact APB..

CANNACEAE

Canna X generalis and *Canna X orchioides* (Cannas)- Garden escape, suckers, on disturbed river edges, grub out.

CYPERACEAE (Sedges)

Carex divisa- Invasive rampant rhizomatous weed of brackish wetlands on Swan Coastal Plain (Wonnerup, Leschenault inlet), difficult to remove, no information.

Cyperus eragrostis (Umbrella Sedge), **Cyperus polystachyos** and **Cyperus tenuiflorus** (Scaly Sedge)- Weeds of disturbed wetlands.

Cyperus tenellus (Tiny Flatsedge)- Widespread weed of granite rocks, woodlands, wetlands and watercourses.

Isolepis prolifer- Common weed of disturbed lakes and creeks, hybridizes with native **Isolepis cernua** at Wilsons Inlet, Denmark.

All above difficult to control, little information.

HYDROCHARITACEAE

Egeria densa (Dense Waterweed)- Aquatic, lakes and rivers, stem segments, decalared plant, contact APB.

Vallisneria gigantea (Ribbon Weed)- Aquatic, Margaret River, stolons, native to Kimberley, seek expert advice.

IRIDACEAE

Babiana stricta (Baboon Flower)- Serious weed of clay based wetlands, pull up before flowers, wipe Glyph. 1:100 at flowering.

Gladiolus undulatus- Invasive weed of verges, wetlands and estuarine sites, cut off flowers, pull up in sandy areas or dig up, wipe with Glyph. 1:100..

#**Gynandiris setifolia** (Thread Iris)- Widespread weed of wasteland, roadsides, firebreaks and salt lake margins, no information.

Hesperantha falcata- Garden escape, common weed of wetlands on Swan Coastal Plain, dig up, wipe with Glyph. 1:100.

Homeria flaccida (Cape Tulip)- Common weed of Tuart, Banksia, York Gum/Wandoo woodlands, Granite rocks and limestone heath, difficult to control, pull up small infestations, cut off flowers, spray with Glyph. 1:100 or Glean.

Romulea rosea (Guildford Grass)- Widespread weed of Wandoo, Jam and Banksia woodlands, granite rocks and clay wetlands, as above..

Sparaxis bulbifera (Harlequin Flower)- Garden escape, serious invader of clay ephemeral wetlands, as above.

Watsonia bulbifera (Bulbil Watsonia)- serious weed of roadverges, wetlands, creeks and granite rocks.

Watsonia marginata- occasional weed of roadverges.

Watsonia meriana- serious weed of wetlands, verges, granite rocks and Wandoo woodlands.

Watsonia versfeldii- serious weed of verges, granite rocks.

All Watsonias pull up, grub out, break off top at corm which then rots. Wipe Glyph. 1L in 2L water at flowering.

JUNCEAE

Juncus acutus (Sharp Rush)- Agricultural weed, grows in saline scalds in Wheatbelt, but also in natural saline wetlands around Perth, spreading.

Juncus articulatus, **Juncus bufonius** (in part), **Juncus capitatus** and **Juncus oxycarpus**- Weeds of disturbed wetlands.

Juncus microcephalus- Weed of Creeks and Wetlands.

Juncus polyanthemos and **Juncus usitatus**- Weeds of wet pastures, native to Eastern Australia.

Annuals (**bufonius** and **capitatus**) probably not possible to control. Others difficult to dig out, slash spray regrowth in summer or wipe Glyph.

POACEAE (Grasses)

Aira caryophyllea, **Aira cupiana**, **Aira elegantissima** and **Aira praecox** (hairgrasses)- Widespread bushland weeds. Very difficult to control by hand weeding

Alopecurus myosuroides and **Alopecurus pratensis** (Foxtail)- Rare weeds of creeklines, hand weed, wipe Glyph.

Anthoxanthum odoratum (Sweet Vernal Grass)- Widespread weed of wetlands, weed at flowering, use fusilade or Glyph..

Arundox donax (Giant Reed)- Garden escape, suckering, around wetlands, grub out or cut, burn, spray regrowth with 100ml Glyph. to 10 L water..

Avellina michelii- Widespread weed of wetlands and woodlands, weed at flowering, spray with fusilade or sertin at 2L/Ha. before flowering.

Briza maxima (Blowfly Grass)- Common weed of wetlands, weed at flowering, herbicide as above..

Briza minor (Shivery Grass)- Common weed of wetlands, control as above.

Bromus catharticus and ***Bromus japonicus*** occasional in very disturbed wetlands, control as above.

Bromus diandrus (Brome Grass)-very widespread serious weed of islands, wetlands, control as above.

Bromus hordeaceus (Soft Brome)- Very widespread serious weed of creeklines and wetlands, control as above.

Cortaderia selloana (Pampas Grass)- roadverge, wetland, wasteland weed, dig out, or cut down, burn, spray regrowth with Glyph, check with APB.

Cynodon dactylon (Couch)- Widespread weed of fresh and brackish grassed swamps, winter wet flats, and creeks, use fusilade at 4L/Ha.

Cynosurus echinatus (Rough Dogstail)- Agricultural weed, grazed woodlands, creeklines, control as for Bromus.

Dactylis glomerata (Cocksfoot)- Disturbed creeklines.

Digitaria sanguinalis (Crab Grass)- Wasteland, gardens, roadverges, occasional in disturbed urban wetlands, weed at flowering, spray with fusilade or sertin at 2L/Ha. before flowering.

Echinochloa crusgalli (Barnyard Grass)- Widespread weed of creeks and rivers, .

Echinochloa cus-pavonis and ***Echinochloa telmatophila***- Weed of Drains, all weed at flowering, spray with fusilade or sertin at 2L/Ha. before flowering.

Glyceria maxima (Reed Sweetgrass)- Agricultural weed, roadsides, occasional wetlands and granite rock pools, hand weed or wipe with Glyph. 1:100..

Hainardia cylindrica (Common Barbgrass)- Creekline and disturbed wetlands, no information.

Holcus lanatus (Yorkshire Fog)- Common weed of disturbed wetlands, weed at flowering, spray with fusilade or sertin at 2L/Ha. before flowering.

Holcus setiger (Annual Fog)- Rare weed of disturbed wetlands, control as above.

Hordeum geniculatum- Agricultural weed of disturbed saline creeklines, control as above.

Hordeum marinum (Sea Barley)- Serious weed of roadverges, saline wetlands, creeks and woodlands, control as above.

Lolium rigidum (Annual Ryegrass)- Widespread weed of sandy soils, islands, verges, agriculture, control as above.

Lolium tremulentum (Darnell)- Scattered weed of verges, wetlands, urban bush, agriculture, control as above.

Parapholis incurva (Coast Barbgrass)- Weed of islands, estuarine margins, saline areas, coastal limestone, control as above.

Paspalum dilatatum (Paspalum)- Wasteland, drains, disturbed creeks/rivers, lakes, control as above.

Paspalum distichum (Water Couch)- Wasteland, drains, disturbed creeks/rivers (brackish), lakes, control as above in disturbed areas only, hand weed over water.

Paspalum urvillei (Vasey)- Wasteland, drains, disturbed creeks/rivers, lakes, weed at flowering, spray with fusilade or sertin at 2L/Ha. before flowering.

?*Paspalum vaginatum* (Salt Water Couch)- Saline estuaries, becoming major weed in Vasse Inlet. Considered native in Eastern Australia. ?control as above in disturbed areas only, hand weed over water.

Pennisetum clandestinum (Kikuyu)- Garden escape, rampant runners, disturbed creeks, rivers and lakes, rake, pull up, difficult to control, needs high rates of herbicide.

Pennisetum macrourum- Rare weed of disturbed creeks, swamps and lakes, as above.

Pennisetum purpureum (Elephant Grass)- Serious weed of creeks along Darling Scarp, treat as for Pampas Grass.

#*Phalaris angusta*, *Phalaris aquatica*, *Phalaris arundinacea*, *Phalaris canariensis* and *Phalaris paradoxa*- Agricultural weeds, drains, verges, weed at flowering, spray with fusilade or sertin at 2L/Ha. before flowering.

#*Phleum pratensis*- Weed of disturbed wetlands, control as above.

#*Phragmites australis*- weed of disturbed wetlands, Albany, cut off at flowering, dig out.

Poa annua (Winter Grass)- Widespread lawn weed, wasteland, islands, swamps, granite rocks, small, probably not worth controlling, resistant to many herbicides.

Polypogon maritimus (Coastal Beardgrass)- Weed of coastal wetlands.

Polypogon monspeliensis (Annual Beardgrass)- Weed of disturbed wetlands.

#*Polypogon viridis*- Agricultural weed, drains, verges, all weed at flowering, no specific information on herbicides.

#*Puccinellia ciliata*- Agricultural weed, drains, verges, weed at flowering, no specific information on herbicides.

Sorghum halpense (Timothy Grass) and *Sorghum sudanense*- Disturbed river edges, weed at flowering, no specific information on herbicides.

Stenotaphrum secundatum (Buffalo Grass)- smothering rhizomatous weed of creeks, rivers and wetlands, difficult to hand weed, spray with 4L/Ha of fusilade when actively growing.

Vulpia myuros (Rats Tail Fescue)- widespread weed of numerous vegetation types, weed at flowering, spray with fusilade or sertin at 2L/Ha. before flowering.

PONTERIDACEAE

Eichhornia crassipes (Water Hyacinth)- Aquatic. Garden escape, lakes, rivers, fragmentation, eradicated. Declared plant, see APB.

POTAMOGETONACEAE

Potamogeton crispus (Curly Pondweed)- Aquatic, ornamental lakes, seek expert advice.

TYPHACEAE

Typha orientalis (Bullrush)- Weed of drains, ornamental ponds, dams, creeks and lakes. Slash flowers, cut off below water rising water level as stems then rot.

DICOTYLEDONS

APIACEAE

#*Berula erecta* (Water Parsnip)- wetlands along Leeuwin- Naturaliste Ridge, hand weed.

#*Hydrocotyle bonariensis*- Garden escape, seepage areas on Beaches at Bunbury, probably not worth controlling

Hydrocotyle rannunculoides- Garden escape, Aquatic weed in Canning River, contact APB.

APOCYNACEAE

Vinca major (Vinca)- Garden escape, disturbed woodlands (Marri), creeklines, hand weed.

ASCELPIADACEAE

Gomphocarpus fruticosus (Swan Plant)- Garden escape, disturbed wetlands, pull up before flowering, use gloves (poisonous irritable sap), spray with Glyph. 1:100..

ASTERACEAE

Aster subulatus (Bushy Starwort)- Weed of wetlands, drains, pull at flowering, wipe Glyph. 1:100..

Cirsium vulgare (Spear Thistle)- Widespread weed, agriculture, granite rocks, wetlands, islands, pull at flowering, wipe with Glyph..

Conyza albida (Tall Fleabane), *Conyza bonariensis* (Flax Leaf Fleabane) and *Conyza parva*- Weeds of verges, wasteland, disturbed wetlands, urban bush, Pull at flowering, spray Glyph..

Cotula bipinnata (Fern Cotula)- Wasteland, disturbed wetlands, no information.

#*Delarlea odorata* (prev. *Senecio mikanioides*- Cape Ivy)-Garden escape, vegetative, swamps, cut down, dig up.
Dittrichia graveolens (Stinkwort)- Weed of wasteland, verges, saline wetlands, hand weed, difficult to control.
Gnaphalium calviceps (Cudweed)- rarely recorded weed of wetlands.
Gnaphalium candidissimum (White Cudweed)- Common weed of granites, wetlands, handweed both.
Hypochaeris glabra (Smooth Catsear)- Widespread weed of many vegetation types, handweed small infestations.
Lactuca saligna (Willow Leaf Lettuce) and *Lactuca serriola* (Prickly Lettuce)- Scattered weed of wasteland, wetlands, verges, and woodlands, pull before flowering.
Pseudognaphalium luteo-album - Widespread weed , verges, wasteland, granite rocks, swamps, pull up at flowering.
Sonchus asper (Prickly Sowthistle)- weed of wetlands. Note very similar native species, *S. hydrophilus*.
Sonchus oleraceus (Sowthistle)- Widespread weed of many vegetation communities, both cut down, pull up at flowering, spary with Glyph. 75/100 ml. in 15 L of water.

BORAGINACEAE

#*Myosotis sylvatica* (Forget- Me- Not)- Garden escape, serious weed of creeklines in Porongurup National Park, mist with Glyph. 1:100 at flowering.

BRASSICACEAE

Roippa nasturtium- officinale (Water Cress)- Disturbed wetlands, drains, seepages, creeks, hand weed.

CALLITRICHACEAE

Callitriche stagnalis- widespread aquatic weed of disturbed wetlands, leave or seek APB advice.

CAPRIFOLIACEAE

Lonicera japonica (Honeysuckle)- Garden escape, disturbed creeks, cut down, remove by hand, paint cut stump with Garlon 600.

CARYOPHYLLACEAE

Corrigola littoralis - Uncommon weed of disturbed wetlands.
Sagina apetala (Common Pearlwort)- Scattered weed of wasteland, verges, granite rocks, salt lakes.
Spergularia diandra (Small Sand Spurrey) and *Spergularia marina* (Salt Sand Spurrey)- Scattered weeds of disturbed wetlands.
Spergularia rubra (Red Sand Spurrey)- Weed of estuarine margins.
All are common, but small and uncommon weeds if wetlands in good condition, weed if necessary.

CHENOPODIACEAE

Atriplex prostrata (Hastate Orache)- Weed of estuarine, saline sites, pull out, perhaps not worth controlling.
Chenopodium ambrosioides (Mexican Tea)- Disturbed wetlands.
Chenopodium glaucum- Weed of saline areas.
Chenopodium macrospermum- Weed of dry lake beds.
Chenopodium murale (Green Fat Hen)- Weed of saline areas, islands.
Chenopodium multifidum (Scented Goosefoot)- Disturbed wetlands.
All probably only worth controlling by weeding at flowering.

CONVOLVULACEAE

Cuscuta epithymum (Dodder)- Widespread weed of numerous vegetation types.
#*Cuscuta europeaum* and *Cuscuta campestris* Agricultural weeds, wasteland.
Perhaps ignore, or hand weed serious infestations, ask APB.

Ipomoea cairica (Five Leaved Morning Glory) and *Ipomoea indica* (Morning Glory)- Garden escape, Wetland, estuarine, wasteland weed, tubers, cut down, spray regrowth, need high rates of Glyph. at 300 ml.in 15L..

CRASSULACEAE

Crassula natans - Widespread aquatic weed of wetlands, granite rock pools, hand weed only in small pools.

EUPHORBIACEAE

Ricinus communis (Castor Oil Plant)- Wasteland, road and railverge weed, occasional in disturbed wetlands and river banks, cut down before flowers, spray or pull seedlings.

FABACEAE

Erythrina x sykesii (Coral Tree)- Garden escape, stem fragments, River edges, inject full strength Glyph. in summer.

Lotus angustissimus (Slender Birds Foot Trefoil), *Lotus suaveolens* (Hairy Birds Foot Trefoil) and *Lotus uliginosus* (Birds Foot Trefoil)- Widespread weeds of many vegetation types, no specific information, control only in degraded dense poulations, spray Glyph. 75/100 ml. per 15L water.

Melilotus indicus (Common Meliot)- Widespread weed of islands, coastal dunes, creeks, granite rocks, coastal woodlands, as above.

Melilotus messanensis - Weed of swamps, Bunbury, control as above.

Ornithopus compressus (Yellow Seradella) and *Ornithopus pinnatus* (Slender Seradella)- Weeds of wasteland, swamps, Agonis and Tuart woodland, as above.

#*Psoralea pinnata* (Taylorinna)- Agricultural weed, creeks, swamps, cut down.

Robinia pseudoacacia (Black Locust)- Garden escape, suckers, verges, wasteland, creeks, cut down, paint stumps with Garlon 600.

Trifolium angustifolium (Narrowleaf Clover)- Weed of swamps, granite, wasteland, verges, urban bushland, Marri woodland.

Trifolium arvense (Hares Foot Clover)- widespread weed of swamps, granite, wasteland, verges, urban bushland, Banksia, Jam and Wandoo woodland.

Trifolium campestre (Hop Clover)- widespread weed of granite rocks, wasteland, verges, urban bushland, Banksia Tuart and Wandoo woodland.

Trifolium dubium (Suckling Clover)- widespread weed of swamps, granite, wasteland, verges, urban bushland, limestone shrubland, Banksia, Tuart and Jam woodland.

Trifolium glomeratum (Ball Clover)- widespread weed of swamps, granite, wasteland, verges, urban bushland.

Trifolium repens (White Clover)-weed of swamps, granite, wasteland, verges.

Trifolium subterraneum (Sub Clover)- weed of swamps, granite, wasteland, verges.

Trifolium tomentosum (Wooly Clover)- Weed of Wandoo woodlands, granite and creeks.

All Clovers hand weed or spray with Glyph. 75/100 ml. in 15L water.

#*Ulex europeus* (Gorse)- Garden escape, Wasteland, verges, Albany area, cut down.

Vicia hirsuta (Hairy Vetch)- Disturbed wetlands, wasteland, verge.

Vicia sativa (Common Vetch) - Common weed of woodlands, wasteland, verges, agriculture, pull up, no specific information.

GENTIANACEAE

Cicendia filiformis- Weed of wetlands, granite rocks.

#*Cicendia quadrangularis*- Weed of claypans, both inconspicuous, no information.

HALORAGACEAE

Myriophyllum aquaticum (Parrot's Feather)- Garden escape, aquatic, vegetative, creeks, drains, declared plant, see APB.

LAMIACEAE

Mentha aquatica, *Mentha X spicata* (Spearmint), *Mentha X suaveolens* (Apple Mint), *Mentha X piperita* (Eau- De- Cologne Mint)- Garden escapes, rhizomes, disturbed creeks, swamps.

Mentha pulegium (Pennyroyal)- Agricultural weed, disturbed swamps, drains.

All difficult to control, remove by hand, need high rates of herbicide.

LOBELIACEAE

Monopsis simplex - Common weed of wetlands, creeks, granite rocks, no information.

LYTHRACEAE

Lythrum hyssopifolium (Loosestrife)- Weed of drains, dams, verges, disturbed wetlands, no information, hand weed or leave.

MIMOSACEAE

Acacia decurrens (Early Black Wattle)- Garden escape, verges, creeklines, wasteland.

Acacia longifolia (Sydney Wattle)-Garden escape, verges, creeklines, swamps.

Acacia melanoxylon (Blackwood)- Garden escape, Mt. Clarence and Quinninup, potentially a serious weed of swamps from Augusta to Albany.

Acacia pycnantha (Golden Wattle)- Garden escape, verges, Wandoo woodland, urban bushland, drains.

Cut down at or below ground level, stem inject Glyph. at 1: 2.

MORACEAE

Ficus carica (Fig)- Garden escape, common weed of rivers, Swan Coastal Plain and Scarp.

NYMphaeACEAE

Nymphaea mexicana (Yellow Waterlily)- Garden escape, Vasse River, Busselton.

Nymphaea odorata (Waterlily)- Garden escape, Canning, Vasse and Margaret River and Lake Seppings (Albany).

OLEACEAE

#***Fraxinus ?rotundifolia*** (Desert Ash)- Garden escape, suckers, cut down, paint stumps.

OXALIDACEAE

#***Oxalis incarnata***- Garden escape, bulbils, wasteland, creeklines in Karri in Porongurup Range, wipe or spray with Glyph. , 100 ml. to 10L water at flowering.

PHYTOLACCACEAE

Phytolacca octandra (Ink Weed)- Weed of wasteland, verges, disturbed and grazed woodlands, swamps and granite slopes, grub out plant and tuber, spray Glyph. 1 part to 10 parts water.

PITTOSPORACEAE

#***Pittosporum undulatum*** (Sweet Pittosporum)- Weed of verges, granite rocks (Albany), creeks (Margaret River) and forest (Denmark). Potentially a very serious weed! Cut down, paint stump with Garlon 600.

PLANTAGINACEAE

#***Plantago coronopus*** (Buckshorn Plantain) and - Weed of wasteland, verges, disturbed creeklines, saline marshes.

Plantago major (Greater Plantain)- Weed of very disturbed wetlands, both weed rosettes before flowering, wipe with Glyph. 100 ml. in 15 L water,.

POLYGONACEAE

Rumex acetosella (Sorrel)- Common invasive weed of disturbed wetlands, woodlands, creeks and granite slopes, difficult to control because of spreading rhizomes.

Rumex brownii, ***Rumex conglomeratus***(Clustered Dock), ***Rumex crispus*** (Curled Dock),

Rumex obtusifolius and ***Rumex pulcher***- Weeds of disturbed wetlands, drains, creeks and swamps.

#***Rumex frutescens***- Weed of coastal granite seepages. For these weeds, pull up at flowering, spray or wipe with Glyph. 150 ml. to 15 L. water at flowering.

PRIMULACEAE

Anagallis arvensis (Scarlet and Blue Pimpernels)- Widespread weeds of granite rocks, limestone soils, woodlands, wetlands and dunes, only control in badly disturbed areas use Glyph., Ally or Glean..

#**Samolus valerandi**- Weed of seepages, wetlands and creeks Yallingup to Augusta, probably only worth hand weeding.

RANUNCULACEAE

Ranunculus muricatus- Weed of lawns, wasteland and disturbed wetlands.

Ranunculus trilobus- Weed of disturbed wetlands and creeks, no specific information on either.

ROSACEAE

#**Acaena novae-zelandiae**- Weed of creek and river edges and disturbed Karri forest, rhizomatous, grub out only in degraded areas.

Rubus discolor, **Rubus selmeri** and **Rubus ulmifolius** (Blackberries)- Garden escape, creeks, declared plants, contact APB.

SALICACEAE

Populus alba (White Poplar)- Garden escape, forms dense suckering stands in disturbed wetlands.

Salix babylonica (Weeping Willow)- Garden escape, spreading from broken branches, along rivers and creeks, cut down both, paint stump with Garlon 600.

SCROPHULARIACEAE

Bellardia trixago (Bartsia)- Weed of Granite Rocks and wetlands.

Parentucellia latifolia (Red Bartsia) and **Parentucellia viscosa** (Sticky Bartsia)- Very widespread weeds of wetlands, no specific information, pull up at flowering.

SOLANACEAE

Physalis peruviana (Cape Gooseberry)- Garden escape, wasteland, and disturbed wetlands, no specific information, pull up at flowering.

Solanum americanum- Garden escape, wasteland, creeks and wetlands, pull up, spray seedlings.

Solanum laciniatum- Weed of edges of rivers and creeks, cut down, spray seedlings.

Solanum nigrum (Black Nightshade)- ?Garden escape, common weed of Woodlands, creeklines and wetlands, pull up, spray seedlings.

TROPAEOLACEAE

Tropaeolum majus (Nasturtium)- Garden escape, disturbed creeks, Pull up.

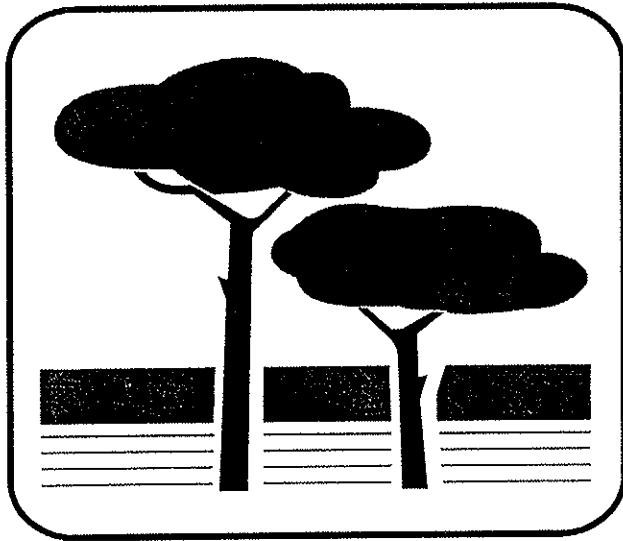
URTICACEAE

#**Soleirolia soleirolii** (Baby Tears)- Weed of springs along Leeuwin- Naturaliste ridge, probably not worth controlling.

VERBENACEAE

Lantana camara (Lantana)- Garden escape, common along upper reaches of the Swan River, grub out, cut back, spray herbicide on actively growing plants.

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Water's Edge Seminar

Bridgetown Lesser Hall, March 22, 1996

Speakers' Papers



SOUTH WEST DEVELOPMENT
COMMISSION

C01656

WATER'S EDGE PROGRAM

BACKGROUND

The existing South West Development Commission Townscape program initiated in 1989, has primarily focussed on the central business districts and main streets of south west towns. Evaluation of Townscape projects during 1994 showed that more and more communities had identified the rivers and creeks in their towns as priority areas for improvement.

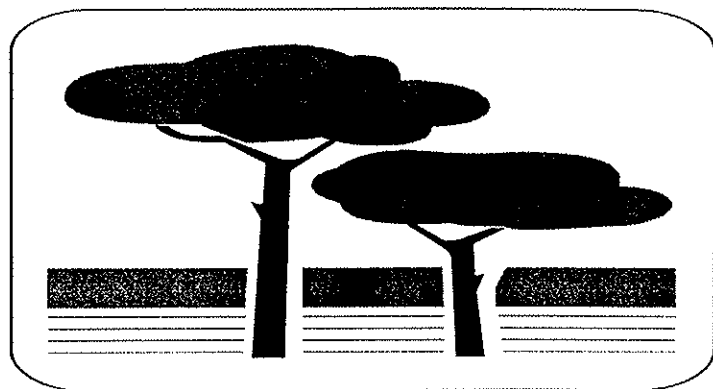
Water's Edge will operate in conjunction with and compliment the Commission's Trails program.

OBJECTIVES

Water's Edge in this program is defined as, a river, creek or water hole and its surrounding environment. The area must be considered part of a town's Townscape, have tourism potential, contribute to the local economy and be used by the community for recreational and cultural purposes.

The program also seeks to:

- Respond to widespread interest by existing Townscape committees, environmental groups and local government authorities, to rehabilitate and upgrade areas located on rivers, creeks or adjacent to waterholes within town boundaries.
- Develop the tourism potential of these areas through improved aesthetics and facilities.
- Strengthen local economies through tourism and cultural activities being held in these revitalised areas.
- Promote and capitalise on the diversity of the south west inland waterways.
- Through rehabilitation address the growing level of degradation in South West water environments.



- Assist in the continuation of integrated local area planning and its implementation, ensuring this is done in co-operation with the community and other government and non government agencies.

SCOPE

The Water's Edge program will cover the 12 shires making up the Commission's South West region.

IMPLEMENTATION

The Commission will allocate grants from the Water's Edge program annually.

Local government authorities will be eligible to apply for funds on a \$:\$ basis. All towns involved in the program must have a community committee and demonstrate community consultation and involvement.

Appropriate planning documentation will be necessary for successful funding applications, however, funds will be available for drawing up of plans.

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South West
Development
Commission