



- It is best to stock your dam with species that are native to your local area such as marron, koonacs or gillies. Contact Fisheries for more information.
- It is illegal to introduce feral species such as Red-ferns and Yabbies into South West dams. They can rapidly invade waterways and will voraciously consume other native animals including marron, gillies, frogs, and insects. Yabbies will also destroy dam walls.

Introducing Fauna

- Manual control and physical barriers such as mulch and weed matting can be used as alternatives to chemical control.
- Control weeds prior to planting and follow up any new or re-occurring weeds. Ongoing weed control may be required at some sites.



- It is important to undertake weed control where weeds are likely to compete with native species.

Weed Control

Vegetating the areas where water enters and exits the dam reduces the movement of sediment. Spillways and swale drains should ideally contain local native species to control erosion or at least be grassed with perennial pastures as a minimum. Steep, erosion prone sections should be rock lined for stability.

Erosion caused by water as it enters and exits a dam reduces the water quality of the receiving water body. These sediments will also reduce the dam's water holding capacity and cause infilling of river pools, which are important summer refuge for instream fauna.

Vegetated Filters

Creating habitat



- Leaf litter, logs, rocks and nesting boxes around the dam provide excellent habitat for a variety of animals. Branches and dead trees in the water provide safe roosting sites for birds.
- Dense rushes and sedges provide excellent nesting habitat for water birds such as swamp hens, and also provide a sheltered environment for aquatic invertebrates and native fish.
- Some areas of bank should be kept open to provide varied habitat and safe entry points to the water. These areas can be lined with sand or pebbles, or may be planted with short native grasses and groundcovers.
- If your dam is constructed on a waterway, provision for fish passage can be provided via a rock ramp or bypass channel.
- Islands provide a safe refuge for birds to nest away from feral animals. Floating islands are easy to build as shown in Figure 2. Make sure they are anchored in place with enough rope to allow for water level changes and perforate the boxes to allow for drainage and root growth. The poster illustrates a terraced earth island.

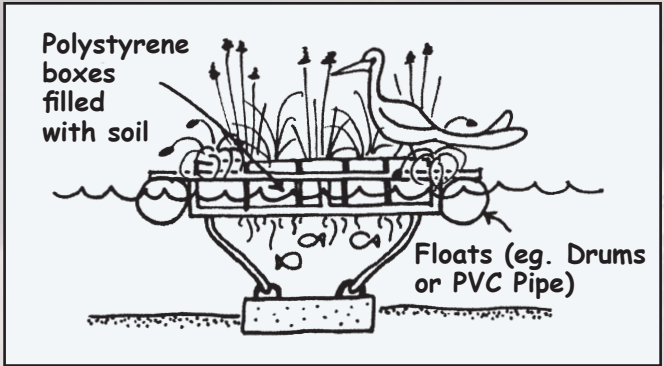
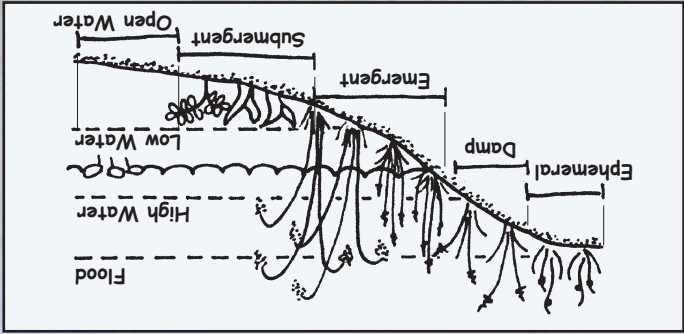


Figure 2. Constructing a floating island.



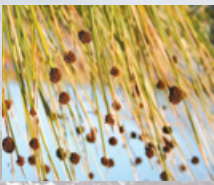
Open Water (Submerged)
These areas can support both floating plants and fully submerged plants.



Shallows (Emergent)
Shallow water zones support emergent plants that stabilise the bed and provide habitats for a variety of macroinvertebrates and birds.



Seasonally Wet (Damp)
The seasonally wet area can be planted up with a variety of rushes and sedges.



Upper Banks (Ephemeral)
The upper banks will support a variety of small shrubs, herbs and groundcovers. Trees planted on natural banks provide valuable shade and shelter.



Revegetation works should include a variety of local native species with a range of flowering and fruiting times. These species will be suited to certain planting zones as detailed below and shown in Figure 1 (see poster for species lists).

Revegetation & Planting Zones

Further Information & Reading

Contact government agencies and catchment groups for advice or search the web for further information.

The following were referred to in the making of this pamphlet.

- Dept. Environment, 2001 *River Restoration Manual* Perth
- Dept. Land & Water Conservation NSW, 1998 *The Constructed Wetlands Manual*
- Romanowski N, 1998 *Planting Wetlands and Dams* Hyde Park Press, Adelaide
- Romanowski N, 1998 *Aquatic and Wetland Plants* Hyde Park Press, Adelaide
- Water & Rivers Commission *Waterways WA Program* Perth
- Busselton Shire Dams Policy

Photos were provided by Department of Environment and Conservation, Martin Pritchard, Nicole Lincoln, Veronica Piper, Gemma Mincherton and Katie Biggs.

Remember - Take plenty of photos before, during and after!



Contact the Cape to Cape Catchments Group on 9757 2202



Created by GeoCatch, October 2006

Converting Dams to Wetlands

What are the advantages?

- Reduced erosion and associated management and repairs.
- Improved water quality through nutrient stripping and shading.
- Oxygenation of water and sediments.
- Creation of habitat.
- Natural pest control (can host pest predators).
- Adds to property value by improving visual amenity and creating a feature.

How do I do it?

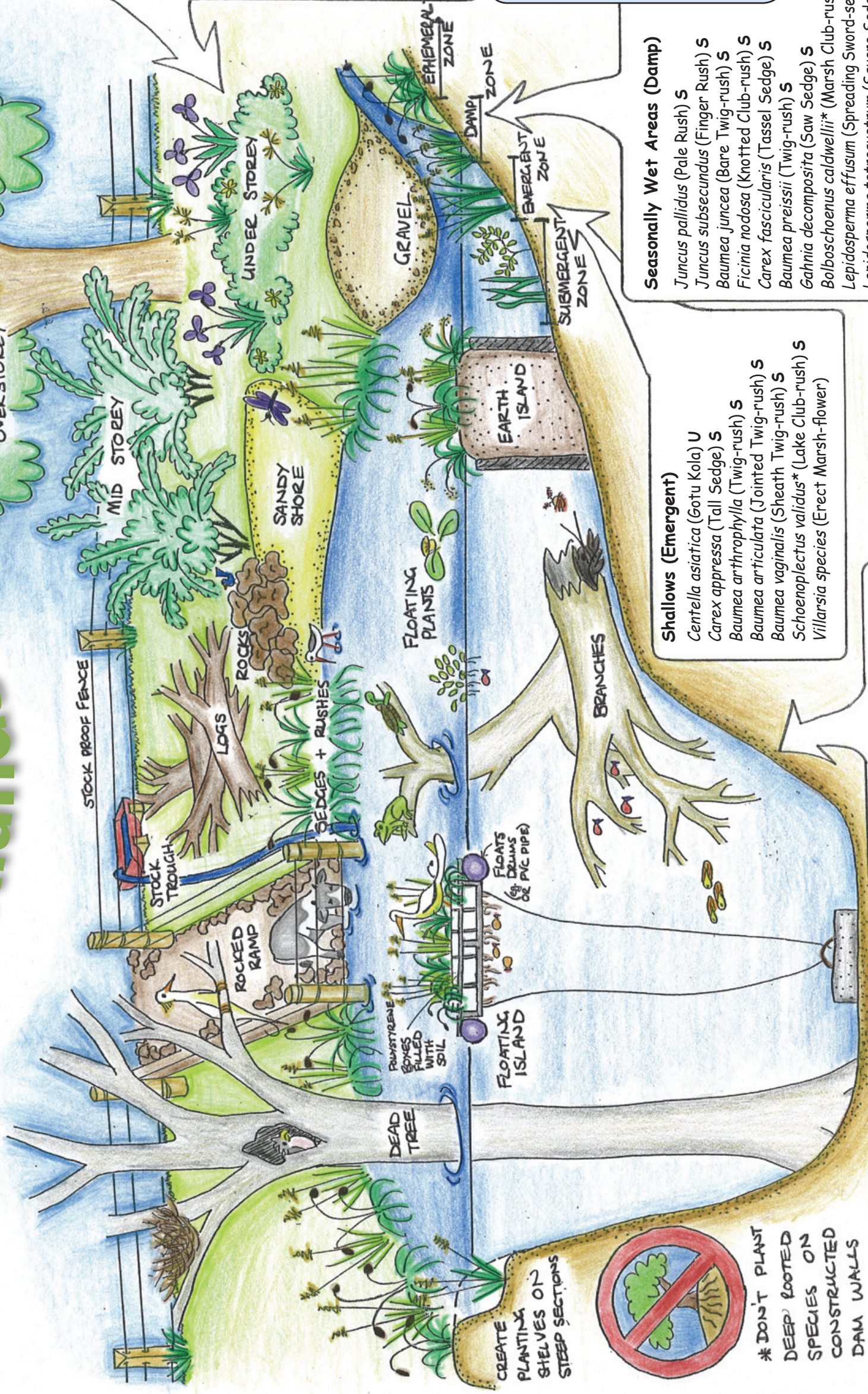
- Plan out what you want to create with a diagram of the site and a calendar of activities.
- Fence out stock – ideally wildlife should still be allowed access.
- Provide stock water troughs away from the dam area or rock an access point.
- Reshape banks and foreshores – reduce slopes (ideally to less than 1:3), create access areas and planting zones. Check for Acid Sulphate Soils before doing earthworks.
- Cover exposed soil with weed free mulch or matting to reduce erosion and weed invasion, secure in place on steeper slopes.
- Plant up the banks with local native species (see poster for suggestions).

Converting Dams to Living Wetlands



Converting Dams

to Living Wetlands



Dry Banks (Ephemeral)

Acacia urophylla (Net-leaved Wattle) M 2m
Acacia saligna (Orange Wattle) M 6m
Acacia extensa (Wiry Wattle) M 2m
Austrodanthonia caespitosa (Wallaby Grass) U
Orthrosanthus polystachyus (Morning Iris) U
Paterosonia occidentalis (Purple Flags) U
Anigozanthos flavidus (Tall Kangaroo Paw) U
Anigozanthos manglesii (Red & Green Roo Paw) U
Microlaena stipoides (Weeping Grass) U
Banksia grandis (Bull Banksia) O/M 10m
Banksia attenuata (Candle Banksia) O/M 10m
Grevillea pulchella (Beautiful Grevillea) M 1m
Hakea lasiantha (Hairy Yellow Pea) M 1m
Sollya heterophylla (Australian Bluebell) C
Clematis pubescens (Old Man's Beard) C
Hibbertia cuneiformis (Cutleaf Hibbertia) M 3m
Callistachys lanceolata (Native Willow) O/M 8m
Gompholobium tomentosum (Hairy Yellow Pea) M 1m
Viminaria juncea (Swish Bush) M 4m
Hovea elliptica (Tree Hovea) M 3m
Hardenbergia comptoniana (Native Wisteria) C
Kennedia coccinea (Coral Vine) C
Kennedia prostrata (Running Postman) C
Ricnocarpus glaucus (Wedding Bush) M 1m
Phyllanthus calycinus (False Boronia) M <1m
Dodonaea ceratocarpa (Hop Bush) M 2m
Hypocalymma robustum (Swan River Myrtle) M 1m
Agonis flexuosa (Peppermint) O 10m
Calothamnus sanguineus (Bloodflower) M 2m
Melaleuca thymoides (Sand Wattle-Myrtle) M 2m
Eucalyptus marginata (Tarrah) O 30m
Eucalyptus patens (Blackbutt) O 45m
Corymbia calophylla (Marri) O 40m
Pimelea rosea (Rose Banjine) M 1m
Logania vaginalis (White Spray) M 2m

KEY

U - Under-storey
 M - Mid-storey
 O - Over-storey
 C - Climbers and creepers
 S - Sedges and Rushes

* Species that can spread rapidly (use with caution).

Note: These species are provided as general guide. If a dam is located next to an area of good wetland or waterway vegetation, the local vegetation should be used to determine your species list.

Seasonally Wet Areas (Damp)

Juncus pallidus (Pale Rush) S
Juncus subsecundus (Finger Rush) S
Baumea juncea (Bare Twig-rush) S
Ficinia nodosa (Knotted Club-rush) S
Carex fascicularis (Tassel Sedge) S
Baumea preissii (Twig-rush) S
Gahnia decomposita (Saw Sedge) S
*Bolboschoenus caldwellii** (Marsh Club-rush) S
Lepidosperma effusum (Spreading Sword-sedge) S
Lepidosperma tetraquetrum (Square Sedge) S
Lepidosperma longitundinale (Pithy Sword-sedge) S
Astartea fascicularis (Dainty Astartea) M 2m
Taxandria linearifolia (Swamp Peppermint) M 4m

Shallows (Emergent)

Centella asiatica (Gotu Kola) U
Carex appressa (Tall Sedge) S
Baumea arthropophylla (Twig-rush) S
Baumea articulata (Jointed Twig-rush) S
Baumea vaginalis (Sheath Twig-rush) S
*Schoenoplectus validus** (Lake Club-rush) S
Villarsia species (Erect Marsh-flower)

Open Water (Submergent & Floating)

Triglochin lineare (Water Ribbons)
*Lemna species** (Duckweed)
Ottelia ovalifolia (Swamp Lily)



* DON'T PLANT DEEP ROOTED SPECIES ON CONSTRUCTED DAM WALLS