

The Grange Golf Club Inc.

Vegetation Management Plan 2020



Executive Summary and Landscape Concepts

THE GRANGE GOLF CLUB INC.



VEGETATION MANAGEMENT PLAN
for
THE GRANGE GOLF COURSE
2020
Executive Summary



Tall River Red Gums on the East Course, near 3E Green

Acknowledgements

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FOREWORD

Of all the sand belt courses, Grange now preserves the largest representation of plants that once grew on these red sand dunes. Its status is even greater when it is realised that no conservation parks are located on any part of these ancient bastions. This is also only one of a handful of locations in the Adelaide region where remnants of pre-European settlement vegetation can be found. It is vital that this genetic pool be preserved for the future...

Geoffrey Manning, 1997

It cannot be understated that we have at Grange some of the most significant remnant vegetation on the Adelaide plains. The significance is evident today by the remnants of several distinctly different natural plant communities within a single, large property, indicating what a large part of the western suburbs would have looked like for thousands of years before the construction of our two courses. This wider vision can be easily imagined today from the red sand dunes on the East Course where we find our Southern Cypress Pine Woodland to the low-lying western edges of the property with scattered majestic River Red Gums and small stands of ancient Swamp Paperbarks.

When playing both courses it's easy to forget how much the vegetation ties the golf course together, offering corridors for our fairways, tees and greens as we traverse the undulating landscape. It's not until the vegetation is lost that you really understand the importance of how the right trees and understorey in the right place can enhance the landscape and the golfing experience. To put it plainly, without these areas the course would not be the place it is today - the picture would be without its frame.

It is also important that the vegetation contributes to a resilient and sustainable landscape – by using plants and natural plant groupings that are in balance with the local climate and environment, resource inputs can be minimised. A strong focus of this plan is thus to protect, maintain, and enhance where necessary, existing vegetation that is best suited to the local environment.

Rowan Daymond

Course Superintendent



Endangered *Pterostylis arenicola* (Sandhill Greenhood Orchid) in The Pinery

INTRODUCTION

The Grange Golf Club was established in 1926 when a group of golf enthusiasts recognised that the natural landscape closely resembled features of a Links golf course. This appreciation of the natural land-forms and associated vegetation has resulted in the survival of one of the last few remaining areas of original, native vegetation along the Adelaide metropolitan coast.

The West Course was opened for play in 1927, and it was not until 1967 that the East Course was opened. The West and East Courses were reconstructed in 2007 and 2012 respectively. The ASR wetland system near Frederick Road was constructed in 2007 and has become an integral part of the golf course. The wetland's vegetation has the important function of improving water quality, but also provides valuable wildlife habitat.

The Club's grounds span 110 hectares, and feature over fifty native plant species outside the constructed wetlands. Many of these species now occur in very low numbers and will require careful management to ensure their continued survival at Grange. Amongst the most distinctive and unique features at Grange are the small remnants of native vegetation associated with the original Greater Reedbeds, and the inland sand dune system of the Adelaide Plains characterised by groves of the native Southern Cypress Pine. The protection and management of these surviving remnants, will help to maintain the unique landscape character of the East Course. Avenues of large, introduced conifers contribute to the distinctive character of the West Course.

The vegetation frames the playing areas, characterises the course and 'finishes' the golfing environment. The vegetation should be sustainable in terms of maintenance, climate resilience and compatibility with turf culture. The purpose of the Vegetation Management Plan 2020 (VMP) is to provide the Club Committee and Management with clear strategies and actions for sustainable vegetation management that can be readily integrated with other course management systems and processes. The desired outcome is a visually pleasing and maintainable course landscape that enhances the golfer's experience.

Part 1 of the VMP addresses the management objectives, strategies and actions for Grange Golf Course. Parts 2 and 3 contain landscape concept plans for the East Course and the West Course respectively. For each hole, landscape concept plans identify the key landscape character elements and define a high-level landscape concept.

LANDSCAPE VALUES & PLANNING

Key landscape assets

The unique and distinctive assets that set Grange Golf Course apart from other courses include the native vegetation and natural landforms, and specific plantings of non-native vegetation, viz.:

- The original stands of the native Southern Cypress Pine, predominantly on the East Course, but also parts of the West Course
- The large River Red Gums, and the less common South Australian Blue Gums and Drooping Sheoaks, on both courses
- Several sandy wastes including original dunes, with native vegetation
- Small, surviving natural wetlands with relict Swamp Paperbarks
- Avenues & groves of introduced conifers, including Stone Pine, on the West Course

The 2003 East Course Vegetation Management Plan (Carter, 2003) recognised "the natural features of the land, particularly the remnant dune system (and associated native vegetation) and the sandy/grassy wastes, as key architectural features of the course".

Native vegetation

Within the past two decades, up to 77 native plant species (excluding wetlands) have been recorded for Grange Golf Course (Schneyder, 2008). At least four native plant communities occurred on the site of Grange Golf Course at the time of European colonisation and still exist as small scattered remnants today:

- 1) Southern Cypress Pine Woodland
- 2) Dryland Tea Tree Low Woodland
- 3) River Red Gum Woodland
- 4) Swamp Paperbark Low Woodland

Native fauna

Closely associated with the native vegetation of Grange Golf Course - and an integral part of the ecosystem - is a rich variety of fauna including native birds (129 species, 1993-2008), reptiles (10 species, 1995-2006), mammals and insects.

Landscape sustainability

Whilst the primary role of the vegetation is to define and frame the playing areas, it must also be sustainable in terms of maintenance, climate resilience and compatibility with turf culture. Landscapes in which the original diversity of native species is still intact are generally more resilient than depleted or modified landscapes. The small patches of native vegetation at Grange are ideally suited to the local conditions and their continued protection will contribute to the sustainable management of the course landscape. Some planted vegetation contributes little to a sustainable landscape (e.g. invasive trees, or trees poorly suited to local conditions) and will be removed over time where there is the ability to replace them with native species more suited to local conditions.

Landscape character zones

Three landscape character zones are recognised according to the predominant vegetation type:

ZONE 1: Non-native vegetation

Vegetation that has been planted and is not native to the local area. The most common examples are introduced conifers (e.g. Stone Pine) and species native to other parts of Australia, e.g. Coast Teatree (Vic.) and Willow Myrtle (WA).

East Course: Holes 1E - 7E

West Course: All Holes, except 1W, 3W, 13W

ZONE 2: Native vegetation

Vegetation that is indigenous to, or naturally occurring at, Grange Golf Course. The vegetation may be remnant or grown and planted from seed of local native species. The back nine of the East Course, is an example of Zone 2 as it is dominated by Native Pine (Southern Cypress Pine) which occurred in this area prior to European settlement.

East Course: Holes 8E – 18E

West Course: Holes 1W, 3W, 13W

ZONE 3: Constructed Wetland

Planted vegetation associated with the Aquifer Storage and Recovery (ASR) Scheme on the East Course. Includes wetland species in the ponds, and dryland species adjacent to the ponds (e.g. the screen along Frederick Road boundary).

Landscape concept planning

Landscape Concept Plans have been developed to describe the existing and future landscape character of each hole on the East Course (Section 2) and the West Course (Section 3). Specific management actions are required to achieve the desired landscape character, which may include one or more of the following approaches:

- Protecting and maintaining key features or sites
 - minimising threats and degrading influences (weeds, irrigation over-spray, tree work, buggy traffic, trampling, etc.)
- Extending or expanding key features or sites by revegetation
- Removing inappropriate vegetation:
 - Invasive plants (e.g. Swamp Oak, Coast Teatree) causing turf management problems
 - Sick or diseased plants needing replacement
 - Plants poorly suited to local conditions due to a drying climate, or
 - Plants that detract from the existing or desired landscape aesthetic



MANAGEMENT ISSUES

Many native plant species have been lost from the course for a variety of reasons. In 2008, a total of 77 species were recorded for Grange Golf Course not including the wetlands (Schneyder, 2008). Of these, nineteen species were not relocated in 2020 due to local extinction or such low numbers that detection is now difficult. The value of native vegetation with a diverse range of species is its resilience and the ability to adapt to changing conditions, particularly climate. Although much has been lost over the years the diversity that remains should be preserved. All landscapes, including wetlands, need to be managed so that they maintain their integrity and function. A key aim of the VMP is thus to protect and enhance desired vegetation, by addressing various loss or disturbance factors, including those outlined below:

Irrigation water

Over-spray from playing areas promotes the growth of weeds which degrade the vegetation, imposing an additional cost to the maintenance of the golf course.

Trampling

Foot and buggy traffic, particularly on sandy soils, damages native plants, increases risk of soil erosion, and promotes weed growth which further degrades the vegetation.

Vegetation maintenance work

Vegetation maintenance work can have unintended consequences. Tree work - felling trees, pruning limbs, removing fallen trees or branches – is a common activity in golf courses and has a high risk of causing damage to small, understorey plants. Spraying weeds involving lack of operator care or skill can readily cause significant damage or loss.

Herbicides, pesticides and fertilisers

Chemical drift from playing areas can injure or damage plants, and promote weed growth.

Weeds

Weeds follow disturbance, e.g. foot and buggy traffic, tree removal activity, irrigation over-spray. Control of weeds in non-playing areas is a significant annual cost to golf course operations.

Introduced fauna

Due to its size and urban surrounds, the golf course is frequented by foxes which damage bunkers, prey on native animals and spread weeds.

Edge effects

Edge degradation of vegetation occurs due to the combined effect of degrading influences at the edge such as irrigation over-spray, foot/buggy traffic, chemical drift and mowing.

Vegetation removal

Removal of trees and other vegetation may be required due to poor health and condition, weediness, impact on turf culture, or incompatibility with the landscape character.

Changing climate

Rainfall has declined over most of the state since the 1970s, particularly for autumn and spring rainfall over the agricultural regions. Locally, decreases in winter, spring and annual rainfall are projected due to a southward shift of winter and spring storm systems. Early in this century (2030), winter rainfall is projected to decrease by up to 15 per cent. The condition of open and green spaces in the Western Adelaide Region will be adversely impacted by the warmer and drier weather conditions. The condition of trees, landscaped areas and turf are likely to reduce as soils dry, and as evapotranspiration increases (Govt. of SA, 2016).

MANAGEMENT OBJECTIVES

OBJECTIVE 1: To maintain and enhance the desired landscape character and visual amenity of the course

The VMP aims to conserve and enhance the existing landscape character of Grange Golf Course. A more cohesive and attractive landscape will be created by conserving and reinforcing the high-quality landscape character elements and replacing or improving poor quality elements.

OBJECTIVE 2: Integrate climate adaptation in vegetation planning and management

Vegetation management strategies for drying and warming conditions are now a high priority. Incorporating climate resilience into tree planting and vegetation management will help to improve the adaptive capacity of the course's ecosystem including turfed playing areas.

OBJECTIVE 3: To preserve and maintain the natural biodiversity

The greatest risk to the vegetation is the loss of biological diversity – either the complete disappearance of a species from the golf course, or the decline in population (number of plants) of a species to an unrecoverable level. An important aim of vegetation management therefore is firstly to prevent this loss, and secondly, to increase population sizes to healthy, sustainable levels.



Some of the many plant species native to the Grange Golf Course (From left to right: Silver Banksia, Karkalla, Sea Berry Saltbush, Edge Bluebell, Woolly-mat Rush and Ruby Saltbush)

PLAN IMPLEMENTATION

Below are some of the key recommendations for implementing this Plan:

| Native vegetation restoration | |
|----------------------------------|---|
| 2 | Demarcate, protect and restore Class A native vegetation sites |
| 3 | Protect the Pinery & Sandhill Greenhood Orchid as an Environmentally Sensitive Area under a Local Rule |
| 5 | Prepare Rehabilitation Plans for each Class A site |
| 8 | Establish a seed collection register |
| 9 | Establish seed orchards for rare species |
| 11 | Use local provenance seed sources for revegetation activities |
| Non-native vegetation management | |
| 14 | Ensure removals & replacements are consistent with Landscape Concept Plans, VMP & arborist advice |
| 15 | Progressively replace planted vegetation that is poorly adapted to a more arid climate |
| Weeds | |
| 21 | Develop a weed hygiene protocol to prevent the entry, or the early detection & eradication, of new weeds or diseases in GGC |
| 23 | Prepare a weed control guide for priority weeds in GGC |
| Fauna | |
| 24 | Monitor and record native fauna in GGC |
| 25 | Monitor & reduce number of foxes |
| 26 | Reduce numbers of the aggressive Noisy Miner with vegetation that favours other species |
| Awareness and Training | |
| 28 | Demarcate Class A native vegetation sites |
| 33 | Raise awareness and appreciation of local native plants (e.g. amenity plantings, updates, items or notices in GGC eNews) |

REFERENCES

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Landscape Concept Plans
EAST COURSE



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August 2020

INTRODUCTION

The aim of the Landscape Concept Plan for the East Course is to develop cohesive and attractive landscape by identifying and reinforcing the high-quality, distinctive or unique landscape character types.

Landscape character zones

Three landscape character zones are recognised according to the predominant vegetation type:

- Zone 1: Non-native vegetation - Vegetation that has been planted and is not of local native provenance to Grange or the local area: Holes 1E - 7E.
- Zone 2: Native vegetation - Vegetation that is native to Grange (the vegetation may either be remnant, or grown and planted from seed of local native species): Holes 8E – 18E.
- Zone 3: Constructed Wetland - Planted wetland species associated with the Aquifer Storage and Recovery (ASR) Scheme.

Native vegetation

The condition of indigenous vegetation patches at Grange varies widely from a single, isolated individual with no associated plants, to a plant community with several strata or layers (e.g. grasses, shrubs and trees) containing many plants of many species. A simple classification (A1, A2 or B) to indicate the relative condition of native vegetation is based on two criteria, structural diversity and species diversity:

- **Class A1** - All or most original layers present, many species present
- **Class A2** - All or most original layers present. One or more layers absent or severely altered/damaged; Lesser diversity in the understorey
- **Class B** - Only one of original layers present; Single species, comprising several individuals.

Landscape Concept Plans

Individual Landscape Concept Plans have been developed for each hole on the East Course. Each plan describes the existing conditions and outlines the strategies or broad actions to achieve the desired landscape character. Management actions to achieve the desired landscape character may include one or more of the following approaches:

- Protecting and maintaining key features or sites
 - minimising threats and degrading influences (weeds, irrigation over-spray, pest animals, trampling, etc.)
 - restoring degraded vegetation patches
 - improving individual tree health
- Extending or expanding key features or sites – i.e. revegetation and tree planting
- Removing inappropriate vegetation:
 - Invasive plants causing turf management problems
 - Sick or diseased plants
 - Plants poorly suited to local conditions due to a drying climate, or
 - Plants that detract from the existing or desired landscape aesthetic



Photographs: Native Ruby Saltbush fruits; Native Puntty Bush flower; Native Silver Banksia flower; Native Sea-berry Saltbush fruit; Seasonal wetland, 9E Waste.

HOLE 1

EXISTING

Predominantly planted trees, though landscape character is strongly influenced by remnant stands of River Red Gum. Less conspicuous are very small, ecologically significant stands of remnant Swamp Paperbark and Dryland Teatree. Existing boundary buffer vegetation provides inadequate visual screening for neighbouring properties and protection from errant balls.

Features:

- Native trees:
 - Swamp Paperbark (A), Dryland Teatree (B), River Red Gum (C), Native Pine (D)
- Native vegetation patches :
 - Class B: several small groups of old Swamp Paperbark trees (understorey absent) on RHS of 1E
 - Class B: several stands of River Red Gum (understorey absent), as woodland remnants, along 1E

PROPOSED

Improve the aesthetic back drop along the fairway with increased planting of locally native species to accentuate the character of the course. To achieve an effective visual screen from White Sands Drive, progressively remove the stand of Swamp Oaks and other non-natives and replace with a semi-dense planting of local native trees, shrubs and grasses to reinforce the local provenance character. Remove poor quality or non-native species on the mound behind the green and revegetate with a dense planting of native trees and shrubs to screen adjacent housing and provide a 'native vegetation amphitheatre' to the green and screen out adjacent housing. Remove non-natives from amenity garden surrounding the tees and replace with local native species.

Strategy

Tee

- Remove non-native species and replace with locally native species (Plant Community 2)

Left (East)

- Continue recent planting theme of local native species to the green.
- Remove small exotic cypress pine group (in swale), Swamp Oaks and Golden Wreath Wattle (*Acacia saligna*)
- Retain big eucalypt on hill; establish understorey (e.g. *Poa poiformis*)

Right (West)

- Screen fence with tall shrubs, e.g. Coast Boobialla, Dryland Teatree
- Remove large stand of Swamp Oak and poor quality, damaged and stunted eucalypts and replace with Drooping Sheoak, Dryland Teatree and native understorey (Plant Community 2)

1E - Green

- Mass removal of exotic pines (immediate)
- Plant group of Native Pines on West side of mound
- Mass plant Dryland Teatree, Drooping Sheoak & Kangaroo Thorn (*Acacia paradoxa*) behind the green to create an amphitheatre of native screening plants

Hole 1 - EAST COURSE: Significant Features



Native trees

- A = Swamp Paperbark
- B = Dryland Teatree
- C = River Red Gum
- D = Native Pine

Native vegetation

- Class A1
- Class A2
- Class B

HOLE 2

EXISTING

Predominantly planted trees, shrubs and grasses surrounding the tee and down the fairway. Landscape character is strongly influenced by remnant stands of River Red Gum between 1 and 2 East. Swamp Oaks surrounding the old 2nd East Turf Nursery and an inadequate planting of eucalypts along the right-hand side of the fairway.

Features:

- Native trees: Dryland Teatree (A)

PROPOSED

Take advantage of the original red sand dune surrounding the tee and planting heathland species on the inside of the dune surrounding the tee with locally native trees and shrubs on the fence line to provide adequate screening. Poor turf quality in the carry will be replaced by creating a low heathland carry with a turf path to the fairway. Provide adequate screening of the old turf nursery with native vegetation that flows into the back of the 3rd East green.

Strategy

Tee

- Plant a backdrop/screen of Dryland Teatree, Drooping Sheoak, native groundcovers and grasses on the red sand dune (refer Plant Community 2: Dryland Teatree Low Woodland)
- Create a low native heathland carry (e.g. Muntries, Common Everlasting, Satin Everlasting, Common Sea-heath, Wallaby Grass and Spear Grass)

Left

- See Hole 1 – Left

Right

- Selectively remove poor quality planted eucalypts along housing line, replace with tall screening species (to 5m above fence) to protect houses from errant balls

Green

- Remove planted Coastal Teatree and & *Melaleuca armillaris*; Replace with Native Pine (refer Plant Community 1)

Hole 2 - EAST COURSE: Significant Features



Native trees

- B = Dryland Teatree
- C = River Red Gum
- D = Native Pine

Native vegetation

- Class A1
- Class A2
- Class B

HOLE 3

EXISTING

Predominantly planted vegetation (Coastal Teatree and *Melaleuca armillaris*) surrounds the Par 3 with a remnant Dryland Tea Tree behind the tee block and a group of 7 remnant River Red Gums. Non-native species behind the green - Norfolk Island Hibiscus, Coastal Teatree and *Melaleuca armillaris* - have been planted to screen out the old 2nd East turf nursery with a remnant River Red Gum amongst the shrubbery.

Features:

- Native trees: Dryland Teatree (A), River Red Gum (B), Native Pine (C)

PROPOSED

Remove all non-native and exotic species around the back of the tee and revegetate with large screening shrubs (e.g. Dryland Teatree). Gradually remove the inadequate screening from the back of the green, starting from the old turf nursery and replace with large screening species (e.g. Dryland Teatree), gradually removing and planting towards the green as the native replacement species begin to establish and provide some screening. Continue to allow colonising species (Lagoon Salt-Bush and Red Ruby Saltbush) regenerate on the left-hand side of the tees to prepare the clay soil for plantings of small shrubs.

Strategy

Tee

- Protect root zone of large, remnant Dryland Teatree at rear of tee – establish native grass and/or low shrub understorey (refer Plant Community 2)
- Remove all other plants including exotic *Pinus* and Norfolk Island Hibiscus behind seating area and replace with Dryland Teatree

Left

- Remove group of 5 Norfolk Island Hibiscus
- Remove *Melaleuca armillaris* and plant large/medium shrubs (e.g. Dryland Teatree and Kangaroo Thorn)
- Retain grey foliage eucalypt
- Protect root zone of the group of 7 River Red Gums (between 3E green and 4E tee) from mowing and herbicide damage (triazines) by roping off only (potentially in play)

Right

- Remove *Melaleuca armillaris* & mixed planted species (non-native) and replace with large screening species (e.g. Dryland Teatree and Kangaroo Thorn)

Green

- Remove *Melaleuca armillaris* & mixed planted species gradually and replace with large and medium screening species (e.g. Dryland Teatree, Kangaroo Thorn, Sticky Hop Bush and Umbrella Bush)

Hole 3 - EAST COURSE: Significant Features



Native trees

- B = Dryland Teatree
- C = River Red Gum
- D = Native Pine

Native vegetation

- Class A1 ———
- Class A2 - - - -
- Class B ———

HOLE 4

EXISTING

The tees are predominantly surrounded by planted vegetation with Native Pine along the fence line and a small created garden carry between the blue and white tee comprising Poa and Dianella grasses. Existing screening vegetation between the Practice Fairway and 4E consists of tall Swamp Oak (invading the turf) and notably containing a small stand of very old, remnant Swamp Paperbark. The right-hand side housing line has areas of Small-Leaved Blue Bush naturally regenerating amongst non-native and poor-health eucalypts. The right hand-side is also dominated by the ASR wetland.

Features:

- Native vegetation patches:
 - Class B: Small Swamp Paperbark Woodland remnant between 4E and Practice Range
- Native trees: Swamp Paperbark (A)

PROPOSED

Plant appropriate screening species around 4E Tee to improve separation from 3E Green. Improve boundary planting on 4E to achieve a more effective visual screen from houses. Create a low native heathland carry in place of poor-quality turf and create a path through the carry. Gradually remove the Swamp Oaks between the Practice Range and 4E and replace with appropriate native species (trees and understorey – refer Plant Community 4) to enhance and accentuate the local native character. Annually flood the swale between the Practice Range and 4E and introduce understorey species to promote the health of the remnant Swamp Paperbarks.

Strategy

Tee

- Remove *Melaleuca armillaris*; establish screening vegetation (e.g. Dryland Teatree) and a large feature gum (e.g. River Red Gum or SA Blue Gum)
- Create a low native heathland carry (e.g. Muntries, Common Everlasting, Satin Everlasting, Common Sea-heath, Wallaby Grass and Speargrass)

Right

- Remove poor quality eucalypts & plant tall screening species (e.g. Dryland Teatree)
- Remove the Dianella-Poa feature between the two tees and replace with low native heathland species (e.g. Muntries, Common Everlasting, Satin Everlasting and Wallaby Grass)
- Remove volunteer eucalypts (germinated from mulch) along the ASR wetland

Left

- Remove Norfolk Island Hibiscus tree and replace with SA Blue Gum, River Red Gum or Dryland Teatree
- Adjacent to the Practice Range, remove individual Swamp Oaks sending suckers into turf area, progressively remove other less invasive Swamp Oaks over time and replace with suitable screening
- Retain and protect the small patch of remnant Swamp Paperbarks: under-plant with ephemeral wetland species & flood annually (refer planting list for Plant Community 4)

Hole 4 - EAST COURSE: Significant Features



Native trees

A = Swamp Paperbark

Native vegetation

Class A1 —
Class A2 - - -
Class B —

HOLE 5

EXISTING

Predominantly planted trees, on heavy, clay-based soil, with some low, sandy rises. The main remnant feature is River Red Gums behind the 5E green. The vegetation area on the right between 5E and 7E is a low sandy rise up to 70m wide but narrows to less than 8m behind the green.

Features:

- Native vegetation patches:
 - Class B: River Red Gum Woodland between 5E and 7E
- Native trees:
 - River Red Gum (A)

PROPOSED

Utilise the large vegetation area between 5E and 7E to return to a River Red Gum Woodland (refer to Plant Community 3) as it is largely out of play. This area is ideal to bring biodiversity back into the course, placing habitat logs through the areas for lizards, planting more shrubs and trees that are beneficial to native bird species in the area.

Strategy

Right

- Refer ASR Wetland Landscape Concept

Left

- Retain planted eucalypts removing only poor-quality specimens and plant a few more River Red Gums and remove Old Man Saltbush replacing with medium sized shrubs
- Increase diversity of the mid and ground stratum by planting species from the Plant Community 3 species list (e.g. Kangaroo Thorn, Scarlett Bottlebrush, Puntty Bush, Umbrella Bush, Running Postman, Ruby Saltbush, and Berry Saltbush).

Hole 5 - EAST COURSE: Significant Features



Native vegetation

- Class A1
- Class A2
- Class B

HOLE 6

EXISTING

Predominantly planted trees on heavy, clay-based soil. The main remnant feature is River Red Gum on the left of the 6th tees behind the 5th green and natural regeneration of Lagoon Saltbush, Samphire and Thatching Grass *Gahnia filum*. A large cypress pine occurs halfway up on the left-hand side of the fairway in a swale. The right-hand side is dominated by the ASR wetland, and green surrounds have been planted with large shrubs to screen out land occupied by Telstra.

PROPOSED

Continue planting of River Red Gum Woodland species (refer to Plant Community 3) on the low rise. Slowly replace the Native Pines within this area with River Red Gums, Kangaroo Thorn, and Scarlet Bottlebrush. At the top of the rise, prepare the turfed area for planting of Drooping Sheoaks to the cypress pine and beyond, removing the cypress once the new trees have started to establish some height. Continue to use screening species to block out the back-corner block with the Telstra tower.

Strategy

Tee

- Establish tall screen (e.g. Swamp Paperbark) behind Tee, adjacent ASR wetland.

Right

- refer ASR Wetland Landscape Concept

Left

- Retain planted eucalypts, removing only poor-quality specimens and replace with SA Blue Gum.
- Develop a River Red Gum Woodland feature based on the existing small group of large remnant Red Gums (NW of 5E Green). (Refer planting list for Plant Community 3)
- Establish a small grove of Drooping Sheoak on the sandy rise, extending north to the small exotic cypress pine (remove in time).
- Maintain a thin line of trees in N half from cypress pine which is quite “in-play”

Green

- Improve screening of Power Substation on east side, e.g. Dryland Teatree
- Establish screen planting on north side, e.g. Native Pine or Dryland Teatree

Hole 6 - EAST COURSE: Significant Features



| Native vegetation | |
|-------------------|-------------|
| Class A1 | <div></div> |
| Class A2 | <div></div> |
| Class A3 | <div></div> |

HOLE 7

EXISTING

The vegetation is predominantly planted trees, on heavy, clay-based soil with a sandy rise between 7E and 5E containing a group of River Red Gums. There is little physical separation between 7E Tee and 8E Green, however the out-of-play area widens to 40m further south where it is sparsely vegetated. The 7E green borders the Practice Range and a large stand of Swamp Oaks acts as a barrier for deterring balls from the Practice Range away from the 7E Green.

Features:

- Landforms:
 - Wide, natural low sandy rise between 7E and 5E
- Native trees:
 - River Red Gum (A)
- Native vegetation patches:
 - Class B: small River Red Gum plant community remnant in the low sandy rise between 7E and 5E

PROPOSED

Widen the single line of trees on the right side and further south utilise the wider area for an extensive planting of Drooping Sheoak to the Green. Reinstate a River Red Gum Woodland in the waste between 5E and 7E with a little denser planting as it is largely out of play to increase the biodiversity in this area. Progressively remove the Swamp Oaks on the left-hand side of the green in line with the Course Architect’s plans for the new Practice Facilities and screen with the appropriate plantings that suit these plans. Remove the Coastal Galenia weed from the back of the left bunker and revegetate with low growing species to create a defined edge of vegetation to the bunker.

Strategy

Tee

- Screen bore shed and proposed new toilet (West of the Tee) with large shrubs (e.g. Coast Boobialla and Dryland Teatree)

Left

- Refer **Hole 5 Left** and **Hole 6 Left**

Right

- Widen single line of trees where possible; remove and replace poor specimens; retain the 3 good eucalypt specimens
- Where out-of-play area widens, establish an avenue of Drooping Sheoak to the Green
- Remove Golden Wreath Wattles (West of the Green) and replace with Dryland Teatree

Green

- Thin out and overtime remove all Swamp Oak on East side of the Green in line with the Course Architect’s redevelopment of the new Practice Facilities and plant appropriate screening species
- Remove all groundcover weeds from the back of the bunker and revegetate with low growing groundcovers (e.g. Running Postman and Ruby Saltbush).

Hole 7 - EAST COURSE: Significant Features



Native trees
A = Swamp Paperbark
B = Scarlet Bottlebrush
C = River Red Gum

Native vegetation
Class A1
Class A2
Class B

HOLE 8

EXISTING

There is little physical separation between 7E Tee and 8E Green, however the out-of-play area widens to 40m further south where it is sparsely vegetated. A large sand and clay waste/seasonal wetland, up to 80m wide and 250m in length, and small groups of old, remnant Swamp Paperbarks and Scarlet Bottlebrush are dominant features. Nine olive trees have established between 8E and 9E.

Features:

- Landforms:
 - Large sand and clay waste/ephemeral wetland between 8E and 9E
- Native trees:
 - Swamp Paperbark (A), Scarlet Bottlebrush (B), River Red Gum (C)
- Native vegetation patches:
 - Class A2: River Red Gum Woodland community in large sandy waste between 8E & 9E
 - Class B: small Swamp Paperbark and River Red Gum plant community remnants west of the tees

PROPOSED

Redevelop the sand and clay waste between 8E and 9E at the southern end to function as a seasonal wetland by improving inflows and natural regeneration of wetland species. Use appropriate methods to control the Olive trees on the rise between 8E and 9E and remove poor and non-native eucalypt specimens. Remove the Norfolk Island Hibiscus from the area and remove vegetation smothering two of the Scarlet Bottlebrush trees. Screen out the bore shed north of the green with large shrub species (e.g. Dryland Teatree or Coast Boobialla).

Strategy

Tee

- Retain/protect Swamp Paperbarks west of tees (Plant Community 4)
- Remove Coastal Teatree and replace with Dryland Teatree
- Overtime, remove cypress and *Pinus* and replace with River Red Gums

Left

- Remove Willow Myrtle trees at southern end of the waste around the drainage inflow and replace with small group of Drooping Sheoaks
- Remove Norfolk Island Hibiscus from the northern end of the sandy waste and replace with Swamp Paperbarks
- Protect and enhance Swamp Paperbark habitat at northern end (Plant Community 4)
- Protect and enhance Scarlet Bottlebrush habitat near centre of the sandy waste
- Remove some imported sand and improve augment water inflows to sandy waste (northern and southern end)

Right

- Refer **Hole 7 – right**

Green

- Screen out bore shed with large shrub species (e.g. Coast Boobialla or Dryland Teatree)

Hole 8 - EAST COURSE: Significant Features



Native trees

- A = Swamp Paperbark
- B = Scarlet Bottlebrush
- C = River Red Gum

Native vegetation

- Class A1 ———
- Class A2 - - - - -
- Class B ———

HOLE 9

EXISTING

Mostly developed on a former River Red Gum Woodland community, the remnant features of which are a large ephemeral wetland between 8 and 9 East, a wide sandy rise between 10E Green and 9E Fairway, several small groups of large River Red Gum trees elsewhere and a natural claypan between 9E Green and 10E tees. The Practice Range behind the Green is poorly screened.

Features:

- Landforms:
 - Large sandy waste with wetland features between 8E & 9E (area 1.5 ha; 275m x 75m)
 - Natural claypan between 9E & 10E (area: 0.13ha; 135m x 10m)
- Native trees:
 - River Red Gum (A), Swamp Paperbark (B), Scarlet Bottlebrush (C), SA Blue Gum (D)
- Native vegetation patches:
 - Class A2: River Red Gum Woodland community in large sandy waste between 8 & 9
 - Class A2: Remnant River Red Gum Woodland community on a large sandy rise between 10E Green and 9E fairway (area 0.35ha; 90m x 40m)

PROPOSED

Remove inappropriate plantings of Swamp Oak, Coastal Teatree, Norfolk Island Hibiscus, *Pinus*, Cyprus and Tamarisk. Improve continuity of vegetation between 9 and 10, reinforcing the elements of the River Red Gum Woodland. Restore the remnant River Red Gum Woodland community right of the Red Tee. Further develop the large sandy waste between 8 and 9 as a seasonal wetland by improving seasonal inflows and natural regeneration of wetland species as well as planting patches of Thatching Grass *Gahnia filum* for a potential butterfly project with Landscape Boards SA (formerly Natural Resources Management).

Strategy

Tee

- Remove Swamp Oak, Norfolk Island Hibiscus, non-native eucalypts and Coastal Teatree behind and next to tee blocks; replace with native *Melaleuca* (Swamp Paperbark or Dryland Teatree) to complement remnant Swamp Paperbark Group (4) and River Red Gum (refer to Plant Community 3 and 4)
- Remove couch and grasses on low/hill mound and plant to appropriate screening shrubs under existing trees

Right

- Wide, out-of-play area between the Red Tee, 10E Green and 13E Carry (0.35ha; 40m x 90m) supporting a dry River Red Gum Woodland community on a sandy rise between 10E and 9E fairway: remove Geraldton Wax-Flower, control Perennial Veldt, etc.; re-establish open understorey (e.g. Muntries, Speargrass ssp., Running Postman etc.). Establish a small refuge area for small birds using Kangaroo Thorn, Sticky Hopbush, Umbrella Bush, etc.
- Remove Tamarisk group (6) on mound; replace with a big feature gum (e.g. SA Blue Gum)
- Establish a River Red Gum Woodland community in the 15m wide out-of-play area (Plant Community 3), extending from Tamarisk group to the group of 5 remnant River Red Gums
- Remove large *Pinus*
- Retain current mowed section north of the clay pan waste and large Willow Myrtle (trim)
- Retain line of big eucalypts to the Green; remove or trim any encroaching on the line of play
- Retain large SA Blue Gum next to path, west of Green and establish appropriate understorey
- Continue recent planting of claypan with samphire and other wetland species in sparse patches as this waste is still largely “in-play”

Green

- Remove Coastal Teatree, non-native eucalypts, *Pinus* and cypress around the green
- Under-plant retained species left of the green in out-of-play area with screening shrubs for visual barrier to Practice Range and act as a refuge for small birds (e.g. Kangaroo Thorn, Puntty Bush, Sticky Hopbush, and Umbrella Bush)
- Plant a few River Red Gums and SA Blue Gums between the back of the green and the Practice Range as well as screening shrubs for a visual barrier to the Practice Range in accordance with the Course Architect’s redevelopment of the Practice Facilities

Hole 9 - EAST COURSE: Significant Features



Native trees

- A = Swamp Paperbark
- B = Scarlet Bottlebrush
- C = River Red Gum
- D = SA Blue Gum
- E = Native Pine

Native vegetation

- Class A1
- Class A2
- Class B

HOLE 10

EXISTING

Some evidence of a former River Red Gum Woodland Community occurs right of the tee blocks between 9E and 10E, with two Thatching Grass *Gahnia filum* plants persisting in the sparse native understorey. A wide sandy rise between 10E Green, 9E Red Tee and 13E Carry. A very large, remnant River Red Gum occurs at the rear of the Green.

Features:

- Landforms:
 - Natural claypan between 9E and 10E (area: 0.13 ha; 135m x 10m)
 - Wide sandy rise and valley between 9E Red Tee, 10E Green and 13E Carry
- Native trees:
 - River Red Gum (A), SA Blue Gum (B), Native Pine (C)
- Native vegetation patches:
 - Class A2: Remnant River Red Gum Woodland community on a large sandy rise between 10E Green, 9E Red Tee and 13E Carry (are 0.35ha; 90m x 40m)

PROPOSED

Restore the remnant River Red Gum Woodland community on the large sandy rise between 10E Green and 9E Red Tee, which is largely out-of-play - plant species to create a small bird refuge (e.g. Kangaroo thorn and Puntty Bush).

Strategy

Tee

- Progressively remove group of Coastal Teatree; replace with Dryland Teatree
- No change to vegetation west of the tee (planted garden including *Atriplex nummularia* and *Gahnia filum*)

Left

- Retain group of River Red Gums and maintain an existing rough
- Remove the 2 cypress trees and revegetate gap with Dryland Teatree and/or Drooping Sheoak
- Remove Golden Wreath Wattle and Coastal Teatree; replace with Dryland Teatree and/or Drooping Sheoak
- Rope off diseased group of Native Pine; plant small seedlings to offset the loss of old, senescing trees, maintain the size of this smaller outlier
- Extend planting towards the Green using species more compatible with River Red Gum Woodland habitat e.g. Drooping Sheoak (refer Plant Community 3)

Right

- Refer to **Hole 9 – right**

Hole 10 - EAST COURSE: Significant Features



Native trees
A = Swamp Paperbark
B = Scarlet Bottlebrush
C = River Red Gum
D = SA Blue Gum
E = Native Pine

Native vegetation
Class A1
Class A2
Class B

HOLE 11

EXISTING

Hole 11 has been developed in a transition between Native Pine Woodland and Red Gum Woodland indicated by isolated trees or small stands of Native Pine and River Red Gum.

Features:

- Native trees: River Red Gum (A), Native Pine (B), SA Blue Gum (C)

PROPOSED

Remove inappropriate plantings of Bracelet Honey-Myrtle (*Melaleuca armillaris*), Coastal Teatree, *Pinus*, and Tamarisk. To provide a distinctive local character, reinforce the remnant elements of each woodland community, with appropriate transitioning (through species selection and spatial design) between Native Pine and River Red Gum.

Strategy

Tees

- Progressively remove Old Man Saltbush and plant with more appropriate species (e.g. Puntty Bush, Umbrella Bush, and Sticky Hopbush)

Right

- Remove group of Tamarisks; replace with Native pine and/or Drooping Sheoak
- Interplant large Coastal Teatree with Native Pines and Drooping Sheoaks, then progressively remove Coastal Teatree once new plantings start to establish. Continue reconstruction of Native Pine Woodland (refer Plant Community 1) - between stands of remnant River Red Gums through to the Green
- Retain large feature River Red Gum and enhance understorey (refer Plant Community 3)

Left

- Refer **Hole 10 – right**

Hole 11 - EAST COURSE: Significant Features



Native trees

- A = Native Pine
- B = River Red Gum
- C = SA Blue Gum

HOLE 12

EXISTING

Hole 12 has been developed in a transition between Native Pine Woodland and Red Gum Woodland indicated by isolated trees or small stands of Native Pine and River Red Gum.

Features:

- Native trees: Native Pine (A), SA Blue Gum (B)

PROPOSED

To provide a distinctive local character, reinforce the remnant elements of each woodland community, with appropriate transitioning (through species selection and spatial design) between Native Pine and River Red Gum. Remove Coastal Teatree and improve quality of screening vegetation around the water tank behind the 12th Green.

Strategy

Tee

- Remove small Coastal Teatree and replace with Native Pine; once pines have started to establish, remove larger Coastal Teatree and interplant with additional Native Pine
- Stabilise east side of bunker (18E) with groundcover (e.g. Muntries)
- Continue planting of the newly vegetated Native Pine Woodland behind the tees
- Remove the turf area heavily infested with Kikuyu around the large leaning Native Pine and extend the vegetation behind the bunkers into this area; overtime, remove the large leaning Native Pine when it becomes a safety hazard

Left

- Retain and under-plant group of large River Red Gums (refer Plant Community 3)
- Remove leaning eucalypt and *Pinus* tree behind, as well as the 2 large *Pinus* and 2 Cyprus trees; convert this area to a Native Pine Woodland (refer Plant Community 1)

Right

- Refer to **Hole 11 – right**

Green

- Improve screening of tank behind the Green by removing the large *Melaleuca armillaris* and Coastal Teatree; replacing with tall screening species (to 10m), e.g. Dryland Teatree

Hole 12 - EAST COURSE: Significant Features



Native trees

- A = Native Pine
- B = River Red Gum
- C = SA Blue Gum

HOLE 13

EXISTING

Hole 13 has been developed on Native Pine Woodland and River Red Gum Woodland. The key landscape feature is the largest stand of native vegetation and natural dune surviving on Grange Golf Course, known locally as “The Pinery”. This site is of great ecological, scientific and conservation importance as it supports a colony of the rare Sandhill Greenhood orchid.

Features:

- Landforms: The natural dunes of The Pinery (13E/14E), & along the right side of 13th tee and carry.
- Native vegetation patches:
 - Class A1: Native Pine Woodland (The Pinery) between 13E & 14E
 - Class A2: River Red Gum Woodland between 13E Tee and 9E Red Tee
 - Class B: Native grassland in the 13E carry
- Native trees: River Red Gum (A), Swamp Paperbark (B)

PROPOSED

Remove inappropriate plantings of Coastal Teatree, *Melaleuca armillaris*, Norfolk Island Hibiscus, Golden Wreath Wattle, and non-native eucalypts. Replace removals with local indigenous species to restore continuity with the areas of remnant vegetation – Native Pine Woodland or River Red Gum Woodland – to reinforce the distinctive and unique character of the course. Consult a fire ecologist re the potential use of ecological burning to regenerate native grasses in the 13th carry (e.g. advice on fuel levels, timing, burn intensity, species composition).

Strategy

Garden, rear of tee

- Trim large Sugar Gum
- Remove all plants, except Native Pine, Umbrella Bush and Puntty Bush; Re-plant with Native Pine Woodland species including *Thomasia petalocalyx* and *Grevillea ilicifolia* (Plant Community 1)

Tee

- Remove any regenerating Native Pines on the right-hand side as they will grow in the line of play from the Black Tee
- Control fox dens in this area to prevent the spread of weeds and reduce the impact on native fauna
- Maintain low native grassland as a landscape feature and a seed orchard

Right

- In the waste (40m x 90m) between 13E and 9E Red Tee, featuring a River Red Gum Woodland on a low dune:
 - Remove Geraldton Wax-flower, control Perennial Veldt etc. re-establish open understorey (e.g. Muntries, Running Postman, Common Everlasting, Spear Grasses, etc. – refer to Plant Community 3)
 - Retain Golden Wattles & encourage natural regeneration to suppress reinvasion by weeds
 - Establish a refuge for small birds using large shrubs (e.g. Kangaroo Thorn, Umbrella Bush)
- Plant small existing mowed/out-of-play area to NE (10-15m, approx. 40m²) with low growing River Red Gum Woodland species (refer Plant Community 3)
- Remove non-native eucalypts and re-plant Red Gum Woodland species
- Retain/protect group of 4 old Swamp Paperbarks
- Remove Norfolk Island Hibiscus trees, and group of 6 Swamp Oaks

Green

- Retain the 2 large eucalypts
- Remove Golden Wreath Wattle tree
- Establish a Native Pine Woodland (refer Plant Community 1)

Left - Pinery

- Maintain the existing site restoration program for The Pinery, based on sensitive, low-impact bush regeneration methods using experienced bush-care technicians
- Club Committee to consider defining The Pinery as an environmentally-sensitive area (ESA) & no play zone (with Local Rule clarifying the relief procedure) to protect the Sandhill Greenhood orchid from damage during play.

Left - other

- Continue Native Pine Woodland reconstruction from north from The Pinery towards the 13E Green (refer Plant Community 3)
- Maintain the two large River Red Gums on the low hill; remove other trees (2 Sugar Gums) and replace turf with native tussock grasses
- Remove Coast Teatree and *Melaleuca armillaris* near the Green; convert to Native Pine Woodland

Hole 13 - EAST COURSE: Significant Features



Native trees

A = River Red Gum
B = Swamp Paperbark

Native vegetation

Class A1 ———
Class A2 - - - - -
Class B ———

HOLE 14

EXISTING

Hole 14 has been developed on Native Pine Woodland and River Red Gum Woodland. The key landscape feature is the largest stand of native vegetation and natural dune surviving on Grange Golf Course, known locally as “The Pinery”. This site is of great ecological, scientific and conservation importance as it supports a colony of the rare Sandhill Greenhood orchid. This hole is also characterised by remnant sand dunes on either side of the fairway providing a corridor of Native Pine Woodland.

Features:

- Landforms:
 - The natural dunes of The Pinery (13E/14E) and along the right-hand side of the 13th tee and carry and along the right-hand side of 14E.
- Native vegetation patches:
 - Class A1: Native Pine Woodland (The Pinery) between 13E & 14E
 - Class A1: Native Pine Woodland between 14E & 15E
- Native trees:
 - Drooping Sheoak (A)

PROPOSED

Remove inappropriate plantings of Coastal Teatree, *Melaleuca armillaris* and non-native eucalypts. Edge plantings of groundcovers on the left-hand side along The Pinery to prevent the encroachment of maintenance (mowing, boom spraying etc.) and golf buggy traffic. Erect a new fence around the perimeter of The Pinery. Place habitat logs along the right-hand side of the fairway for native reptiles within this area and to prevent buggies from driving into the dune area where it is unstable and degraded, and to promote natural regeneration.

Strategy:

Right

- Remove Bracelet Honey-Myrtle (*Melaleuca armillaris*), Coastal Teatree, *Calothamnus villosus*, WA Red-flowering Gum and Aleppo Pine; Re-establish Native Pine Woodland (refer Plant Community 1) from the tee to the start of the remnant patch.
- Carefully restore the remnant Native Pine Woodland patch using low-impact bush regeneration methods:
 - Restoration should focus on methods to encourage natural regeneration – avoid planting the interior of the path (i.e. limiting planting to edges and adjacent areas only)
 - Key weeds for removal include Coastal Galenia, Ice Plant, Perennial Veldt Grass, Soursob, Fleabane, Buck’s-Horn Plantain, Wild Radish, Stinging Nettle and Sow Thistle.

Left

- Refer to **Hole 13, Left - The Pinery**

Green

- Left of the green, selectively plant a small number of Native Pine to flow into The Pinery and expose the only Puntly Bush (*Senna artemisoides*) population on the course.
- West of Green and concrete path, remove Coastal Teatree, Old Man Saltbush, Mirror Bush; selectively replant Native Pine, *Thomasia petalocalyx* and *Grevillea ilicifolia*

Hole 14 - EAST COURSE: Significant Features



Native vegetation

- Class A1 ———
- Class A2 - - -
- Class B ———

HOLE 15

EXISTING

Hole 15 has been developed over a former Native Pine Woodland which extends west to the Turf Nursery, west of the 16E tee block. The only population of *Thomasia petalocalyx* (2) and *Grevillea ilicifolia* (5) are within the vegetation area that surrounds the 15th Blue and White Tees. A low gradient sand dune on the right of the Red Tee is a natural regeneration area for native grasses and groundcovers. A small stand of Swamp Oak occurs to the back right of the green.

Features:

- Landforms:
 - The natural dune between 15E and 14E.
- Native vegetation patches:
 - Class A1: Native Pine Woodland, right-hand side of 15
 - Class A1: Native Pine Woodland, left side of concrete path to 15E Tee
- Native trees:
 - River Red Gum (A)

PROPOSED

Remove all non-native vegetation (Coastal Teatree, Old Man Saltbush, non-native eucalypts) and trees within the line-of-play and replace with Native Pine Woodland Species (refer Plant Community 1). Fence the vegetation area around the tee from the beginning of the path down around the 15th, 16th, and 18th tees to limit traffic in the area of the *Thomasia petalocalyx* and *Grevillea ilicifolia* and to promote the extensive natural regeneration that is already occurring.

Strategy:

Tee

- Remove Coastal Teatree, Old Man Saltbush and Mirror Bush
- Restore the Native Pine Woodland community by low impact bushcare methods; avoiding planting the interior path and limiting planting to edges and adjacent areas only
- Rope off and protect the last remaining colonies on the Golf Course, occurring here, of *Thomasia petalocalyx* and *Grevillea ilicifolia*.

Right

- Refer to **Hole 14 – right**
- Keep the relatively open area between tee and bunker free of tall-growing species for line-of-sight to the pin; plant with low growing groundcovers (refer Plant Community 1) and native grasses.

Left

- On low mound, left side of concrete path, remove all non-native species (e.g. *Pinus*, *Acacia rupicola*); Re-establish Native Pine Woodland with open, grassy understorey (refer Plant Community 1)

Green

- Plant tall screening trees behind the Green (e.g. Sheoaks, SA Blue Gum); once established, remove Swamp Oaks.

Hole 15 - EAST COURSE: Significant Features



Native trees

A = Native Pine
B = River Red Gum

Native vegetation

Class A1

Class A2 

Class B 

HOLE 16

EXISTING

The greater part of 16E has been developed over a former River Red Gum Woodland. A large out-of-play area of 1.3ha (up to 50m wide and 350m long) occurs between the Turf Nursery and the back of 16E Green. Much of this area contains a large, temporary soil stockpile from the West Housing Development. Surviving features of the former River Red Gum Woodland include old River Red Gums and Drooping Sheoaks close to the right side of the fairway. The boundary comprises mixed plantings of non-native eucalypts, *Pinus*, cypress, *Melaleuca armillaris* and Coastal Teatree. Left hand side of the fairway has a small colony of Dryland Teatree and Silver Banksia.

Features:

- Native vegetation patches:
 - Class B: Native grassland, left side of 16E
 - Class B: Dryland Teatree Woodland remnant, left side of 16E
- Native trees:
 - River Red Gum (A), Swamp Paperbark (B), Drooping Sheoak (C), Native Pine (D), Dryland Teatree (E)

PROPOSED

West of the Turf Nursery on 16E, existing boundary vegetation should be supplemented to provide adequate screening from the adjacent residential development. Beyond the small stand of old Native Pine, revegetation should be based on a River Red Gum Woodland community. Reinforce boundary planting to improve screening from adjacent residential development; remove inappropriate plantings of non-native eucalypts, Bracelet Honey-Myrtle, Coastal Teatree, Cypress, Norfolk Island Hibiscus, Swamp Oak, etc. Replace removals with local native species to enhance the original communities in this area – Native Pine Woodland and River Red Gum Woodland.

Strategy:

Tee

- Revegetate damp, low swale on right side of tee; replace recently removed Knobby Club Rush with alternative low-growing species (e.g. Silky Blue-grass, Blue Twig-rush, Sea Heath etc.)
- On the rising ground at the rear and right side; progressively replace existing vegetation with:
 - Screening plants behind the Green (Dryland Teatree, Native Pine, Drooping Sheoak) and other, smaller Native Pine Woodland species
 - Establish 3 or 4 SA Blue Gums on the high point, near fairway
 - On the rise to the right of the Tee block, remove Old Man Salt Bush, Swamp Oak and *Pinus*; replace with Drooping Sheoak, River Red Gum, Kangaroo Thorn on the high point and screening species on the low point to screen out new residential development. Create a new maintenance track to the Turf Nursery along the fence line to allow easier access for course staff.

Right

- Remove planted eucalypts and palms along fence next to the Turf Nursery
- Between the Turf Nursery and edge of the fairway, replace non-native trees with tall gums (SA Blue Gum and/or River Red Gum) and Drooping Sheoak.
- Remove non-native eucalypts, Bracelet Honey-Myrtle, Coastal Teatree etc. along fence line; closer to the fence, establish 2 or 3 lines of locally native trees for screening with open understorey; further away from fence plant lower screening vegetation, e.g. Dryland Teatree, Coast Boobialla. Re-establish River Red Gum Woodland

Left

- Left of the Tee, remove Coastal Teatree around the 2 River Red Gums; replace with Native Pines
- On the small rise, retain the small River Red Gums, introduce Drooping Sheoaks, Golden Wattle and native grass/herb understorey
- Amongst the grouping of Dryland Teatree and Silver Banksia, selectively plant more of these two species

Green

- Remove Swamp Oak, Norfolk Island Hibiscus left of and behind the Green; Restore this area as a Swamp Paperbark Low Woodland (refer to Plant Community 4)
- Remove Coastal Teatree and non-native trees to the right of the Green and screen with Dryland Teatree and Drooping Sheoak

Hole 16 - EAST COURSE: Significant Features



EXISTING

Features:

- PROPOSED**

Strategy

Tee

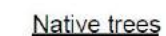
- Carry**

- Left**

- Right**

- ## Green

- ### Hole 17 - EAST COURSE: Significant Features



Native vegetation

Class A1 

Class A2

Class B 

HOLE 18

EXISTING

Hole 18 has been developed over two native plant communities: a former Native Pine Woodland and a Native Pine – Silver Banksia – Sheoak Woodland (approximately 0.7ha). A significant remnant of the Native Pine – Silver Banksia – Sheoak Woodland occurs on the right of the fairway. Remnants of a third native plant community – River Red Gum Woodland, occurs near the 12th Tees.

Features:

- Landforms:
 - Low natural dune along the right side of the fairway
- Native vegetation patches:
 - Class A1: Native Pine Woodland right side
- Native trees:
 - River Red Gum (A), Dryland Teatree (B), Native Pine (C)

PROPOSED

Improve screening of large water tank on the left side. Restore the Native Pine – Silver Banksia – Sheoak Woodland by minimising impacts such as traffic and irrigation over-spray and by applying a sensitive bush management approach to encourage natural regeneration.

Strategy

Tee

- Remove the Coastal Teatree on the right-hand side of the Black Tee and the Knobby Club Rush on the left and extend the turfed area out to meet the Blue Tee to reduce irrigation over-spray OR remove the Coastal Teatree on the right of the Black Tee and the Knobby Club Rush on the left, remove the small area of turf between the Black Tee and Blue Tee and alter the Black Tee irrigation heads; plant with low growing native groundcovers and create a path to the Black tee.
- Create a Native Pine back drop surrounding the Black Tee and to screen out the 15th and 16th holes.

Left

- See also **Hole 12 – left**
- Remove Coastal Teatree; re-establish Native Pine Woodland (refer Plant Community 1)
- Improve screening on western side of large water tank: remove Pine, acacias and replace with dense planting of Native Pine
- Remove: leaning eucalypt and Pine behind 2 large *Pinus* trees and 2 cypress trees; convert this area to Native Pine Woodland (refer Plant Community 1)
- Retain and under-plant group of large River Red Gums

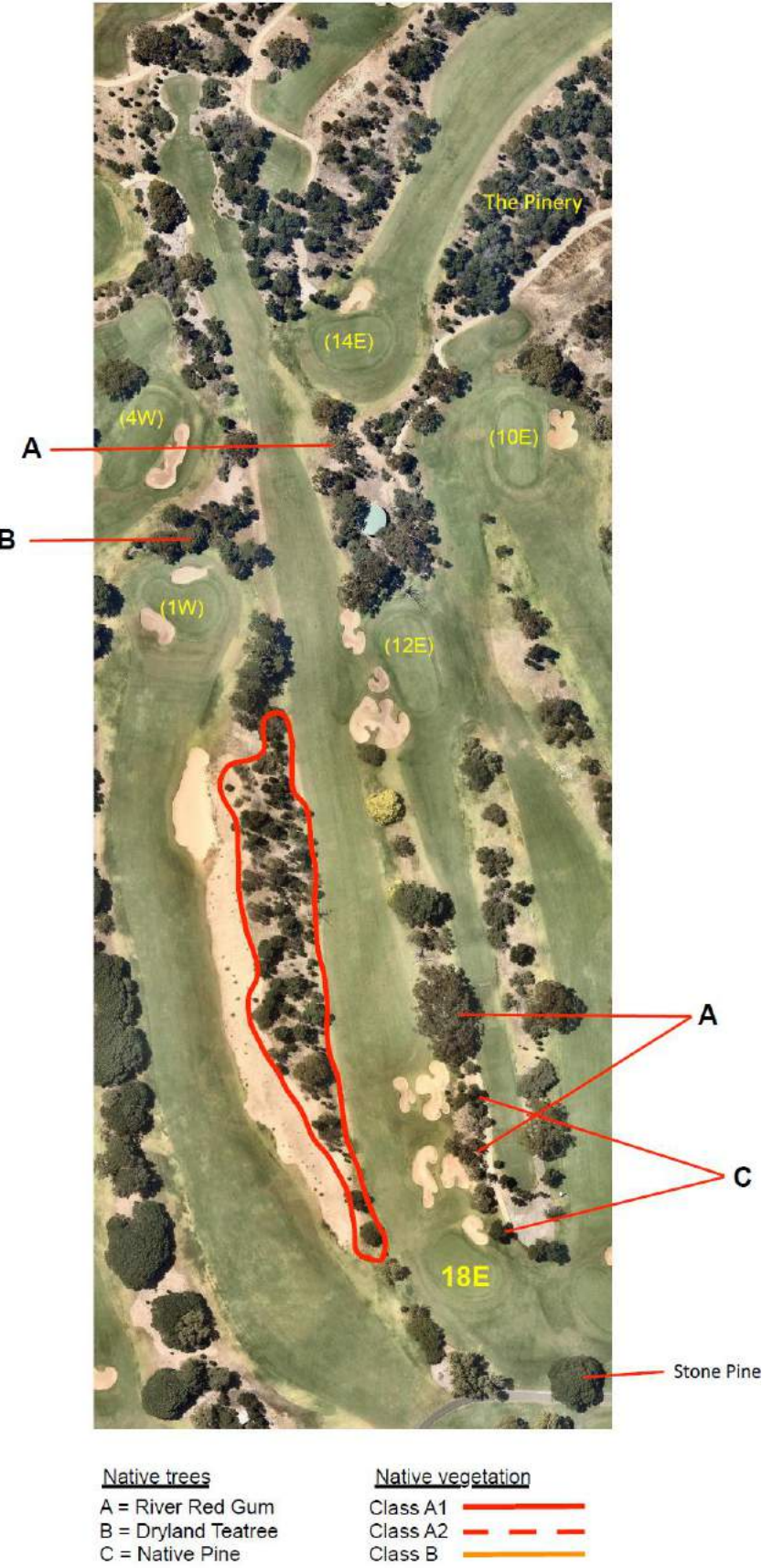
Right

- Maintain open understorey behind 4W Green; Plant a tall-growing eucalypt (e.g. SA Blue Gum); progressively replace tall Bracelet Honey-Myrtle with Native Pine
- Remove Pine and replace with Native Pine and extend planting across open area to group of 8 large Pines & single Cypress
- Remove 2 Pines from the southern end of the group of 8 and the single Cypress
- Carefully restore the Native Pine – Silver Banksia – Sheoak Woodland:
 - Minimise impacts of turf operations and golfers, particularly traffic, irrigation over-spray and weed invasion
 - Restoration should focus on methods to encourage natural regeneration, avoiding planting the interior of the patch (planting should be limited to the edges and adjacent areas)
- Revegetate the wide sandy waste/bunker at the northern end with suitable native species (e.g. Muntries and Ruby Saltbush).
- Re-establish the Native Pine Woodland to the group of Tamarisks at the southern end
- Remove the Tamarisks

Green

- Remove group of Tamarisks south of the Green; Replace with Native Pines

Hole 18 - EAST COURSE: Significant Features



ASR Wetlands

EXISTING

The ASR wetlands are situated on the right (eastern) side of 4E, 5E and 6E. The dryland, perennial vegetation in the vicinity of the ponds largely comprises volunteer species introduced in the ground mulch. Soil type is heavy-textured, clay-based. This area may have originally supported a River Red Gum Woodland.

PROPOSED

Within 5 metres of the ponds, retain Swamp Paperbark, but remove all other tree species including Swamp Oak, River Red Gum, and Golden Wreath Wattle (*Acacia saligna*) to protect the integrity and function of the basins. Outside this zone remove all Swamp Oak and Golden Wreath Wattle. Retain existing shrubs and ground covers particularly local native species (Scarlet Bottlebrush, Dryland Teatree, *Scaevola crassifolia*, etc.). Plant Swamp Paperbark and Scarlet Bottlebrush (*Callistemon rugulosus*) along the eastern edge of the ponds to provide screening from Frederick Road.

Strategy

Hole 4E / Southern Cell

- Improve the boundary screening between the Southern Cell and the Central Cell (e.g. Dryland Teatree).
- On the eastern/northern side of the Southern Cell remove the tree species, particularly Swamp Oak, eucalypts, and Golden Wreath Wattle, however retain the Native Pine, Dryland Teatree and shrub species.
- Plant Swamp Paperbark and Scarlet Bottlebrush along the eastern edge of the ponds to provide screening from Frederick Road. Remove any tree species.

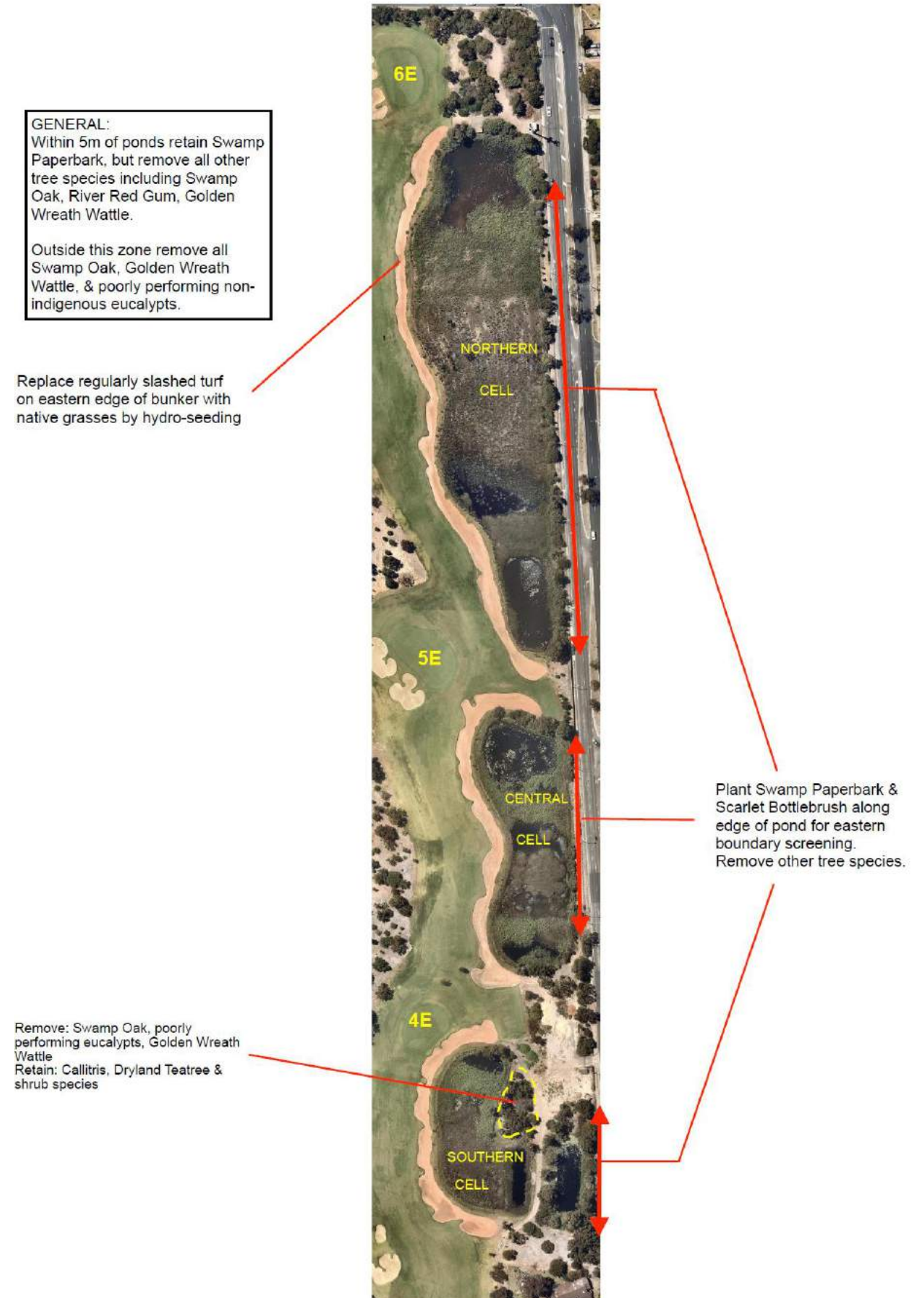
Hole 5E / Central Cell

- Plant Swamp Paperbark and Scarlet Bottlebrush along the eastern edge of the ponds to provide screening from Frederick Road. Remove any tree species.

Hole 6E / Northern Cell

- Plant Swamp Paperbark and Scarlet Bottlebrush along the eastern edge of the ponds to provide screening from Frederick Road. Remove any tree species.
- Establish a native grass narrow strip and replace the regularly slashed turf (approx. 80-100m) along the eastern edge of the bunker near the approach to the green.

ASR Wetlands - EAST COURSE





Landscape Concept Plans
WEST COURSE



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August 2020

INTRODUCTION

The aim of the Landscape Concept Plan for the West Course is to develop cohesive and attractive landscape by identifying and reinforcing the high-quality, distinctive or unique landscape character types.

Landscape character zones

Two landscape character zones are recognised on the West Course according to the predominant vegetation type:

- Zone 1: Non-native vegetation - Vegetation that has been planted and is not of local native provenance to Grange or the local area: all Holes, except 1W, 3W, 13W
- Zone 2: Native vegetation - Vegetation that is native to Grange (the vegetation may either be remnant, or grown and planted from seed of local native species): Holes 1W, 3W, 13W

Indigenous vegetation

The condition of indigenous vegetation patches at Grange varies widely from a single, isolated individual with no associated plants, to a plant community with several strata or layers (e.g. grasses, shrubs and trees) containing many plants of many species. A simple classification (A1, A2 or B) to indicate the relative condition of indigenous vegetation is based on two criteria, structural diversity and species diversity:

- **Class A1** - All or most original layers present, many species present
- **Class A2** - All or most original layers present. One or more layers absent or severely altered/damaged; Lesser diversity in the understorey
- **Class B** - Only one of original layers present; Single species, comprising several individuals.

Landscape Concept Plans

Individual Landscape Concept Plans have been developed for each hole on the West Course. Each plan describes the existing conditions and outlines the strategies or broad actions to achieve the desired landscape character. Management actions to achieve the desired landscape character may include one or more of the following approaches:

- Protecting and maintaining key features or sites
 - minimising threats and degrading influences (weeds, irrigation over-spray, pest animals, trampling, etc.)
 - restoring degraded vegetation patches
 - improving individual tree health
- Extending or expanding key features or sites – i.e. revegetation and tree planting
- Removing inappropriate vegetation:
 - Invasive plants causing turf management problems
 - Sick or diseased plants
 - Plants poorly suited to local conditions due to a drying climate, or
 - Plants that detract from the existing or desired landscape aesthetic



Photographs: Groves of planted pines, 16W; Large River Red Gum near 4W tee; Native grass feature, 8W carry.

HOLE 1

EXISTING

Hole 1 occurs predominantly over two former Native Pine Woodland communities and to a lesser extent, River Red Gum Woodland, with remnant features of each still present. A feature of Hole 1 is a patch of Native Pine Woodland containing small colonies of Silver Banksia, Quandong and Drooping Sheoak. The woodland is flanked on the west by a large sandy waste, sparsely vegetated with Knobby Club-rush, Woolly Mat-rush and Perennial Veldt Grass. An avenue of large Stone Pines runs along the left-hand side, transitioning into the Stone Pine character of the West Course from the Native Woodland character of the East.

Features:

- Landforms:
 - Low natural dune along the right side of the fairway
- Native vegetation patches:
 - Class A1: Native Pine Woodland right side of 1 West (between 1W & 18E)
- Native trees:
 - River Red Gum (A), Dryland Teatree (B)
- Non-native trees:
 - Large avenue of Stone Pines between 1W & 2W

PROPOSED

Maintain the avenue of Stone Pines as a landscape feature of the West Course. Carefully restore the rare Native Pine Woodland to encourage possible regeneration of species that may still be present at the site. Remove the invasive Knobby Club Rush and Perennial Veldt Grass in the sandy waste along the right-hand side of the fairway and replace with low-growing native sand-binding species (e.g. Muntries, Pigface, Ruby Saltbush etc.) to prevent sand drift into the Native Pine Woodland.

Strategy

Left

- Retain dead tree for habitat purposes
- Remove Tamarisk trees and replace with Native Pine
- Retain avenue of Stone Pines, removing only poor specimens, with major pruning where necessary for line of sight; Remove planted eucalypts
- Retain and enhance grove of Native Pine and Sheoak; remove pine tree and non-native eucalypts

Right

- refer East Course **Hole 18 – right**
- Remove and replace the invasive Knobby Club Rush and Perennial Veldt Grass in the sandy waste; Replace with low-growing native heath and grass species for soil stabilisation (refer Plant Community 1): e.g. Muntries, Common Everlasting, Austral Storksbill, Long Tails, Woolly Mat-rush, Coast Speargrass etc.

Green

- Retain big Pine tree West of the Green
- Protect/enhance habitat for a large, old Dryland Teatree – associated with Native Pine, River Red Gum, Sticky Hopbush and Sheoak – between 1W and 4W Greens

Hole 1 - West Course: Significant Features



Native trees

B = Dryland Teatree

Native vegetation

Class A1
Class A2
Class B

HOLE 2

EXISTING

Hole 2 occurs predominantly over Native Pine Woodland with remnant features still present around the Tees and to a lesser extent, River Red Gum Woodland. On the right of the tees is a remnant sand dune with a large hollow between Hole 2 and Hole 4 Tees. Avenues of Stone Pines run along both sides of the fairway commencing from the end of the Carry.

Features:

- Landforms:
 - Natural sand dune along the right side of the fairway
- Native vegetation patches:
 - Class A2: Native Pine Woodland between 1W and 2W
 - Class A2: Native Pine Woodland between 2W and 3W (including Chocolate Lily colony)
- Native trees:
 - River Red Gum (A), Native Pine (B)
- Non-native trees
 - Two avenues of large Stone Pines running down both sides of the fairway

PROPOSED

Maintain the avenues of Stone Pines as a landscape feature. Rope off the vegetation areas both sides of the path from 1W to the 2nd West Tees as both areas have regeneration occurring. On the slopes of the swale beside the tees, plant groundcovers to control soil erosion.

Strategy

Left

- Refer to West Course **Hole 1 – left**

Right

- Near the tees is a large sandy Waste (60m wide, 100m long) with scattered small Native Pines and open understorey (including Woolly mat-rush). There is little or no traffic in this area; A significant big patch of Vanilla Lily occurs at the southern end (closer to 3W). At the right-hand dog-leg on 3W, plant native tussock grasses on the narrow, turfed tongues of the bunkers to stabilise and define the edge. Establish low growing vegetation (e.g. *Kunzea pomifera*, native grasses, Woolly mat-rush) on the adjacent broad sandy flat, and plant some Native Pine nearer 2W. On the sandy flat to the north, and south of 2 tall Native Pines, plant 4 or 5 Native Pines over native tussock grasses. Adjacent to this area, in the deep hollow, plant some more Sheoak and Native Pine over Flax-lily, Spear grasses, Ruby Saltbush, Chocolate Lily, Golden Wattle. To the east and north, lay back the steep batter 1-2m and stabilise with *Kunzea*, Woolly Mat-rush, Flax-lily, Ruby Saltbush, etc.
- Potential sand mining close to the fairway will adversely affect a colony of native skinks with active burrows in this area (suspected Spotted Ctenotus).
- Retain the two River Red Gums on the western side, but remove adjacent exotic pine tree.
- Retain avenue of Stone Pines, including the dead tree in the small gap. Thin out Stone Pines; keep the other tall *Pinus* sp.

Green

- Remove cypress trees (4), *Melaleuca armillaris*, Coastal Teatree; Tamarisks; Replace all with Native Pine around the Green
- Plant Native Pine around bore pump shed for screening; Remove non-native eucalypt (*E. spathulata*)

Hole 2 - West Course: Significant Features



Native trees

A = River Red Gum

Native vegetation

Class A1 ———
Class A2 - - - - -
Class B ———

HOLE 3

EXISTING

Hole 3 occurs over formerly Native Pine Woodland and River Red Gum Woodland with remnants of each still present. An avenue of large Stone Pines also features along this hole. A large natural, sandy waste, runs along the right-hand side from the carry towards the Green as well as a smaller sandy waste on the left of the ladies' tee providing a sandbelt look to the hole.

Features:

- Landforms:
 - Natural sand dune along the right side of the fairway
- Native vegetation patches:
 - Class A1: Native Pine Woodland right-hand side of 3W
 - Large colony of Chocolate Lily (*Arthropodium strictum*) between 3W and 2W
- Native trees:
 - Silver Banksia (A), River Red Gum (B), Native Pine (C)
- Non-native trees
 - Avenue of Stone Pines between 3W and 2W

PROPOSED

Maintain the avenue of Stone Pines between Hole 3 and Hole 2 to maintain a consistent character for the West Course. At other locations, remove inappropriate or invasive plantings of Tamarisk, Coast Teatree, Bracelet Honey-Myrtle and introduced cypress trees. Reinstate sand drifted from the right-hand side waste bunker, then stabilise and revegetate the recovery site.

Strategy

Tee

- Remove Knobby Club Rush in the garden area beside the Blue Tee and replace with Native Pine and a sparse understorey (refer Plant Community 1).
- Remove Perennial Veldt and Poa grass left of the Red Tee; replace with native Spear grasses in a clumping effect

Left

- Retain the two, pink-flowering *Hakea francisiana* shrubs (native to northern Eyre Peninsula) as an attractive floral feature
- Establish Native Pine Woodland habitat (Plant Community 1) around group of three Silver Banksia shrubs (local provenance); Remove recently planted tubestock (not local provenance) and replace with a handful of Silver Banksia seedlings where the seeds are sourced from the course.
- Plant hollow between Hole 3 and Hole 9 Pine trees with native grasses
- In sandy vegetation patch between the 3rd, 8th and 9th West, remove acacias and planted eucalypts; introduce more Flax-lily, native grasses and small group of Sheoaks
- Maintain small open area between the 8th Green and Hole 3 for TV tower for potential tournaments
- Just south of Hole 8 Green: Retain Pine tree; remove acacia shrub, Tamarisk, Geraldton wax-flower; Plant Sheoaks with colonisers (e.g. Ruby Saltbush, Seaberry Saltbush); Retain the 3 Native Pines; Near fairway plant Sheoaks with a native grass understorey
- East of Hole 8 Green retain the 2 River Red Gums and large Pine trees
- Just north of Hole 8 Green: Remove non-native eucalypt (next to small Sheoak)

Right

- Retain the avenue of Stone Pines, including the dead tree in the small gap. Thin out Stone Pines (remove or major prune selected trees); keep the other tall *Pinus ssp.*
- The right side features a large sandy waste (60m wide, 100m long) with scattered small Native Pine and open understorey (including Woolly Mat-rush).
 - A large patch of Chocolate Lily between 2W and 3W is at risk of damage from buggies. Place large habitat logs around the patch to prevent further buggy traffic.
 - Sand from the bunker has drifted east-ward and is beginning to cover the patch of Chocolate Lily. Recover the sand drift (blue shading in the following Figure) to re-instate the original profile of the bunker:

Hole 3 - West Course: Significant Features



Continued overleaf



Figure. Sand drift from 3W bunker to be reinstated

- The excavated area should then be seeded with fescue to stabilise the soil.
- Once the fescue is established and the substrate is stable, plant native tussock grasses on the narrow, turfed tongues of the bunkers to stabilise and define the edge.
- Establish low growing vegetation (e.g. *Kunzea*, native grasses, Woolly mat-rush) on the adjacent broad sandy flat, and plant some Native Pine nearer 2W.



- On the sandy flat to the north, and south of 2 tall Native Pines, plant 4 or 5 Native Pines over native tussock grasses. Adjacent to this area, in the deep hollow, plant some more Sheoak and Native Pine over Flax-lily, Spear grasses, Ruby Saltbush, Vanilla Lily, Golden Wattle.
- To the east and north, lay back the steep batter 1-2m and stabilise with *Kunzea*, Woolly Mat-rush, Flax-lily, Ruby Saltbush etc.
- Possible sand mining close to the fairway will adversely affect a colony of native skinks with active burrows in this area (suspected Spotted Ctenotus).
- Retain the 2 River Red Gums on the western side, but remove adjacent *Pinus* tree.

Green

- Behind Green: Remove Coastal Teatree and Tamarisk; Remove 3 *Pinus* trees between 2 large Sugar Gum trees
- East of Green: Remove or prune big Coastal Teatree; Retain large *Pinus* trees
- Between Green & 4W tees: Develop garden feature (Native Pine, *Dianella*, Spear grasses, etc.)

Photographs: Grove of planted pines, 5W; Native Small-fruited Bluebush flowers;
Native Woolly Mat-rush flowers; Planted pines near 11W Green

HOLE 4

Hole 4 - West Course: Significant Features

EXISTING

Hole 4 is established over a former Native Pine Woodland and River Red Gum Woodland, with remnants of each still present. A line of Stone Pine trees runs down the left-hand side of the Par 3 behind which occurs a stand of remnant Native Pine with a sparse native understorey. The fourth Blue Tee has a steep gradient running down into a sandy hollow.

Features:

- Native vegetation patches:
 - Class B: Native Pine Woodland on the left-hand side
 - Small colony of Chocolate Lily near the seating area on the left-hand side of 4W
- Native trees:
 - River Red Gum (A), Native Pine (B)

PROPOSED

Remove planted groundcovers of inappropriate species (*Myoporum parvifolium*) on the slopes of the hollow and replace with Plant Community 1 groundcovers (e.g. Muntries, Pigface, Ruby Saltbush etc.). Re-establish a dense Native Pine Woodland on the left-hand side out-of-play area with a sparse native understorey.

Strategy

Tee

- Between tees and 3W Green, remove big Coastal Teatree; Retain and lift large Pine trees; develop a garden feature using Native Pine, Flax-lily, Spear grasses, etc.

Left

- Remove large Coastal Teatree near bunker
- Extend the Native Pine Woodland to established Native Pines with a lower stratum of planting (refer Plant Community 1)

Right

- Refer **West Course Hole 2 – Tee**

Green




- Behind the Green, remove non-native eucalypt
- Retain large Bracelet Honey-myrtle
- Retain and protect the large, old Dryland Teatree behind the 1W Green and enhance the Native Pine community around it with selective planting (refer Plant Community 1)



Native trees

- B = River Red Gum
- D = Dryland Teatree

Native vegetation

- Class A1 
- Class A2 
- Class B 

HOLE 5

EXISTING

Hole 5 occurs predominantly over River Red Gum Woodland with some remnant features still present. A significant patch of Native Pine Woodland occurs between 5W and 17E, though it suffers from heavy weed invasion. Regenerating native Spear grasses and Austral Storksbill on the left between Holes 4 and 5 provide an aesthetically appealing natural feature.

Features:

- Landforms:
 - Natural sand dune along the right side of the fairway
- Native vegetation patches:
 - Class A1: Native Pine Woodland right-hand side between 5W and 17E
 - Class B: Group of large River Red Gums right of 5W Green
- Native trees:
 - River Red Gum (A), Swamp Paperbark (B)

PROPOSED

Remove inappropriate or invasive plantings of Coastal Teatree, Bracelet Honey-Myrtle, Cypress trees and some Native Pine. Restore Native Pine Woodland patch between 5W and 17E.

Strategy

Tee

- Behind tees, remove all planted vegetation except Silver Banksia; Plant Native Pine and shrubs (e.g. Sticky Hopbush, Kangaroo Thorn, Umbrella Bush etc.) to improve screening

Left

- See West Course **3W – Green**
- Remove Cypress tree and Pine with damaged crown
- Near green, replace recently planted Native Pine with Drooping Sheoak

Right

- Carefully restore the Native Pine Woodland patch using low-impact bush regeneration approach:
 - Restoration should focus on methods to encourage natural regeneration, avoiding planting the interior of the patch (planting should be limited to edges and adjacent areas).
 - Key weeds for removal include Coastal Teatree, shrub acacias, Cypress, Coastal Galenia, Hottentot Fig, Soursob, Wild Radish, and Fleabane
- Retain group of large Pine trees
- Plant gap between 2 patches of Sugar Gum *Eucalyptus cladocalyx* (6 trees each) to native tussock and spear grasses.
- Remainder of right side to Green: Retain open aspect; Remove Coastal Teatree, maintain existing large Pine trees and River Red Gum – control Perennial Veldt, replacing with native tussock grasses
- Small group of River Red Gum near Green: Maintain irrigated turf underneath canopies

Green

- Remove introduced cypress but retain *Pinus* tree
- Right of the Green, plant Swamp Paperbark and Scarlet Bottlebrush in hollow. On higher ground plant Drooping Sheoak and Dryland Teatree. Along fence-line plant native screening species including Kangaroo Thorn

Hole 5 - West Course: Significant Features



Native trees

- A = River Red Gum
- B = Swamp Paperbark

Native vegetation

- Class A1 ————
- Class A2 - - - -
- Class B ————

HOLE 6

EXISTING

Established over former River Red Gum Woodland with a few remnant trees still present. The vegetation along the western boundary contains many inappropriate or invasive species. Small groups of large exotic Pines between 6 and 7 West provide visual interest.

Features:

- Native trees: River Red Gum (A), Drooping Sheoak (B)

PROPOSED

Keep left side open, removing all eucalypts and Coastal Teatree from opposite bunker up to the Green, replacing with tall feature pines (e.g. *Pinus pinaster*) to make way for turf. On the right side, retain large River Red Gums (2) and Coastal Teatree for screening to adjacent the tee; elsewhere remove Coastal Teatree and other woody weeds (e.g. Poplar, Buckthorn, shrub acacias, Bracelet Honey-Myrtle) and replace with medium shrubs (e.g. Sticky Hopbush, Scarlet Bottlebrush and Dryland Teatree) to allow adjacent houses limited view of the course. Extend group of planted Sheoaks before first bunker, 10 metres towards fairway.

Strategy

Tee

- On right: Retain large River Red Gums (2) and Coastal Teatree for screening

Left

- Group of large introduced pine trees: remove poor quality specimens; retain the best of 2 non-native eucalypts
- Retain group of 4 Coastal Teatrees
- Remove 2 senescing eucalypts
- Remove 10 small River Red Gums

Right

- Extend group of planted Sheoaks before first bunker, 10m towards fairway
- Remove large introduced pine trees next to bunker, retain the large pine trees just south of the bunker
- Retain group of small River Red Gums
- Remove Coastal Teatree and Bracelet Honey-Myrtle between second bunker and Green; replace with Dryland Teatree

Green

- Keep left side open
- On right side, replace planted Native Pine with Dryland Teatree

Hole 6 - WEST COURSE: Significant Features



Native trees

A = River Red Gum

HOLE 7

EXISTING

Hole 7 occurs over over formerly River Red Gum Woodland with a few remnant trees still present. Small groups of large exotic pines between Hole 6 and Hole 7 provide visual interest and reaffirm the character of the West Course.

Features:

- Native trees: River Red Gum (A), Drooping Sheoak (B)

PROPOSED

Maintain low understorey on both sides (removing Coastal Teatree and establish native grassland), retaining large Pine trees and Sheoaks and planting more of each to replace removed eucalypts. In the right carry remove turf from the rough to establish a native grassland carry feature with wildflowers planted throughout to provide some texture and colour to the hole.

Strategy

Tee

- Remove the group of Coastal Teatree on the right and replace with Dryland Teatree
- Remove Coastal Teatree to expose the large River Red Gum and establish a native grassland from the slope of the 12W Tees down into the 7W Carry.

Right

- Establish a low, heathy Carry (20m x 70m) in front of tees: Scalp back turf and plant to local native groundcovers, low herbs and grasses (e.g. Muntries, Common Everlasting, Satin Everlasting, Edge Bluebell, spear grass and Wallaby Grass)
- From Carry to first bunker: replace senescing eucalypts, other eucalypts and Cypress tree; replace with tall *Pinus* species.
- From bunker to the green, remove senescing eucalypts and poor *Pinus* specimens, replacing with Sheoaks and maintaining an understorey of spear-grasses; remove all small eucalypt in the hollow and replace with 3-4 Sheoaks
- Near the Green, remove 2 small eucalypts and young Native Pine; replace with Sheoaks

Left

- Refer to West Course **Hole 6 – left**

Hole 7 - WEST COURSE: Significant Features



Native trees

- A = River Red Gum
- B = Drooping Sheoak

HOLE 8

EXISTING

Existing over a predominantly River Red Gum Woodland with remnant features still present. Regenerating native Spear-grasses and Austral Storksbill in the Carry provide an attractive natural feature.

Features:

- Native vegetation patches: Class B: Naturally regenerating native grassland in 8W Carry
- Native trees: River Red Gum (A)

PROPOSED

Landscape the Carry by adjusting the flow of the sand dune and making the high points a little higher, transplanting the Spear Grass from the low points onto the newly formed high points and leaving the low points as bare sand to give the carry a “bunker aesthetic” garden feature. Once the transplanted Spear Grasses have established, plant native herbs and grasses (e.g. Austral Storksbill, Common Everlasting, Wallaby Grass, Edge Bluebell etc.) on the high points amongst the Spear Grass to provide colour and different textures to the Carry.

Strategy

Left

- Native Spear-grass regeneration in the carry: Encourage Spear-grass spread northwards by altering thinning the dense population on the right-hand side of the carry by altering the landscape of the sand dune and transplanting Spear-grass across the site; Introduce C4 (warm season) grasses (e.g. Kangaroo Grass) and native herbaceous plants (e.g. Common Everlasting, Satin Everlasting, Austral Storksbill and Edge Bluebell etc.) to provide longer seasonal growth and colour.

Green

- Behind the Green, retain the 2 River Red Gums and large Pine trees
- Just north of the Green: Remove non-native eucalypt (next to small Sheoak) and plant small grouping of Sheoaks

Right

- Just south of the Green, retain the introduced pine tree but remove the shrub acacia, tamarisk, Geraldton Wax- flower; replace with Drooping Sheoaks and colonising shrub species (e.g. Ruby Saltbush, Seaberry Saltbush); retain the 3 Native Pines and plant small grouping of Drooping Sheoaks and native grasses
- Maintain small open area for TV tower

Hole 8 - West Course: Significant Features



HOLE 9

EXISTING

Characterised by avenues of tall exotic pine trees, including Stone Pines. A small number of River Red Gums occur on both sides of the fairway.

Features:

- Native trees: River Red Gum (A)

PROPOSED

Maintain the existing landscape character of the tall exotic pine avenues. Establish a low-heathland garden feature in the Carry using local native species.

Strategy

Tee

- Establish a low, heathy carry (15m x 120m) in front of the tees to the avenue of tall exotic Pines between 9W and 3W: Scalp back the turf in the rough and plant locally native groundcovers, low herbs and grasses (e.g. Muntries, Common Everlasting, Satin Everlasting, Edge Bluebell, Spear Grass and Wallaby Grass etc.)

Left

- Remove Native Pines and replace with Sheoaks and Sticky Hopbush
- Plant a River Red Gum or Sheoak just south of the existing large River Red Gum
- Maintain the avenue of large exotic pine trees
- Avenues of pines to Green: Maintain the open aspect between 9W and 3W (e.g. native tussock grasses and ground-covers).

Right

- Maintain low, native tussock-grass understorey
- Remove small, non-indigenous eucalypts and group of 5 Pine trees and replace with River Red Gums
- Retain group of 4 River Red Gums and plant more to the short avenue of large Stone Pines. Remove the single introduced cypress tree and replace with a grouping of Drooping Sheoaks.
- Stone Pines to Green: Remove Coastal Teatree and replace with Sheoaks and Dryland Teatree

Hole 9 - West Course: Significant Features



Native trees

A = River Red Gum

HOLE 10

EXISTING

Predominant vegetation is introduced conifers (Stone Pines) occurring as avenues of large, mature trees. A small number of River Red Gums occur on both side of the fairway.

Features:

- Native trees: River Red Gum (A)

PROPOSED

Maintain the exotic Pine avenues, removing only individual poor specimens. Remove other non-native species such as Bracelet Honey Myrtle, Coastal Teatree and Golden Wreath Wattle. Improve screening around Maintenance Facility using locally native species (e.g. Dryland Teatree, Umbrella Bush, Kangaroo Thorn etc.)

Strategy

Left

- Retain big exotic Pine and native grass understorey; introduce low-growing, showy herbaceous plants (e.g. Common Everlasting & Satin Everlasting).
- Remove Golden Wreath Wattle and Bracelet Honey Myrtle hanging over the sand bin and ball washer
- Remove large Cypress tree and replace with River Red Gum or SA Blue Gum
- Remove group of exotic Pines (6), Coastal Teatree (2), Bracelet Honey Myrtle (2) and cypress; replace with River Red Gum or SA Blue Gum
- Retain exotic Pines to the Green, removing single poor specimen

Right

- Between 2W Gren and Maintenance Facility, remove the Bracelet Honey Myrtle, Bottlebrush and some Native Pines; Retain Dryland Teatree and plant Sheoaks and groundcovers (e.g. Ruby Saltbush, Claspig Goodenia)
- Adjacent Maintenance Facility, plant Sheoaks and Dryland Teatree to improve screening by existing trees (River Red Gums, Lemon Scented Gum and exotic Pines)
- Retain the avenue of exotic pines from the Maintenance Facility to the Green

Green

- Left of the Green, remove the group of 3 Willow Myrtle
- Rear of the green in the large open sandy vegetation area, transplant the Native Pine recently planted to more appropriate sites and replace with Sheoaks and groundcover plants to keep relatively open

Hole 10 - WEST COURSE: Significant Features



Native trees

A = River Red Gum

HOLE 11

EXISTING

The predominant vegetation is introduced conifers, occurring as avenues of large, mature trees. A small number of River Red Gums occur left of the Tee with the Maintenance Facility boundary running along the right-hand side of the fairway.

Features: Native trees: River Red Gum (A), Dryland Teatree (B)

PROPOSED

Improve screening around the Maintenance Facility using locally native species (e.g. Dryland Teatree, Drooping Sheoaks etc.). In the large sandy open area between 11, 12 and 13 West, plant an open Drooping Sheoak Woodland.

Strategy

Tee

- Retain group of Coastal Teatree for the short term to provide screening and progressively remove over the longer term replacing with Dryland Teatree and Sheoaks.

Left

- Remove Coastal Teatree after the big River Red Gum and replace with Dryland Teatree
- Remove exotic pine next to large, old Dryland Teatree
- Plant groundcovers (e.g. native tussock grasses, Muntries, Woolly Mat-rush, Flax Lily, Ruby Saltbush etc.) and a grove of Sheoaks in the large open sandy vegetation area from the old Dryland Teatree to the exotic pine avenue behind the 12W Green.

Right

- Refer to **10W – right**
- Adjacent Maintenance Facility, remove shrub acacias and replace with Sheoak, Dryland Teatree and Sticky Hopbush to improve screening

Hole 11 - WEST COURSE: Significant Features



Native trees

A = River Red Gum
B = Dryland Teatree

HOLE 12

EXISTING

Hole 12 is predominantly planted vegetation comprising of exotic pines, non-native eucalypts and Coastal Teatree.

PROPOSED

Maintain the avenue of exotic pines and good eucalypt specimens (e.g. large Sugar Gum) between 12W and 11W, removing only individual poor specimens. Remove other non-native species such as Coastal Teatree right of the tee and selectively plant Native Pine with a native grass and herbaceous understorey flowing into the planned 7W heathy Carry.

Strategy

Tee

- Remove Coastal Teatree at the back of the Tee block and to the right to open up the area and see the flow of the land into the 7W carry; Plant Native Pine and Sheoaks over a native grass and herbaceous understorey

Right

- Remove small, poor quality exotic pines, Bracelet Honey Myrtle, Coastal Teatree and plant Sheoaks over groundcovers (e.g. Flax Lily, native tussock grasses)
- Prune exotic pines

Green

- Remove the Tamarisk in the group of exotic pines behind the Green

Hole 12 - WEST COURSE: Significant Features



Native trees

B = Dryland Teatree

HOLE 13

Hole 13 - WEST COURSE: Significant Features

EXISTING

Some small patches of remnant native vegetation occur between Hole 13 and the western boundary fence line including Swamp Paperbark and Coastal Daisy-bush.

Features:

- Native trees:
 - River Red Gum (A)
 - Remnant Coastal Daisy-bush on the right of the White Tee

PROPOSED

Reinstate appropriate habitat around the remnant Swamp Paperbark and the Coastal Daisy-Bush along the western boundary. Remove non-native species such as Coastal Teatree and non-native eucalypts and replace with appropriate screening species from adjacent Western Boundary housing.

Strategy

Tee

- Remove group of small senescing Native Pines between the 6th Green and 13th Tees and replace with Sheoaks
- Retain Swamp Paperbark and remove all other vegetation including Tamarisk, Swamp Oak, Golden Wreath Wattle, Bracelet Honey Myrtle and re-establish a Swamp Paperbark Low Woodland community (refer to Plant Community 4)

Right

- Along the boundary, remove woody weeds (Italian Buckthorn, African Boxthorn, Cape Ivy, Swamp Oak) and other non-native species; Reconstruct Swamp Paperbark Low Woodland community where Swamp Paperbarks still occur and in other low areas by reintroducing suitable understorey species (e.g. Lagoon Saltbush, Chaffey Saw-sedge, Common Sea-heath, Creeping Brookweed). Reconstruct suitable habitat around the large Coastal Daisy-bush near the first bunker.

Left

- Refer to West Course **Hole 12 – right** and **Hole 11 – left**



Native trees

- A = Swamp Paperbark
- B = Dryland Teatree

HOLE 14

EXISTING

The predominant vegetation of 14W is planted with small remnant patches comprising non-indigenous and poorly planted eucalypt trees, group plantings of Native Pines and various non-indigenous species. A grouping of large Stone Pines, Native Pines and Coastal Teatree make up the LHS with a native grass understorey. Several significant pockets of Swamp Paperbark and Dryland Teatree occur along the Western Boundary of the fence as well as two large River Red Gums, two large Lemon-scented Gums and a patch of Thatching Grass *Gahnia filum*.

Features:

- Indigenous trees: River Red Gum (A)
- Remnant *Gahnia filum* on 14W-Right

PROPOSED

Maintain good eucalypt and Native Pine specimens, Swamp Paperbark, Dryland Teatree and Thatching Grass *Gahnia filum* on the RHS, removing poorly planted and poor-quality specimens that have been used to screen adjacent housing. Restore appropriate habitat in the heavy soils and plant with ephemeral wetland species, hollowing out some areas for smaller seasonal wetland for aesthetic and utilising soil type and hydrology as circa 1930 when 14W was still a natural wetland.

Strategy

Tee

- Remove Swamp Oaks
- Retain most vegetation including Native Pine and Swamp Paperbark, Dryland Teatree and Coast Boobialla

Left

- Maintain existing turf adjacent to tees
- Retain group of Native Pines and Sheoaks, removing the single Sugar Gum
- Retain large Stone Pines
- Remove Coastal Teatree and *Grevillea* and replace with Sheoaks and native grass understorey
- Establish a group of Sheoaks where signature pine was removed
- Opportunity to replace rough with Sheoaks and native grass understorey to give 14W and the back of 16W a more defined feel

Green

- Retain Native Pine along the southern fence line and establish Native Pine / Sheoak and Banksia woodland
- Remove Swamp Oaks, bottlebrushes and poor condition eucalypts

Right

- Retain 2 River Red Gums and expand Thatching Grass *Gahnia filum* patch to develop a small seasonal wetland feature
- Remove two large Lemon-scented Gums due to them being prone to dropping limbs and right on the boundary where houses are or remove branches likely to hit houses
- Remove poor quality eucalypts and wattles
- Remove all weed species – Swamp Oak, Cape Ivy and Italian Buckthorn
- Remove Coastal Teatree, non-native eucalypts, *Melaleuca nesophila*, bottlebrush and poor quality Sheoaks and replace with more appropriate ephemeral wetland species
- Establish screening plants from adjacent housing as first priority

Hole 14 - WEST COURSE: Significant Features



Native trees

A = River Red Gum

HOLE 15

EXISTING

The predominant vegetation has been established over a former River Red Gum Woodland with small remnant patches still existing. An avenue of large pines runs the length of the left-hand side of the hole and inappropriate plantings of Coastal Teatree with scattered Pines and eucalypts running down the right-hand side. There is a large turf nursery tucked behind the large group of Swamp Oaks right of the fairway.

Features:

- Native trees: Dryland Teatree (A), River Red Gum (B), SA Blue Gum (C), Native Pine (D)

PROPOSED

Maintain avenue of Pines along the left-hand side removing the scattered Coastal Teatree. At the approach, utilise the two established River Red Gums on the left as a feature to the Green. Plant appropriate screening along the right-hand side with species supporting a River Red Gum Woodland (Plant Community 3).

Strategy

Tee

- Remove Golden Wreath Wattle, Coastal Teatree and 2 Stone Pines progressively, interplanting the area with a handful of River Red Gums and Sheoaks and screening species e.g. Kangaroo Thorn, Scarlet Bottlebrush, Sticky Hop Bush etc.

Right

- Remove all Coastal Teatree along the boundary progressively; retain large remnant River Red Gum and small group of Pines and plant appropriate screening (refer Plant Community 3)
- Near the small patch of regenerating River Red Gums and native grass species, remove the Pines and poor eucalypt to open up this area to reinforce a small River Red Gum Woodland community
- Progressively remove Swamp Oaks adjacent the turf nursery replacing with Sheoaks, Native Pines and adequate screening plants

Left

- Retain Dryland Teatree and River Red Gum left of the Carry
- Retain avenue of Pines, thinning out the group around the irrigation satellite box and removing Coastal Teatree and the poor eucalypt specimen towards the Green
- Utilise the two River Red Gums at the approach as a feature to the Green, removing the Pine between them

Green

- Remove select Pines in the large group right of the green in front of the neighbouring houses and maintain the rest
- Remove Coastal Teatree at the back of the Green and around the 16th Tees replacing with appropriate screening species (e.g. Dryland Teatree)

Hole 15 - WEST COURSE: Significant Features



Native trees

- A = River Red Gum
- B = SA Blue Gum
- C = Dryland Teatree

HOLE 16

EXISTING

The predominant vegetation of Hole 16 is planted Stone Pines in avenues of large trees down the length of both sides. A small number of River Red Gum trees occur towards the green on both sides.

PROPOSED

Maintain the avenues of introduced conifers, removing only individual poor specimens and those impacting play. Remove poor condition River Red Gums and Sugar Gums between 16W and 17W. In the longer term, progressively replace Coastal Teatree screening around the tee with Dryland Teatree and Drooping Sheoak.

Strategy

Tee

- Retain Coastal Teatree for the short term to provide screening; Progressively replace over the longer term with Dryland Teatree and Sheoaks around the LHS of the tee and down towards the back of 15W green

Left

- see West Course **Hole 15**

Green

- Extend vegetation area behind green into the rough with plantings of Sheoaks and native grasses in the understorey

Right

- Remove Sugar Gum and eucalypts and maintain avenue of pines

Hole 16 - WEST COURSE: Significant Features



Native trees

A = River Red Gum
C = Dryland Teatree

HOLE 17

EXISTING

The predominant vegetation of Hole 17 is exotic *Pinus* in avenues of large trees and a gully to the right of the green. A small number of River Red Gum trees occur between 10W, 17W & 18W as well as a group of Native Pines to the left of the green and a remnant Coast Daisy-bush next to the ladies' tee.

Features (refer also Figure 19):

- Indigenous trees: River Red Gum (A)
- Indigenous vegetation:
 - Remnant Coast Daisy-bush near tee
 - Copse of Native Pines next to Green
- Mature planted conifers

PROPOSED

Maintain the exotic pine avenues, removing only individual poor specimens. Remove other non-indigenous species such as Coastal Teatree, Euphorbia, Bracelet Honey Myrtle, and wattles, replacing them with Sheoaks, Native Pines and Dryland Teatree. Introduce low growing heathland grass species to the sand dunes either side of the approach (Jacksons's Gulch) and the two small vegetation areas next to the Coastal Daisy.

Strategy

Left

- Retain avenue of pines besides removing two amongst 5 River Red Gums to expose the tree grouping
- Remove introduced cypress tree nearer the green
- Selectively plant native grasses on the sand dune at the approach amongst the Spear Grass

Green

- Retain and lift the canopies of the gully of pines between 17W green and 16W tees
- Remove Bracelet Honey Myrtle, wattles, Coastal Teatree and Euphorbia behind the green and replace with Native Pines, Sheoaks use Dryland Teatree as screening to the adjacent housing

Right

- Selectively plant native grasses on the sand dune at the approach amongst the Spear Grass
- See also 16W

Tee

- Remove planted vegetation from garden beds on the right of the men's and ladies' tee, with the exception of the remnant Coastal Daisy and hollow out to reclaim sand and revegetate with native grasses and groundcovers
- Remove Sugar Gum left of the ladies' tee and maintain 3 large pines

Hole 17 - WEST COURSE: Significant Features



HOLE 18

EXISTING

The predominant vegetation of Hole 18 is exotic *Pinus* in avenues of large trees. A small number of River Red Gums occur between 18W and 10W and down the RHS of the fairway, as well as a defining group of River Red Gums on the edge of the West Putter. A grouping of Native Pine also occurs down the RHS between 17W and 18W.

Features (refer also Figure 20):

- Indigenous trees: River Red Gum (A), Native Pine (B)
- Non-indigenous trees: Exotic conifers
- Indigenous vegetation patches: Small groups of mature River Red Gums (A)

PROPOSED

Maintain the exotic pine avenues removing only poor specimens. Remove non-indigenous and poor specimens from the RHS fence line and screen with River Red Gum woodland shrub species and Sheoaks. Introduce low growing heathland species to the LHS of the approach along the roadside.

Strategy

Tee

- Remove introduced cypress pine and wattles right of the tees and revegetate with native grasses and shrubs
- See 17W for sand mound on RHS
- Left of the blue and white tee in the gully, remove turf from this area and revegetate with native grasses and shrubs

Left

- Introduce low growing heathland species to the LHS of the approach along the roadside and readjust irrigation to limit off-target watering in this area
- Maintain group of large pines left of the greenside bunkers
- Refer to 10W

Right

- Reclaim sand and hollow area in front of Native Pines and revegetate hollowed areas with heathland species
- Maintain exotic pine avenue down the length of the fairway
- Maintain grouping of large River Red Gums
- Remove non-indigenous and poor specimens from the houseline in line with the Practice Facility upgrade and use some of the area for more carparks, revegetating the edge of the fairway with tall trees and screening species (e.g. River Red Gum, Sheoak, Scarlett Bottlebrush, Kangaroo Thorn etc.)

Hole 18 - WEST COURSE: Significant Features



Native trees

A = River Red Gum
B = Native Pine

Native vegetation

Class A1 ———
Class A2 - - - -
Class B ———



Photographs: The Pinery from 14E; Native Pines, The Pinery; Fungi, The Pinery; Sandhill Greenhood amongst native Karkalla; Interpretive Sign, The Pinery; Native Bluebell.

APPENDIX 1. The Native Plant Communities of Grange Golf Course

At least four-native plant communities occurred on the site of Grange Golf Course at the time of European colonisation. Evidence of these still exist as small remnants on both courses, the largest and most intact being native pine woodland in the Pinery on the back nine of the East Course. Each native plant community occupied a specific habitat, based predominantly on soil type, terrain and hydrology.

Kraehenbuehl (1996) observed and recognised four native plant communities (including 1, 2 and 4 below) from visits to the local area in the 1950s. Although not recorded, River Red Gum Woodland (plant community 3) is likely to have occurred here originally given the presence today of a few very old trees. Almost its entire habitat was destroyed on the Adelaide Plains within just a few years of European settlement, leaving little evidence of the understorey for scientific documentation. This rapid demise was due to several reasons: it occurred on the most fertile, arable soils; it most likely had an open herbaceous and grassy understorey, easily cleared or grazed out by stock; and the trees were a good source of firewood.

For the purpose of managing the native vegetation in Grange Golf Course, four plant communities are defined as follows, and described in further detail below:

1. Southern Cypress Pine Woodland
2. Dryland Tea Tree Low Woodland
3. River Red Gum Woodland
4. Swamp Paperbark Low Woodland

The fourth local community recognised by Kraehenbeuhl (1996), a Southern Cypress Pine – Silver Banksia – Sheoak Woodland, is included in this classification under Plant Community 1 (Southern Cypress Pine Woodland), as a sub-type.

General descriptions of native plant communities

1. Southern Cypress Pine Woodland

The plant community structure is dominated by the upper canopy of Southern Cypress Pine (*Callitris gracilis*), often occurring in pure stands, but occasionally associated with Drooping Sheoak (*Allocasuarina verticillata*) and SA Blue Gum (*Eucalyptus leucoxylon* ssp. *leucoxylon*). The mid-storey is typically open, consisting of sparsely distributed small trees and shrubs such as Golden Wattle (*Acacia pycnantha*), Sticky Hop-bush (*Dodonaea viscosa*) and Umbrella Bush (*Acacia ligulata*). The more prominent ground layer consists of low shrubs, grasses, sedges and ground covers. A sub-type of this plant community occurs between 18E and 1W where Silver Banksia (*Banksia marginata*) and Quandong (*Santalum acuminatum*) are prominent in the mid-storey.

The natural understorey in most remnants is severely depleted. Kraehenbeuhl (1996: 189) noted “Even up until 1960 there was still an excellent and varied shrub assemblage”, listing over 50 species, of which less than ten survive now (2020). The Pinery is the best remaining example of this community. The shrub understorey is naturally sparse comprising occasional low shrubs amongst a suite of groundcovers, grasses, herbs and sedges. Much of the natural understorey has been heavily invaded by introduced grasses and broad-leaf weeds.

Southern Cypress Pine Woodland is widespread, mainly the East Course, particularly the back nine (e.g. 13E, 14E, 15E and 18E). Generally occurring on dunes and sandy rises.

2. Dryland Tea Tree Low Woodland

The plant community structure is dominated by Dryland Teatree (*Melaleuca lanceolata*) as a tall shrub or small tree, occasionally associated with Drooping Sheoak (*Allocasuarina verticillata*) and Southern Cypress Pine (*Callitris gracilis*). The mid-storey is typically open, consisting of sparsely distributed small trees and shrubs such as Golden Wattle (*Acacia pycnantha*), Umbrella Bush (*Acacia ligulata*) and Sticky Hop-bush (*Dodonaea viscosa*). The ground layer consists of a diverse cover of herbs including composites (daisies), clumps of native grasses, sedges and other ground covers.

Kraehenbeuhl (1996: 192) noted this community “occurred principally on the north-western side of the Pinery, where the light red dunes sloped away towards the Port River.” Nowadays there is little remaining evidence of this community, limited to just a few, isolated, old trees on both courses.

3. River Red Gum Woodland

The plant community structure is dominated by the upper canopy of River Red Gum (*Eucalyptus camaldulensis*), occasionally associated with SA Blue Gum (*Eucalyptus leucoxylon* ssp. *leucoxylon*) and Drooping Sheoak (<5% cover). The mid-storey is typically open, consisting of well-spaced small trees and shrubs including Golden Wattle (*Acacia pycnantha*), Scarlet Bottlebrush (*Callistemon rugulosus*), Kangaroo Thorn (*Acacia paradoxa*), Sticky Hop-bush (*Dodonaea viscosa*) and Lignum (*Muehlenbeckia florulenta*). The understorey is a diverse, mid-dense assemblage of grasses (wallaby grasses, spear grasses, kangaroo grass, lemon-scented grass, etc.), herbs, low shrubs and ground-covers.

River Red Gum trees are scattered across both courses on light and heavy soils, sometimes in groups (e.g. 9E/10E/13E). The natural understorey is now largely absent (a few, possibly remnant shrub species occur near 10E green).

4. Swamp Paperbark Low Woodland

The plant community structure is dominated by the upper canopy of Swamp Paperbark (*Melaleuca halmaturorum*). The understorey consists of low-growing salt tolerant shrubs including samphires, and sedges and grasses adapted to occasional inundation. The understorey is typically sparse, comprising a relatively low number of species.

Swamp Paperbark trees occur across both courses as single old plants or small groups of less than four or five old plants, generally with native understorey absent.

Kraehenbuehl (1996) noted this community once occurred in “...saline and semi-saline areas around the periphery of the Reedbeds between the Patawalonga Creek and Grange...”. He also noted “the Reedbeds must have presented a wondrous sight to early observers” and saw merit in the idea of recreating “a small example of a reed bed swamp, somewhat similar to that which existed in the first days of settlement.”

Swamp Paperbark Low Woodland was more extensive near the western boundary close to the edge of the original Greater Reedbeds, indicated by the presence of a few very old Swamp Paperbark plants on 16E and 17E and along the western boundary of the West Course (right side of 6W and 13W). Small pockets of very old plants can also be found closer to the eastern boundary on the East Course, for example near 1E tees, between 4E and the Practice Range, and between 8E and 9E.

References:

Kraehenbuehl, DN (1996). *Pre-European Vegetation of Adelaide: A Survey from the Gawler River to Hallett Cove*. Nature Conservation Society of South Australia Inc. Adelaide.

Schneyder, T (2008). *Native Vegetation Management Plan 2008 – 2013*. The Grange Golf Club Inc.

APPENDIX 2. PLANTING LISTS – Native Plant Communities

PLANT COMMUNITY 1

Southern Cypress Pine WOODLAND

Plant community structure is dominated by Southern Cypress Pine (*Callitris gracilis*), often occurring in pure stands, but occasionally associated with Drooping Sheoak and SA Blue Gum. The mid-storey is typically open, consisting of sparsely distributed small trees and shrubs such as Golden Wattle, Sticky Hop-bush and Umbrella Bush. The more prominent ground layer consists of low shrubs, grasses, sedges and ground covers. A sub-type of this plant community occurs between 18E and 1W where Silver Banksia and Quandong are prominent in the mid-storey.

Upper tree canopy

- Mid-dense (up to 40% cover at maturity)
- Callitris gracilis* Southern Cypress Pine
- Allocasuarina verticillata* Drooping Sheoak (uncommon, <5% cover)
- Eucalyptus leucoxylon* ssp. *leucoxylon* SA Blue Gum (rare, <5% cover)

Mid-storey

Small trees / tall shrubs

- Very sparse (<5% cover)
- Acacia pycnantha* Golden Wattle
- Acacia paradoxa* Kangaroo Thorn
- Banksia marginata* Silver Banksia
- Santalum acuminatum* Quandong

Medium shrubs

- Very sparse (<5% cover)
- Acacia ligulata* Umbrella Bush
- Dodonaea viscosa* Sticky Hop-bush

Ground stratum

- Sparse to mid-dense (10-25% cover)
- Shrubs
 - Grevillea ilicifolia* var. *ilicifolia* Holly-leaved Grevillea
 - Thomasia petalocalyx* Paper Flower
 - Rhagodia candolleana* Seaberry Saltbush
 - Chrysocephalum apiculatum* Common Everlasting
- Groundcovers
 - Kunzea pomifera* Muntries
 - Kennedia prostrata* Running Postman
 - Einadia nutans* Climbing Saltbush

- Muehlenbeckia gunnii* Native Sarsaparilla
- Carpobrotus rossii* Karkalla, Ross' Noonflower

Herbs

- Senecio pinnatifolius* Variable Groundsel
- Wahlenbergia littoricola* Bluebell
- Ptilotus polystachyus* Long Tails
- Helichrysum leucopsideum* Satin Everlasting

Grasses & sedges

- Rytidosperma caespitosum* Common Wallaby Grass
- Themeda triandra* Kangaroo Grass
- Austrostipa nodosa* Tall Spear-grass
- Austrostipa elegantissima* Elegant Spear-grass
- Anthosachne scaber* Native Wheat grass
- Lomandra leucocephala* ssp. *robusta* Woolly Mat-rush
- Dianella revoluta* Black-anther Flax-lily
- Lepidosperma viscidum* Sticky Saw-sedge
- Baumea juncea* Bare Twig-rush
- Ficinia nodosa* Knobby Club-rush

PLANT COMMUNITY 2

Dryland Teatree Low Woodland

Plant community structure is dominated by Dryland Teatree (*Melaleuca lanceolata*) as a tall shrub or small tree, occasionally associated with Drooping Sheoak and Southern Cypress Pine. The mid-storey is typically open, consisting of sparsely distributed small trees and shrubs such as Golden Wattle, Umbrella Bush and Sticky Hop-bush. The ground layer consists of a diverse cover of herbs including composites (daisies), clumps of native grasses, sedges and other ground covers.

Based on visits to Grange in the 1950s, Kraehebuehl (1996) noted that this community “occurred principally on the north western side of the Pinery, where the light red dunes sloped away towards the Port River.” The waste between 16E and the northern boundary, containing dumped soil, would be a suitable site to re-establish this plant community.

Canopy

- Sparse to mid-dense cover (up to 30%) at maturity
- Melaleuca lanceolata* Dryland Teatree
- Callitris gracilis* Southern Cypress Pine (sparse, <5% cover)
- Allocasuarina verticillata* Drooping Sheoak (sparse, <5% cover)

Shrubs, large

Acacia pycnantha Golden Wattle

Acacia ligulata Umbrella Bush

Dodonaea viscosa Sticky Hop-bush

Nitraria billardierei Nitre-bush

Shrubs, low

Rhagodia candolleana Seaberry Saltbush

Maireana brevifolia Small-leaved Blue-bush

Adriana quadripartita Coast Bitter-bush

Groundcover

Kennedia prostrata Running Postman

Enchylaena tomentosa Ruby Saltbush

Chrysocephalum apiculatum Common Everlasting

Myoporum parvifolium Creeping Boobialla

Kunzea pomifera Muntries

Herbs

Senecio pinnatifolius Variable Groundsel

Ptilotus polystachyus Long Tails

Helichrysum leucopsideum Satin Everlasting

Lotus australis Austral Trefoil

Grasses & sedges

Austrostipa nodosa Tall spear-grass

Austrostipa elegantissima Elegant Spear-grass

Rytidosperma caespitosum Common Wallaby Grass

Themeda triandra Kangaroo Grass

Ficinia nodosa Knobby Club-rush

Baumea juncea Bare Twig-rush

Lomandra leucocephala Woolly Mat-rush

Dianella revoluta Black-anther Flax-lily

PLANT COMMUNITY 3

River Red Gum Woodland

Plant community structure is dominated by River Red Gum, occasionally associated with SA Blue Gum and Drooping Sheoak (<5% cover). The mid-storey is typically open, consisting of well-spaced small trees and shrubs including Golden Wattle, Scarlet Bottlebrush, Kangaroo Thorn, Sticky Hop-bush and Lignum. The understory is

a diverse, mid-dense assemblage of grasses (wallaby grasses, spear grasses, kangaroo grass, lemon-scented grass, etc.), herbs, low shrubs and ground-covers.

Upper tree canopy

Sparse cover (up to 30%) at maturity

Eucalyptus camaldulensis River Red Gum

Eucalyptus leucoxylon ssp. *leucoxylon* SA Blue Gum (uncommon, <5% cover)

Allocasuarina verticillata Drooping Sheoak (sparse, <5% cover)

Mid-storey

Sparse cover (<5%)

Acacia pycnantha Golden Wattle

Callistemon rugulosus Scarlet Bottlebrush

Acacia ligulata Umbrella Bush

Acacia paradoxa Kangaroo Thorn

Senna artemisioides Puntty Bush

Duma florulenta Lignum

Dodonaea viscosa Sticky Hop-bush

Ground-stratum:

Shrubs, low

Sparse cover (10-25%)

Kennedia prostrata Running Postman

Enchylaena tomentosa Ruby Saltbush

Maireana brevifolia Small-leaved Blue-bush

Einadia nutans Climbing Saltbush

Atriplex semibaccata Berry Saltbush

Atriplex suberecta Lagoon Saltbush

Goodenia amplexans Claspig Goodenia

Chrysocephalum apiculatum Common Everlasting

Disphyma crassifolium ssp. *clavellatum* Round-leaf Pigface

Herbs, Grasses, Sedges

Mid-dense (50-75% cover)

Herbs

Arthropodium strictum Vanilla Lily

Wahlenbergia littoricola Bluebell

- Lotus australis* Australian Trefoil
- Pelargonium australe* Austral Storksbill

Grasses & sedges

- Rytidosperma caespitosum* Common Wallaby Grass
- Themeda triandra* Kangaroo Grass
- Austrostipa nodosa* Tall Spear-grass
- Austrostipa elegantissima* Elegant Spear-grass
- Chloris truncata* Windmill Grass
- Dichanthium sericeum* Silky Blue-grass
- Baumea juncea* Bare Twig-rush
- Ficinia nodosa* Knobby Club-rush
- Dianella revoluta* Black-anther Flax-lily
- Cymbopogon ambiguous* Lemon-scented grass
- Enneapogon nigricans* Black-heads, Bottlewashers

PLANT COMMUNITY 4

Swamp Paperbark Low Woodland

Plant community structure is dominated by Swamp Paperbark (*Melaleuca halmaturorum*). The understorey consists of low-growing salt tolerant shrubs including samphires, and sedges and grasses adapted to occasional inundation. The understorey is typically sparse, comprising a relatively low number of species.

The preferred habitat for Swamp Paperbark Low Woodland is low lying areas on heavy soil (high clay content) subject to occasional inundation. The species Swamp Paperbark can also tolerate salinity and dry conditions. Mature Swamp Paperbarks may occur as a dense copse of closely spaced trees.

Swamp Paperbark Low Woodland was more extensive near the western boundary, close to the edge of the original reedbeds, indicated by the presence of a few very old Swamp Paperbark plants on 16E and 17E and along the western boundary of the West Course (right side of 6W and 13W). Small stands of very old plants can also be found closer to the eastern boundary on the East Course, for example near 1E tees, between 4E and the Practice Range, and between 8E and 9E. The (original) understorey was naturally relatively sparse, comprising probably less than a dozen species of low shrubs, herbs and sedges.

This plant community can be re-established as a seasonal wetland feature on heavy or saline soils in low lying areas subject to inundation or where there is a high water table. Closely planted trees can develop into a very attractive copse, and as Swamp Paperbark plant is also tolerant of dry conditions, it can be used as an effective screen or windbreak in other areas. The composition of the understorey of wetland and dryland Swamp Paperbark communities would therefore differ (see below).

Canopy

- Mid-dense to dense cover (up to 60%) at maturity*
- Melaleuca halmaturorum* Swamp Paperbark

Understorey – ephemeral wetland

Sparse (10-20% cover)

- Atriplex suberecta* Lagoon Saltbush
- Frankenia pauciflora* Common Sea-heath
- Gahnia filum* Chaffey Saw-sedge
- Samolus repens* Creeping Brookweed
- Wilsonia rotundifolia* Round-leaved Wilsonia
- Suaeda australis* Austral Seablite
- Atriplex paludosa* Marsh Saltbush
- Duma florulenta* Lignum
- Juncus kraussii* Sea Rush
- Tecticornia halocnemoides* Grey samphire
- Tecticornia granulata* Samphire
- Distichlis distichophylla* Emu grass

Alternate understorey (dryland variant)

- Maireana brevifolia* Small-leaved Blue-bush
- Maireana oppositifolia* Heathy blue-bush
- Nitraria billardierei* Nitrebush
- Rhagodia candolleana* Seaberry Saltbush
- Atriplex suberecta* Lagoon Saltbush
- Ficinia nodosa* Knobby Club-rush
- Dianella revoluta* Black-anther Flax-lily
- Baumea juncea* Bare Twig-rush
- Gahnia filum* Chaffey Saw-sedge
- Enchylaena tomentosa* Ruby Saltbush
- Chloris truncata* Windmill Grass
- Enneapogon nigricans* Black-heads

APPENDIX 3. Native Plant Species of Grange Golf Course

| Species name | Common name | Conservation status # | | | Source ## | |
|---|------------------------|-----------------------|-----|----|--------------|-------------|
| | | AMLR | AUS | SA | NVMP 2008 | VMP 2020 |
| <i>Acacia ligulata</i> | Umbrella Bush | RA | | | ✓ | ✓ |
| <i>Acacia paradoxa</i> | Kangaroo Thorn | LC | | | ✓ | ✓ |
| <i>Acacia pycnantha</i> | Golden Wattle | LC | | | ✓ | ✓ |
| <i>Allocasuarina verticillata</i> | Drooping Sheoak | LC | | | ✓ | ✓ |
| <i>Anthosachne scaber</i> var. <i>scaber</i> | Native Wheat-grass | LC | | | ✓ | |
| <i>Arthropodium strictum</i> | Vanilla Lily | LC | | | ✓ | ✓ |
| <i>Astroloma humifusum</i> | Native Cranberry | LC | | | ✓ | |
| <i>Atriplex cineria</i> | Coast Saltbush | LC | | | ✓ | ✓ |
| <i>Atriplex paludosa</i> | Marsh Saltbush | LC | | | ✓ | ✓ |
| <i>Atriplex semibaccata</i> | Berry Saltbush | LC | | | ✓ | ✓ |
| <i>Atriplex suberecta</i> | Lagoon Saltbush | NT | | | ✓ | ✓ |
| <i>Austrostipa elegantissima</i> | Elegant Spear-grass | LC | | | ✓ | |
| <i>Austrostipa hemipogon</i> | Half-beard Spear-grass | LC | | | ✓ | |
| <i>Austrostipa mollis</i> | Supple Spear-grass | LC | | | | ✓ |
| <i>Austrostipa nodosa</i> | Tall Spear-grass | LC | | | ✓ | ✓ |
| <i>Banksia marginata</i> | Silver Banksia | LC | | | ✓ | ✓ |
| <i>Baumea juncea</i> | Bare Twig-rush | LC | | | ✓ | ✓ |
| <i>Calandrinia eremaea</i> | Small Purslane | NT | | | | ✓ |
| <i>Callistemon rugulosus</i> | Scarlet Bottlebrush | RA | | | ✓ | ✓ |
| <i>Callitris gracilis</i> | Southern Cypress Pine | LC | | | ✓ | ✓ |
| <i>Carpobrotus rossii</i> | Karkalla | LC | | | ✓ | ✓ |
| <i>Chloris truncata</i> | Windmill Grass | LC | | | ✓ | ✓ |
| <i>Chrysocephalum apiculatum</i> | Common Everlasting | LC | | | ✓ | ✓ |
| <i>Cotula australis</i> | Common Cotula | LC | | | | ✓ |

| Species name | Common name | Conservation status # | | | Source ## | |
|--|------------------------|-----------------------|-----|----|--------------|-------------|
| | | AMLR | AUS | SA | NVMP 2008 | VMP 2020 |
| <i>Cymbopogon ambiguus</i> | Lemon-scented Grass | RA | | | ✓ | |
| <i>Dianella brevicaulis</i> | Coastal Flax-lily | NT | | | ✓ | |
| <i>Dianella revoluta</i> | Black-anther Flax-lily | LC | | | ✓ | ✓ |
| <i>Dichantheum sericeum</i> | Silky Blue-grass | VU | | | ✓ | |
| <i>Disphyma crassifolium</i> | Round-leaf Pigface | LC | | | ✓ | |
| <i>Distichlis distichophylla</i> | Emu Grass | LC | | | ✓ | ✓ |
| <i>Dodonaea viscosa</i> ssp. <i>spatulata</i> | Sticky Hop-bush | LC | | | ✓ | ✓ |
| <i>Duma florulenta</i> | Lignum | VU | | | ✓ | |
| <i>Einadia nutans</i> | Climbing Saltbush | LC | | | ✓ | |
| <i>Enchylaena tomentosa</i> var. <i>tomentosa</i> | Ruby Saltbush | LC | | | ✓ | ✓ |
| <i>Enneapogon nigricans</i> | Black-heads | LC | | | ✓ | ✓ |
| <i>Eucalyptus camaldulensis</i> | River Red Gum | NT | | | ✓ | ✓ |
| <i>Eucalyptus leucoxylon</i> ssp. <i>leucoxylon</i> | SA Blue-gum | NT | | | ✓ | ✓ |
| <i>Ficinia nodosa</i> | Knobby Club-rush | LC | | | ✓ | ✓ |
| <i>Frankenia pauciflora</i> var. <i>gunnii</i> | Common Sea-heath | NE | | | ✓ | |
| <i>Gahnia filum</i> | Chaffy Saw-sedge | VU | | | ✓ | ✓ |
| <i>Goodenia amplexans</i> | Clasping Goodenia | NT | | | ✓ | ✓ |
| <i>Grevillea ilicifolia</i> ssp. <i>ilicifolia</i> | Holly-leaved Grevillea | VU | | | ✓ | ✓ |
| <i>Hardenbergia violacea</i> | Native Lilac | NT | | | ✓ | |
| <i>Hibbertia virgata</i> | Twiggy Guinea Flower | NT | | | ✓ | |
| <i>Kennedia prostrata</i> | Running Postman | LC | | | ✓ | ✓ |
| <i>Kunzea pomifera</i> | Muntries | RA | | | ✓ | ✓ |
| <i>Lepidosperma viscidum</i> | Sticky Saw-sedge | LC | | | ✓ | |

| Species name | Common name | Conservation status # | | | Source ## | |
|---|-------------------------|-----------------------|-----|----|--------------|-------------|
| | | AMLR | AUS | SA | NVMP 2008 | VMP 2020 |
| <i>Leptospermum lanigerum</i> | Silky Tea-tree | RA | | | ✓ | |
| <i>Leucopogon parviflorus</i> | Coast Beard-heath | NT | | | ✓ | |
| <i>Lomandra leucocephala</i> ssp. <i>robusta</i> | Woolly Mat-rush | VU | | | ✓ | ✓ |
| <i>Lotus australis</i> | Australian Trefoil | NT | | | ✓ | |
| <i>Maireana brevifolia</i> | Small-leaved Bluebush | LC | | | ✓ | ✓ |
| <i>Maireana oppositifolia</i> | Heathy Bluebush | LC | | | ✓ | |
| <i>Melaleuca halmaturorum</i> | Swamp Paperbark | EN | | | ✓ | ✓ |
| <i>Melaleuca lanceolata</i> | Dryland Tea-tree | RA | | | ✓ | ✓ |
| <i>Muehlenbeckia gunnii</i> | Coastal Climbing Lignum | LC | | | ✓ | ✓ |
| <i>Myoporum insulare</i> | Boobialla | NT | | | ✓ | ✓ |
| <i>Myoporum parvifolium</i> | Creeping Boobialla | VU | | R | ✓ | ✓ |
| <i>Nitraria billardierei</i> | Nitre-bush | RA | | | ✓ | |
| <i>Olearia axillaris</i> | Coast Daisy-bush | NT | | | ✓ | ✓ |
| <i>Pelargonium australe</i> | Austral Storksbill | RA | | | ✓ | ✓ |
| <i>Poa poiformis</i> var. <i>poiformis</i> | Coast Tussock-grass | LC | | | ✓ | ✓ |
| <i>Portulaca oleracea</i> | Munyroo | LC | | | ✓ | ✓ |
| <i>Pseudognaphalium luteoalbum</i> | Cudweed | | | | ✓ | ✓ |
| <i>Pterostylis arenicola</i> | Sandhill Greenhood | CR | VU | V | ✓ | ✓ |
| <i>Rhagodia candolleana</i> ssp. <i>candolleana</i> | Sea-berry Saltbush | LC | | | ✓ | ✓ |
| <i>Rytidosperma caespitosum</i> | Common Wallaby-grass | LC | | | ✓ | ✓ |
| <i>Samolus repens</i> | Creeping Brookweed | NT | | | ✓ | |
| <i>Santalum acuminatum</i> | Quandong | RA | | | ✓ | ✓ |
| <i>Scaevola crassifolia</i> | Coastal Fan Flower | VU | | | ✓ | |

| Species name | Common name | Conservation status # | | | Source ## | |
|--|-----------------------|-----------------------|-----|----|--------------|-------------|
| | | AMLR | AUS | SA | NVMP 2008 | VMP 2020 |
| <i>Senecio pinnatifolius</i> var. <i>pinnatifolius</i> | Variable Groundsel | NT | | | ✓ | ✓ |
| <i>Senna artemisioides</i> | Punty Bush | RA | | | ✓ | ✓ |
| <i>Spinifex hirsutus</i> | Coast Spinifex | LC | | | ✓ | ✓ |
| <i>Tecticornia halocnemoides</i> ssp. <i>halocnemoides</i> | Grey Samphire | VU | | | ✓ | |
| <i>Tecticornia pergranulata</i> ssp. <i>pergranulata</i> | Samphire | RA | | | ✓ | |
| <i>Themeda triandra</i> | Kangaroo Grass | LC | | | ✓ | ✓ |
| <i>Thomasia petalocalyx</i> | Paper Flower | NT | | | ✓ | ✓ |
| <i>Tricoryne elatior</i> | Yellow Rush-lily | NT | | | ✓ | |
| <i>Wahlenbergia littoricola</i> | Coastal Bluebell | NE | | | ✓ | ✓ |
| <i>Wilsonia rotundifolia</i> | Round-leaved Wilsonia | VU | | | ✓ | ✓ |

Conservation status

Source: Regional Species Conservation Assessments Adelaide and Mount Lofty Ranges Region Complete Dataset for all Flora Assessments February 2014

AMLR = Adelaide & Mt Lofty Ranges Region: **CR** = Critically Endangered, **EN** = Endangered, **VU** = Vulnerable, **RA** = Rare, **NT** = Near Threatened, **LC** = Least Concern, **NE** = not evaluated

AUS = Australia *EPBC Act 1999*: **VU** = Vulnerable

SA = South Australia *NPW Act 1972*: **V** = Vulnerable, **R** = Rare

Source

NVMP 2008: Schneyder, T. (2008). Native Vegetation Management Plan 2008 – 2013. The Grange Golf Club Inc.

VMP 2020: Reynolds, TM., Abercrombie, J. & Daymond, R. (2020). Vegetation Management Plan for Grange Golf Course. The Grange Golf Club Inc.

APPENDIX 4. Biodiversity decline at Grange Golf Course

Table 1. Native species at risk

The local provenance of the following native plant species is at risk due to small population size and/or lack of natural regeneration.

| Life-form | Species | Common Name |
|--------------|---|------------------------|
| Tree | <i>Allocasuarina verticillata</i> | Drooping Sheoak |
| | <i>Eucalyptus leucoxylon</i> ssp. <i>leucoxylon</i> | SA Blue Gum |
| | <i>Eucalyptus camaldulensis</i> | River Red Gum |
| | <i>Melaleuca lanceolata</i> | Dryland Teatree |
| | <i>Melaleuca halmaturorum</i> | Swamp Paperbark |
| Shrub | <i>Banksia marginata</i> | Silver Banksia |
| | <i>Grevillea ilicifolia</i> | Holly-leaved Grevillea |
| | <i>Thomasia petalocalyx</i> | Paper Flower |
| | <i>Goodenia amplexans</i> | Clasping Goodenia |
| | <i>Senna artemisioides</i> | Punty Bush |
| | <i>Olearia axillaris</i> | Coast Daisy-bush |
| | <i>Callistemon rugulosus</i> | Scarlet Bottlebrush |
| | <i>Acacia paradoxa</i> | Kangaroo Thorn |
| Grass | <i>Chloris truncata</i> | Windmill Grass |
| | <i>Enneapogon nigricans</i> | Black-heads |
| | <i>Rytidosperma caespitosum</i> | Common Wallaby-grass |
| Sedge | <i>Gahnia filum</i> | Chaffy Saw-sedge |
| Ground-cover | <i>Kunzea pomifera</i> | Muntries |
| | <i>Kennedia prostrata</i> | Running Postman |
| | <i>Wahlenbergia littoricola</i> | Edge Bluebell |
| | <i>Carpobrotus rossii</i> | Karkalla |
| | <i>Wilsonia rotundifolia</i> | Round-leaved Wilsonia |

Table 2. Loss of Grange provenance

Many plant species recorded in 2008 (Schneyder, 2008: Appendix B) were not relocated in 2019-2020. The local (Grange) provenance of the following species is either extinct or surviving in such low numbers that their presence is difficult.

| Common name | Species name |
|------------------------|--|
| Coast Beard-heath | <i>Leucopogon parviflorus</i> |
| Heathy Bluebush | <i>Maireana oppositifolia</i> |
| Nitre-bush | <i>Nitraria billardierei</i> |
| Climbing Saltbush | <i>Einadia nutans</i> |
| Cushion Fan-flower | <i>Scaevola crassifolia</i> |
| Native Lilac | <i>Hardenbergia violacea</i> |
| Austral Trefoil | <i>Lotus australis</i> |
| Round-leaf Pigface | <i>Disphyma crassifolium</i> |
| Sticky Saw-sedge | <i>Lepidosperma viscidum</i> |
| Half-beard Spear-grass | <i>Austrostipa hemipogon</i> |
| Native Wheat-grass | <i>Anthosachne scaber</i> var. <i>scaber</i> |
| Lemon-scented Grass | <i>Cymbopogon ambiguous</i> |
| Elegant Spear-grass | <i>Austrostipa elegantissima</i> |
| Silky Blue-grass | <i>Dichanthium sericeum</i> |
| Common Sea-heath | <i>Frankenia pauciflora</i> |
| Creeping Brookweed | <i>Samolus repens</i> |
| Lignum | <i>Duma florulenta</i> |
| Grey Samphire | <i>Tecticornia halocnemoides</i> ssp. <i>halocnemoides</i> |
| Samphire | <i>Tecticornia pergranulata</i> ssp. <i>pergranulata</i> |

APPENDIX 5. Birds of Grange Golf Course

Source: Observations by Derek Carter from 1993 to 2008.

Native species

| | | | |
|--------------------------|-------------------------|----------------------------|---------------------------|
| Stubble Quail | Straw-necked Ibis | Rainbow Lorikeet | Singing Honeyeater |
| Little Button-quail | Royal Spoonbill | Musk Lorikeet | White-plumed Honeyeater |
| Australian Pelican | Pied Oystercatcher | Purple-crowned Lorikeet | White-naped Honeyeater |
| Darter | Masked Lapwing | Cockatiel | White-fronted Honeyeater |
| Little Black Cormorant | Red-kneed Dotterel | Budgerigar | New Holland Honeyeater |
| Great Cormorant | Black-fronted Dotterel | Superb Parrot | Eastern Spinebill |
| Little Pied Cormorant | Black-winged Stilt | Crimson Rosella | White-fronted Chat |
| Australasian Grebe | Silver Gull | Eastern Rosella | White-browed Babbler |
| Hoary-headed Grebe | Caspian Tern | Australian Ringneck | Rose Robin |
| Black Swan | Whiskered Tern | Australian Ringneck | Flame Robin |
| Cape Barren Goose | Black-shouldered Kite | Elegant Parrot | Red-capped Robin |
| Pacific Black Duck | Black Kite | Rock Parrot | Grey Shrike-thrush |
| Australasian Shoveler | Whistling Kite | Pallid Cuckoo | Golden Whistler |
| Grey Teal | White-bellied Sea-Eagle | Fan-tailed Cuckoo | Rufous Whistler |
| Chestnut Teal | Wedge-tailed Eagle | Horsfield's Bronze-Cuckoo | Grey Fantail |
| Hardhead | Little Eagle | Southern Boobook | Willie Wagtail |
| Australian Wood Duck | Collared Sparrowhawk | Barn Owl | Magpie-lark |
| Buff-banded Rail | Spotted Harrier | Tawny Frogmouth | Black-faced Cuckoo-shrike |
| Australian Spotted Crake | Swamp Harrier | Fork-tailed Swift | White-winged Triller |
| Baillon's Crake | Peregrine Falcon | Laughing Kookaburra | Masked Woodswallow |
| Black-tailed Native-hen | Australian Hobby | Sacred Kingfisher | Australian Magpie |
| Dusky Moorhen | Grey Falcon | White-throated Treecreeper | Little Raven |
| Purple Swamphen | Nankeen Kestrel | Superb Fairy-wren | Welcome Swallow |
| Eurasian Coot | Peaceful Dove | Spotted Pardalote | Fairy Martin |
| White-necked Heron | Brush Bronzewing | Striated Pardalote | Clamorous Reed-Warbler |
| White-faced Heron | Crested Pigeon | White-browed Scrubwren | Little Grassbird |
| Nankeen Night Heron | Galah | Yellow-rumped Thornbill | Mistletoebird |
| Great Egret | Long-billed Corella | Red Wattlebird | Silvereye |

| | | | |
|-----------------------|---------------------------|--------------------------|--|
| Little Egret | Little Corella | Brush Wattlebird | |
| Intermediate Egret | Major Mitchell's Cockatoo | Spiny-cheeked Honeyeater | |
| Australian White Ibis | Sulphur-crested Cockatoo | Noisy Miner | |

Introduced species

| | |
|---------------------|---------------------|
| Mallard | European Greenfinch |
| Rock Dove | European Goldfinch |
| Spotted Turtle-Dove | Common Blackbird |
| Richard's Pipit | Common Starling |
| House Sparrow | |



Noisey Miner

APPENDIX 6. Frogs and reptiles of Grange Golf Course

Source: Recorded by Derek Carter, August 1995 - October 2006, unless otherwise stated

(**Bold** = recorded at Grange Golf Course; others known from region; * = not locally native)

FROGS

| | | | |
|-----------------|--|-------------------------------|---|
| Pelodryadidae | <i>Litoria ewingii</i> | Brown Tree Frog | |
| Limnodynastidae | <i>Limnodynastes dumerilii</i> | Eastern Banjo Frog | |
| | <i>Limnodynastes tasmaniensis</i> | Spotted Marsh Frog | Commonly reported calling |
| | <i>Neobatrachus pictus</i> | Painted Burrowing Frog | Record of 'large mottled green/grey toad' |
| Myobatrachidae | <i>Crinia signifera</i> | Clicking Froglet | Recorded T. Reynolds, 15/5/20 |

REPTILES

| | | | |
|------------|--|-----------------------------------|---|
| Chelidae | <i>Chelodina longicollis</i> | Eastern Long-necked Turtle | Many records, often dead, killed by foxes? |
| Agamidae | <i>Ctenophorus pictus</i> | Painted Dragon | |
| | <i>Pogona barbata</i> | Eastern Bearded Dragon | Common 1995-06; No records 2018-20; Extinct? |
| Gekkonidae | <i>Christinus marmoratus</i> | Marbled Gecko | Commonly in sheds |
| Scincidae | <i>Ctenotus spaldingi</i> | Eastern Striped Ctenotus | |
| | <i>Hemiergis peronii</i> | Peron's Earless Skink | |
| | <i>Lerista bougainvillii</i> | Bougainville's Skink | |
| | <i>Menetia greyii</i> | Common Dwarf Skink | |
| | <i>Morethia boulengeri</i> | Common Snake-eyed Skink | Recorded P. Bird 5/2/20 |
| | <i>Tiliqua rugosa</i> | Sleepy Lizard | Fairly common |
| | <i>Tiliqua scincoides</i> | Eastern Bluetongue | 1 record 19/8/03 |
| Elapidae | <i>Pseudechis porphyriacus</i>* | Red-bellied Black Snake | 1 record 21/10/02; Misidentification or escapee |
| | <i>Pseudonaja textilis</i> | Eastern Brown Snake | Common |

TOTAL: 11 frog and reptile species recorded for Grange Golf Course

Compiled by Peter Bird, 7/3/2020

APPENDIX 7. Butterflies and Food Plants of Grange Golf Course

Source: All records by Derek Carter Aug 1995 – Oct 2006, unless otherwise stated

(**Bold** = butterfly recorded at Grange Golf Course; others known from region; * = not native)

| FAMILY | COMMON NAME | SCIENTIFIC NAME | FOOD PLANTS |
|--|--------------------------------|----------------------------------|--|
| PAPILIONIDAE (2) (Swallowtails) | Dainty Swallowtail | <i>Papilio anactus</i> | <i>Citrus spp.*</i> |
| | Orchard Swallowtail | <i>Papilio ageus</i> | <i>Citrus spp.*</i> |
| PIERIDAE (3) (Whites & Yellows) | Cabbage White* | <i>Pieris rapae</i> | <i>Brassicaceae*</i> |
| | Caper White | <i>Belenois java teutonia</i> | <i>Capparis mitchellii</i> (migratory) |
| | Small Grass Yellow | <i>Eurema smilax</i> | <i>Senna spp.</i> (migratory) |
| LYCANENIDAE (1) (Coppers & Blues) | Saltbush Blue | <i>Theclinesthes serpentata</i> | <i>Rhagodia candolleana</i> , <i>Atriplex spp.</i> , (P. Bird, 5/2/2020) |
| | Grass Blue | <i>Zizina labradus labradus</i> | <i>Medicago*</i> , <i>Trifolium*</i> , <i>Kennedia prostrata</i> |
| NYMPHALIDAE (6) (Brush foots) | Common Brown | <i>Heteronympha merope</i> | <i>Austrostipa</i> , *, <i>Ehrharta*</i> , <i>Poa</i> |
| | Meadow Argus | <i>Junonia villida calybe</i> | <i>Arctotheca*</i> , <i>Scabiosa*</i> , <i>Plantago lanceolata*</i> |
| | Australian Admiral | <i>Vanessa itea</i> | <i>Urtica urens*</i> |
| | Australian Painted Lady | <i>Vanessa kershawi</i> | <i>Arctotheca calendula*</i> , <i>Chrysocephalum apiculatum</i> |
| | Wanderer or Monarch* | <i>Danaus plexippus</i> | <i>Gomphocarpus cancellatus*</i> |
| | Lesser Wanderer | <i>Danaus chrysippus petilia</i> | <i>Gomphocarpus cancellatus*</i> |
| HESPERIIDAE (0) (Skippers) | Southern Dart | <i>Ocybadistes walkeri</i> | <i>Cynodon dactylon*</i> , <i>Pennisetum*</i> |
| TOTAL: 12 species recorded for Grange Golf Course | | | Compiled by Peter Bird, 7/3/2020 |

APPENDIX 8. Native Vegetation Condition Classes

The condition of native vegetation patches varies substantially in GGC. Condition varies from a small group of plants of one species (e.g. Dryland Teatree), with no associated plants, to a plant community with several strata or layers (e.g. grasses, shrubs and trees) containing many individuals of many species.

A simple classification system to indicate the relative condition of native vegetation in GGC has been devised based on two criteria: structural diversity and species diversity.

| Vegetation Class | Structural diversity | Species diversity |
|------------------|--|---|
| Class A | All or most original layers present | Many species present |
| Class A1 | All original layers present; largely intact upper layer (e.g. tree) | Greater diversity in the understorey |
| Class A2 | All or most original layers present. One or more layers absent or severely altered/damaged | Lesser diversity in the understorey |
| Class B | Only one of original layers present | Single species, comprising two or more individuals. |

APPENDIX 9. Guiding Principles for Landscape Concept planning

Design principles for development of individual Landscape Concept Plans.

| Principle | Criteria or example |
|---|---|
| Consistency with Broad Landscape Zone Character | Zone 1 : Non-native vegetation Zone 2 : Native Vegetation Zone 3 : Constructed Wetland |
| Compatibility with course design | - Establish vegetation required for screening or green/fairway definition - Remove vegetation obscuring desired sight line |
| Compatibility with turf management | - Remove trees causing root competition or suckers e.g. Swamp Oak |
| Natural / native features | - Retain/restore native vegetation (e.g. Native Pine Woodland) and natural landforms (e.g. remnant dunes) |
| High-quality landscape character types (aesthetic, distinctive, unique) | - Avenues or groves of mature planted trees - Original landforms, e.g. remnant dunes - Individual tree (age, size, form, condition) |
| Climate resilience | - Drought tolerance, e.g. Native Cypress Pine |
| High functional value | - Plants useful for soil erosion control - Plants adapted to flooding or wet soils |
| Tree removals | - Diseased or unhealthy – Arborist Assessment - Planted, with potential to invade playing surfaces or ecologically sensitive areas (eg Swamp oaks) - Non-native and better options exist - Non-natural association of native species |