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Our Ref: *0041_2016_0513_AW_AG*

PHCC Working Together
Peel-Harvey Catchment Council

13 May 2016

Draft Perth and Peel Green Growth Plan for 3.5 million
Department of the Premier and Cabinet
Locked Bag 3001
WEST PERTH WA 6872

consultation@dpc.wa.gov.au

Dear Sir/Madam

Peel-Harvey Catchment Council's submission on the strategic assessment of the Draft Green Growth Plan for 3.5 million

The Peel-Harvey Catchment Council is the NRM regional body responsible for the Peel-Harvey Natural Resource Management (NRM) Region. The following comments are provided within the context of our mission statement[1]: 'as environmental stewards we will encourage and enable effective catchment management to create a health natural environment in the Peel-Harvey by building community education and capacity, influencing and leading critical thought and environmental pride, and exemplifying and implementing best practice'.

The PHCC has crafted this submission with reference to the requirements of relevant legislation and policies, including but not limited to the:

- Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act)
- Environment Protection Act 1986 (WA) (EP Act)
- Strategic Assessment Agreement, including terms of reference and endorsement criteria
- The EPA's interim s16(e) strategic advice – Perth and Peel @ 3.5 million environmental impacts, risks and remedies
- Commonwealth and WA Offset Policies
- EPA policies and advices
- Threat abatement plans, conservation advices and recovery plans, including the Carnaby's Cockatoo Recovery Plan (2013)
- Ecological Character Description and Management Plan for the Peel-Yalgorup Ramsar site
- Water Quality Improvement Plan for the Rivers and Estuary of the Peel-Harvey System - Phosphorus Management
- Planning and Development Act 2005 (WA) (P&D Act).

The PHCC wishes to state upfront its **strong support for the use of strategic assessments** as a means of delivering improved conservation outcomes while reducing administrative costs and creating greater certainty to the development industry and community. The PHCC supports the strategic assessment

[1] Peel-Harvey Catchment Council Strategic Directions 2014-24

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of the Perth and Peel Regions (SAPPR) and acknowledges the extensive amount of work that has been undertaken to support the preparation of the draft Strategic Conservation Plan and supporting action plans (hereafter: GGP) and impact assessments.

In the PHCC's view the GGP represents an important and unique opportunity to deliver an integrated approach to the future development of the Perth and Peel regions to meet the challenge of accommodating a growing population while protecting and enhancing the important values of these regions. The Strategic Assessment of the Perth and Peel Regions (SAPPR) is a crucial process in laying out a sustainable growth plan for Perth and Peel, to influence the shape of our communities for future generations to come. It is in this context that the PHCC has sought to participate and contribute the development of the GGP, including as a member of the SAPPR Stakeholder Reference Group

The WA Government is also to be commended for promoting a 'Green Growth' approach to development. Green Growth is synonymous with sustainable development. According to the OECD **Green Growth is described as "fostering economic Growth and development while ensuring that natural assets continue to provide the resources and environmental services on which our well-being relies"[2].** Such an approach aligns closely with the PHCC's vision and mission. However, after having reviewed the documents, the PHCC believes **the GGP, in its current form, will not meet these objectives and presents an unacceptable level of risk to the conservation values of the Perth and Peel regions** that are protected under the EPBC Act and the EP Act. **Major changes are required if the Green Growth Plan is to meet the intent of the Strategic Assessment Agreement and terms of reference, and if it is to deliver on the promise of sustainable use of our region's natural assets while preventing further deterioration of the environment.**

It is the PHCC's considered view that the GGP should be significantly amended, before being released for a second phase of public consultation.

The GGP and environmental impact assessment information should also be reorganised in such a way as to better support and enable effective public participation. The current organisation, comprising more than 60 documents, creates confusion and makes it difficult for the reader to logically follow the approach to development, impact, avoidance, mitigation, offset and outcome. The unwieldy presentation affects the transparency of the proposed management commitments, which are split over many documents. This compromises the reader's ability to interpret the plan, and creates a risk for effective implementation.

This letter sets out the PHCC's overarching position and strategic priorities. Further more detailed comments are contained in the accompanying tables:

Table 1 - A summary of general comments, including comments on the development proposal as per the five classes of actions

Table 2 - Detailed comments on the proposed conservation measures

[2] Organisation for Economic Co-operation and Development (2016) http://www.oecd.org/greengRowth/whatisgreengRowthandhowcanithelpdeliversustainabledevelopment.htm

Table 3 - Detailed comments relating to impact assessment relevant to the environmental values of the Peel-Harvey Catchment, particularly in relation to matters of national environmental significance (MNES) protected under the EPBC Act.

Summary

The PHCC is strongly of the view, and believes there is a public expectation, that a Green Growth Plan that will operate over a 30 year period should seek to improve on the status quo to deliver a net environmental benefit. Significant changes are needed for this to be achieved:

- Conservation commitments, objectives and outcomes in the Green Growth Plan must have a clear focus for the *improvement* of environmental values wherever possible and be measurable with defined targets, timeframes and responsibilities
- The impact assessments (State and MNES) require a greater level of detail in relation to the nature and extent of likely impacts (particularly quantitative information in relation to both direct and indirect impacts)
- The process of avoid, mitigate and offset must result in an acceptable outcome for all protected matters (see Table 3). In particular:
  - There must be a greater emphasis on avoidance of impacts via
    - A more compact, higher density development footprint that avoids any major clearing of native vegetation
    - A greater emphasis on measures to reduce demand for basic raw materials (BRM)
  - The conservation gain from proposed offsets must be sufficient to reduce the residual impacts of the classes of actions
    - There is currently too much emphasis on tenure change of land already in various forms of protection and, in the case of Carnaby's Black Cockatoo (CBC), already used by the species and therefore not offering additional protection to the present status
    - There must be a much greater emphasis on habitat creation, particularly in relation to CBC, consistent with the EPA's interim advice
    - Offsets must be consistent with the Commonwealth Offset Policy
- A more robust assurance framework is required that establishes specific monitoring, contingency thresholds and adaptive management responses. It should clearly link mechanisms to monitor and evaluate implementation against the plan's intended outcomes, while providing for continuous improvement. It must provide for ecosystem and environmental monitoring such that the condition and extent of MNES and state factors (hereafter: environmental values) can be evaluated over time, enabling identification of declines, likely source and appropriate, adaptive, responses.
- There must be a commitment to adequate funding for the life of the GGP. The cost and funding mechanism should be identified and provided for public comment.
- Adequate detail and assurance must be provided regarding proposed changes, particularly to State and local government planning processes that will be required to implement the GGP.
  - Such information is lacking, particularly within the impact assessment reports, especially in relation to matters of national environmental significance (MNES) under the EPBC Act

- There needs to be a clear mechanism for dealing with new or modified listings (of MNES or aspects of the environment protected under the EP Act) over the period of the GGP's operation.

In relation to the Peel-Harvey, the PHCC wishes to emphasise that the system is already degraded and at risk of collapse. In this context, the GGP must aim to deliver an outcome that *improves* the current condition of the Peel-Yalgorup Ramsar site's ecological character. Robust planning tools are essential, especially given that past approaches have failed to achieve the necessary development controls, e.g. the moratorium on clearing and drainage in the Peel-Harvey Catchment[3]. The absence of legal mechanisms that enable effective controls (the moratorium on clearing, for example) is a major barrier that has yet to be effectively addressed.

The PHCC recommends:

- The creation of a Special Control Area over the Peel-Harvey Coastal Plain Catchment under the Planning and Development Act 2005 for the explicit purpose of preventing nutrient export activities
- A legislated land and water protection and management model be established for the Peel-Yalgorup Ramsar Site (Peel-Yalgorup Park) that includes the entire Peel Yalgorup Ramsar Site (PYS), proposed extensions to the Ramsar Site, and Regional Open Space
- A network of Marine Park and Marine Management areas for the Peel-Harvey Estuary, rather than just a Marine Management area
- Greater recognition be given to the community's role in managing and monitoring of the Peel-Harvey's environmental values, including a commitment to provide resources to facilitate and effectively deliver community based programs (including education, awareness-raising, citizen science/monitoring, and on-ground works programs)
- Changes in planning mechanisms that translate to clear requirements and guidelines for (local and state) government implementation, with sufficient resources and support to meet the intent of the GGP.

The PHCC considers an effective governance framework is crucial to provide effective regional delivery and collaborative decision making across all aspects of the GGP:

- The Governance Framework must be modified to provide for a regional coordinating and reporting mechanism to ensure regional delivery and collaborative decision making.

In relation to Carnaby's Black Cockatoo, the PHCC considers the impact of the draft GGP to be unacceptable and inconsistent with the Carnaby's Cockatoo Recovery Plan:

- Predicted impacts on the species are potentially catastrophic;
- Further avoidance of clearing of native vegetation is required;

[3] Kinhill (1988) Stage 2 Environmental Review and Management Programme

- Proposed offsets, which are comprised primarily of acquisition of existing land already utilised by the species and much of which is already under some form of protection, are insufficient to address these impacts and as such are inconsistent with the Commonwealth Offset Policy 4;
- Consistent with the EPA interim s16(e) advice, priority must be given to the creation of habitat for the species.

The PHCC notes that in approving actions the Commonwealth Minister cannot act inconsistently with a recovery plan for a threatened species[5].

Key strengths

As previously stated, the PHCC supports the development of a GGP and the strategic assessment.

The concept and intent of a number of the proposed conservation measures are supported in principle (see Table 2). Key amongst these are the:

- Expansion of Yalgorup National Park
- Acquisition of freehold land facing a high risk of land use conversion and/or vegetation clearing
- Promotion of the use of soil products
- Peel-Harvey Riparian Zone Restoration Project
- Access to the Estuary Strategy.

Others are supported subject to amendment and/or the provision of further information (see Table 2), including the:

- Proposed extension to the Peel-Yalgorup Ramsar Site
- Mandatory Soil Testing and associated agronomic advice and extension programs
- Wetland buffers policy
- Drainage intervention package.

Proposed additions to Australia's National Reserve System are supported where they will contribute to improving the comprehensive, adequate and representative (CAR) reserve system. However, we have significant concerns about the value of these measures in compensating for the potential impacts of development. The comments contained in Table 3 relating to the impact assessment reports detail these concerns, and provide suggested modifications.

The Strategic Conservation Plan and supporting Action Plans include mitigation commitments to "conduct revegetation and replanting programs in conservation reserves, Regionally Significant Natural Areas, open space and other retained areas". Such commitments are extremely important in providing opportunities for:

- Additions to populations through translocations and specific plantings

[4] Section 146 (1) Agreement, Relating to the impacts of a Plan for the protection of Matters of National Environmental Significant in the Perth and Peel regions, WA, Appendix C: Terms of Reference 4.3 (g)
[5] EPBC Act Ch.4 Pt.10 s146K 2(b)

- Increasing complexity of remnants of vegetation
- Planting of buffers to protect and enhance natural assets
- Education and involvement of rural land owners in useful conservation works
- Involvement of community groups in conservation actions
- Additions to ecological corridors and stepping zones
- Enhancing the provision of essential ecosystem benefits and services.

We also note that conservation planning involves far more than 'revegetation and replanting'. It should also take into account the habitat and ecosystems created through landscape scale changes to landforms, drainage, water retention in the landscape and infiltration of water into the landscape to support ecosystems through seasonal cycles and provide greater resilience against impacts of a changing climate, and extreme events, e.g. fire events.

Key concerns

Impact assessment

In deciding whether to endorse the GGP, the Commonwealth Minister must be satisfied that the impact assessment report adequately addresses the impacts to which the Strategic Assessment Agreement relates[6].

On reviewing the documents it is evident that, while avoidance measures are elaborated on at some length, the impacts of the classes of actions, mitigations and offsets, (with the exception of Carnaby's Black Cockatoos), are not well described or quantified and therefore we are unable to determine their effectiveness. Where more detailed impact assessment information is provided, the nature and extent of expected impacts are severe, for example:

- The population viability assessment for Carnaby's reveals an almost catastrophic impact on the species
- Over 11% of the mapped Banksia Woodland community (a community nominated for listing under the EPBC and a critical habitat for black cockatoos) is within or adjacent to the development footprint
- At least 36% of remaining conservation-significant wetlands[7] on the Swan Coastal Plain occur within or adjacent to the class of action footprints (hereafter: development footprint).

It is therefore difficult to make judgements regarding the acceptability of residual impacts and the capacity to meet conservation objectives. It is important that the magnitude of all residual impacts, and the consequent benefits of proposed offsets, be identified. Such information is also necessary to determine the acceptability of those offsets.

[6] Section 146 (1) Agreement, Relating to the impacts of a Plan for the protection of Matters of National Environmental Significant in the Perth and Peel regions, WA, Attachment D Endorsement Criteria

[7] Conservation Category and Resource Enhancement Wetlands as mapped within the geomorphic wetlands database

It is also noted that a thorough impact assessment should not be undermined by a lack of survey effort or scientific knowledge (as stipulated in both the relevant State[8] and Federal[9] environmental legislation). We note that field surveys were not conducted to inform the strategic assessment (as is typically required for case-by-case environmental impact assessment[10]) on the basis that the geographic scale of the strategic assessment area precludes such an approach. Instead, the values of the area were identified using 'landscape scale approaches' identified as aerial photograph interpretation, existing records and GIS analysis[11]. This landscape scale approach would be acceptable if relevant background information were available for public review, if alternative sources of scientifically credible evidence were provided, and if the limitations of such approaches were described specific to the assessment of each matter or environmental aspect.

Development footprint

The PHCC does not support the proposed urban development footprint as the most appropriate option for accommodating the anticipated future population of 3.5 million. The State has shown there are more compact footprint alternatives that would avoid major clearing of native vegetation for urban growth. Compact cities support stronger communities, reduce environmental impacts and are more cost effective for the taxpayer, hence the global shift towards this trend. We urge that the State:

- Adopt a more compact urban growth form as the basis for development in the GPP
- Provide a greater commitment for site-specific avoidance of clearing of native vegetation during implementation
- Rule out new greenfield urban expansion areas in the Peel, including that proposed for Ravenswood.

Basic raw materials

The proposed basic raw materials class of action is not supported. The need for fill can be reduced by selecting a more compact city footprint thereby achieving multiple social, environmental and economic benefits, including significantly reduced impacts on Banksia woodlands, and consequently Carnaby's Black Cockatoos.

The GGP's BRM proposal is based on an embedded practice within WA's building and construction industry that relies largely on blanket clearing, levelling and fill. Innovative, contemporary planning approaches that are more sympathetic to natural topography, and which are supported by many interest groups, including the WA Urban Development Institute of Australia (UDIA)[12], are largely ignored in the GGP. Further, the implementation of such approaches is constrained by existing planning mechanisms, which the GGP does little to address. The PHCC believes that demand-side

[8] EP Act Section 4a (1)
[9] EPBC Act Ch. 1 Pt. 1 Section 3A(b)
[10] For approvals under Part 9 of the EPBC Act or Part IV of the EP Act.
[11] MNES EIAR Ch 6 p 6-1.
[12] Debra Goostrey, previous CEO Urban Development Institute of Australia WA (pers. comm. 2015)

management, through measures that actively promote alternate housing construction methods (to reduce BRM and other resource requirements) and which seek to promote a cultural shift away from unsustainable legacy practices, is needed. Such measures could achieve significant avoidance of impacts compared with that of the current the BRM proposal, thereby enabling the State to better promote ecologically sustainable development as is required under the Strategic Assessment Agreement[13] and expected by the public.

We are also concerned about the impact of the proposed development (including basic raw materials class of action) on landscape values. We note that State Planning Policy No. 2[14] stipulates that planning strategies and decision-making should consider the need for a landscape or visual impact assessment for land use or development proposals that may have a significant impact on sensitive landscapes. We note that State impact assessment report identifies various sensitive landscapes as occurring within the strategic assessment area (e.g estuaries, dune systems) but we were unable to locate an assessment of impacts on these values[15].

Offsets

Offsets can play an important role in compensating for unavoidable residual significant impacts of development, particularly where they provide for a like-for-like replacement of value at the same point in time. However, we consider the offsets proposed as part of the GGP to be inadequate given:

- The offsets program relies largely on the acquisition of habitat that is already publically-held, some of which is already protected in some way and/or unlikely to be cleared under current planning frameworks, such that minimal benefit is likely to be gained through tenure change
- The timing of land acquisition and management improvements appears more likely to occur on a longer-term timescale, where habitat loss could occur immediately, thus further compounding the consequences of habitat loss
- The value of offsets, in 'offsetting' a residual impact cannot be determined since there is an inadequate level of quantitative EIA information provided.

Assurance and Adaptive Management

The overall approach to the Strategic Conservation Plan is a one-way designation of high level outcomes, objectives and conservation commitments. This could be an adequate framework if:

- The outcomes and objectives of the plan were specific, measurable, and time-bound, thus providing an appropriate benchmark upon which success can be measured
- The management measures included measurable targets, clarity around statutory power and responsibility, clear timeframes and accountabilities
- A feedback loop was added enabling a transparent, public process for identifying whether the plan is achieving its desired objectives, with a clear contingency framework if it is not.

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[13] Section 146 (1) Agreement, Relating to the impacts of a Plan for the protection of Matters of National Environmental Significant in the Perth and Peel regions, WA p12
[14] State Planning Policy No. 2 Environment and Natural Resources Policy (WAPC 2003)
[15] Within the State EIAR.

The PHCC does not consider the GGP provides the public with the necessary level of confidence that the proposed outcomes can be achieved[16]:

- There is little provision for measurement systems, monitoring of outcomes, and accountability for remediation if approved outcomes are not met
- There is no penalty, and therefore little incentive for success, if proposed outcomes are not met for either the State as the overall proponent of the GGP, or for development interests. An enforceable penalty to provide a disincentive is therefore needed, e.g. a bond or similar security.
- The legal responsibility for the plan's implementation is unclear, as is the role of various parties in implementation of the proposed management measures.

Implementation requirements

The GGP implementation relies heavily on the State's land use planning system, suggesting that a number of changes to the system may be required. We also note the EPA's intent to the 'limit the operation of Part IV of the *Environmental Protection Act 1986'*, provided the outcomes (of the GGP) can be 'hard-wired' into the State's land use planning system and associated policies[17]. Limited detail is provided in the plan as to how the State's planning system and associated policies will be used to implement to the GGP outcomes, and what changes to the system may be needed – now or in future.

We note Attachment B – Key issues to be addressed in the MNES Plan of the Section 146 Agreement between the Commonwealth and the State requires the GGP to use plain English to explain the planning system of the relevant jurisdictions, and provide clarity around legal responsibilities affected by the GGP once it is endorsed. It also requires that the GGP must give a clear and secure basis for building confidence that the benefits and outcomes committed to at the time of endorsement will be achieved[18]. Given the history of ineffective planning and policy instruments in the Peel-Harvey[19], the public needs to be convinced that the new measures proposed in the GGP will in fact meet their intent. Instead, the GGP falls short in building an appropriate level of public confidence, and the PHCC does therefore does not believe the terms of Agreement are currently met.

Funding

Funding certainty for the GGP's implementation is crucial. The State must commit to providing adequate funding, over the life of the plan, to cover the cost of its delivery. The mechanisms the State then employs to recover such costs (developer contributions, development taxes and other policy

[16] We note the State is required to address, in a clear and upfront manner, adaptive management processes to be implemented including those for addressing failure to meet environmental outcomes.
[17] EPA (2015) Perth and Peel @ 3.5 Million, environmental impacts, risks and remedies (Interim Strategic Advice of the EPA to the Minister for Environment under section 16(e) of the EP Act, p 5
[18] Section 146 (1) Agreement, Relating to the impacts of a Plan for the protection of Matters of National Environmental Significant in the Perth and Peel regions, WA, p10
[19] Including, for example, the ineffective response to the moratorium on clearing and drainage

instruments as are currently being discussed by the State and others) become a subsidiary issue. We discuss this further in Table 1.

Through reducing 'red-tape' the strategic assessment (and Commonwealth endorsement) will give a high level of certainty to the development industry resulting in a significant private benefit. This private benefit should be matched by an equivalent public benefit in environmental protection. Blanket, up front approval also means that impacts of the GGP listed in the future will not require assessment under the EPBC Act. In effect, regulators and the public will have no ability to understand how the regions' threatened species and ecological communities of the future will be impacted by the development plans approved today. We see this as an unacceptable risk transfer.

Development outside the footprint

While certainty is provided for development within class of action footprints, there is no certainty provided in terms of what happens *outside* the class of action footprint. This is a significant gap in the assessment, and makes it difficult to assess the acceptability or otherwise of the proposed mitigation and conservation measures. To provide a greater level of protection for environmental values within the strategic assessment area, and a necessary level of public confidence that the outcomes of the GGP can be achieved, we urge that the GGP should clearly state (for each class of action) whether there will be a presumption against any development outside each class of action footprint (but within the strategic assessment area), or whether such development will specifically precluded for the life of the GGP.

Iterative planning process – the need for a feedback loop between EIA and development footprint / sub-regional structure plans

It appears that the relationship between *Directions 2031* (and supporting documents) and the GGP is one directional. Public consultation on the planning process, in particularly on the development footprints, was conducted in 2015, prior the release of the GGP and impact assessment reports. Based on our knowledge of the relevant State and Federal legislation, the State is required to consider alternatives to the current proposal, yet the narrative provided from the State thus far implies the development footprints are all but 'locked in'. We also note that in November 2013 the WA Environmental Protection Authority wrote to the Department of Planning providing an Environmental Scoping Document for the finalisation of the sub-regional structure plans. As the future development subject to strategic assessment is articulated through the sub-regional structure plans, the EPA's Environmental Scoping Document has been used to guide the preparation of the State environmental impact assessment report. We are unable to locate a copy of that scoping document, and are therefore unsure how the development proposal (comprising classes of actions) has responded to the expectations set down the Environmental Scoping Document (and whether or not they vary from the s16 e advice subsequently provided by the EPA). Either way, the State must provide the public with a level of confidence that the current impact assessment can and/or will influence the final alignment or layout of the development footprint as appropriate (particularly if the public and/or Commonwealth deem the likely impacts of the current proposal unacceptable).

Public participation

The PHCC is highly concerned about the plan's long 30 year timeframe and the consequences of the EPBC Act being 'turned off' during that time. At present, the EPBC Act provides the community with an opportunity to shape the achievement of conservation outcomes at a local scale. The strategic assessment, if approved, will represent a lost opportunity for public input into environmental impact assessment. This is of particular concern as it is not clear how the proposed state planning reforms[20] will impact on the public's ability to genuinely participate.

Community participation provides a vital and economically significant contribution to management and monitoring of the natural resources in the Peel-Harvey Catchment. The draft GGP fails to adequately recognise or value community participation, and the plan does little to support continued participation in future. The State should commit to providing long-term support for community participation, particularly in relation to communication, education participation and awareness raising (CEPA) that aligns with the Ramsar Convention's CEPA program and delivers in accordance with Australia's obligations under the Ramsar. The PHCC intends to publish imminently the *Wetlands and People Plan: A CEPA Action Plan* for the Peel-Yalgorup System for this purpose.

Contingency for significant events, climate change impacts and threatening processes

The impacts of significant events, such as the recent fires that burnt out 71,000 ha of land in the Strategic Assessment footprint, do not appear to have been adequately considered (particularly in relation to Section 4.1 b of the Terms of Reference). Therefore, we have significant concerns that any impact assumptions based on the development footprint, without inclusion of buffers for e.g. continuing rainfall declines, fire events and/or large frost events triggered by a changing climate pose too large a risk to the environmental values of the Perth and Peel regions.

The impact assessment reports – particularly the assessment of impacts on MNES – fail to adequately describe how climate change will influence both the nature and extent of likely impacts on particularly matters over time, and whether climate change impacts pose a risk to the efficacy of proposed management measures for each matter. Declining rainfall and predicted sea-level rise are of particular relevance to the environmental values of the Peel-Harvey.

The Strategic Assessment Agreement between the State and Commonwealth requires the GGP consider the principles of ecologically sustainable development, while specifically noting mechanisms and strategies that relate to environmental flows and water for ecosystems[21]. In the context of the climate change and South West WA's drying climate, and the important role of surface and groundwater hydrology in the distribution and extent of so many listed species, communities and other matters (see Table 3), environmental flows and water for ecosystems are significant issues warranting further attention.

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[20] We refer here to the EPA's s16e advice which describes an intent to limit the operation of Part IV approvals under the *Environmental Protection Act 1986*

[21] Section 146 (1) Agreement, Relating to the impacts of a Plan for the protection of Matters of National Environmental Significant in the Perth and Peel regions, WA, p12

Conclusion

In conclusion, the PHCC considers it is crucial that the GGP and strategic assessment provide the framework for the sustainable future development of Perth and Peel regions. While the PHCC supports many aspects of the GGP, changes are required to ensure the environmental impacts of the plan are acceptable, meet relevant legislative requirements, including the Objectives of the EPBC Act, the strategic assessment Terms of Reference and endorsement criteria.

Representatives of the PHCC would be happy to meet with government representatives to elaborate on the detail of this submission. The PHCC looks forward to continuing to work with the WA government in finalising the GGP.

Acronyms, abbreviations and frequently used terms

PYS	Peel-Yalgorup System Ramsar Site, listed under the Ramsar Convention in 1990.
Proposed development	The combined classes of actions (and their footprints).
Endorsement	The Commonwealth Minister for the Environment's endorsement of the MNES Plan
GGP	Green Growth Plan. Comprises the Strategic Conservation Plan and Action Plans A through I. We interpret this to be synonymous with the use of 'MNES Plan' in the Section 146 (1) Agreement between the WA Government and the Commonwealth Government.
SA	Strategic assessment. The assessment of impacts arising from the GGP, in accordance with Part 10 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) and associated Terms of Reference. There is also a concurrent environmental impact assessment process underway with respect to impacts on the State's environment as defined under the *Environmental Protection Act 1986* (WA), with the EPA providing advice to the Minister under s16e of the Act.
EIA	Environmental impact assessment

Should you require further information, please do not hesitate to contact Jane O'Malley (PHCC CEO) on (08) 6369 8800 or email admin@peel-harvey.org.au.

Yours sincerely

Andy Gulliver

Andy Gulliver
Chairman

cc: Mr Bruce Edwards, Assistant Secretary, Assessments (WA, SA, NT)

Table 1: PHCC comments on general aspects of the GGP

	Theme	PHCC position	Summary	PHCC recommended amendments/alternatives	Relevant sections and other references
1	Basic raw materials	Not supported, however: Amber area – supported with amendments Red areas – supported with amendments	• The Basic Raw Materials (BRM) class of action outlines the process for identification of areas of BRM extraction necessary to support population growth as outlined in the Strategic Conservation Plan. This has resulted in the identification of 'exclusion areas', 'further investigation areas', and 'future extraction areas'. The area identified as 'future extraction areas' will result in the clearing of 2,500 ha of native vegetation, with further clearing likely through the 'further investigation areas'. BRM needs • There is a built-in 5 yearly review to the BRM class of action, which is supported, but it should be made clear that the process will not allow for expansion of future extraction areas. Proponent lobbying within the 5 years until the next review could result in extensive additional areas of extraction. • Banksia woodland and Carnaby's Black Cockatoo habitat should be a Tier 1 biodiversity value for the purpose of BRM planning (and be avoided at all costs). • This plan should address the flat lot building culture in Perth, and the heavy reliance on clean fill for development. Strategic thinking and innovative practices should form part of the BRM class of action to explore alternative feasible options and work with the development industry to change the expectations of flat filled developments. Encouraging the retention of existing topography and native vegetation across future development areas, and avoiding areas prone to flooding (and therefore requiring extensive volumes of fill) should be the priority focus, with the control of extraction a secondary option, and only when necessary. This will assist in avoiding further impacts by reducing the reliance on fill, and better meet's public and Commonwealth expectations for hierarchal environmental assessment. • Sequential land use is supported, but only when significant environmental impacts can be avoided (i.e. priority should be to avoid areas of environmental value, with sequential land use a secondary consideration when the end use will not result in a loss of environmental value). • Rehabilitation on sites identified for extraction is supported, although we note that rehabilitation must be undertaken at a high standard to provide ecological function following extraction. It would be preferred if efforts were focussed on avoidance of unnecessary impacts as opposed to rehabilitation, but if necessary, rehabilitation to pre-extraction standard should be a minimum requirement on approvals to mine (can be potentially enforced through changes to the MRS and PRS). • It is stated that other areas of extraction (i.e. those not identified in the BRM class of action) will be subject to the normal (current) environmental approval process. This will allow for proponents to continue to extract outside of the identified areas in the BRM class of action, and all but undermines any possible environmental benefit and certainty of impacts. Ultimately all the BRM class of action achieves is to provide proponents with land identified in the class of action with certainty over their allowed extraction (and reduced approval requirement). This also undermines the offset and mitigation responses associated with impacts to MNES and state factors overall as the reliance on BRM is based on a number of variable factors and doesn't consider the BRM needs of other industries. Therefore it is likely the extraction areas will be significantly greater than what has been identified, yet consideration of cumulative impacts and appropriate overall mitigation response will therefore be inadequate. • The rationale for categorising BRM areas as "Amber' should be provided to the public in the documentation. The purpose of the strategic assessment is to provide certainty, and yet the creation of an 'amber' category implies that these areas have known environmental constraints. • The identification of exclusion areas is supported, however, the Plan needs to make clear how long-term conservation outcomes will be achieved within these areas (e.g. will all 'red' BRM areas be included for high-level protection (Level 1 protection as defined in the GGP?)	• We urge the State to adopt demand-side management measures (building approaches that retain existing topography and vegetation, avoiding areas prone to flooding) to reduce clean-fill requirements, enabling a reduced BRM footprint (and thereby achieving a greater level of up-front avoidance) • The GGP should provide for control of extraction areas as a secondary option, and only when necessary. • The process for resolving Amber areas should be made more transparent. • The process for 5-yearly reviews should be further detailed, including relevant provisions for public review • Banksia Woodland and Carnaby's habitat should be identified as a Tier 1 Biodiversity value for the purposes of BRM planning. • Sequential land use should be considered when significant environmental impacts can be avoided. • Rehabilitation must be undertaken to a pre-extraction standard to ensure ecological function is restored post-development • The GGP should clarify that applications for extraction outside the identified areas in the class of action will not be approved. • The rationale for the Amber (further investigation areas) be provided so any environmental constraints relevant to these areas can be assessed. • The plan should make clear how long-term conservation outcomes will be achieved on the areas identified as 'exclusion areas' including relevant tenure, protection levels and management measures.	Action Plan D
2	Proposed new conservation reserve as an offset for	Not supported	• The PHCC does not consider the proposed new conservation estate constitute an adequate offset for the proposed development. Under the Commonwealth Government's Offsets Policy 'suitable offsets must be of a size and scale proportionate to the residual impacts on the protected matter'. (EPBC Act 1999 Environmental Offsets Policy (Commonwealth of Australia, 2012). • This measure involves expanding the State's conservation reserve system, yet relies largely on inclusions of land comprising established vegetation and provides limited opportunities for the creation of new habitat. The potential to restore and create	• The State should be required to demonstrate, through scientifically credible evidence, how the proposed new conservation estate, as revised as necessary, will: a. Offset the proposal's impact, in a manner which is proportionate in size and scale to the	Action Plan H

	impacted MNES and State environmental values		selected habitats in existing natural areas is acknowledged but is of limited value, given little in the way of formal commitments are made in this regard. • Further, the PHCC is concerned that the proposal relies upon the 170,000 ha as an offset (in full or part) when many of these areas have already been allocated for conservation by Government, and at least 20,000 ha has already been purchased by Government under previously offset agreements under the EPBC Act. There is no way for those reviewing the documentation to understand what is 'new' offset for development proposed under the GGP, in contrast to what is 'pre-existing' as an offset for a development already approved.	residual impacts on the protected matters. (e.g. For each protected matter, the proponent should demonstrate how the value of the impacted matter will be replaced, restored or re-created). b. Directly support the values (species, communities, habitat and ecosystem processes) that are being impacted by the proposal. • Commonwealth endorsement of the GGP should not be provided until this analysis and evidence is made publicly available and the public has a reasonable opportunity to assess the proposed new conservation estate.	
3	Funding adequacy, and mechanisms	Currently inadequate	• An assurance of adequate and committed State Government funding over the life of the plan is essential to providing confidence that the GGP's outcomes can be achieved. This assurance has not been provided thus far. • To meet the costs of implementing the Strategic Conservation Plan, including the Conservation Program, we note funding measures are likely to include contributions from proponents applied through he approval processes that apply to each class of action under Action Plans A to D. • We also understand the State is currently preparing a funding options paper to support the GGP (but note it has not been provided for public review). • The GGP should provide a clear method as to how any levies are calculated, e.g. will developer contributions vary in relation to the impacted environmental value? Used correctly, levies would enable the private operators to appropriately internalise the (currently externalised) costs of development on the public's common property (that is: the environmental values of the Perth and Peel Regions). We see this as an integral factor in the nexus between land development and environmental management in Perth and Peel Regions. • Any proposals for funding mechanisms must include appropriate transparency and accountability mechanisms, including transparent financial reporting on an annual basis. • It is important that discussion and planning of the funding package and proponent's contributions be provided for public comment after the proposed Conservation Estate has been accepted, in-principle, by the Commonwealth Government. • The funding package should include innovative funding mechanisms such as revolving funding mechanisms and 'banking mechanisms', separate to conventional direct offset arrangements. This is to lever great protection and management of natural areas within the Strategic Assessment Area.	• A commitment to provide adequate funding must be provided by the State. • The proposed funding package could include innovative funding mechanisms such as revolving funding mechanisms and 'banking mechanisms', separate to conventional direct offset arrangements. This would lever greater protection and management of natural areas within the Strategic Assessment Area.	Not specific
4	Assurance Plan	Currently inadequate	• The only opportunity for improvement provided by the Assurance Plan is by way of a requirement for corrective actions. There is no mention of a continuous improvement program, an adaptive management approach or processes that would support such. The Assurance Plan needs to be modified to provide for a) a process for continuous improvement of the plan should be more clearly prescribed (for example, including a contingency pathway should any aspect of the plan (development, commitments, objectives, outcomes) be found inadequate in achieving the desired ends). Likewise, a process for adaptive management based on the outcomes of environmental condition monitoring must be prescribed in this plan. • Regular compliance and enforcement activities are provided for within the assurance plan, however essential specific details are absent: when, where, on whom, by whom. • In the event of a non-compliance incident, the State intends to prepare non-compliance report. **This should be provided to the Commonwealth within 7 days of the non-compliance event being identified where the event relates to an MNES, and must be published in the public domain within 7 days of the non-compliance event being identified.** The requirement for corrective actions is supported, **where it includes a commitment to provide additional, follow-up reporting to the Commonwealth and the public.**	• Provides a framework for monitoring and evaluation, but notably, not improvement. This must be modified. • Minimum monitoring conditions should be included in relation to each conservation commitment, objective and outcome. • Greater provision for public disclosure of non-compliance events is required. • The role of the Commonwealth in monitoring and enforcement needs to be made clear.	Action Plan I

			• Annual reporting is prescribed with reference to a review process to be implemented through Action Plans. **The assurance plan needs to specify what a 'process' is and how is it defined, particularly in relation to complex environmental systems such as the Peel-Yalgorup.** • The Assurance Plan omits necessary detail about when, and under what circumstances a review of outcomes potential reviews against conservation objectives that should formulate a foundational consideration in such a long term planning framework. Because the initial impact assessment is not clear about assumptions of likely adequacy of proposed conservation commitments, it is absolutely vital to ensure future monitoring and review consider the effectiveness of the measures undertaken towards achieving the conservation objectives and a there is a mechanism to respond to these. • Once approved, the Australian Government's function will largely be in the role of monitoring and enforcement. What resourcing will be provided to cover the additional cost of monitoring and enforcement, and what commitments are made to ensure this funding across the approval's lifespan?		
5	General quality of the impact assessment	Currently inadequate	• It is difficult for the reader to get an overall sense of what environmental values will be gained (through avoidance, mitigation and offsets) and the nature and extent of those that will be lost. • Detailed, quantitative, descriptions of impacts are largely lacking; a notable exception is the impact assessment for Carnaby's which is provided with a supplementary population viability assessment report that indicates potentially catastrophic impacts to the species. • A summary, guide or graphic of the impact assessment and mitigation responses that illustrates what will be gained or lost overall would help the community in preparing informed submissions. • An overarching table in the up-front section of each impact assessment that brings all the relevant points together so that the impacts and responding strategies can be aligned and accountability can be established, should be included. The table headings should include: MNES (or state env factor), likely impacts, avoidance approach, mitigation approach, offsets, timeframe for implementation, responsible Minister (if other than the Premier as the head of the state government).	• A summary guide or graphic showing the nature and extent of likely impacts before, and after avoidance mitigation and offsets is required for each impacted value (MNES, state factors) and overall. • Where quantitative information is provided (for example the PVA for Carnaby's Black Cockatoo) the predicted impacts are significant if not catastrophic. This is concerning as it implies the risk of catastrophic impacts may have been understated or overlooked by nature of lacking descriptive information. • A more transparent description of impacts is required – particularly quantitative information to better describe the extent of likely impacts. • Further information in relation to avoidance approach, mitigation approach, offsets, timeframes for implementation, responsibility (if other than the Premier as head of the State) is needed.	
6	Climate change impacts, adaptation and biodiversity conservation	Currently inadequate	• The CSIRO and the Australian Bureau of Meteorology have prepared climate change projections for eight regions of Australia, known as NRM clusters. The Perth and Peel Regions (included in the Southern and Southwestern Flatlands (SSWF) Cluster) are predicted to experience an average temperature of between 0.7 oC (low emissions scenario) to 1.1 oC (high emissions scenario) for the 20 year period from 2020 – 2040. For the same period, rainfall will decrease by up to 13% annually (although the trends are less clear). • We expect these changes will have significant bearing on the extent and condition of species and communities across the Swan Coastal Plain. Such changes are also likely to influence the effectiveness of management interventions. • The Commonwealth IAR broadly acknowledges the impact of climate change on threatened species and ecological communities. The two key measures to ensure management of impacts associated with climate change are building resilience in ecosystems and implementing an ongoing assurance framework (Commonwealth IAR, Chapter 13.5.2). • The impact assessment for MNES (Ch 13) articulates clearly that climate change is expected to impact upon MNES; it notes, for example, that all endangered and critically endangered communities and nearly all threatened species occurring in the strategic assessment area face a 'high risk' of vulnerability to climate change. • The impact assessment report goes on to provide a short, general discussion of potential impacts to Ramsar sites, and defers to the specific Ramsar Chapter for further discussion. We note no further discussion (nor specific risk assessment, nor management response) is provided in the relevant section (Chapter 19). • There is no discussion of the extent to which impacts to particular MNES will be exacerbated by anticipated impacts of climate change (we note this is a requirement of Section 4.2b of the Section 146 (1) Agreement between the State and Commonwealth).	• The impact assessment for each environmental value (State Factor or MNES) must specifically: consider impacts of climate change on the environmental value, and provide appropriate management responses and discuss the consequences of climate change on management efficacy. • Given that predictions are showing that worst case scenarios are being exceeded, any consideration should use worst case scenarios as a minimum.	MNES EAIR Ch 14, 19

7	Management responses to threatening processes: landscape scale linkages	Currently inadequate	• Commonwealth IAR acknowledges that management of key threatening processes is complex and requires integrated approaches across different land tenure and land managers (i.e. landscape-scale management approaches). • We also not that the Section 146 (1) Agreement between the State and Commonwealth requires the impact assessment to consider whether or not, and if so the extent to which, the impacts [on MNES] will be exacerbated by…adaptation to the impacts of climate change • The MNES EIAR states that 'Parks and Wildlife are the main Government agency responsible for landscape scale management of threatening processes' (Commonwealth IAR, Section 14.2). This is incorrect as Parks and Wildlife do not have jurisdiction over lands not vested in the Conservation Commission, unless it is for the protection of listed flora and fauna. The IAR also assumes that the creation of 170,000 ha of conservation reserves will lead to improved landscape scale management of key threatening processes. No evidence is proved as to how the creation of new reserves improves management of threats across the landscape. • The GGP proposes a Conservation Program of on-ground management activities including revegetation (re-establishment of native vegetation in degraded areas) and rehabilitation (repair of ecosystem processes) focused on improving habitat quality for multiple species and restoring or improving habitat connectivity and ecological linkages across the landscape" (Action Plan H, p11). We wholly support the need for landscape scale linkages, especially where they create networks of various land use types.	• To enable improved management of threatening processes at the landscape-scale, the GGP must ○ Demonstrate how all lands with significant conservation assets that support MNES will be managed ○ How the State will support private landholders and public land managers (other than Parks and Wildlife) to improve management of threatening processes at the landscape scale.	Commonwealth IAR (Section 14.2)
8	Wise use of the Peel-Harvey Estuary (managing users and conflicting uses)	This is a gap in the GGP.	• According to the GGP, 'people pressures' such as fan boat use are recognised as an impact of the development plans on the Peel-Yalgorup Ramsar Site. • The impacts are intended to be managed as part of the proposed Peel-Regional Park and Estuary Marine Management Area (MNES Commitment #2).We do not support either of these proposals in their current form (see Table 2). • A management planning process is described as part of this proposals for a Peel-Regional Park and Estuary Marine Management Area (see Table 2). Management planning is a critical aspect of future management and wise use of the Peel-Harvey Estuary (and broader Peel-Yalgorup System). We urge that the Peel-Yalgorup Ramsar Site Management Plan (PHCC, 2009) be reviewed as part of a commitment for collaborative management of the Peel-Yalgorup System during the life of the GGP. • The community must be involves in a meaningful way, with clear commitments provide in the GGP to this end.	• A thorough management planning processes is essential for achieving wise use of the Peel-Harvey estuary. The interests of competing users and uses must be appropriately balanced. The GGP must: ○ Refer to the need for wise use of the Estuary (and broader Peel-Yalgorup System) in accordance with the Australian Governments obligations under the Ramsar Convention ○ Commit to a collaborative planning process for the Peel-Harvey Estuary (and broader Peel-Yalgorup System) as part of a review of the existing Management Plan for the PYS (PHCC 2009) ○ Commit to implement a communication, education participation and awareness-raising (CEPA) program for the Peel-Harvey Estuary (and broader Peel-Yalgorup System) that is consistent with the Ramsar Convention's guidance (PHCC 2016, Wetlands and People Plan).	
9	General – errors, omissions	N/A	• Privately owned land (ref MNES EIAR 19-62) within the Peel-Yalgorup Ramsar Site boundary also includes numerous other freehold parcels around the PH Estuary (Bouvard Canals for example). **Suggest this is reviewed for accuracy**. • PHCC coordinated the development of the ECD ***and PYS management plan*** (ref to MNES EIAR Table 19-7). • LACs (MNES EIAR Table 19-9) includes a number of 'Not applicable' references where limits of acceptable change are yet to be established. The use of the term N/A is misleading (implies a lack of relevance and understates the fact that LACs need to be urgently established. **Suggest N/A is replaced with 'unknown - - LAC yet to be established'**. • Reference to recent water quantity intervention to control ASS exposure is needed to explain the current 'excellent' status of water quality at Lake Mealup in the MNES EIAR. This status has only recently been achieved through interventions by community to artificially supplement standing water levels. • The close proximity of proposed BRM sites to wetlands of the PYS suggests impacts are likely. MNES EIAR **Table 19-20 should be expanded to include BRM as a source of impact**.	• Modifications are as suggested in column to the left.	References are provided in the column to left.

			• Using the eutrophication methodology described in Section 19.5.4, Figure 19-7 is presumably intended to show the nutrient enrichment risk for attributed to each of the proposed new urban industrial and rural residential areas within the two coastal catchments. However, the figure provided as 19-7 is actually a map of Becher Point Wetlands (not the PYS). **This should be corrected.**		
10	Supporting information	Currently inadequate	• The MNES impact assessment report cites various reference that have not been provided for public review. Key examples include: 1. The risk analysis for the Peel-Yalgorup Ramsar Site (cited in Ch 19 of the Cth Impact Assessment Report, p 19-80). 2. The analysis that was used to identify sites for inclusion into the [Peel-Yalgorup] Ramsar site as extensions to the current boundary (see Action Plan F: MNES Conservation Commitment #90). 3. A report developed by the National Environmental Research Program (NERP) Environmental Decisions Hub – Whitehead et al 2015 (cited in the EPBC EIAR, Part C, p 11-3). • The MNES also lacks references to information sources, in particular how information used in the assessment was tested and what uncertainties exist. We note this is a requirement of Section 146 (1) Agreement between the State and the Commonwealth (specifically: Appendix C Terms of Reference).	• Supporting information that clarifies or supports the impacts assessment on MNES must be provided to the public for review, including, but not limited to the items listed identified in Column 2. This information must be provided for public review prior to finalising the GGP. • The MNES EIAR must provide further detail about how information used in the assessment was tested for reliability and what uncertainties exist.	
11	Organisation of the documents	Currently inadequate	• There are more than 60 documents published as part of the GGP suite. • The arrangement of information within the documents is complex, such that the reader must utilise multiple documents in order to understand the scope and description of proposed developments, the consequences of that development on the WA environment and on matters of national environmental significance, and the proposed conservation response (noting that many environmental values are protected under both State and Commonwealth legislation and therefore discussed in two separate impact assessment reports). • The ability of the reader to understand the conservation response is similarly hindered by the fact that measures are described, often repetitiously (and somewhat inconsistently), in various documents (including the Strategic Conservation Plan and Action Plans F, G and H).	• We urge that the documents be re-organised and consolidated. • The various lists of commitments (included within Action Plans F, G and H and I should be amalgamated into one (with appropriate linking to State and/or Cth matters as appropriate). • The SCP, development action plans (A through E), and assurance framework should also be amalgamated	
12	Assessment of potential future listings	Currently inadequate	• Given the long timeframe of the GGP (having effect until 2050, a period of over 30 years) the assessment of impacts on MNES aims to consider impacts of potential matters considered to have a high likelihood of listing over that timeframe. While this intent is supported, it should not replace the need for a mechanism to deal with new listings as they arise (MNES EIAR p 22-11). • The approach to identifying future potential listings (FPL) comprises a review of those currently included in a Final Priority Assessment Listing and/or otherwise recommended to the Minister for listing by the TSSC prior to the submission of the MNES EIA report. The inherent assumption is that species with 'a high likelihood of listing' within the next *35 years* are *at this point in time* already nominated, are about to be nominated, or are already under assessment. This is clearly a flawed assumption. • Further, we note that 6 species of migratory shorebirds were added to the Commonwealth Threatened Species list by the Commonwealth Minister for Environment, effective as of the 5th May 2016. None of the 6 species is identified as a FPL in Chapter 22 of the MNES EIAR, suggesting the approach used to identify FPL is weak, and/or its execution is flawed. It also indicates that the adopted approach inadequately deals with changes to listing criteria for species and communities that are relevant to more than one MNES (in this case listed migratory species and listed threatened species). • That section further explains the impact assessment approach occurs at a 'higher level' (than for Category 1 and 2 MNES) because of relatively limited information available. We do not support this assumption as: a) the level of information required for a listing nomination is particularly detailed and b) a lack of survey or scientific information should not undermine the quality of the impact assessment and resulting management approach. • This assessment does not demonstrate that projections for climate change to 2050 (the lifespan of the GGP) have been considered as a factor in identifying FPLs. The vulnerability of species to climate change (including, range extent, abundance and diversity) is a key factor should be considered.	• Six migratory shorebird species were recently listed as threatened species, yet none of these were identified as a FPL. We note the approach taken to assess the impacts on migratory species is different to that utilised for migratory species that are also listed as threatened (see MNES EIAR Ch 20) • While we support the intent to assess impacts on matters that may soon be listed, this action does not replace the need for a mechanism to consider new listings or changes in conservation status over time, particularly in relation to climate change projections. An adequate response is needed.	MNES EIAR Ch 22.

Table 2: PHCC comments on key conservation measures.

No.	Proposed measure	PHCC position	Justification	Proposed amendments/alternatives	Relevant sections and other references

1	Implement key actions necessary to improve and maintain the health of the Peel-Yalgorup system…using a whole of catchment management approach.	Supported with amendments	• Action Plan G – State Commitment # 35 prescribes "implement key actions necessary to improve and maintain the health of the Peel-Yalgorup wetland system, particularly through reduced inflow of nutrients, including a reduction of P load to below 75 t/yr, using a whole of catchment approach…"
			• It goes on to identify 10 key actions. All of which we support (some with amendments as discussed further in rows below):
			  ○ Implementing mandatory soil testing, independent agronomic advice and reporting of fertiliser use (discussed below, see row 2)
			  ○ Develop and implement a long term drainage nutrient intervention program (discussed below, see row 3)
			  ○ Facilitating the greater uptake of soil products to reduce nutrient runoff and leaching, and improve water holding capacity of poor soils (further discussed in row 4)
			  ○ Continue bagged fertiliser regulation (further discussed in row 5)
			  ○ Development of nitrogen targets to guide catchment management decisions
			  ○ Development and implementation of actions to reduce sediment and organic loading
			  ○ Improvement in the monitoring and reporting on the health of the river system including the publication of annual water quality report cards
			  ○ Improve regulation of agricultural and horticultural nutrient point sources
			  ○ Undertake whole of catchment numerical modelling to provide revised load reduction targets to inform drainage management actions, guide investment planning, and provide the basis for compliance testing against targets, with modelling to be reviewed every 5 years
			  ○ Development, operation and maintenance of an estuarine ecosystem response model to inform management decisions.
			• We note the intent of these key actions are inextricably linked to the State's Regional Estuaries Initiative (REI). The REI projects are funded until 2019 only, but the intent is for the effectiveness of the interventions to extend well beyond that timeframe. Thus we support the proposed key actions as a natural complement to, and extension of, the REI.
			• The WQIP for the Peel-Harvey estuary was published in 2008 and requires revision by 2018 (recommended by the WQIP to be within 10 years). This WQIP is only concerned with the reduction of phosphorus and not with other nutrients including nitrogen, organic carbon and sediment. Development of a contemporary WQIP for the Peel-Harvey, as is proposed here and as a deliverable of the REI, is highly supported. Indeed we understand work to this end is already underway.
			• We also note, a number of these 'key actions' are already underway. The development of a contemporary WQIP (as discussed) is a deliverable of the REI and we understand is already underway. Likewise, development of the estuary response model is currently underway via an ARC linkage project. Conversely, we note that regular monitoring and reporting on the health of the river system was not included as an REI deliverable (nor elsewhere, to our knowledge), thus we emphatically support its inclusion here.
				• A commitment to review and update the Ecological Character Description for the PYS, within 2 years of endorsement.
				• A review of the Limits of Acceptable change, to fill current gaps (as denoted by N/A in the current draft documents) and to ensure limits represent the latest knowledge of the system within 2 years of endorsement.
				• The GGP must commit to deliver a revised/contemporary WQIP (and confirm this is to be delivered via the complementary Regional Estuaries Initiative); and must provide a commitment to implement the WQIP's recommendations with measurable targets, clear responsibilities and adequate resourcing.
				• A commitment to adopt revised water quality targets arising from any contemporary WQIP (a deliverable of the State's Regional Estuaries Initiative) must be included as a measure in the GGP.
				• Further detail about what statutory planning mechanisms will be utilised to ensure any contemporary WQIP targets can be achieved.
				• Prescribe effective statutory planning mechanisms that will enable existing and future WQIP targets to be embedded into the Planning system.
				• A commitment to implement the Peel-Harvey sub-catchment (water quality improvement) implementation plans, together with a monitoring, evaluation, reporting and improvement framework that includes feedback loops to enable adaptive management.
				• Each commitment must specifically identify what must be achieved (targets), with defined timelines and who is responsible for achieving individual targets. This is an essential base for monitoring and reporting progress towards quantified targets, and as a trigger compliance actions, should targets not be met.
				• The various lists of commitments relating to ground and surface water management in the Peel-Harvey should be amalgamated into one (compiling relevant State and MNES Commitments), with duplicate commitments removed, while including adequate cross referencing to related State factors and/or MNES as appropriate (see also Table 1, row 11.
				• All commitments relating to the ecological character of the Peel-Yalgorup System, including State Commitment #35, should be subject to Commonwealth endorsement. This should include, but not be limited to, all Commitments relating to protecting or improving ground and surface water quality and quantity.
				• Further information should be provided in the documents to give assurance of a coordinated approach to nutrient management across various initiatives (GGP, REI and others). This information should clarify who is responsible for each aspect or action, and clarify the relationship between various water quality improvement programs (proposed and underway).
					• Hale and Butcher (2007) Ecological Character Description for the Peel-Yalgorup Ramsar Site.
					• PHCC (2009) Peel-Yalgorup System Ramsar Site Management Plan.
					• Action Plan H

			• We also note there appears to be duplication between the proposed key action 'development of actions to reduce sediment and organic loading' and the proposed 'sedimentation basins for organic carbon removal' that comprise a component of the drainage intervention program (see row 3). This is an example of how the separation of commitments to protect the Peel-Harvey Estuary into separate State and MNES Commitments becomes unwieldy. • In some cases, measures that are relevant to both the State and Commonwealth EIA are duplicated as both State and MNES commitments (e.g MNES Commitment # 94 and State Commitment # 29) whereas in other cases, they are not (e.g State Commitment #30). A single repository for all commitments would avoid this. • Furthermore, the nutrient status and eutrophication risk affecting the Peel-Harvey estuary is a critical component of the system's ecological character (see Hale and Butcher 2007; PHCC 2009). Therefore, all commitments affecting the components and processes of the Peel-Yalgorup wetland system should be included as MNES commitments, for Commonwealth endorsement.		

2	Targeted mandatory soil testing on the Swan Coastal Plain.	Supported with amendments	• We agree that reducing the potential nutrient run-off from agricultural fertiliser use is the most cost effective long term intervention measure to prevent further deterioration of the PH Catchment.
			• It is a flawed assumption that landholders will act on the agronomic advice provided; particularly if support and extension programs are inadequate.
			• The program is broadly discussed as including soil testing, agronomic advice and reporting (see Action Plan H p12, and State Commitment #35). The detail provided in Action Plan H (p13) also suggests a second part to the program: targeted extension program.
			• We note that mandatory soil testing will only result in a decrease of nutrient export if the landholder acts on the advice of the agronomist following testing. As currently proposed, there is no compulsion for the landholder to do so. This initiative is all about bringing about behavioural change through education rather than change by regulation; and should be packaged, and resourced, accordingly.
			• We note that limited detail is provided in the GGP about how the extension program will work. More information, including minimum standards or conditions, should be included in the documents.
			• Similarly, the State has proposed to meet the cost of soil testing and independent agronomic advice (Action Plan H p 13) for the first 3 years, but has provided no financial commitment for the complementary extension program
			• An adaptive management approach (comprising continuous monitoring, public reporting, evaluation and improvement) is needed to ensure that the agronomic advice and behaviour change programs are achieving the desired nutrient reduction outcome. A measurable nutrient reduction target should prescribed within this measure. Contingencies, should this target not be achieved, must also be prescribed.
			• We acknowledge that there are strengths and limitations associated with regulating fertiliser application, but urge this be identified as a contingency measure, should MST nutrient reduction targets fail to be achieved.
			• We note this program is prescribed with a three-year timeframe. We recommend that a commitment to extend the program be included in the GGP, until such time as nutrient reduction targets are achieved.
			• The program will target landholders of properties > 40 ha, within the PH Estuary catchment (therefore excluding landholders surrounding the Yalgorup Lakes – an environmentally
				• Measurable nutrient use reduction targets at catchment and subcatchment scales must be prescribed to enable evaluation and improvement of this measure over time.
				• Effective (enforceable) planning processes must be outlined, noting the need to build public confidence that such measures will work
				• The program must be prescribed for the life of the GGP, or until such time as nutrient use reduction targets are achieved.
				• More information in relation to the targeted extension aspect of the program, including minimum standards or conditions, should be included in the documents, together with a commitment from the State to fully fund this over the long-term.
				• The program must be designed in such a way that property owners of multiple smaller properties (that collectively cover an area > 40 ha) are captured for inclusion in the program.
				• The program must be extended to include property owners (including those with landholdings < 40 ha) surrounding the Yalgorup Lakes system (ie within the Lake Clifton catchment).
				• A long-term (30 years or equal to the duration of the GGP), staged adaptive management plan must be included as part of this measure. It should prescribe:
				  ○ A 3-yearly program of public reporting, *evaluation and improvement*
				  ○ Contingency thresholds
				  ○ A series of contingency actions, including:
				  i. The introduction of fertiliser use regulations (ie if land managers do not implement the recommendations that come from mandatory soil testing, then compulsory compliance should be introduced within a defined period (recommended after 3 years) without going through further approval processes
				  ii. An expansion of the program to include landholdings < 40 ha
				  iii. Introduction of nutrient budgets for < 40 ha if non-mandatory measures fail to achieve a significant effect.
					• This measure is described in MNES EIAR CH19, p19-85, however there is no
					• It is also described in Action Plan H – Conservation Program p 12
					• This measure is included in Action Plan G – State Commitments (Environmental Commitment 35)

			sensitive environment at risk from altered water quality. The program should be extended to target landholders surrounding the Yalgorup Lakes system. • We note this proposal targets landholders of properties > 40ha. The plan must ensure that landholders of multiple smaller (<40 ha) properties are captured.		
3	Long term drainage intervention in the PH Catchment	Supported with amendments	• PHCC supports this three stage, 20 year program to deliver drainage intervention across the coastal catchment. We support the three phase design (comprising pilot-phase year 0-5, implementation year 5-15, and evaluation in years 15-20), while noting the inextricable link between the GGP measures and the Regional Estuaries Initiative. • All seven of the identified key components are supported, namely: a) constructed wetlands augmented with offline treatment technologies b) stock exclusion & riparian zone management c) application of P binding clays or equivalents d) sedimentation basins for organic carbon removal e) drain maintenance f) drain modification at subcatchment and landholder scale, and g) urban stormwater retrofitting. • We note that limited information is provided in relation to sediments and monosulfidic black ooze, in the context of risks to water quality. Acid sulfate soil exposure is a known threat to the wetlands of the Peel-Yalgorup System (including Lakes McLarty and Mealup) and is one likely to be vulnerable to risks of altered hydrology associated with the proposed development, particularly withinin the context of a drying climate. • We support the aim of this measure to deliver the required 35t/yr reduction of P inflow (an additional P reduction beyond what will be achieved through the MST program discussed above), and see the program as an appropriate strategy toward the P inflow target of less than 75 t/annum (Action Plan H p 13), however these are the targets for the current WQIP from 2008 and should be adaptive to change over time as more contemporary information becomes available. • We recommend the program be prescribed (with adequate committed funding) across the entire GGP lifespan, or until such time as nutrient reduction targets are achieved. • We note the comment "in the absence of other alternatives that are effective at this [the catchment] scale, drainage intervention is proposed'. New information regarding the effectiveness of interventions, for example from the newly announced Regional Estuaries Initiative (REI) projects, should be used to guide investment in drainage intervention. • These commitments are a key to reducing current nutrient loads to the estuary and understanding effectiveness of various water interventions and treatments e.g. constructed wetlands, phosphorus binding clays, sedimentation basins • The objectives of the Regional Estuaries Initiative (REI) projects for the Peel-Harvey Catchment are inseparably linked to the objectives of these drainage interventions. The REI projects, including the measurement and evaluation components are funded until 2019 only, but the intent is for the effectiveness of the interventions to extend well belong the life of the project. The current bottom-of-catchment monitoring, reporting and modelling of nutrient concentrations and loads by the Department of Water will not measure the effectiveness of these interventions. The GGP must therefore make a commitment for an overarching long-term monitoring program that commences immediately to capture the effectiveness of: ○ the interventions implemented in the REI ○ the interventions to which the Green Growth Plan commits and to	• We support all seven of the identified key components of this measure, while noting that other innovations, developed through advances in knowledge, technology and adaptive management should also be enabled through the GGP. • The inclusion of a target (35t/yr reduction of P inflow) for this measure is supported, however we note that this target must be subject to revision as new information becomes available (as per State Commitment #35 for revised catchment nutrient modelling and resulting changes to water quality targets). • The program must be delivered across the entire GGP lifespan, or until such time as nutrient reduction targets are achieved. A commitment to provide adequate funding is also required. • The effectiveness of this measure is dependent upon hydrological regimes including surface and groundwater quantity, and is therefore vulnerable to changes associated with the region's drying climate. We reiterate earlier comments provided (p 11) in relation to environmental flows. • The GGP must commit to deliver a revised/contemporary WQIP and must provide a commitment to implement the WQIP's recommendations, with measurable targets, clear responsibilities and adequate resourcing provided. • The GGP should include a commitment to implement Strategy D 'Improved drainage, watercourse and wetland management' of the Subcatchment Implementation Plan (PHCC 2012) • A commitment to fund long-term (commensurate with the life-span of the GGP) monitoring at the bottom of each sub-catchment is needed • A commitment to fund monitoring of interventions implemented through the REI • A commitment to fund monitoring of the interventions delivered through this measure.	• Peel-Yalgorup Ramsar Site (MNES EIAR CH19, p19-86) • Action Plan H – Conservation Program p 13 • Action Plan G – State Commitment # 35 • Subcatchment Implementation Plan (PHCC 2012) • Peel-Harvey WQIP

			○ complement the current (DoW) bottom-of-catchment monitoring program. • The WQIP for the Peel-Harvey estuary was published in 2008 and requires revision by 2018 (recommended by the WQIP to be within 10 years). This WQIP is only concerned with the reduction of phosphorus and not with other nutrients including nitrogen, organic carbon and sediment. Development of a contemporary WQIP for the Peel-Harvey is a deliverable of the REI. This process will involve remodelling of current and target loads of nutrients, so it is imperative that: (i) the targets and actions recommended in the revised WQIP supersede those from the current version (ii) the drainage intervention commitments in the GGP deliver the recommendations of the contemporary WQIP • Access to drains for nutrient intervention works is currently hindered by confusion over institutional arrangements governing the responsibility for and management of drains. Establishment of clearer and more effective institutional arrangements as well as a streamlined approach to obtaining works permits is an imperative to overcoming this barrier. This barrier must be addressed in the plan with an associated commitment. • Commitment for continued drainage intervention works throughout the life of the GGP must be provided (currently, the drainage intervention package is provided for the first 20 years of the 30 year GGP.		
4	Promotion of the use of soil products	Strongly supported	• The PHCC recognises the value of soil amendments for their potential to improve soil fertility, water holding capacity, nutrient retention and water repellence. We also agree that significant changes are needed in relation to current use of water-soluble fertilisers. • We support the commitment to facilitate the uptake of soil products to reduce nutrient runoff and leaching and improve water holding capacity of poor soils (State Commitment #35). As previously stated, we urge this be included as a commitment for Commonwealth endorsement. • We support the promotion of soil products including: natural materials such as compost and clay; and waste derived materials; and the need for ongoing improvement of regulatory systems and standards, including in relation to soil products derived from waste products. • Classification of waste derive materials as soil products, where appropriate, is highly supported. • We also support the proposed 'further work' on matching soil product type and application rate to the characteristics of specific soil types (MNES EIAR p 19-87). However, we urge that the proposed 'further work' should be prescribed in further detail, including as a measurable commitment in the GGP.	• The GGP should commit to the implementation of Strategy B 'Better soils for improved productivity' of the Subcatchment Implementation Plan (PHCC 2012) • All commitments relating to the ecological character of the Peel-Yalgorup System, including State Commitment #35, should be subject to Commonwealth endorsement. This should include, but not be limited to, all Commitments relating to improving ground and surface water (including through the promotion of soil products).	• Peel-Yalgorup Ramsar Site (MNES EIAR CH19, p19-87) • Action Plan H – Conservation Program p12 • Action Plan G – State Commitment #35 • Subcatchment Implementation Plan (PHCC 2012)
5	Continuing bagged fertiliser regulation	Strongly supported	• Action Plan H proposes that the proposed measures to improve water quality will be complemented by the Department of Environmental Regulations *Environmental Protection (Packaged Fertiliser) Regulations 2010* which limit the amount of available phosphorous contained in fertilisers available for domestic use. • We understand this measure, while important in protecting the wetlands' ecological character/hydrological processes and environmental quality, is a continuation of the status quo.	• All commitments relating to the ecological character of the Peel-Yalgorup System, including State Commitment #35, should be subject to Commonwealth endorsement. This should include, but not be limited to, all Commitments relating to improved ground and surface water affected by this measure.	• Action Plan H – Conservation Program p12 • Action Plan G – State Commitment #35

6	Water quality investigations of proposed urban expansion areas	Supported with amendments	• PHCC supports the need for further investigation of nutrient export and eutrophication risk in association with any new urban development in the PHCC. Specific consideration of water quality issues in accordance with the Better Urban Management Framework is supported • We also support the importance of undertaking such measures "early in the land use planning process as possible' (MNES Commitment #94, State Commitment #29). Our opinion is that such investigations should be undertaken to inform the identification of urban expansion sites identified in the Urban Class of Action footprint. This work has not been done already (or has not been provided with the GGP documents) and thus should be completed as a matter of priority to identify the capability of the proposed urban footprint with respect to water management issues. • Further, we do not agree water quality investigations should be limited to Ravenswood North and Pinjarra West Precincts. Water quality investigations are a necessary aspect of all new urban development within the Peel-Harvey catchment toward ensuring reducing nutrient export from urban sources. • However, as it is written (MNES EIA p 19-87), this management/mitigation response is non-binding to any proponent (the State or a delegate) and fails to stipulate what, if any, outcome would be required should an unacceptable nutrient export or eutrophication risk be identified. • Further clarity around responsibility for this measure (who and what) should be provided.	• This measure should be applied to all new development (not limited to those proposed for Ravenswood North and Pinjarra West). • We urge that that the proposed urban expansion in Ravenswood North be removed as recommended by the Sub-regional Alliance Group comprising members including the City of Rockingham, City of Mandurah, Shire of Waroona and Shire of Murray. • Water quality investigation in relation to significant urban expansion areas (including Ravenswood North and Pinjarra West) should be provided prior to the Commonwealth endorsement of the Urban and Industrial Class of Action. • Conditions should be placed on the State, in relation to urban nutrient export standards applicable to all new urban development sites, in the event that the Urban and Industrial Class of Action is to be endorsed. • Appropriate monitoring requirements, and proposed responses to unsatisfactory results of that monitoring, are also needed as condition of endorsement. • Further, the GGP should prescribe longer timeframes (than is currently the case) for land developers' responsibility for nutrient management of a development site. Longer timeframes (e.g 5-7 years) would increase the incentive for the land developer to adopt more effective long-term strategies for nutrient reduction, with effective processes for monitoring, public reporting and trigger adaptive actions where necessary	• Peel-Yalgorup Ramsar Site (MNES EIAR CH19, p19-87) • MNES Commitment #94 (Action Plan F, p29). • Action Plan G, State Commitment #29)

7	Continued groundwater allocation planning and management (Continued management of groundwater resources)	Supported with amendments.	• We support the intent to develop 'alternative water source options' and to 'implement several management strategies…through the current review of the *Peel Coastal Groundwater Allocation Plan…*to minimise the impacts of a drying climate and abstraction upon the Yalgorup Lakes System' (MNES EIAR p19-88).
			• We note however that the review of that Groundwater Allocation Plan was completed in 2015. The MNES EIAR therefore discusses a management and mitigation approach that relies on influencing a 'current' review of a plan which in fact is already complete.
			• We support all five of the management strategies listed for development via the review, namely: GDE licence assessment tools, reducing allocation limits to restrict availability of additional licences, M&E of prescribed GDE sites against resource objectives, interventions to safeguard the thrombolite TEC, managed aquifer recharge where feasible as an alternative source to offset reduction of groundwater inflow (MNES EIAR p19-88).
			• We note, however, that few were adopted as a result of the 2015 Groundwater Allocation Plan review. The remainder should be included as conservation commitments.
			• Where a water source of suitable quality is available, the feasibility of MAR and Aquifer Storage and Recovery schemes should be considered. Managed aquifer recharge (MAR) schemes should not be limited to urban areas only.
			• PHCC is highly cognisant of present and future risks of climate change in terms of altered surface and groundwater regimes and their impacts on ecological character of the Peel-Yalgorup System.
			• We therefore support the inclusion of measures that respond to future climate change risks, particularly water reuse, trading, reduced abstraction and direct supplementation (MNES EIA p 19-89).
			• We note that none of these strategies were adopted as a result of the 2015 Groundwater Allocation Plan review. We do however acknowledge that the allocations have been
				• This commitment is not currently measurable. It should be modified accordingly.
				• The 5 strategies recommended in the MNES EIA (p19-88) should be included as time-bound commitments of the GGP, ie
				  ○ GDE licence assessment tools
				  ○ reducing allocation limits to restrict availability of additional licences
				  ○ M&E of prescribed GDE sites against resource objectives
				  ○ interventions to safeguard the thrombolite TEC
				  ○ managed aquifer recharge where feasible as an alternative source to offset reduction of groundwater inflow
				• Managed aquifer recharge is supported and should not be limited to application in urban areas.
				• The measure should also include a commitment to meter licenced and licence-exempt groundwater usage in the two subareas associated with the groundwater dependant thrombolite community at Lake Clifton.
				• A commitment is recommended to reallocate groundwater for environmental purposes to reduce the salinity of Lake Clifton, with appropriate support/resources to landowners to transition away from groundwater dependency
				• Contingency thresholds and responses (in relation to the annual evaluation) should be prescribed as part of the Conservation Commitment (#93), particularly in relation to Lake Clifton where salinity levels in the Lake must be reduced to avoid catastrophic impacts to the Thrombolite community (a listed TEC).
				• Future measures to combat climate change risks should be identified now, with criteria established to trigger implementation.
					• Peel-Yalgorup Ramsar Site (MNES EIAR CH19, p19-88)
					• MNES Conservation Commitment #93 (Action Plan F, p29).
					• Thrombolite Recovery Plan

			reduced significantly, although there is no evidence demonstrating that the abstraction of groundwater from the Peel coastal area has been reduced. • The corresponding commitment (MNES Conservation Commitment #93 (Action Plan F, p29) commits the State to 'ongoing management in accordance with existing legislation and policy'. This commitment appears unlikely to create any meaningful difference beyond the business as usual approach. The commitment does provide for an adaptive management approach to groundwater allocations based on annual allocation, without specifying how such evaluations would take place, nor what contingencies would be put-in-place should the need for intervention be identified.	• The Interim Recovery Plan for the Lake Clifton Thrombolites should be revised and implemented as a commitment of the GGP, with quantifiable actions, responsibilities and resources defined.	
8	Construction (Continued management of groundwater resources)	Strongly supported	• PHCC supports the recognition of risks to water quality from construction activities, and the need for effective avoidance and mitigation using best practice controls. The examples listed include Construction Environment Management Plans, Acid Sulfate Soil MPs, Sediment and Erosion Control MPs, spill response procedures, and storage/stockpiling of potential contaminants; each of which we support. • We note that this measure is delivered through MNES conservation commitment #6, to *implement environmental assessment and management measures, controls and standards for all development to reduce direct and indirect environmental impacts…ensuring that new proposals that are approved incorporate at a minimum the existing standard and expectations for control/mitigation/management of direct and indirect impacts*. The mechanism by which this is to occur (the State's existing statutory planning and approval processes) is detailed in Action Plans A B C and D. We support this approach as it is currently outlined. • We note the intent to continue employing such controls through development approvals, but note that the EIA process under the EPBC Act (including the use of approval conditions) will no longer be available as a mechanism by which such controls are applied. The need for transparent measures within the State's regulatory and planning frameworks is therefore key. • The effectiveness of such controls rely on the operator's expectation of compliance and enforcement. Further information in relation to audit and compliance should be provided in MNES EIAR in order to provide confidence around the effectiveness of this measure. It is also unclear what role, if any, the Commonwealth will take in the compliance and enforcement of standards (and how this differs from the current scope under existing arrangements).	• Further information in relation to audit and compliance should be provided in relation to this measure. This information is essential in providing the public with confidence in the proposed approach to managing water quality risks arising from construction. • Approval and compliance will fall to Local Governments and therefore appropriate support mechanisms including training and resourcing to effectively undertake this role should be included, with transparent reporting mechanisms to gauge effectiveness and adaptive measures. This could be provided via certification of professionals in a similar manner to energy efficiency ratings for building licenses are outsourced to ensure specific and up-to-date registration and training maintains quality of outcomes and minimises risk.	• Peel-Yalgorup Ramsar Site (MNES EIAR CH19, p19-89) • Action Plan F – MNES Conservation Commitments p 11 • Planning and statutory approval processes in Action Plans A B C & D
9	Better Urban Water Management Framework (Continued management of groundwater resources)	Supported with amendments	• PHCC supports the use of the Better Urban Water Management Framework as the 'primary mechanism for protection of water quantity and quality through the land planning process' (MNES EIAR 19-89). • We understand the BUWMF applies all over the State as it is an implementation mechanism of *State Planning Policy 2.9: Water Resources*. • However, MNES conservation commitment #94 appears to limit the application of the BUWMF to new development in Ravenswood North and Pinjarra West. Our position is that any new urban development within the PH catchment should be subject to more detailed site-specific investigation and assessment in relation to the Better Urban Water Management Framework, and should require that proponents demonstrate – through site investigation and analysis - adherence to all relevant nutrient targets. We note that this	• Amend MNES Conservation Commitment #94 to: ○ Enable its application to all new development (urban, industrial and rural residential) within the Peel-Harvey Catchment (removing the limitation to Ravenswood North and Pinjarra West). ○ Better define what constitutes the 'specific considerations' referenced. The Plan must specify what additional targets/standards and/or design criteria will be applied as a result of water quality issues in the area.	• Peel-Yalgorup Ramsar Site (MNES Assessment CH19, p19-89) • Action Plan F – MNES Conservation Commitments p 29

			position is consistent with State Commitment # 41, which we urge be adopted as a Commonwealth Commitment in relation to protection of the Peel-Yalgorup System.		
10	Review of State Policies	Not supported. An alternative is proposed.	• The PHCC welcomes the State Government's interest in amending the SPP and EPP "…and implement Planning and Development Act 2005 mechanisms to prevent high nutrient export activities on soils with a low phosphorus retention capacity." • Inappropriate land use and development which further risks catchment water quality is not acceptable and considered one of the highest risks to the Peel-Yalgorup Ramsar Site (for example, recognised through Peel-Yalgorup Management Plan (PHCC 2009) and Ecological Character Description (Hale and Butcher 2007). • The EPP and SPP have been of limited effectiveness since their gazettal over 30 years ago, largely due to the fact that they are policies and not easily enforceable instruments. • Planning control mechanisms that are legislatively enforceable at the appropriate scale(s) of planning and development assessment are required. • An explicit planning control mechanism to prevent high nutrient export activities (Commitment 36, Action Plan G) under the Planning and Development Act 2005 is required to remove any ambiguity that exists under a multi-objective Act such as the PDA 2005	• The PHCC strongly supports the creation of a Special Control Area under the Planning and Development Act 2005 over the Peel-Harvey Coastal Plain Catchment for the explicit purpose of preventing high nutrient export activities on soils with a low phosphorus retention capacity. A commitment to this end should be included in the GGP.	• MNES EIAR Ch 19 p 19-93 • Action Plan G, State Commitment #36
11	Governance for the implementation of water quality commitments	Not supported. An alternative is proposed.	• The PHCC welcomes the reconstituting of the existing statutory Peel Regional Planning Committee (PRPC) is with the aim of ensuring that planning decisions are cognisant of the water quality improvement objectives. We urge this measure be included as a written commitment of the GGP. • We also welcomed the establishment of the Peel-Harvey Estuary Management Committee (PHEMC) and Senior Officers Group, and have valued the opportunity to participate in these since their inception. However, the PHEMC is not operating in line with the intent of its introduction or terms of reference. A more effective, collaborative approach needs to be implemented to continue PHEMC and ensure it operates effectively. Membership for PHEMC also needs to extend to include Department of Fisheries and Department of Transport, given the important roles they play in the management of the Peel-Harvey Estuary. • We support the establishment of a Peel-Harvey Water Quality taskforce, but note that this Taskforce needs to feed into an overall governance structure across all aspects of the GGP. We also support the purpose and intent of the taskforce in overseeing roles, responsibilities and actions relating to protection of the environmental values of the Peel-Harvey system (State Commitment #37).	• The Governance Framework must be modified to provide for a Regional Coordinating Mechanism to ensure regional delivery and collaborative decision making, e.g. a Peel-Harvey Strategic Conservation Plan Regional Implementation Steering Group with senior officers of appropriate agencies and community groups responsible for or key to the implementation of the SCP. The Water Quality Taskforce would feed into this Steering Group, as would other Taskforces across the suite of activities (e.g. terrestrial based land management programmes). This Regional Implementation Group must have an independent chair and report to the PHEMC/Ministerial Oversight Committee on the progress of the quantitative outcomes of the SCP, without political census. The Ministerial Oversight Committee would sit above the Steering Group (this would be a revised PHEMC model) which would consist of relevant directors general, agency representatives and community groups. Further this Ministerial Committee would report directly to the Premier (or DG of Department of Premier and Cabinet) on the progress of the SCP commitments.	• Strategic Conservation Plan Ch 5 p 59 • Action Plan H – Conservation Program p 12

12	Additional (State) commitments in relation to hydrological process and Inland waters environmental quality (relevant to protecting the ecological character of the Peel-Yalgorup System Ramsar site from the identified indirect threats.	Strongly supported	• A series of additional measures (in the form of State Commitments) are proposed in relation to hydrological process and inland waters environmental quality (the State Factor which relates to the Peel-Yalgorup System). We note these measures are identified exclusively in relation to State Factors (and therefore are not duplicated elsewhere, nor are they subject to Commonwealth endorsement under the current structure of the GPP. These measures are: ○ State Commitment # 30, which relates to continued implementation of measures to reduce water use, increase water recycling and develop alternative fit for purpose sources ○ State Commitment #31 which relates to ensuring that the irrigation needs of future Public Open Space are addressed ○ State Commitment # 32, which relates to continued review of environmental water requirements ○ State Commitment # 41 Continue to improve urban water management through…implementing the better urban management framework, including in all in-fill areas and brownfield development, by reviewing and updating the framework, and through development of Sub-regional Water Management Strategies (to support sub-regional structure planning) ○ State Commitment # 42 Support the drafting and enacting of modernised water resource management legislation. • The PHCC strongly supports each of these proposed measures.	• The following State Commitments must be included as MNES Commitments of the GGP, for Commonwealth Endorsement: ○ State Commitment # 30, which relates to continued implementation of measures to reduce water use, increase water recycling and develop alternative fit for purpose sources ○ State Commitment #31 which relates to ensuring that the irrigation needs of future Public Open Space are addressed ○ State Commitment # 32, which relates to continued review of environmental water requirements ○ State Commitment # 41 Continue to improve urban water management through…implementing the better urban management framework, including in all in-fill areas and brownfield development, by reviewing and updating the framework, and through development of Sub-regional Water Management Strategies (to support sub-regional structure planning) ○ State Commitment # 42 Support the drafting and enacting of modernised water resource management legislation. • Commitment #32 (to continue to review environmental water requirements) must include a monitoring and evaluation program at a scale and resolution sufficient to ensure the decisions regarding allocation of water for the environment are based on scientific evidence. • See also our comments in relation to Salinity and Lake Clifton (row 13 of this table.)	• MNES EIA Report Ch 19 - Ramsar. • Action Plan G – State Commitments
13	Determine the cause of rising salinity in Lake Clifton	Supported with amendments	• PHCC supports the proposal to determine the cause of rising salinity in Lake Clifton by undertaking water quality monitoring and developing a groundwater flow model (see Action Plan F – MNES Conservation Commitment #28). • There is a current lack of a long-term, robust monitoring program to measure the quantity of groundwater abstracted from the superficial aquifer in subareas likely to affect the flow of groundwater into Lake Clifton. Similarly there is no monitoring program in place to evaluate the water quality (salinity and nutrients) of Lake Clifton or the regional groundwater; monitor the changes in water levels; or to model the effect of water abstraction from the superficial aquifer. As a result, much of the debate about the drivers of increasing salinity of Lake Clifton, for example over-abstraction of groundwater, increased tidal forcing and the thickness of the fresh groundwater lens is speculative. The proposed action to determine the cause of rising salinity is therefore supported. • Whilst such investigations are an essential first step, a commitment to take action in response to identified threats is also crucial. Adaptive management actions, including contingency measures, should be identified as part of this proposal, along with a commitment to provide required funding to implement remedial actions. We therefore welcome the commitment to investigate options remedial action (#29), but urge this commitment be modified to stipulate triggers for intervention with remedial actions, together with a commitment to provide adequate funding.	• This measure should be modified to provide for adaptive management in response to results of salinity investigations, with an associated commitment to fund any necessary interventions. An urgent timeframe for the investigation must be provided. • The measure should also include a commitment to meter licenced and licence-exempt groundwater usage in the two subareas (Lake Clifton and Island Point) associated with the groundwater dependant thrombolite community at Lake Clifton. • Until the hydrology of the three subareas near to Lake Clifton (Lake Clifton, Island Point and White Hills subareas) is better defined, and the risks to the thrombolite community from groundwater abstraction mitigated, no further licenses to take water from these subareas should be issued. Further, as licences to take water are surrendered, the allocation for the subarea should be reduced by the amount corresponding to the water entitlement for those licences. This commitment should be made in the GGP. • Trading of and agreements for water entitlements to reduced water use in subareas with sensitive GDEs (such as Lake Clifton, Island Point and White Hills subareas) should be actively encouraged and promoted by Department of Water, and stipulated within the GGP. This should include incentives for the surrender of water allocations for environmental purposes.	• Action Plan F – MNES Conservation Commitment • Interim Recovery Plan for Lake Clifton Thrombolites • Scientific Advice (linked to the Commonwealth listing of the Thrombolites as a TEC)
14	Establish and manage the Peel Regional Park	Not Supported – Alternative Proposed.	The PHCC notes the commitment to the formal designation of a Park over parts of the Peel-Yalgorup Ramsar System, as made by State Government since at least 2003. The Peel-Harvey	• The GGP should provide for the establishment of a legislated land protection and management model for the Peel-Yalgorup Ramsar Site (creating a Peel-Yalgorup Park) instead of the Peel Regional Park. As a minimum, use	• MNES EIAR, p19-90

			Catchment Council supports the intent of such a proposal, and we have previously provided our support for the Peel Regional Park Plan Use Classifications (DPI on behalf of WAPC, 2006).
			
			However the proposal for a Regional Park does not adequately protect the System's national and international values, as is required to achieve the commitments of the Ramsar Conventions (and any related objectives for Ramsar, as amended).
			
			• The formal designation of a Regional Park (where supported under the CALM Act) is designed for '…**land that the Minister considers to have regionally significant conservation, landscape protection or recreation values'**. (CALM Act Amendment 2015, Division 2A,8E; CALM Act 1984 as amended).
			• A Regional Park is designed to protect regionally significant values, but not necessarily values at a national or international scale.
			• A Regional Park framework does not provide sufficient, transparent legislative protection to ecological values of international significance where there is potential conflict between environmental values and recreational/commercial/development values. Recreational and development pressure over the Ramsar site will only increase over the next 20 years and beyond.
			• The Regional Park proposal in the documentation provides no detail on the proposed tenure (and protection status) of lands that are to be included in a future Park. Site-specific land tenure and classification is a critical part of improved management of the future Park.
			• The Park proposal provides no detail of the proposed inclusions and park boundaries. The PHCC's position is that a Park, whatever designation, should cover the whole Peel-Yalgorup Ramsar Site (with extensions).
			
			The PHCC supports the State Government's commitment to purchase land reserved for a future Park, but are concerned that half of the commitment is allocated to a period beyond 2026. The land acquisition process needs to be revised to bring forward the majority of acquisitions within the next ten years. The challenge is to ensure that once purchased/protected, land is vested in a tenure which will protect its ecological values.
			The PHCC is also concerned that the Government is committed to purchasing all reserved ROS, even where some of the reserved land does not have high ecological or recreational values and other mechanisms, such as part protection/part active land use are more appropriate.
				classifications and spatial extent illustrated in the Peel Regional Park Use Classifications of 2006 should be adopted.
				• The preferred model could be a Peel-Yalgorup Act – an Act for the Protection and Wise Use of the Peel-Yalgorup Ramsar Site.
				• The Peel-Yalgorup Park and legislation should:
				  ○ Require legislated land zoning within the site (land and waters) for the protection of ecological character and management of wise use of the Park.
				  ○ Create legislated Management Plans, Plan reviews, and public participation in statutory processes.
				  ○ Provide added protection to zones where the underlying land tenure does not provide this protection.
				  ○ Require all development within the site to be in accordance with the Management Plan.
				• The PHCC supports the establishment of a community advisory committee which is integrated into the Government's preferred approach (Peel Regional Park or Peel-Yalgorup Park as proposed above).
				• The PHCC considers that the Peel-Yalgorup Park should include all of the Ramsar Site, proposed extensions to the Ramsar Site, and Regional Open Space.
				• There should be a commitment to review the proposed boundary within 3 years of gazettal, to better reflect the intent of the Park, based on scientific evidence for effective buffers, rather than cadastre boundaries.
				• There needs to a commitment to provide use classifications that improve the health of the Estuary as a priority, e.g: previously suggested 'pastoral theme' classifications should not be considered; cleared land adjacent to the Murray River need to be restored for conservation values if we are to restore the health of our waterways.
				• The commitment to purchase land should be:
				  ○ Broadened to a commitment to either purchase reserved land, or use other alternative mechanisms to secure part protection of sites through negotiated planning outcomes (where part of the land lends itself to solutions other than purchase. This recommendation is made to establish solutions which are tailored to the values of the land, and free up other resources to acquire or manage other high priority areas.)
				  ○ Brought forward such that protection of all Regional Open Space (through acquisition or alternative planning mechanisms) is substantially completed within 10 years following endorsement of the GGP.
					• Action Plan H Conservation Program p 14
					• Peel Regional Park Plan Use Classifications 2006.

15	Marine management area	Not supported – Alternative Proposed.	• The proposal to protect matters of MNES and other environment values in and on the waters of the Peel-Harvey Estuary and its tributaries via the proclamation of a Marine Management Area is not fully supported. • Whilst declaration of a Marine Management Area over large parts of the Estuary and tributaries may be sufficient to protect MNES in some areas, it will not suffice in other areas with high values. • Under the CALM Act the purpose of a Marine Management Area is "*for the purpose of managing and protecting the marine environment so that it may be used for conservation, recreational, scientific and commercial purposes.*" (CALM Act, Division	• A combination of Marine Parks and Marine Management Areas are needed to protect adequately protect MNES. The GGP should include a commitment to implement a network of Marine Parks and management areas that collectively encompass the spatial extent of the Estuary and lower tributaries. • The State must commit to undertake a process of determining the location and extent of both Marine Management Areas and Marine Parks in the Estuary and lower tributaries to protect MNES and other environmental values. ○ Marine management areas are required where multiple use is the primary management outcome;	• Action Plan F - MNES Commitment #90 • Action Plan G - State Commitment #2

			3, 13C) Marine management areas may allow recreational or active use with risk to conservation values as permitted under Section 13C. • In contrast, the purpose of Marine Parks is "……*for the purpose of allowing only that level of recreational and commercial activity which is consistent with the proper conservation and restoration of the natural environment, the protection of indigenous flora and fauna and the preservation of any feature of archaeological, historic or scientific interest*.' (CALM Act, Division 3, 13B)	○ Marine parks are required where protection and management of MNES ort state environmental values is the primary management outcome. • The process of determining the location and extent of both Marine Management Areas and Marine Parks should involve representatives of the community and other stakeholder groups. • The State must commit to establishing this network of Marine Management Areas and Marine Parks as a high priority, within a specified timeframe following the Commonwealth's endorsement of the GGP.	
16	Peel-Yalgorup Ramsar Site Boundary Extension	Supported with amendments.	• PHCC strongly supports inclusion of the Serpentine River including Goegrup and Black Lakes within the Ramsar Site boundary. • The PHCC submitted a proposal to the State in 2008, based on significant collaboration Wetlands Branch of DPaW (formerly DEC) and relevant local governments; and through consultation with stakeholders via the PYS Ramsar Site Technical Advisory Group (representing more than 27 stakeholder groups). The proposal received broad support from all stakeholders before being provided formally to the State. • We again provide a copy of that proposal as part of our current submission on the strategic assessment (Attached, Appendix A). Letters of response from the State, illustrating support for the proposal, are provided therein.	• We support the inclusion of additional land into the boundary of the Peel-Yalgorup System Ramsar Site and urge that the PHCC's proposal (dated 2008, Appendix A) be adopted as part of the revised proposal, with the relevant commitment amended. • Further detail in relation to the State's proposal for boundary extensions should be provided to the public for comment as an urgent priority.	• MNES EIAR, p19-90 • Action Plan F – MNES Conservation Commitment # 90 • PHCC's boundary extension proposal (Appendix A)
17	Expansion of Yalgorup National Park	Strongly supported	• PHCC welcomes the commitment (MNES Commitment #92) to extend Yalgorup National Park 'as detailed in Action Plan H' (MNES EIAR p 19-92). • The MNES Impact Assessment Report (p 19-92) goes on to describe the State's intent to acquire: ○ Cape Bouvard freehold lands (~1,800 ha) ○ Land for conservation, ecosystem linkages and Ramsar buffer – acquire private land for southern extension (~2,333ha) ○ State forest converted to national park (~2,050 ha). A total of approximately 6,183 ha is therefore indicated. • PHCC strongly supports the acquisition of high conservation value land that would otherwise be under threat of land use conversion and/or vegetation clearing. We also support the • Action Plan H (p21) describes the intent to expand Yalgorup National Park by 2,100ha and provide improved management including, but not limited to additional recreational facilities within the National Park, access management protection for protection of the Lake Clifton Thrombolites, weed management particularly around Yalgorup Lakes, and monitoring of Ramsar site values. • We support the proposed management actions, however we note these have not been prescribed in the corresponding MNES Commitment (#92). • Action Plan H describes a two phase approach to this proposal (as part of the broader conservation reserves proposal, see row 23).	• We strongly support the intent of this proposal where it specifically refers to a minimum commitment of a 6,183 ha expansion. • We are concerned however that the description of this measure is repeated in various sections of the documents, with a consistent reference to this area-based commitment. We provide further discussion of this problem in Table 1 row 11. • Negotiated planning solutions should be utilised as far as possible enable prioritisation of land acquisitions in areas where negotiated outcomes are not possible and where the risk of land conversion is greatest.	• MNES EIAR, p19-92 • Action Plan H – Conservation Program p 10, 21 • MNES Commitment #92

			○ An initial component (for immediate action following the Commonwealth's endorsement of the Strategic Conservation Plan) is proposed (no details are provided about what this initial expansion package will contain). ○ Phase 2 involves the acquisition of 1,000 ha of private land for the expansion of Yalgorup National Park; set to occur within the first 5 years following the Commonwealth's endorsement of the Strategic Conservation Plan. • We strongly support the proposed acquisitions as a Priority A action. • However, we note an apparent lack of consistency across the documents with respect to the total area of extensions anticipated. A minimum area should be thus be prescribed as part of any corresponding commitments.		
18	Peel-Harvey Riparian Zone Restoration Project	Strongly supported	• This measures is described as a partnership with the Peel Harvey Catchment Council and other stakeholders to conserve remnant and riparian vegetation and restore disturbed areas i.e. control off road vehicles, feral animals, weeds and dieback, and undertake revegetation, rehabilitation and restoration projects (Action Plan H p 14; MNES EIAR p 19-90). • The PHCC strongly supports any measures towards restoring and enhancing the conservation value of riparian zones in the PHCC catchment – particularly where they deliver a combined biodiversity and water quality outcome. We also welcome the opportunity to participate in the design and delivery of such a project. • We note that significant work is needed to restore the riparian environments of the Swan Coastal Plain, given that only 1% of waterways of the Swan Coastal Plain are in good condition or better (PHCC 2014, Bindjareb Boodja Landscape 2025, A Strategy for Natural Resource Management Strategy in the Peel-Harvey Region). • To make a measurable improvement towards restoring the condition of riparian habitats, significant effort is needed. Any investment in riparian restoration activities must therefore be associated with a measurable target.	• The State must include a commitment to provide adequate funding for the delivery of the Strategic Conservation Plan, including this measure. • A measureable target must be prescribed as part of this measure including: ○ foreshore assessments will be undertaken for all reaches of the 3 rivers and major tributaries feeding into the Peel-Harvey Estuary, within the first___ years of the GGP's endorsement ○ __ ha of riparian zone will be restored each year commencing ___ to achieve an overall increase in riparian areas of __ ha. This will result in __ % of waterways on the Swan Coastal Plain improving in condition to a total of __ % being in good condition by __.	• MNES EIAR, p19-90 • Action Plan H – p 14 • MNES Commitment #90 • PHCC 2014, Bindjareb Boodja Landscape 2025, A Strategy for Natural Resource Management Strategy in the Peel-Harvey Region
19	Access to the Estuary Strategy	Strongly supported	• This measure proposes partnerships with the community and other stakeholders to implement multi-use recreational nodes and a network of trails, primarily for walking, cycling and canoeing which link recreation sites and other destinations around the Peel Harvey estuary and associated waterways. It will deliver upgrades to recreation sites such as picnic areas and canoe and boat launching areas to ensure that recreation occurs in a controlled and planned manner, and utilising appropriate areas thereby taking pressure off sensitive conservation sites and values (Action Plan H). • PHCC supports this measure. Investment in creating or upgrading facilities that promote well managed, nodal, tourism and recreational use is highly supported, especially if done in such a way as to promote better recognition of a single, local 'Ramsar' brand. • We highly support the proposed partnerships with community and other stakeholders. • We note that this strategy aims to relieve tourism and recreational pressures from 'sensitive conservation sites and values'. Adequate investment in protecting such sites is therefore needed as a complement to the proposed investment in recreation nodes and trails.	• This measure should identify the need for complementary management of sensitive conservation sites and values (including clarification around how the GGP will deliver such). • Public access needs to be prevented from sensitive areas, particularly during nesting and other sensitive timeframes. • Measurable targets to enable evaluation and continuous improvement of the strategy and related interventions • Access to the Estuary needs to be carefully managed with sufficient quality recreation nodes that encourage wise use of the Estuary (education focussed signage and facilities) • No new private access jetties be allowed within the strategic assessment area, together with a gradual surrender of existing private jetties is encouraged • Reference must be made to past strategies related to estuary and water way use. The capacity of the system to accommodate use must be better understood as a requirement of any forthcoming strategy.	• MNES EIAR, p19-90 • Action Plan H p 14

20	Migratory Bird Habitat Protection Works	Supported with amendments	• This measure proposes to protect and restore estuarine ecosystems and Ramsar values focussing on priority areas for migratory birds and shorebirds. This would comprise habitat protection, interpretation, on-ground management and monitoring. • The PHCC is highly supportive of this intent. • This measure comprises a proposal to expand Len Howard Conservation Park and Class A nature reserves at Samphire Cove, Creery, Austin Bay and Kooljerrenup into the adjacent intertidal areas (we note no map illustrating the spatial extent of this measure is provided). • We note that each of these sites is within the Peel-Yalgorup System Ramsar Site. • Within these reserve expansion sites, added protection is intended to be provided to migratory shorebird habitat; and disturbance to birds from pedestrians, dogs and cats, motorised and non-motorised vessels would be better managed (MNES EIAR p 92). Access would also be limited during critical feeding and breeding times (November to March). • The description of this measure implies such interventions will be limited only to these newly created reserves (occurring within the Peel-Yalgorup Ramsar Site), therefore excluding other important migratory bird habitat areas in the Perth and Peel Region (see figure 20-1, MNES EIAR Ch 20 p20-11). • We urge that this program be expanded to all migratory bird habitat sites within the Perth and Peel Region. • The PHCC supports efforts to better protect important habitats for migratory birds within the Peel-Yalgorup System; however, we recommend a network of Marine Parks and Management Areas as the best approach for protecting the values of these important habitat areas (see also our comments in row 15). • We also note a number of important habitat areas are not identified within the description of this measure. This measure should prescribe a process to identify, evaluate and prioritise for investment all important migratory bird habitats within the Perth and Peel regions. • We note the measure specifically excludes any restriction on fishing within important habitat areas. Further, management of fishing would remain the responsibility of the Department of Fisheries as per current management arrangements. • The PHCC does not support this approach. There is limited information provided in the MNES EIA report describing scale and severity of impacts on important habitat areas resulting from human access in its various forms. We note that the overlap between important bird habitat and areas used by recreation fishers is a significant gap in the current knowledge of the estuary system; this gap is also identified in the draft assessment report for the Marine Stewardship Council accreditation of the Peel-Harvey blue swimmer crab fishery. We therefore urge that fishing access restrictions to important habitat areas during critical life-stages *not* be ruled out whilst this knowledge gap exists. • We also note that recreational fishing for Blue Manna Crabs forms part of a recent Marine Stewardship Council assessment for sustainability certification. We understand that forthcoming recommendations will highlight the need for better understanding of the impacts of recreational scoop fishing on marine and fringing habitats (including habitats for migratory shorebirds).	• This proposal needs measurable targets, timeframes and funding commitments. Such measures should stipulate as a minimum the area over which added protection will be achieved; the area over which disturbance will be reduced, the areas in which access will be limited during critical life stages, with staged (e.g 5 yearly) reporting and continuous improvement measures. A commitment to continue this measure throughout the life of the GGP is also required. • The monitoring and evaluation of restoration efforts must also be prescribed in the GGP. • We recommend the program be modified for application to all migratory bird habitats in the Perth and Peel Region; recognising that the interconnectedness of local habitats is extremely important for international migrants – particularly in a changing climate. • As we have previously indicated, our recommended approach for management arrangements for the estuary is a network of Marine Parks and management areas (refer to row 15); given the significant conservation values of important bird habitats associated with the Peel-Harvey Estuary. • We do not support the blanket statement preventing the introduction of fishing restrictions in important habitat areas. The relevant statements should be removed from the GGP. • Further information in relation to the impacts of recreational fishing on important bird habitats within the Peel-Yalgorup System must be provided in the MNES EIAR report, and where gaps in the knowledge exist, these should be highlighted explicitly – with a commitment to respond prescribed in the GGP as a high priority. A commitment to further investigate the relationship between fishing practices and impacts on important habitats within the Peel-Yalgorup System should thus be provided. • The GGP should utilise the assessment of impacts of recreational fishing for Blue Manna Crabs gathered as part of the current MSC accreditation process •	• MNES EIAR, p19-92 • Draft Action Plan H – Conservation Program p 16 • Action Plan F, MNES Commitment # 90 • MSC assessment report and associated downloads (https://www.msc.org/track-a-fishery/fisheries-in-the-program/in-assessment/Indian-ocean/peel-harvey-estuarine-fishery-recreational-and-commercial-blue-swimmer-crab-and-commercial-sea-mullet/assessment-downloads)
21	Manage indirect impacts to migratory birds	Supported with amendments	• The GGP plan (MNES EIAR Ch 20, p 20-29) proposes to manage indirect impacts to migratory shorebirds on a site specific basis, paying particular attention to sites directly adjacent, or in close proximity to the classes of action footprint. This will be done via: ○ continuing to implement existing groundwater management arrangements and potential future site supplementation	• This proposal needs a measurable targets, timeframes and funding commitments. Such measures should stipulate, as a minimum, the area/length of wetland buffers created, minimum requirements improving the extent and condition of migratory bird habitat over time, and a commitment in terms of increased community awareness and education.	• MNES EIAR p 20-17, 20-29 • MNES Commitment #80

			○ maintaining vegetated buffers at all sites where they currently exist and seeking to develop buffer zones where they currently do not ○ controlling access to sites to minimise disturbance to shorebirds in a way most appropriate to the individual site; and/or ○ educating the neighbouring community about shorebirds and what they can do to assist in their conservation • While we support the intent of this measure, it fails to provide a specific, measureable and time-bound commitment towards the conservation objectives and outcomes for this MNES. • Further, we note that this measure principally seeks to confirm existing management arrangements for wetlands (which, we note, are currently failing to adequately protect the Perth and Peel regions wetlands). • We strongly support the aspects of this commitment which seek to do more (than under the business as usual scenario. Specifically: we strongly support 'develop buffer zones where they do not [exist]', 'educating the neighbouring community about shorebirds…to assist in their conservation', and additional measures to 'control access to sites to minimise disturbance'. The wording of the commitment needs to be amended however, to ensure these aspects are delivered. For example, '*seeking* to develop buffer zones' provides an easy 'out-clause' thus undermining public confidence in the ability of this measure to achieve something additional to the status quo. • We do not support the aspect of this commitment that simply seeks to continue existing groundwater management arrangements. Rather, we urge that a specific migratory bird habitat monitoring program as part of an adaptive management program for migratory habitats in the Perth and Peel Regions. That monitoring program should, as a minimum, ensure the natural variability of key wetland components and processes are maintained (including groundwater quality and quantity). Such a program should also prescribed contingency thresholds and measures should the need for intervention be identified.	• Further details (including minimum commitments) about the proposed community awareness-raising program should be provided in the GGP. • A dedicated migratory bird habitat monitoring and adaptive management program should be prescribed as a commitment of the GGP to ensure the ecology of migratory shorebird habitats is maintained and improved over time. Contingency thresholds and responses should be identified as part of the adaptive approach. Such a program should apply to all mapped habitats occurring within the Perth and Peel Regions. • A commitment to fully fund this measure throughout the life of the GGP should be provided. • Create certainty by deleting the words 'seek to' from the commitment to develop buffer zones within migratory bird habitats across the region and provide a minimum, measurable target (ha) for buffer zone creation, as noted above.	
22	Monitoring of LACs	Supported with amendments	• Action Plan H commits to an ongoing monitoring program that includes the limits of acceptable change will be established at the commencement of the Strategic Conservation Plan to improve and maintain the health of internationally listed wetlands for the Peel-Yalgorup Ramsar site (Action Plan H p 15) • The MNES EIA report (Ch 19, p 19-6) describes limits of acceptable change (LACs) as LACs as an important tool to assist in determining both the current condition of Ramsar sites, and also trends in the condition of ecological character over time. Generally, LACs are set for parameters including hydrology, water quality and flora and fauna (native and exotic). • Further, the MNES EIAR (ibid) describes that LACs 'set the boundaries between which the condition of Ramsar site values can fluctuate without concern. When ambient conditions exceed LACs, it provides an indication that changes in the ecological condition of the site may be occurring'. • We note that the LAC's for the Peel-Yalgorup System (see Hale and Butcher 2007, p125) were set in accordance with the definition provided by Phillips (2006) whereby…" that if a particular measure or parameter moves outside the 'limit of acceptable change' this may indicate a change in the ecological character that could lead to a reduction or loss of the values for which the site was Ramsar listed". Thus, whilst the limits established for the PYS	• The LACs for the Peel-Yalgorup System have consistently been regarded as management triggers. This point should be clarified in the GGP documents. • A commitment to review of the LACs should be undertaken, in the immediate term, to ensure they provide the best framework for evaluating the ecological character of the system over time. The review must include opportunity for public comment and should be completed prior to finalising the GGP. • Monitoring must commence from day 0 of the plan's implementation (where not already underway) with a commitment to continue monitoring throughout the duration of the GGP lifespan • Committed funding is essential to the successful delivery of all conservation commitments. An adequate level of monitoring against LACs will required significant investment. A commitment for full funding for all LACs (including those identified currently as data deficient) across the full GGP lifespan must be provided. • It is unclear what, if any response, the State will take should monitoring reveal a LAC (management trigger) has been exceeded. Contingency measures and an adaptive management framework, should be prescribed.	• Action Plan H p 15

			are inextricably linked to natural variability, the limits are in fact further outside the range that could be attributed to natural variability (see Hale and Butcher, figure 54, p 125). As a minimum, they should be considered as triggers identifying the point at which management intervention is required. • In order to know the Condition (health) of the Peel-Yalgorup Ramsar Site, 41 Management Triggers (Limits of Acceptable Change) were identified. In 2007, and still today, there was not, and is not, sufficient data available to determine the threshold levels for 1/3 of these triggers. Further, from the very limited data available, one third of the triggers are showing degrading trends and one third are stable. This raises questions around what happens should LAC's be exceeded, and what work must be done to fill existing gaps. • Further, we note the LACs are now nearly 10 years old, and therefore require review. Such a review should be provided as a commitment of the GGP.	• A commitment to revise the Peel-Yalgorup Ramsar Site Management Plan (PHCC 2009) by 2019 should be provided • MNES EAIR P 19-92 reads as though this measure is limited to water quality only WQ. This should be clarified.	
23	Expanding the conservation reserve system: Confirmation of previous government commitments to conserve	Supported in principle	• 150,000 ha of the 170,000 ha of new conservation reserves proposed in Action Plan H is currently Government owned land, and a large portion of this has been previously committed by the State to be conserved (e.g. Peel Regional Park and Bush Forever). • The creation of the new conservation reserves has been a community expectation created by successive Governments. • Increasing the area of conservation estate particularly where it is intended to protect high value conservation assets and/or to better protect the CAR network is highly supported in principle. The value of conservation reserves for amenity and well-being is also noted.	• We welcome the protection high conservation land and water in the State's conservation estate. • We support the preparation of Management Plans for new reserves and the implementation of these plans as a matter of urgency.	• Action Plan H p 7 • Action Plan F MNES Commitment #5 • MNES Action Plan G: State Commitment #8
24	Selection of sites for new conservation reserves (conservation reserve system)	Supported in part (Phase 1: supported) (Phase 2: not supported)	• The PHCC recognises the extensive amount of work that has been undertaken to support the current proposed Strategic Conservation Plan, including the new conservation reserves proposal. We acknowledge the inherent complexity of the processes to select future conservation reserves in such a biodiverse and constrained area • The PHCC supports, in-principle, the initial package (Phase 1) of 80,000 ha of new conservation reserves, but notes that these are substantially pre-existing government proposals and all public lands. • The PHCC does not support the Phase 2 package as currently presented and as currently proposed to be implemented. The documentation does not demonstrate that these sites contain the species, communities and habitats to protect MNES and State environmental values. • The PHCC does not accept that the proposed new conservation reserves meet the objective/outcome of contributing to a comprehensive, adequate and representative reserve system. For example no ecological assessment has been conducted (or not provided) to verify the habitat values of the selected reserves for the targeted species of national and state significance. Many of the selected reserves have been identified for conservation for over 20 years prior to comprehensive information being available and may no longer have the assumed environmental values. • We note the principal document cited in method for identifying suitable sites (a report developed by the NERP Environmental Decisions Hub, cited as Whitehead et al 2015) has not been published with the GGP or made available to the PHCC as requested.	• Management commitments for acquired land that would result in the creation of new vegetation/habitat or restoration of degraded vegetation/habitats) is supported. • We do not support the proposed tenure change as a legitimate offset for native vegetation clearing and habitat loss.	• MNES EIAR p19-90 • Action Plan H Conservation Program p 10

25	Management Plans for proposed new conservation reserves (conservation reserve system)	Supported with amendments	• It is encouraging that the proposal includes a commitment to preparing management plans for all new reserves. • It is important that Management Plans are prepared and finalised as a matter of priority within a specified time after gazettal. • The PHCC is concerned that the conservation values of many public lands proposed for protection are deteriorating due to lack of active management (e.g. uncontrolled access, dieback, weed control). Urgent management works in new reserves should not be postponed where a Management Plan has not been prepared.	The GGP must be modified to include: • A commitment to prepare Management Plans for all new Reserves within 3 years of the gazettal of each new reserve. • A commitment to ensure urgent works will be identified and funded within 3 years of reserve gazettal, with implementation and ongoing maintenance frameworks identified and implementation progress publicly reported. • A commitment that all Management Plans must include full costings for implementation for the first 5 years of management.	• Action Plan H Conservation Program p 11
26	Management of conservation reserves (Conservation reserve system)	Supported with amendments	• The PHCC strongly supports the Government's commitment to conduct on-ground management of new conservation reserves, specifically revegetation, replanting and threat abatement (Action Plan H, p11) • There is concern however, that given the Plan's reliance on these activities as an offset measure, and the fact that most of these sites are already heavily vegetated, limited opportunities exist for significant revegetation and replanting. • There is also a concern that the Plan, in regard to management of new reserves, appears to place a priority on revegetation and replanting. It is a well-established conservation management principle to focus on restoration first, and revegetation second. • The management of conservation reserves could also consider reversing man-made interventions such as drains and could consider whole landscapes as an ecosystem rather than a series of fragmented or isolated projects, in order to deliver benefits for multiple MNES whilst contributing to ecologically sustainable development. • The general lack of detail in the Plan on the management needs of the sites is also of concern, and may set back the Government's management program for many years.	• The Plan should include a clear Program of Management that sits over the commitment to establish and manage new conservation reserves. The Program should: ○ Identify the extent of revegetation possible in each proposed reserve; ○ Identify the priority sites for restoration in each reserve.	• Action Plan H Conservation Program p 11
27	*Gap:* Commitment to improved ecological connectivity on the coastal plain portion of the Peel-Harvey Estuary catchment	A new commitment is required in response to this gap	• Various conservation objectives and commitments within the GGP refer to habitat connectivity, for example: ○ "Protect and maintain a connected network of known and potential habitat within the Strategic Assessment Area (the conservation objective for Chuditch (*Dasyurus geoffroii*); Action Plan F, p19) ○ "Improve habitat connectivity and ecological linkages through revegetation and replanting programs in conservation reserves, RSNA's and other retained areas" (State Commitment #9 in relation to the maintaining the representation, viability and ecological function at the species population and community level (the objective for the State factor – Flora and Vegetation, Action Plan G, p7). • The GGP proposes a Conservation Program in response that will include the following on-ground management activities: revegetation (re-establishment of native vegetation in degraded areas) and rehabilitation (repair of ecosystem processes) focused on improving habitat quality for multiple species and restoring or improving habitat connectivity and ecological linkages across the landscape" (Action Plan H, p11). • The commitment to maintain and improve ecological connectivity is focused on proposed conservation areas, with no evidence presented that these areas provide the habitat requirements for MNES species, and no ecological analysis of the habitat ranges of these species. • The PHCC acknowledges that ecological connectivity has been a consideration in various parts of the impact assessment, and is alluded to as a consideration in the State's commitments (as per the reference to Action Plan H). However, there is a significant need	• It is suggested that a greater commitment to maintaining and enhancing ecological connectivity could be achieved by (at least in the Peel-Harvey Coastal Plain Catchment) by: ○ the formal recognition of regionally significant ecological linkages in the Peel Region Scheme; ○ The inclusion of provisions in the Scheme which require the maintenance and enhancement of regional ecological linkages for their ecological, water quality improvement and stormwater management values (in that order) • Incentives for private landholders to restore or create habitats and vegetation patches within identified linkages should be included as a commitment of the plan.	• Action Plan H Conservation Program p 11 • Action Plan F, p19

			for more direct commitments to maintain and enhance connectivity across the coastal plain portion of the Peel-Harvey Estuary Catchment. • The GGP provides little evidence of how the commitment to maintain ecological connectivity, in light of a 7000 ha net loss of native vegetation, will be planned, implemented and monitored. • Further, there is little discussion of the ecological connectivity value of rivers and other waterways, and other existing native vegetation.		
28	*Gap:* Recognition of private land conservation	A new commitment is required in response to this gap	• The PHCC acknowledges the many significant efforts of private landholders to manage and protect bushland, rivers and other natural areas for conservation. • Through schemes such as the Serpentine-Jarrahdale Conservation Zone, private land conservation has protected and managed over 1400 ha of bushland in the Perth-Peel regions since 2002. • The SAPPR process and proposed Strategic Conservation Plan has not recognised this approach to conservation as a more cost-effective means of achieving conservation outcomes. • Examples of sites where private land conservation has been effective are Lowlands and the Kingia Properties in the Shire of Serpentine-Jarrahdale (both properties support MNES and State environmental values). • Examples of sites where private land conservation incentives (including development based incentives in some locations) could be appropriate include larger Peel Regionally Significant Natural areas and Bush Forever sites: ○ 68 Jackson Rd Peel Estate ○ 70 Duckpond Bushland Peel Estate 77 Yangedi Swamp Keysbrook	• The Strategic Conservation Plan should include a new initiative: Voluntary Conservation of Private Lands to take advantage of the benefits and cost-effectiveness of securing private lands for conservation. The role of the public in undertaking conservation works is also crucial to this end. • The initiative could include: ○ Expansion of the Serpentine-Jarrahdale Conservation Zone to all coastal plain locations in the Peel-Harvey Catchment; • An incentives scheme for eligible landholders to make entry into the zone financially appealing, and support on-going management costs. For example, the GGP could promote local government rate relief for conservation on private property by committing to fund or offset local government revenue shortfalls. We note rate relief of up to 50% has been offered by local governments (e.g. the Shire of Serpentine Jarrahdale) for conservation of locally significant conservation values.	
29	Improving knowledge of State and Commonwealth Environmental Matters	Supported in principle.	• Action Plan H (Ch 3.5) describes a research and monitoring program to improve knowledge of MNES and State environmental values. Its main aspects include: ○ A range of specific commitments in Action Plans F and G ○ The assurance framework as per Action Plan I ○ The adaptive management framework, which is apparently included as part of the Assurance Framework Provided in Action Plan I. • The PHCC values advances in knowledge (i.e. science) and to use these in decision making for adaptive management, in that context we support the intent of this measure. • However we note the program, as proposed in Action Plan H, appears little more than a reference to the research already proposed as specific measures for particular matters; together with the a reference to program monitoring and reporting. Program monitoring and evaluation is quite different to ecological monitoring of species, communities or systems. • Thus, a more strategic approach to research and monitoring of environmental values across the strategic assessment area is required.	• Information from existing monitoring and research programmes must be analysed to determine: ○ If these programmes are measuring indicators of the condition of the MNES and State environmental values, and ○ Whether these condition indicators are sufficiently sensitive to stresses posed by the various classes of action to indicate decline in condition and can therefore be used to evaluate the success of otherwise of the commitments in Action Plans F and G. • If existing monitoring programs are not sufficient to evaluate the effectiveness of the commitments in the action plans in protecting the MNES and State environmental values, appropriate research, monitoring and evaluation programs must be implemented under the GGP that will do so. • There must be regular (annual) evaluation and reporting of the effectiveness of the commitments based on these condition indicators.	• MNES EIAR, p19-92 • Action Plan G, p 16 – State Commitment #38
30	Development and implementation of a new wetland buffer policy	Supported with amendments	• Action Plan G proposes the development and implementation of a new wetland buffer policy for wetlands to be retained through the land planning process. This measure also involves the avoidance of all CCWs within urban, industrial and rural residential areas and requires an appropriate buffer determined in accordance with the above policy (State Commitment #11).	• Buffer policy and process to avoid wetlands should apply equally to both REWs and CCWs. • A minimum buffer of 100 m should be stipulated within the buffer policy, with setbacks beyond the minimum buffer to be determined on a case by case basis, preferably in consideration of the process outlined in the draft "A methodology	• A methodology for the evaluation of specific wetland types on the Swan Coastal

			• The PHCC recognises the significant value of Conservation Category Wetlands, and therefore supports the intent of these measures. • We also, however, recognise the significant environmental value of Resource Enhancement Wetlands and we note the State's definition of a Resource Enhancement Wetland (REW) is: "Wetlands which may have been modified or degraded, but still support substantial attributes and functions". We therefore urge the need for greater investment in the restoration of REWs where the potential for significant conservation value improvements exists. • We note that since wetlands were mapped and classified across the SCP in early 2000's, there has been significant additional clearing and pressure placed on the remaining wetlands. This elevates the significance of all remaining wetlands, and in particular any wetlands that support substantial attributes and functions. Given this, we urge that the approach applied to CCW's in the application of a buffer policy and avoiding development should be extended to REW's. • We recommend the Policy should include a requirement to reassess all Multiple Use Wetlands and REW's in future development areas prior to any development occurring. • We note the geomorphic wetland mapping database is not always accurate, and many MUW and REW wetlands exhibit CCW values and should be mapped as CCWs and therefore protected with appropriate buffers. This is further reason for an urgent evaluation and review. • Buffer policy should complement the assessment approach for wetlands outlined in the draft "A methodology for the evaluation of specific wetland types on the Swan Coastal Plain, Western Australia" (DPaW, 2013).	for the evaluation of specific wetland types on the Swan Coastal Plain, Western Australia" (DPaW, 2013). • The GGP should provide a mechanism to ensure that MUW's and REW's with high environmental value are identified and protected through the land planning process. • The buffer policy should also be released for public comment prior to finalisation. This commitment should be explicit within the GGP.	Plain, Western Australia https://www.dpaw.wa.gov.au/images/documents/conservation-management/wetlands/Draft_Swan_Coastal_Plain_Evaluation_Methodology_2013.pdf
31	Minimise impacts to REWs	Supported with amendments	• The GGP also proposes to minimise impacts to REWs by determining a list to be retained within the Advice Area which will be treated the same as for CCWs (as per State Commitment #12). We note Advice Area covers the extent of the Metropolitan Region Scheme and the Peel Region Scheme and differs slightly from the mapped Strategic Assessment Area). • There is little detail as to how the assessment of REW's will be undertaken. Spring based level 2 flora surveys and fauna surveys should be undertaken on all REW's that intersect with the classes of actions to ensure any wetlands containing high ecological value or are important habitat areas for conservation significant flora and fauna (including priority species) are identified and protected. • Value of REW's that intersect the classes of actions should be assessed against the draft "A methodology for the evaluation of specific wetland types on the Swan Coastal Plain, Western Australia" (DPaW, 2013). • The process should also identify REW's that have the potential to be restored, and these wetlands should be protected with buffers along with a process for rehabilitation. • The capacity to withstand the effects of climate change should be removed from the criteria of identifying REWs to be protected. This will provide proponents with a convenient out-clause to having to protect REW's. If an REW is identified as having values worthy of protection, then it should be retained and actively managed/restored to limit the potential future impacts of climate change. • The remapping process should be completed and made publically available prior to finalisation of the classes of action footprint (and finalisation of the GGP) to ensure the development footprint adequately responds to wetlands of environmental value (CCW's and REW's).	• Assessment of REW's should be in accordance with state Government methodology for assessment of wetlands, including appropriate level flora and fauna surveys, and in accordance with the draft "A methodology for the evaluation of specific wetland types on the Swan Coastal Plain, Western Australia" (DPaW, 2013). • REW's that have the capacity to be restored should be protected with buffers along with a process for rehabilitation. This commitment should be quantified to establish the area and number of wetlands that will be restored over defined timeframes and should include ongoing management commitments. • The ability to withstand the effects of climate change should be removed from the criteria of identifying REWs to be protected. • The remapping process should be completed and made publically available prior to finalisation of the classes of action.	• A methodology for the evaluation of specific wetland types on the Swan Coastal Plain, Western Australia https://www.dpaw.wa.gov.au/images/documents/conservation-management/wetlands/Draft_Swan_Coastal_Plain_Evaluation_Methodology_2013.pdf

32	Measures to support Carnaby's Black Cockatoos	Supported in principle	• Six measures are specifically targeted at improving Carnaby's Black Cockatoo (CBC) habitat within and outside the Strategic Assessment Area'. They are intended to commence immediately following endorsement of the Strategic Conservation Plan (SCP), and will continue over the life of the SCP. a) Phase 1 of the additional conservation reserves will include 71,000 ha of areas that support CBC habitat (see Row 23 and 24) b) Phase 2 of the additional conservation reserves (see Row 23 and 24) will include a minimum, additional, 45,000 ha of CBC habitat (see Row 23 and 24) c) Creation or rehabilitation of degraded habitat and planting of habitat trees in regional open space, minimum area not defined (planting of 5,000 ha of pines at Gnangara is also noted here, see Row 23 and 24). d) Creation of breeding habitat (700 artificial hollows) between Eneabba and Ravensthorpe e) Improvement of known breeding sites in the Wheatbelt of WA, which may include fencing and protecting remnant vegetation, hollow repair and supplementation, revegetation of food plants and rehabilitation of feeding habitat and control of nest competitors. While we generally support any measures towards the conservation of this species, the value of this package as an offset to the predicted (and somewhat opaque description of residual impacts) in response to the anticipated impacts to CBC (and other black cockatoos) on the SCP is inadequate.	• Whilst we strongly support any measures to better protect CBC and their habitat on the strong coastal plain, none of those proposed represent a scenario that delivers the best conservation outcome for this species. The following amendments are therefore recommended: ○ The commitment to create or rehabilitate degraded habitat in regional open space must be defined with minimum standards and measurable objectives. For example – ___ ha of mapped habitat will be restored from __ condition to ___ condition, in addition to ___ ha of new habitat will be created within each 5 year period commencing from the time the SCP is endorsed. We would expect see a minimum of 25,000 ha of Swan Coastal Plain CBC habitat created or restored. ○ Creation of breeding habitat between Eneabba and Ravensthorpe, whilst a worthy endeavour, but is an inadequate response to impacts to this species occurring on the Swan Coastal Plain. ○ Similarly, improvement of known breeding sites in the Wheatbelt region, whilst a commendable initiative, appears to have little value as an offset for losses to the habitat values of the Swan Coastal Plain.	MNES EIAR Ch15
33	Maintain cockatoo habitat and habitat connectivity within the Strategic Assessment Area through a number of measures (including pine harvesting and planting	Not supported	• The proposed commitment will lead to a net loss of 19,400 ha of pine plantation feeding habitat and a net loss of 9,700 ha of Swan Coastal Plain feeding habitat, before mitigation measures are considered. • This is a significant loss, which the proposed offset measures do not 'offset' or /maintain cockatoo habitat and habitat connectivity within the Strategic Assessment Area. • The further decline of the Carnaby's population caused by the proposed actions and commitments is considered unacceptable (as described in the population viability report). • Greater efforts need to be made to slow down the decline in the Carnaby's population. • Avoiding clearing of known roosting sites and known and possible breeding sites in urban, industrial and rural residential areas is strongly supported	• The State Government should consider alternative arrangements to the net clearing of 19,400 ha of pine plantation over the life of the GGP. These may include the replanting of larger areas of pines, and/or revegetation of large defined areas in the Peel-Harvey Coastal Catchment or Swan-Canning Catchment to provide new habitat for Black Cockatoos. Staggered clearing programs should be given greater consideration • The clearing of 9,700 ha of native vegetation on Swan Coastal Plain is not supported (as stated elsewhere in this submission), and if not avoided, should be replaced with net revegetation areas. • Planting of pines for short term foraging habitat is supported in conjunction with biodiversity planting of endemic foraging species, so that the ultimate outcomes is replacement of natural habitat.	• Carnaby's cockatoo(Calyptorhynchus latirostris) Recovery Plan • Population Viability Assessment Report
34	Mitigate impacts of clearing of cockatoo habitat at BRM and infrastructure sites	Supported in principle	• MNES Commitment 33 relates to the mitigation of impacts through clearing associated with BRM and infrastructure. • All opportunities for revegetation at sites following BRM extraction and infrastructure development are strongly supported. • Compliance and auditing processes need to be in place to ensure proponents provide a satisfactory standard of rehabilitation and revegetation	N/A	• Action Plan F: MNES Commitments

35	Offset residual impacts to Carnaby's habitat through a number of measures	Not supported	The following proposed offsets are, in combination, not supported as an offset for the proposed clearing (MNES Commitment #34) • The protection of 116,000 ha of existing habitat • The rehabilitation of degraded habitat in conservation reserves and the planting of feed species in open space • The provision of 700 artificial hollows • Improved management of feeding and breeding sites in the Wheatbelt of WA.	• The survival of the Carnaby's Cockatoo as a species, and an iconic species of the Swan Coastal Plain, needs to be more comprehensively discussed and resolved in partnership with the community. The current documentation, and offsets proposal, does not allow for this informed, frank discussion. • The Government should present an alternative offsets package, as part of a comprehensive treatment of all Black Cockatoo species, so that the public can assess the available options. The current option appears to accept a significant decline in the species and risks local extinction from the coastal plain and does not embrace the opportunities, and significant community involvement in cockatoo projects or the success of habitat replacement via e.g. artificial nesting, private property planning for cockatoo habitat and community willingness to get involved in the protection of this iconic species • The discussion of alternative offsets packages should involve the community.	• Carnaby's cockatoo(Calyptorhynchus latirostris) Recovery Plan • Action Plan F: MNES Commitments
36	Planting of 5000 ha of pines	Not supported – alternative proposed.	The PHCC is concerned about proposed blanket clear-felling of the existing pine plantation, as outlined in Action Plan E. An alternative proposal, involving the retention of existing pine wildlings would result in a better conservation outcome for black cockatoo species that rely on pines as a critical habitat source, by maintaining trees that are closer to maturity and therefore of greater habitat value. We do not support the clear-felling of pines (including recruited wildlings) and replanting of seedlings since there is an alternative development scenario (retention of wildlings) that could avoid some of the consequent impacts on black cockatoos. This is particularly important given the likely catastrophic impacts to black cockatoo populations that rely on this vegetation as a critical source of habitat	• We support selective clearing of mature pines, with wildings retained for habitat purposes. We encourage the State to investigate wilding retention as a preferred alternative that would achieved significant avoidance compared with the current proposal. • The revised proposal should be provided to the public for comment in advance of any approval of the clearing of pines class of action by the Commonwealth Minister for Environment.	• Action Plan F: MNES Commitments

Table 3: PHCC comments on the impact assessment in relation to key environmental values of the Peel-Harvey Catchment

	Environmental value	Summary	EIA				Relevant links
			GGP Outcome and objective	Identified impacts (brief summary impacts identified)	Management measures	Residual impact	
1	Peel-Yalgorup System – Peel-Harvey Estuary	The outcome for Ramsar is inadequate. It should, in the first instance, aim to *improve* the ecological character of the System and should refer to its 1990 (the time of listing) as a reference point. This outcome should be measurable and time-bound. A clear and upfront description extent of likely impacts is needed. The value of proposed conservation commitments (in terms of their anticipated contribution towards the intended outcome) is required. The objectives for the PYS are currently inadequate. They must be modified to better reflect current knowledge of the system and must be measurable and time-bound. Legacy issues (related principally to water quality) and the proposed management response to these are highly relevant the assessment of impacts and the ability of the State to achieve the conservation objectives for the PYS over time. All related measures and commitments should be considered, and subject to endorsement, by the Commonwealth.	Proposed outcome is – "*The ecological character of wetlands of international importance within the Perth and Peel regions is maintained and where possible improved. Measures and actions are consistent with Australia's obligations under the Ramsar Convention.* **PHCC: The outcome should aim to *improve* the ecological character of the Peel-Yalgorup System, which has already declined since the time of its listing[1], and has been acknowledged as facing further threats by the Ramsar Secretariat[2].** **PHCC: As stated this outcome should also be measurable and time-bound. to enable greater transparency and accountability in relation to the plan's implementation over time** The proposed objectives for the Peel-Yalgorup Ramsar site – *"Maintain the ecological character of the Peel-Yalgorup Ramsar site via the ongoing presence of the following characteristics: Large and diverse complex of ecosystem types including shallow estuaries, coastal saline lakes and freshwater marshes; Populations of plants and animals important to maintaining the biodiversity of the Swan Coastal Plan bioregion, include threatened species and communities; an actively growing Thrombolite community; water quality that is equivalent to or better than current and/or recent historical conditions; suitable habitat to support a range of species during critical life cycle stages,*	The classes of action (CoA) that have the potential to impact the PYS are identified as industrial, rural residential and infrastructure. **PHCC: Given the proximity of proposed BRM extraction to the Yalgorup Lakes, BRM should also be identified as a source of impact.** Impacts to the PYS are considered as indirect only. **A map that overlays the combined Class of Action footprints with the PYS Ramsar site boundary (to confirm no direct footprint impacts) should be provided.** **Limiting the definition of a 'direct impact' to one that occurs only through the intersection of a development footprint and MNES is, in our opinion, inconsistent with the definition of a direct impact provided in the significant impact criteria (see Significant Impact Guidelines 1.1).** Impacts to the PYS are identified as: 1. Threats to water quality at a local scale related to proposed new development (owing to construction, vegetation clearing, increased development footprint, and septic tanks/ATU). **PHCC agrees this is a downstream impact, and therefore indirect.** 2. Decreasing inflows to Yalgorup Lakes due to groundwater abstraction. **PHCC sees this as a direct impact in the case where development will directly impact the water regime of the wetland (refer to Sign Impact Guidelines 1.1). BRM should also be identified as a likely source of impact.**	A number of conservation measures are proposed • Establish Peel Regional Park and expand Yalgorup National Park • Continue to manage groundwater resourced in accordance with existing legislation and policy • Address potential water quality impacts from proposed…in selected urban expansion areas • Implement a monitoring program that includes limits of acceptable change. **PHCC supports all of these recommendations but notes a number of shortcomings and omissions (see Table 2)** For each impact (see column to left) various contributing activities are identified (e.g construction, increased extent of land conversion, altered drainage and groundwater abstraction as contributing to impacts on surface and groundwater). **We note here the importance of environmental controls in relation to all development (classes of actions), as per our comments in Table 2.**	Whilst there are numerous conservation measures proposed, it is unclear how these measures combine to address the likely impacts. There is no information (qualitative or quantitative) describing the scale of likely impacts to the PYS, before or after avoidance. There is no information (quantitative or qualitative) about whether the proposed measures will adequately respond to the magnitude of likely impacts. For example, the adequacy of the combined nutrient management commitments, as a quantitative response to expected impacts of nutrient pollution resulting from the proposed development (five classes of actions) is unclear. A net benefit, in this case in terms of nutrient export, must be achieved to render the GGP acceptable. There is no statement describing the net or residual impact to the PYS.	• MNES EIAR Part D:MNES Assessment Chapter 19 (Ramsar); • Significant Impact Guidelines 1.1.

[1] Hale and Butcher (2007) Ecological Character Description for the Peel-Yalgorup Ramsar Site, Peel-Harvey Catchment Council, Mandurah WA.
[2] 'Wise Use of Our Wetlands' Presentation by Dr Chris Briggs, Secretary General, Convention on Wetlands (Ramsar 1971) 12 November 2014

		Detailed mapping showing the boundaries of the Peel-Yalgorup and the development footprint must be provided for public review. We do not support the current interpretation/delineation of direct and indirect impacts. Impacts arising from the Basic Raw Materials class of action have not been adequately assessed. Crucial information relating to the risk assessment for impacts on the Peel-Yalgorup System must be provided to the public for review. Development controls are required in relation to all classes of action likely to impact on the Peel-Yalgorup. We note the proximity of BRM sites to the PYS and urge BRM be considered in terms of impacts on the system (noting it currently is not). Additional commitments to properly monitor all limits of acceptable change (LACs), to fill gaps in the knowledge about limits, to review the Ecological Character Description and LACs, to implement the Peel-Yalgorup System Ramsar Site Management	*including breeding and moulting waterbirds; over-wintering migratory shorebirds; and breeding fish and crustacean;* o *Very high abundance of waterbirds and migratory shorebirds, sufficient to meet Ramsar listing criteria; breeding, nursery and feeding habitat for numerous fish and crustacean species.* **PHCC: based on the current wording of the outcome and objectives, it is unclear how or even if, success or failure can be measured or tested. The outcomes and objectives should be modified, to include specific measureable and time-bound parameters.** The conservation objectives for the Peel-Yalgorup Ramsar site are inconsistent with the existing management objectives for the site[3] and with current knowledge of the System's ecological character[4]. The conservation objectives should be revised to more closely align with current knowledge of the System's ecological character (in particular it's identified components and processes; see Hale and Butcher 2007)[5]. For example, the current objective: the "ongoing presence... [of a] large and diverse complex of ecosystem types…"[6] is inadequate; given it could be considered 'met' until such time as one of the System's "ecosystem types" becomes "absent". **PHCC: Effectively, this objective sets a test around the presence of absence of the estuary – and is therefore an unhelpful management objective. It should be revised to more closely align with existing management objectives and knowledge of**	3. Increasing people pressures. Risk assessments were prepared by WA State Government Agencies to examine each potential impacts (see MNES EIAR Ch 19 p 19-8). These risk assessments have not been provided to the public. **PHCC: The risk assessments (including assumptions and confidence ratings for each input) and which examine each of the potential impacts of the proposed development must be provided for public comment.** **PHCC believes the following impacts have be overlooked:** 1. Decreasing inflows to Peel-Harvey Estuary from increased groundwater abstraction 2. Decreasing inflows to the Peel Harvey Estuary as a result of drying climate coupled with the water resource demands of an 3.5 million people 3. Changes to wetland vegetation and fauna habitats as a result of sea level rise (coupled with new hard edges that prevent natural variation in fringing vegetation and fauna habitat extent). **PHCC is otherwise unable to properly comment on the risk ratings shown in Tables 19-21, 19-22 and 19-23 as the necessary supporting risk assessment information has not been supplied.** Legacy issues (related principally to water quality) and the proposed management response to these are dealt with as part of the State EIA documentation; implying that related commitments are outside of the Cth's scope for endorsement. **PHCC believes that legacy water quality issues are highly**			

[3] Peel-Yalgorup System Management Plan (PHCC 2009)
[4] See Hale and Butcher (2007)
[5] ibid.
[6] Conservation Objective for the Peel-Yalgorup Ramsar site, point #1

		Plan are needed. Further comments are provided in Table 2. Essential information relating to the risk assessment for impacts to the PYS is currently lacking. The baseline for assessing changes in the condition of the system is, and should continue to be, the condition at the time of listing in 1990.	**the system's ecological character (see PHCC 2009, Hale and Butcher 2007)** **Similarly, "water quality that is equivalent to, or better than current and/or recent historical conditions" is inadequate to protect against further declines to the ecological character of the Ramsar site. The need to improve water quality in the rivers and estuary of the Peel-Harvey is well documented; preventing further declines is insufficient.**	**relevant to assessing the significance of the proposed development, in providing relevant context and sensitive information about this MNES (see Significant Impact Guidelines 1.1). Further, the arbitrary separation of legacy and contemporary water quality issues makes it difficult for the public to evaluate the strengths and weaknesses of the GGP, and, importantly, its delivery and effect over time.**			
2	Migratory shorebirds	We are very concerned that the GGP footprints overlay, or are immediately adjacent to, 70% of the migratory shorebird habitats occurring in the strategic assessment area. An area-based assessment of impacts must be provided if the public is to have confidence that the scale of likely impacts is acceptable. Maps for all 84 shorebird habitat sites showing the spatial extent of the class of action footprint should be provided. The impact assessment omits two species known to occur in the strategic assessment area, and should be revised accordingly. Objectives and outcomes must be specific, measurable (in terms of habitat condition and extent; and in habitat usage in terms of species diversity and abundance), and time-bound.	The proposed outcome applicable to all migratory shorebird species is – "*The values of Perth and Peel regions to listed migratory species are maintained, and where possible improved. Measures and actions are consistent with Australia's international obligations."* The conservation objectives for migratory shorebirds are: • Ongoing use of the Strategic Assessment Area by the 29 migratory shorebird species that have previously been recorded. • Ongoing use of all important habitat areas across the Strategic Assessment Area by migratory shorebird species. • Protection and maintenance of a mosaic and diversity of wetland and coastal habitats for use by these bird species. • 'Ongoing use' means that areas remain as habitat in which migratory shorebirds have been recorded and where the habitat is not lost permanently due to development actions. We note the 'key attributes' that were used to inform the objectives (MNES ch 20 p 20-	The MNES EIAR (Ch 20) notes that 29 migratory shorebirds occur in the strategic assessment area, omitting 2 (Asian Dowitcher and Oriental Pratincole) that have been recorded in the Peel-Yalgorup System (see Hale and Butcher 2007; Birdlife WA (pers.comm.). **PHCC: the impact assessment should be revised accordingly.** Impacts on migratory species habitat are reported in terms of number of sites and proportion of sites impacted, rather than areas of impact (the provided explanation is that 'fine scale inaccuracies in the boundaries of site' means it is not practical to calculate areas of impact). The number of sites impacted, whilst helpful, is meaningless in isolation of impact area, given the scale of the proposed GGP and development footprint. **PHCC: we do not support this approach. Areas of impact should – and can - be calculated using existing data, while noting any data limitations and employing a precautionary approach to spatial analysis accordingly.** 84 migratory bird habitat sites (comprising total 30,500 ha) occur in the strategic assessment area (p 20-19, p20-9).	The MNES EAIR (Ch 20) notes that 5 overarching MNES commitments will provide general benefits to migratory shorebirds. **PHCC: Four (MNES Commitments #1, 2,3,6) rely on subsequent State planning and EIA processes which are neither clear to the reader nor guarantee a conservation outcome commensurate with that required. We do not agree that these will "go a long way to ensuring" protection of habitat.** MNES Commitment #6 provides for the conservation reserve additions, which will beneficial, will fail to achieve intended conservation outcomes (see comments in Table 2). **PHCC: reserve additions, whilst beneficial, do not compensate for an unacceptable level of impact to migratory habitat as is proposed.** MNES Commitment #80 Management of indirect impacts for sites within or adjacent to the development footprint. Site management, including continued groundwater management, continued management of vegetated buffers, an intention to expand buffer areas, access control and community education are proposed as part of this measure.	It is unclear whether, and to what extent, this matter is being addressed through avoidance, mitigation and offset measures, as the GGP and EIAR: • do not provide sufficient information in relation to likely impacts • do not provide clear information in relation to where and how impacts on this MNES have been avoided • provide few commitments (in terms of mitigation and offsets) in relation to this matter that are additional to the status quo • provide limited* information to expected impacts before or after avoidance mitigation and offset measures are applied • provide no information on expected residual impacts. In the absence of this information, it is impossible for the public to make informed	**Significant Impact Guidelines 1.1**

		A program to enable adequate management of people pressures across all 84 migratory shorebird habitat sites is required. Monitoring of habitat condition and extent (in addition to usage) must be included as a commitment of the GGP. An adaptive management framework (including thresholds and responses) must be prescribed. We do not agree that the overarching commitments will "go a long way to ensuring" the protection of migratory species habitat. More effort is needed to protect species and habitats from the impacts of 3.5 million people and the land use changes required to facilitate the city's Growth.	17). **PHCC: we urge that these key attributes should be used to inform an improved set of conservation objectives for migratory shorebirds. The objectives currently fail to enable a meaningful measure of progress towards the conservation outcome. For example, in their current form they allow only for a binary yes or no response, at a point where management intervention would be pointless and/or too late.** **The objectives must be modified to be measurable and time-bound, and should include, as a minimum:** • **An objective related to threat risk (in relation to each identified impact)** • **Habitat condition and extent measures/thresholds** • **Quantitative measures of habitat usage trends including abundance and diversity over time** **In combination, such objectives would enable an adaptive approach to the management of migratory shorebird habitat whilst accounting for natural variability. We note that limits of acceptable change are used for exactly this purpose in Ramsar listed wetlands (many of which provide migratory species habitat). LACs could also serve as useful tool to for monitoring and evaluation of a more robust set of objectives for migratory shorebirds.**	Approximately 70% of those sites (59 of a total 84 sites), occur within (45 sites) or adjacent to (14 sites) the development footprint. **PHCC**: **The impacts to shorebirds from such extensive habitat impacts seem catastrophic.** *We note the text provides further discussion to rule out 32 of the identified 45 sites within the development footprint, and 7 of the 14 sites adjacent to the development footprint, for reasons that are neither upfront nor clear to the reader. **PHCC: Further information around the potential impacts to each habitat site is required.** *****We note 29 sites are considered "important in an EPBC Act context" (Ch 20, p 20-30). **PHCC: we do not agree with this conclusion. We would expect significant impacts (direct and indirect) are likely at all 84 sites.** A further 25 sites are classified as 'away from the classes of action'. We note the indirect impacts in the form of habitat degradation and disturbance of roosting or feeding birds may 'occur at all sites within the Strategic Assessment Area..' yet an assessment of impacts associated with land outside the class of action footprint is noted as being outside the scope of this strategic assessment (p 20- 6. **PHCC: we do not support this approach. Impacts on migratory species habitat occurring outside the development footprint (but within the strategic assessment area) are a likely consequence of the GGP, and could foreseeably be significant. A detailed impact assessment is therefore warranted.** We note habitat is principally mapped as either Ramsar wetlands, important wetland or 'other wetland'. We assume 'other wetland' to be synonymous with habitat that is suitable for these species, since no information is provided about its habitat	**PHCC supports all of these recommendations, however commitments given reflect a business-as-usual approach (see further comment in Table 2). Further, adequate site management must extend to all migratory shorebird habitats within the strategic assessment area.**	comment on the acceptability of the GGP in terms of likely impacts on the PYS. *information that is provided enabled us to calculate that 70% of the 84 habitat sites covering an area 30,500 ha, occur within or immediately adjacent to the development footprint.	

				value, nor what criteria were used to identify (include or exclude) mapped areas. **PHCC: additional, peer reviewed, information should be provided to validate the extent of suitable migratory shorebird habitat mapped in Figure 20-1 (mapped as 'other wetland). The shorebird spatial dataset referenced on p 20-9 and referenced as 'Parks and Wildlife 2014' should also be provided to the public.** The MNES EAIR (Ch 20) describes indirect impacts as: • Habitat impacts associated with changes to wetland hydrology • Habitat impacts associated with the introduction of nutrients, contaminants, weeds, disease • Direct impacts to the individual shorebirds, through disturbance and predation from people, vehicles, pets and feral animals, increased risk of fire, disturbance, noise & vibration, artificial lightning, alterations to wetland hydrological regimes, impacts to air quality. **PHCC: As previously noted, limiting the definition of a 'direct impact' to one that occurs only through the intersection of a development footprint and MNES is, in our opinion, inconsistent with the definition of a direct impact provided in the significant impact criteria (see Significant Impact Guidelines 1.1). Impacts that are consistent with the significant impact criteria should be considered, in the first instance, direct.**			
3	Wetlands	• 2,982 CCW and REWs occur within the Advice Area. 1,087 (36%), occur within or immediately adjacent to the development footprint. We believe this is an unacceptable impact given the significant loss of wetlands that has occurred in	The State deals with the protection of wetlands in relation to two State Factors: Flora and Vegetation; and Impacts to Hydrological Processes and Inland Waters Environmental Quality. Thus the relevant objectives are: • To maintain representation, diversity, viability and ecological function at the	There are 1,891 CCWs in the Advice Area with a total area of 44,987 ha, and 1,070 REWs with a total area of 12,102 ha (State EIAR, Ch 5, Table 5-3 and Figure 5-3). Potential impacts are identified as clearing associated with development, and	Specific commitments are prescribed for CCWs and REWs, including, for CCWs: • Develop a new wetland buffer policy (refer to our comments in Table 2) • Avoid all CCWs within 2 of the 5 classes of action footprints (urban & industrial, and rural residential);	**Before Further Avoidance:** <u>CCWs impacted by the Classes of Action:</u> • Total No. impacted = 461 (out of 1,891, or 24%) • Total area impacted = 1,038ha (out of 44,981ha, or 2.3%).	

		the area, and the significant conservation value of those which remain. • The impact assessment relies on a data set that is unreliable, and requires updating. This creates a great deal of uncertainty surrounding the impact assessment provided. • Review of all wetlands within the Advice Area must be undertaken prior to development occurring. • We do not support the State's approach to managing REW's and urge the State to have regard to the EPA's advice on wetlands as described in Table 5-1.	species, population and community level. • To maintain the hydrological regimes of groundwater and surface water so that existing and potential uses, including ecosystem maintenance, are protected. • To maintain the quality of groundwater and surface water, sediment and biota so that the environmental values, both ecological and social, are protected.	degradation as a result of changes in surface and/or groundwater (Ch5 p81). 1087 wetlands sites occur within or immediately adjacent to the development footprint. Clearing of the 825 occurring within the development footprint (461 CCW comprising 1038 ha; 264 REW comprising 1494 ha) is identified as a potential impact. We note the analysis does not include wetland sites where the area of impact is < 10m^2; with this assumption designed to rule out spatial data errors. Evidence in support of the validity of this assumption is not provided. We note avoidance efforts will reduce potential impacts to CCWs by 28 sites and 331 ha, and REWs by 5 sites and 45 ha. These avoidance measures include a commitment to deliver 'further avoidance achieved during statutory planning processes' (processes are not described) and a commitment to avoid all CCWs in some planning categories in relation to 2 of the 5 classes of actions. These commitments are not extended to REWs, on the basis that they 'are currently not afforded the same level of protection as CCWs and management objectives are often unclear'. However, Table 5-1, in contrast notes: 'Resource enhancement wetlands may have been partially modified, but still support substantial ecological attributes and functions. They are priority wetlands and the *ultimate objective is to manage, restore and protect towards improving their conservation value'* (emphasis added, State EIAR Ch5, table 5-1). We also note that since wetlands were mapped and classified across the SCP in early 2000's, there has been significant additional clearing and pressure placed on the remaining wetlands. This elevates the significance of all remaining wetlands, and in particular any	And, for REWs • Determining a list to be retained that will be treated the same as CCWs…through reviewing all REW's intersected by the development footprints of 2 of the 5 classes of actions. We also note that Action Plan H identifies the proposal to expand the State's conservation reserve as an offset contribution towards protecting wetland values. We note there is inconsistency in the text (which commits to avoiding all CCWs within urban industrial and rural *expansion* areas) and the resulting commitment (State Commitment #11) which omits the word expansion, and therefor broadens the scope for avoidance. **PHCC: review the text to ensure consistency with the proposed commitment.** Limiting the review of wetlands to only those intersecting the 2 of the 5 class of action footprints is folly. Particularly as we note the infrastructure class of action will contribute the greatest source of impact to wetlands - yet its impacts are not included in the proposed review. Further, we are aware of their being significant limitations in the geomorphic wetland database, such that mapping may understate or misrepresent that actual conservation value. **PHCC: *all* wetlands within the Advice Area should be reviewed prior to the finalisation of the GGP – since there are such significant gaps in the current knowledge, and since the value of remaining wetlands on the SCP is so significant.**	<u>REWs impacted by the Classes of Action:</u> • Total No. impacted = 364 (out of 1,070, or 34%) • Total area impacted = 1,494ha (out of 12,768 ha, or 11%). **After avoidance, management and offsets:** Unclear.	

				wetlands that support substantial attributes and functions. Given this, it would seem appropriate that the approach taken for CCW's in the application of a buffer policy and avoiding development should be extended to REW's. **PHCC: we do not support the State's approach to management measures for REWs, and note that it is inconsistent with the public expectations for wetland protection and the EPA's guidance statement 33.** Impacts on multiple use wetlands are not considered in the impact assessment report in relation to the overlap between mapped MUW and the development footprint. We refer to Table 5 -1 in noting the EPA's position on multiple use wetlands, which states: 'the use, development and management of these wetlands should be considered in the context of ecologically sustainable development and best management practice catchment planning through landcare'…, and that the EPA 'urges all reasonable measures are taken to retain…., where possible, other wetland functions'. **PHCC: for these reasons we urge that mapped MUW be avoided wherever possible, and that further commitments are required in order to protect and where possible wetland values.** The geomorphic wetland mapping database is not always accurate, such that, in reality, many wetlands may exhibit values consistent with a higher management category, or may not have been mapped at all. **PHCC: the dataset should be updated to enable a more robust assessment of impacts to wetlands occurring with the Advice Area.**	The commitment to avoid CCWs that intersect the urban & industrial, and rural residential footprints is lacking in detail in respect to how these wetlands will be identified and protected through the land planning process. Currently the classes of action intersect a number of CCW's and REW's and there is likely to be an expectation from proponents that development will occur as identified**. PHCC**: **The class of action footprints should be refined following review of wetlands for protection in the advice area, and be reflected in the available mapping as areas of protection (including buffers).** While we support any efforts to further avoid impacts to conservation significant wetlands, limiting this requirement to only 2 of the 5 classes of actions is an oversight (particularly since the infrastructure class of action is expected to have the greatest impact). **PHCC: the development footprint for all classes of actions should be subject to further avoidance.** **PHCC: any review of wetlands should be in accordance with state Government methodology for assessment of wetlands, including appropriate level flora and fauna surveys, and in accordance with the draft "A methodology for the evaluation of specific wetland types on the Swan Coastal Plain, Western Australia" (DPaW, 2013).** In addition to specific commitments for REWs and CCWs, offsets are also offered towards the maintenance of hydrological regimes (see Action Plan H). This offset value is intended to be achieved through the proposed conservation reserves package. **PHCC: we have found no evidence of how the conservation reserves package has been designed to specifically to enhance the**		

					protection of wetlands (in terms of hydrological values; flora and vegetation; or otherwise).		
4	Threatened Ecological Communities	All outcomes and objectives for TECs should aim to improve the conservation status of the community, in accordance with Australian Government's Biodiversity Strategy 2010-2020, which prescribes outcomes for protecting diversity, including: *2.1.3 An improvement in the conservation status of listed threatened species and ecological communities.*	The conservation outcome for TECs is: *"The viability and conservation status of listed threatened species and ecological communities in the Perth and Peel regions is maintained, and where possible improved, with measures and actions consistent with any approved Commonwealth recovery plans, threat abatement plans or conservation advice."* **PHCC: This GGP outcome should aim to *improve* the conservation status of TECs in the strategic assessment area.** **This outcome should also be measurable and time-bound** **PHCC: currently, none of the objectives for TECs that we reviewed appear to enable an improvement in the conservation status**	Six EPBC listed TECs occur within the Peel strategic assessment area, as discussed in Ch 18 of the MNES EIAR: • Assesmblages…of Tumulus (organic mound) springs (impacts are discussed specifically in Row 5) • Claypans of the Swan Coastal Plain (discussed specifically in Row 6) • *Corymbia calophylla - Kingia australis* woodlands Cth Endangered (discussed specifically in Row 7) • *Corymbia calophylla – Xanthorrhoea preissii* woodlands (not reviewed specifically within this table, however the comments and recommendation we provide in Rows 4 – 8 apply equally to this community type) • Lake Clifton Thromobolites (see also Row 1) • Sedgelands of Holocene Dune Swales (see also Row 8) In addition, the Banksia dominated woodlands of the Swan Coastal Plain bioregion is currently being assessed for listing (MNES EAIR Ch 22). Our comments are provided in Row. Overarching commitments 1 – 6 are identified as having a general benefit to TECs. Limited information is provided in terms of the nature and extent of impacts avoided, mitigated or offset as a result of these measures. Specific commitments be provided in respect to the protection and management of all known populations of TEC's where they intersect the urban and industrial classes of actions. For each TEC, a comprehensive list of all patches/occurrences should be identified with the management commitment specified for each occurrence. **PHCC: while we support the intent of any measures to avoid or minimise impacts, it is unclear:** • **Which sites occur inside or outside the development footprint (i.e. an impact assessment specific to each occurrence);** • **Whether the measure represents an effort to better to protect and/or better manage a TEC occurrence that is not subject to development (ie, where it occurs outside the class of action footprint);** • **Whether the measure represents an effort to further avoid impacts (if the site is within the class of action footprint); and therefore** • **Whether the proposed measures represent the best and most effective mechanism to avoid impacts to TEC's.** We note that Ch 13 (p 13-11) includes a vulnerability analysis for threatened ecological communities to climate change impacts. All TEC's are identified facing a high risk to climate change impacts, yet there are no specific measures designed to deal with this risk. **PHCC: climate change impacts must be considered specifically for each MNES, including its influence on threats, and management responses over time. An adaptive management plan, based on current knowledge and best practice approaches to managing climate change risk should be prescribed for each TEC. As we have previously noted, assurance (as per Action Plan I) is not adaptive management.**		MNES EIAR Ch 18 Australian Government's Biodiversity Strategy 2010-2020,
5	Assemblages of plants and invertebrate animals of	There are just 8 known occurrences of this TEC. All are recognised as critical to the survival of the community. The one occurrence within the Peel-	The conservation objectives for Tumulus Springs of the Swan Coastal Plain are to: • *Maintain the long-term viability and groundwater levels of the ecological*	The community is listed as Critically Endangered, and as such it is considered that all occupied habitat is critical to the survival of this community, and all known occurrences are important (CALM, 2006).	The overarching conservation commitments (see Row 4) are considered to have 'substantial benefits' to this community. This argument appears to be based on broad commitments to protect Bush Forever (such	The area of expected direct and indirect impact to this TEC is not provided.	Department of Conservation and Land Management

	Tumulus (organic mound) springs of the Swan Coastal Plain – Cth Endangered	Harvey Catchment is already under threat of major alternation to hydrological regimes. All occurrences are important as the ecological community is listed as Endangered Six occur within the strategic assessment area, four sites (or their buffers) are within the development footprint. We expect all six would be subject to expected indirect impacts (hydrological changes, weed invasion and grazing/destruction by invasive species) – however the documents provide no analysis of the risks of indirect impacts to each occurrence. Occurrences subject to a direct impact represent various 'protection levels'. We note even sites denoted as having a 'high level of protection' are still subject to development. Conservation measures relate largely to the 6 overarching commitments for MNES. It is unclear if or how these commitments will benefit each site in terms of area of further avoidance or improved management. We note there are no commitments to address indirect impacts at any of the sites; despite the proposed objective requiring the 'management of offsite threats'.	*community within the Strategic Assessment Area.* • *Increase the extent of the ecological community within secure conservation tenure within the Strategic Assessment Area.* • *Manage offsite threats to the ecological community within the Strategic Assessment Area.* The objective of the Interim Recovery Plan is to *maintain or improve the overall condition of the tumulus springs and the associated fauna and plant community in the known locations and reduce the level of threat, with the aim of reclassifying the community from Critically Endangered to Endangered* (CALM 2006) **PHCC The Interim Recovery Plan's objective includes a focus on reducing threats (with the aim of downgrading its conservation status). The GGP is likely to impact 4 of the 8 known occurrences – each of which is 'critical to the survival of the community'; and will likely contribute to an *increased* risk of at least three of the threats identified in the Recovery Plan.** **As a minimum, this objective must be modified to refer to the current condition and extent of the community and provide a measurable and time bound commitment to ensure the current extent is protected and its condition improved.**	Six occurrences, representing 90% of the total extent of this community, occur within the strategic assessment area (MNES EIAR p18-18). Four of the six occurrences (or their buffers) occur within the development footprint, representing land that is identified with various levels of 'current protection' including levels which are identified as 'sympathetic to conservation', including Conservation Category wetlands. Likely impacts are identified as direct (where the development footprint intersects the wetland area) and indirect (hydrological changes, increased weed invasion, grazing and destruction by introduced species). These impacts are identified as having the potential to adversely affect habitat critical to the survival of the community, with management considered a crucial aspect of maintaining the viability of this community in future.	that areas of the TEC within Bush forever zones will be protected) and for Conservation Category Wetlands. **PHCC: it is not clear which, if any, occurrences will directly benefit as a result of these commitments and to what extent. Detailed maps for each occurrence, showing the class of action footprint overlay, and any areas of further avoidance or improved management should be provided.** **PHCC: any further avoidance or improved management of this TEC should be clearly specified with a measurable, time-bound commitment.** In addition, two specific commitments (MNES Commitments #9,#10) have been provided, affecting portions of two occurrences (site #31; 3620): • Protect and manage for conservation occurrence 31 where it occurs in a Bush Forever site 97. • Minimise impacts to the following occurrences where they may be impacted by the infrastructure class of action: 31; 3620. **PHCC: it is unclear what measurable outcome will result (in terms of avoided or minimised impact) as a result of these commitments. Moreover, both provide for actions that appear to already be captured as part of the six 'overarching commitments'.**	The benefit of the proposed management measures – particularly in terms of area of further avoidance, management or protection is not provided. It is therefore not possible to gauge the nature and extent of residual impact to the TEC. While a broad-scale map is provided, it is not possible to tell (from the information provided in Ch 22) which site is which. It is therefore not possible for the public to clearly identify the nature and extent of impacts to the <u>one known occurrence of this TEC existing within the Peel.</u>	(2006). Community of Tumulus (organic mound) springs of the Swan Coastal Plain Interim Recovery Plan No. 198. Perth, Western Australia. MNES EAIR Ch 18 - TECS. MNES EAIR CH

		Thus, impacts to the condition and extent of TECs appear certain in the absence of proper management, however a detailed analysis (e.g. area impacted, and residual impact after avoidance mitigation and offsets) is not provided. For these reasons PHCC believes the measures and actions for this TEC would unlikely achieve the objectives of the Recovery Plan for this species. Additional mapping/spatial data should be provided.					
6	Claypans of the Swan Coastal Plain – Cth Critically Endangered	The majority of known occurrences are within the strategic assessment area. This suggests the potential for significant impact. All occurrences are important as the ecological community is listed as Critically Endangered 35 of the 81 occurrences *within* the strategic assessment area will be directly impacted. It is not clear which, if any, occur *adjacent* to the development footprint. The total area of expected impact must be reported (before or after management measures). The use of 'protection level' categories in describing direct impacts should be removed. The existing protection level appears to have no relevance to the	The conservation objectives for the Claypans of the Swan Coastal Plain are: • *Maintain the long-term viability of the ecological community within the Strategic Assessment Area.* • *Increase the extent of the ecological community within secure conservation tenure within the Strategic Assessment Area.* • *Manage offsite threats to the ecological community within the Strategic Assessment Area.* We note that there is no recovery plan in place for this TEC. However, we note the Australian Government's Biodiversity Strategy 2010-2020, which prescribes outcomes for protecting diversity, including: *2.1.3 An improvement in the conservation status of listed threatened species and ecological communities.* **The proposed objectives are inadequate to achieve an improvement in the conservation status of this community.**	There are 123 reported occurrences of this TEC on the Swan Coastal Plain, covering an area of 768 ha. 81 (408 ha) occur in the strategic assessment area. Direct impacts are indicated as likely to occur where the development footprint intersects the mapped extent of this TEC. Impacts are described in relation to the level of protection of existing land use. **This approach is confusing for the reader, as it suggests current protection level has some additional influence on the scale or severity of a direct impact.** The number and area of sites occurring within the development footprint is very difficult to determine by nature of the way it is reported in Ch 18.8; although the report subsequently notes that 35 of 81 occur within the development footprint (the number occurring adjacent to is not provided). **PHCC: it is difficult to determine where direct impacts are likely to occur, as this information is provided only in the notes associated with**	Overarching commitments (see Row 4) are noted as relevant. Their benefit, in terms of measurable further avoidance, management or offset value is not documented, nor is any commitment made to this end. Further measures are also provided in the form of: • A commitment to protect and manage a number of occurrences where they occur in Bush Forever sites. **PHCC: it is not clear how this action will avoid, mitigate or offset the direct or indirect impacts of the proposed development** • Retaining a series of occurrences where they may be impacted by the urban or industrial class of action **PHCC: this implies further avoidance is to be achieved. If so, a minimum area of further avoidance should be provided as a measurable and time-bound commitment. Also, a commitment to manage these sites from key threats including invasive species is required.** • Minimise impacts to as series of occurrences where they may be impacted by the infrastructure class of action. **PHCC:**	The extent of expected direct and indirect impact to this TEC is not provided. The benefit of the proposed management measures – particularly in terms of area of further avoidance, management or protection is not provided. It is therefore not possible to gauge the nature and extent of residual impact to the TEC.	Advice to the Minister for Sustainability, Environment, Water, Population and Communities from the Threatened Species Scientific Committee (the Committee) on an Amendment to the list of Threatened Ecological Communities under the Environment Protection and Biodiversity

		nature or extent of *direct* impacts (where development is proposed under the GGP within a TEC). The benefit of proposed management measures (in terms of further avoidance, mitigation or offset value) requires further, quantitative description. An adaptive management framework, including monitoring, contingency thresholds and responses is needed as a commitment of the GGP. Additional mapping/spatial data should be provided.	**As a minimum, this objective must be modified to:** • **Require an improvement in the condition and extent of this TEC** • **Include a measurable and time-bound result.**	**Table 18-7 and labelled site map/spatial data are not provided.** The area of sites impacted (individually or collectively) is also not reported. **PHCC: A clearer description of direct impacts is needed including area and number of sites, as well as mapping).** Hydrological change, weed invasion and altered fire regimes are identified as likely indirect impacts. The ability to successful managing hydrological change, particularly within urban settings, is noted.	**it is not clear how this action will be delivered, nor the measurable outcome it is intended to achieve.** The need to manage development to avoid any changes to hydrology is noted. **PHCC: A specific, measurable and time-bound commitment towards managing the impacts of changing hydrology on this TEC is required.** **A prescriptive adaptive management framework is needed as a GGP conservation measure, including monitoring, contingency thresholds and responses should changes environmental condition be identified.**		Conservation Act 1999 (EPBC Act)
7	*Corymbia calophylla - Kingia australis* woodlands Cth Endangered	The majority (41) of known occurrences (44) are within the strategic assessment area; and the majority of those (23) within the class of action footprint. All occurrences are important as the ecological community is listed as Endangered The proximity of sites (in particular those adjacent to the class of action footprint) is currently not reported. This information is needed for the public to understand the nature and extent of indirect impacts. A threat risk assessment for each patch should be conducted – particularly in relation to indirect threats.	The conservation objectives for *Corymbia calophylla - Kingia australis* woodlands are to: • *Maintain the long-term viability of the ecological community within the Strategic Assessment Area.* • *Increase the extent of the ecological community within secure conservation tenure within the Strategic Assessment Area.* • *Manage offsite threats to the ecological community within the Strategic Assessment Area.* The objective of the interim recovery plan for this community is to maintain or improve the overall condition of this community and reduce the level of threat *with the aim of reclassifying it from Critically Endangered to Endangered* (emphasis added, the italicised text is omitted from the MNES EIAR; note this community is listed as critically endangered in WA).	41 (186.25 ha) of the 44 mapped occurrences of this community are within the strategic assessment area. 23 (115 ha) of the 41 occur within the development footprint; 52.8 ha of which is directly overlaid by the development footprint and therefore the subject of likely clearing. **PHCC: the known extent of this community type is not reported, thus it is not possible to determine what *proportion* of the TEC is expected to be impacted. In terms of number of sites, more than half are expected to be impacted. The impact to this community type is therefore considered significant.** Indirect impacts are expected where the proposed development occurs or intensifies near or adjacent to the TEC.	Overarching commitments (see Row 4) are noted as relevant. Their benefit, in terms of measurable further avoidance, management or offset value is not documented, nor is any commitment made to this end. As with the Claypans TEC (see Row 6), Conservation Commitments for this TEC relate to the protection of this TEC in some Bush Forever sites designated for protection, retention of sites where impacted by the urban and industrial class of action, and minimising impacts from the infrastructure class of action. PHCC: Consistent with our comments on other TECs discussed above (Rows 4 to 6): • **It is not clear how (and to what extent) these actions will avoid, mitigate or offset the direct or indirect impacts of the proposed development. This should be clarified**	23 of the 41 known occurrences are within the development footprint. It is not possible to determine this extent of impact by area. Management measures are proposed with the intent of further avoiding and mitigating impacts. However, it is unclear what benefit this will bring in reducing the nature or extent of impacts overall. The residual impact on this TEC after avoidance and mitigation is not clear.	SPRAT database (http://www.environment.gov.au/resource/interim-recovery-plan-corymbia-calophylla-kingia-australis-woodlands-heavy-soil-swan) MNES EIAR Ch18.

		The total area of known occurrences should be reported, so the reader can consider the significance of the expected impact in context. We note the SPRAT database reports a total area of 114.95 ha, comprising 10 occurrences. The expected impact as a proportion of mapped occurrences should be reported upfront. However, we note area of TEC overlaid by the development footprint = 52.8 ha; with 23 (115 ha) of occurrences (or patches) affected. We note that is equal in extent to the *entire* known extent of this community as reported in the SPRAT database. Obviously, the data used to inform the GGP is different to that reported in the SPRAT database. A clarification should be provided in the GGP. The use of 'protection level' categories in describing direct impacts should be removed. The existing protection level appears to have no relevance to the nature or extent of *direct* impacts (where development is proposed under the GGP within a TEC). The benefit of proposed management measures (in terms of further avoidance, mitigation or offset value) requires further, quantitative description.	**PHCC: The proposed objectives are inadequate to achieve an improvement in the conservation status of this community.** **PHCC: As a minimum, this objective must be modified to:** • **Require an improvement in the condition and maintenance of current extent of this TEC, as a minimum** • **be measurable and time-bound.**		• **This measure implies further avoidance can be achieved (within the urban and industrial class of action) without prescribing where and to what extent. A measurable commitment to deliver additional avoidance is required** • **A blanket statement towards minimising impacts from the industrial class of action is provided, without any minimum requirement.** • **There is no information provided documenting the extent of likely indirect impacts. A risk assessment for each patch should be conducted.** • **Measures are needed to manage the risk of indirect threats, particularly altered hydrology.** • **There is no contingency framework or adaptive management plan for this TEC. Given its current conservation status and the anticipated threats from all classes of action, one is definitely required.**		

		An adaptive management framework, including monitoring, contingency thresholds and responses is needed as a commitment of the GGP. The objective should thus be measurable, specific and time bound with clear responsibilities and accountabilities.					
8	Sedgelands of the Holocene Dune Swales of the Southern Swan Coastal Plain – Cth Endangered	We are not confident that the outcomes for this TEC can be achieved. All occurrences are important as the ecological community is listed as Endangered More than half of the known occurrences are within the development footprint, an unknown number occur adjacent to the development footprint. The objective should adopt the success and failure criteria of the Interim Recovery Plan; and should be be measurable, specific and time bound with clear responsibilities and accountabilities. Direct impacts must be more clearly and concisely reported. It is currently not possible for the reader to gauge the scale of impacts to the TEC. Moreover, there is little information provided in relation to the specific benefits of the proposed conservation measure in terms of residual impact.	The conservation objectives for this TEC is the same objective applied to most other TECs within the strategic assessment area: • *Maintain the long-term viability of the ecological community within the Strategic Assessment Area.* • *Increase the extent of the ecological community within secure conservation tenure within the Strategic Assessment Area.* • *Manage offsite threats to the ecological community within the Strategic Assessment Area.* The objective of the interim recovery plan for this community is to maintain or improve the overall condition of this community and reduce the level of threat. We note that it includes criteria for success and for failure. **PHCC: the success criteria should form the basis of the conservation objective for this TEC. E.g. 90% or more of the aerial extent of occurrences maintained at the same condition rank, or improved (using Bush Forever criteria). The objective should thus be measurable, specific and time bound with clear responsibilities and accountabilities.**	The community is recorded from 103 occurrences comprising 190.5 ha; all are located in the strategic assessment area. 59 occurrences are within the development footprint. Management of offsite (we assume indirect) threats is noted as critical to the ongoing viability of this TEC. As previously noted, it is difficult to determine the area of expected impact as these are reported in a complex description of protection categories for the land in which the patch occurs. **PHCC: direct impacts should be clearly and concisely reported. Information about protection category appears irrelevant to the assessment of direct impacts.** Indirect impacts are expected in the form of hydrological changes, altered fire regimes, grazing by native and introduced species. The extent of indirect impacts is not reported. **PHCC: a risk based assessment of indirect impacts to all TEC patches should be provided.**	An assessment of impacts on each patch (in terms of area of impact) is required. A clear and upfront description of direct impacts is required. The key outcomes section of this chapter indicates that 69.1 ha of this community will be impacted through the urban and industrial class of action, after avoidance. Across all classes of actions, the area of direct impact after avoidance and/or mitigation of direct impact is not provided. There is no detail in relation to extent of indirect impacts, or residual impact after mitigation.	Details that would enable the reader to determine residual impact are not provided.	MNES EIAR Ch 18.

		A risk-based assessment of indirect impacts is needed. We note there are no measures specifically provided to address indirect risks.					
9	Banksia dominated woodlands of the Swan Coastal Plain IBRA region (Cth – under assessment)	This community type is currently under assessment for listing as a threatened ecological community. We note that all occurrences will be considered important if the ecological community is listed as Endangered This section provides a clear description of impacts, avoidance, mitigation and offsets, which we welcome. The same approach should be adopted elsewhere in the document. We welcome the efforts to avoid Banksia woodland with the BRM class of action footprints. We do not support the claims of avoidance achieved through the urban and industrial class of action footprint, and note a feasible alternative exists that would deliver a negligible impact on remnant vegetation. 11.5 % (12,668 ha) of the mapped occurrence of this TEC occurs within the development footprint and is likely to be cleared (noting the commitment to avoid a further 3,000 ha of	Our comments on the conservation outcome for TECs are provided in Row 3. The objective for Banksia Woodlands is: No objective is provided.	This community is mapped across an area of 445,407 ha, approximately 25 % (110,109 ha) of which occurs within the strategic assessment area. A significant proportion, 11.5% (12,668 ha), occurs within the development footprint. The MNES EIAR notes also that the actual level of impact over time will also contribute to greater pressures, including fragmentation. The risk associated with indirect impacts (particularly facilitated impacts) arising as a result of (e.g): fragmentation and disturbance, increased threats from invasive species, changes to fire regimes and groundwater drawdown or not discussed. The consequences of climate change on the condition and extent of this TEC, and/or on the nature and extent of likely threats is also not discussed.	Avoidance measures are noted as arising as a result of measures taken to avoid impacts on Carnaby's Black Cockatoo (which relies on Banksia Woodland as a principal source of habitat). These avoidance measures include • Reduction in urban and industrial areas • Avoidance of vegetation through master planning for BRM areas **PHCC: we support the intent of BRM master planning to avoid Banksia Woodland.** **We do not support the claimed avoidance of Banksia Woodland in arriving at the current footprint. Scenario planning has already demonstrated a feasible alternative for a compact city that would deliver only negligible clearing of remnant vegetation.** Other management measures include: • A minimum of 3,000 ha of further avoidance of Banksia Woodland, • Mitigation through rehabilitation of sites impacted through the BRM and infrastructure classes of actions. **PHCC:** while we commend State's approach in providing a specific and measureable target of 3000 ha of further avoidance (and urge such an approach be adopted for all conservation commitments) **we do not support clearing of remnant banksia woodland.** **PHCC: we support site rehabilitation wherever possible, though note this measure**	The residual impact of 9,688 ha of clearing is significant, and in our opinion is unacceptable.	MNES EIAR Ch 22

		Banksia Woodland will reduce this scale of impact. The residual impact of 9,688 ha of clearing is significant, and in our opinion is unacceptable. We support any efforts to restore or rehabilitate remnant vegetation on the Swan Coastal but urge the State to provide specific measurable and time-bound commitments in relation to this an all other commitments of the GGP. An adaptive management program for banksia woodland is required. We do not support the proposed conservation reserve system as a legitimate offset for the loss of Banksia Woodland, especially since further avoidance is possible.			**is not additional to the business as usual scenario.** Offsets are also proposed, in the form of: • An ongoing offsets program in the form of an expanded conservation reserve system and • On-ground management program to rehabilitate and enhance degraded Banksia woodland. **PHCC: we do not support the proposed measures conservation reserve system as a legitimate offset for the loss of banksia woodland. Please refer to our comments in Table 2.** **PHCC: we support the intent of any program to rehabilitate and enhance remnant vegetation, but urge the need for a measureable, time-bound commitment, an assigned responsibility and a transparent accountability and adaptive management framework.** We also note that significant indirect impacts resulting from development are likely. Impacts associated with fragmentation (such as increased edge effects) have not been adequately addresses. We note that the State intends to 'monitor and adaptively manage outcomes for Banksia Woodland', however there no information provided. **PHCC: an adaptive management approach that prescribes monitoring requirements, thresholds and contingencies is needed, and should be provided to the public for review prior to finalising the GGP for endorsement.**		