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Department of
Environment and Conservation

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Chairman
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Attention: Sue Osborne

YANNARIE SOLAR SALT FARM PROPOSAL (ASSESSMENT NO. 1521) SUPPLEMENTARY INFORMATION

I refer to the memo of 22 February 2008 requesting comment on the revised proposal and supplementary information for the Yannarie Solar Salt Farm Environmental Review and Management Programme (ERMP). The Department of Environment and Conservation (DEC) provides the following advice and comments on the basis of its *Conservation and Land Management Act 1984* and *Wildlife Conservation Act 1950* responsibilities for your consideration in assessing this proposal.

DEC has previously submitted a detailed assessment of the Yannarie Solar Salt project to the Environmental Protection Authority (EPA) on 12 March 2007. The additional advice attached relates to the supplementary documentation and modified proposal released by the EPA for a four week public submission period which commenced on 25 February 2008.

The summary of advice, recommendations and conclusion are provided in Attachment 1. Further detailed discussion to substantiate and justify DEC's advice is at Attachment 2.

The attached advice is based on the modified proposal (Straits, 2008) and the following supplementary documents:

- Hope Point Habitat Mapping 2007 (Oceanica, 2008);
- Hydrogeological investigation of Supratidal Flats, Yannarie Solar Salt;
- Yannarie Salt field environmental investigations: Mixing and dilution of Bitterns C discharge (APASA, 2007);
- Yannarie Solar Project Subterranean Fauna Assessment (Biota Environmental Sciences, 2008); and
- Yannarie Solar Project: Additional Flora and Vegetation Assessment (Biota Environmental Science, 2008).

In summary, the proponent is yet to demonstrate how all the critical issues documented in DEC's original submission (12 March 2007) can be, or have been, adequately addressed. Despite the modification of this proposal to reduce the spatial size and rate of throughput, this proposal continues to pose considerable ecological risks to the significant conservation values of the Exmouth Gulf ecosystems. As stated in previous advice, this proposal would preclude future opportunities to conserve an outstanding area of a largely intact arid zone coastal ecosystem type with significant nature-based tourism potential.

The four week period provided to review the modified proposal and all supplementary information and management plans is very restrictive in terms of a thorough assessment. Furthermore, a significant level of uncertainty exists in relation to the impact predictions and the proponent's capacity to mitigate and manage risks. For these reasons, DEC has deferred the review of environmental management plans for this project. Nevertheless, should the EPA deem this proposal 'environmentally acceptable', DEC requests a further opportunity to be involved in assessing the adequacy of proposed management and monitoring measures and environmental conditions within an appropriate timeframe.

Keiran McNamara

Keiran McNamara
DIRECTOR GENERAL

27 March 2008

Att

INTRODUCTION AND SUMMARY ADVICE

Conservation Significance of Exmouth Gulf East

The Yannarie Salt proposal area falls within the 'Exmouth Gulf East' nationally important wetland listed in *A Directory of Important Wetlands in Australia*. The WA Biodiversity Audit (CALM, 2003) identified the supratidal mudflats ('Bare areas, mudflats') of the Cape Range Sub-region as being ecosystems of high priority for reservation with none currently included in the conservation reserve system. In addition, the Marine Parks and Reserves Selection Working Group, in *A Representative Marine Reserve System for Western Australia* (CALM, 1994), identified the eastern side of Exmouth Gulf for potential reservation, including important mangrove communities and shallow water benthic fish and prawn nursery habitats. This report also indicated that the reservation of the supratidal flats between the mangroves and the hinterland would be essential to ensure the adequate management of mangroves and coastal habitats.

Furthermore, a number of conservation significant species protected under the *Wildlife Conservation Act 1950* and the *Environment Protection and Biodiversity Conservation Act 1999* are supported by important habitats within Exmouth Gulf. These species include marine turtles, cetaceans and dugong (for further detail, please refer to Attachment 4 in DEC's submission on the ERMP, 12 March 2007).

It is understood that the Yannarie Solar Salt project poses a significant threat to the long-term integrity of ecosystem function within this area of regional, national and international importance and that the long-term risks remain unacceptable on ecological grounds.

Modified Proposal

The original proposal presented in Straits (2007) was for a nominal 10 million tonne per annum (Mtpa) solar salt field with a direct footprint of approximately 41,000 hectares over approximately 66 kilometres of coastline. The revised project documentation (Straits, 2008) proposes a 4 Mtpa solar salt field that has been reduced in spatial coverage, yet, based on DEC's calculations of the direct footprint from the map provided in Appendix 1 of the Modified Proposal (Straits Salt, 2008), the project still proposes to disturb an area of around 300km^2 (30 kilometres by 10 kilometres) of coastal area comprising supratidal flats, mangrove communities, algal mats, terrestrial vegetation and claypans (excluding dredge channel footprint, boat harbour and indirect ecological disturbances). The reduced spatial coverage of the proposal does not address the following concerns that DEC raised with regard to the original proposal:

- preclusion of future opportunities to conserve an outstanding area of largely intact coastal ecosystem;
- major disturbance to a marine and coastal area of very high national and international conservation significance;
- the significant risks associated with the design, scale and potential large scale irreversible and unmanageable impacts; and
- insufficient information in the ERMP and in supplementary information to adequately address DEC's concerns raised in previous advice (DEC Submission, 12 March 2007).

Noting that DEC's Parks and Conservation group has not been provided with the opportunity to fully review the proponent's 'Response to Submissions', it is not clear to what extent DEC's concerns detailed in the 2007 submission have been addressed. Given that neither the revised proposal nor the supplementary information have alleviated DEC's concerns on the environmental acceptability of the development, our previous recommendations still apply to the modified proposal.

A series of recommendations and related discussion points are provided in Attachment 2 of this advice. This constitutes supplementary advice to DEC's original submission (DEC, 2007), and we request that advice in the original DEC submission is again taken into consideration in finalising this assessment.

Conclusion

Based on a review of the Modified Proposal document (Straits Salt, 2008) and other supplementary documents, DEC is of the view that the modified proposal and supplementary information have not adequately addressed our concerns in relation to the impacts and risks to ecosystem function, sea level rise, altered surface water and groundwater hydrology and risks to subterranean fauna of Exmouth Gulf.

As such, this assessment has not been able to demonstrate that the potential impacts and risks to the biodiversity conservation values of Exmouth Gulf can be managed to ensure that unacceptable environmental impacts will not result from the implementation of this proposal.

Department of Environment and Conservation
March 2008

IMPACT ASSESSMENT

1. IMPACTS AND RISKS TO ECOLOGICAL FUNCTION OF EXMOUTH GULF

Issue: ***Uncertainty with regard to predicted impacts and risks to conservation significant coastal habitat values of Exmouth Gulf.***

Recommendation 1: The EPA should note that the additional supplementary information provided has not adequately addressed DEC's concerns with regard to the potential long-term irreversible impacts on benthic habitat values.

Recommendation 2: The EPA should note that despite the reduced size of the project footprint and the supplementary information provided, the long-term risks associated with the potential for bitterns discharge, possible incidental release of toxic brines and the potential for changes in coastal processes described in DEC (2007) remain valid.

Recommendation 3: The EPA should recognise that the proposal will impact on the benthic habitat values and associated fauna habitat values identified for potential reservation in the Report of the Marine Parks and Reserves Selection Working Group (CALM, 1994).

Recommendation 4: Should this development proceed, the EPA should take into account that, regardless of the reduced scale of the project, the opportunity for the reservation of this system as a representative example of intact, extensive arid zone supratidal flat adjoining an area of significant marine conservation value will be foregone in Western Australia.

Discussion

As requested in advice to the EPA (DEC, 2007), the proponent has undertaken a habitat mapping exercise to better characterise the habitats that could potentially be impacted by the modified proposal. Whilst it is acknowledged that the habitat mapping exercise undertaken by Oceanica (2008) has provided a reasonable spatial coverage and classification of marine habitat values and an estimation of the habitat extent within the zones of loss, effect and influence, this document has only presented results for dredging related marine impacts. In the original advice, it was requested that the proponent undertake a full scale risk assessment and analysis of the impacts on benthic habitats including modelling to indicate the consequences for benthic communities in the event of incidental toxic leachate, acid sulphate soil reactions, incidental release of bitterns and changes in hydrodynamics and coastal processes associated with the construction of the sea wall, salt ponds and bitterns management area (refer to recommendations 4, 5, 7, 10, 30, 34, 40, 47, 49, 53 of DEC, 2007). This additional impact prediction work has apparently not taken place.

Specifically with regard to the habitat mapping and dredging induced habitat losses predicted in Oceanica (2008), the following should be noted:

- The habitat maps have not been overlain with the zones of effect and influence for the proposed new channel;
- Although the proponent has revised the alignment of the original dredge channel in an attempt to avoid reef comprising corals, algae and sponges, it must be noted that the dredge footprint will predominantly be in sparse seagrass beds that are potentially habitat for dugong and marine turtles; and

- It is questioned how the modelling used in the ERMP to predict the extent of the dredge plume has been re-interrogated to account for the new information provided in the habitat mapping exercise. It is unclear whether the proponent has re-interrogated the model using the new dredge footprint and whether an understanding of pressure thresholds for functional benthic groups has been taken into account when establishing impact zones.

Issue: Long-term impacts on ecosystem function.

Recommendation 5: The EPA should note that the concerns and issues highlighted in DEC's submission on the ERMP (DEC, 2007) with regard to long-term impacts on Exmouth Gulf's ecosystem function have not been adequately addressed in supplementary information to the ERMP.

Discussion

Throughout the previous submission (DEC, 2007) several discussions and recommendations raised substantial concern in relation to the risks to and potential long-term impacts on the ecological integrity and function of Exmouth Gulf ecosystems. Specific sections in this submission included, but were not limited to, Section 1.3 (Recommendations 4 and 5), Section 1.4 (Recommendations 7, 8, 10), Section 2.2 (Recommendations 14, 15), and Section 2.2 (Recommendations 17 and 18).

Of particular concern were issues raised with long-term (decadal) changes in coastal processes with regard to the construction of an extensive seawall, potential breaching of concentrator and crystalliser ponds and changes associated with sea level rise (specifically addressed in Section 2 of this advice). The proponent has not modelled the potential risks, or undertaken a risk assessment to address the impacts of changes in coastal processes and ecosystem function. It is not clear how impacts from long-term changes in coastal processes related to sea level rise, changes to supratidal hydrology, and the construction of sixty year structures and impediments across a significant section of the eastern side of Exmouth Gulf, can be mitigated when all significant potential impacts have not been modelled and predicted.

Issue: Bitterns storage, management and assessment.

Recommendation 6: The EPA should note that incorrect background data were used to determine whether bitterns discharge and mixing would result in salinity and magnesium concentrations significantly above background levels.

Recommendation 7: The EPA should note that predicted magnesium and salinity concentrations were found to be above background levels at some sites despite the proponent's use of inappropriate sampling sites when attempting to determine background levels. This indicates that the exceedance of background levels is likely to be much higher and more frequent than predicted in APASA (2007).

Recommendation 8: The EPA should note that the recommendations in Sections 5.1 and 5.2 of DEC's submission on the ERMP (DEC, 2007) requesting (1) verification that the bitterns management area can be adequately mitigated to avoid breaches in levee walls and overtopping, (2) modelling of impacts associated with failure of bitterns storage, and (3) ecotoxicity testing in conjunction with ecological risk assessment, have not been undertaken by the proponent.

Recommendation 9: The EPA should recognise the significant potential impacts with bitterns storage and management and the reality that this project could lead to a proposal for bitterns discharge at Hope Point, in the event that resource recovery and other disposal options prove not to be feasible, which would have the potential for major adverse effects on the conservation values of Exmouth Gulf.

Discussion

In the original advice (DEC, 2007) concerns were raised with regard to bitterns storage, management and the potential for release of toxic brines (Sections 5.1 and 5.2). These concerns remain valid.

DEC understands that the proponent has been asked by the EPA to undertake a study into the mixing and dilution of bitterns. It is also noted that the proponent has not formally proposed to discharge bitterns as a component of this referred project, but has attempted to demonstrate that the product could be safely discharged to Exmouth Gulf if the solar field capacity became exhausted and there were no alternatives but to discharge to the marine environment via the proposed boat harbour at Hope Point (APASA, 2007). Based on an analysis of the results in APASA (2007), DEC expresses the following concerns which support earlier advice in sections 5.1 and 5.2 of the original submission (DEC, 2007):

- The solution will have a high density when compared to sea water and a significantly higher concentration of magnesium compared with ambient sea water;
- Whilst the EPA has advised that bitterns discharge should not exceed the 95th percentile concentration of magnesium determined for local water, the proponent has demonstrated that exceedances of the 95th percentile are likely to occur;
- The sampling to determine background concentrations was undertaken during the time of year when the highest levels of natural salinities would be expected. In addition, sampling has not incorporated intra-annual natural variations and there is no indication as to where in the water column data were taken;
- The collection of background readings was undertaken along a creek system (Dean's Creek) south of Hope Point and although the data from the outermost sampling station were used to estimate background levels, they were most likely influenced by creek waters (e.g. average salinity of >43,000mg/L and up to 50,000 mg/L);
- It is noted that modelled magnesium concentrations rose in the first 12 days to stabilise at an average of 1914mg/l above background levels (page 14, APASA 2007). Once concentrations plateaued, the median concentration was predicted to exceed the 95th percentile of background levels derived from one site (SW06). The proponent has demonstrated that during initial discharge, for a 12 day period, the levels of Mg are likely to exceed the 95th percentile significantly and continue to exceed the 95th percentile of estimated background magnesium by approximately 98/mg/L once the initial rise from discharge reaches a constant concentration. This indicates that the project is likely to have significant impacts on water quality from background levels despite the incorrect non-conservative use of background levels from Dean's Creek;
- The frequency, duration and intensity of exceedance events has not been discussed or modelled, nor has this necessary information been translated into a discussion on ecological consequence.

On the basis of the above points, there is a high risk that salinity and magnesium concentrations are likely to significantly exceed the 95th percentile of background levels, should bitterns be discharged over the life of the project. Furthermore, there has been no ecotoxicity analysis or ecosystem risk assessment undertaken to indicate the extent of

impacts from this risk (which DEC believes to be significant) nor of the likely adverse biological impacts from this.

2. IMPACTS AND RISKS ASSOCIATED WITH SEA LEVEL RISE

Issue: Consequences of sea level rise have not been adequately addressed.

Recommendation 10: The EPA should take into consideration that the proponent has not addressed Recommendations 6, 7, and 8 in Section 1.4 of DEC's submission on the ERMP (DEC, 2007) in relation to climate change and associated sea level rise.

Recommendation 11: The EPA should note that a comparison between maps provided for the 'Base Scenario' of sea level rise and 'Potential Sea Level Rise' predicts that the areas surrounding the proposed salt field will be inundated, which indicates significant risks in relation to storm surge, cyclonic conditions and tidal impacts on the sea wall and levees of the salt field.

Recommendation 12: The EPA should recognise that the projected sea level rise mapping provided highlights a high level of uncertainty with regard to the stability of the system in terms of sustaining the proposed salt pond structures and increases the risk of leachate and levee failure. This demonstrates that the proponent has not adequately addressed climate change risks or the need for climate change adaptation in the design and management of the project.

Discussion

In the sea level rise excerpt from the proponent's 'Response to Submissions' document, it is noted that the proponent has not adequately addressed DEC's concerns with regard to sea level rise. Primarily, the proponent has not addressed Recommendations 6, 7 and 10 of DEC's original submission (DEC, 2007). These recommendations requested that the proponent predict impacts associated with 'worst case scenarios', taking into account significant storm events, storm surge, sea level rise and how the development of the ponds, sea wall and bitterns storage area will be managed to address sea level rise over the next sixty years. Despite concerns raised in relation to storm surge, sea level rise and the very real risk that a greater than one in 100 year average recurrence interval (ARI) storm event has the potential to occur within this location during the life of the project, the proponent has only committed to mitigation measures of one in 25 and one in 50 year ARI.

Furthermore, mapping provided in section 4.14.3 of the proponent's response to submissions document indicates that with the projected 0.38 metre sea level rise within the next 100 years, a substantial area of potential mangrove habitat will be created, indicating that this area will become inter-tidal zone (as opposed to supratidal zone) and will be inundated during daily tidal cycles including areas surrounding the bitterns storage area, concentrator ponds and crystallisers. This presents significant concerns, including that storm surge and tidal events are likely to surround ponds, increasing the risk of leachate and levee failure. The proponent has not demonstrated that these potentially significant failures in design can be successfully mitigated.

3. IMPACTS AND RISKS ASSOCIATED WITH POTENTIALLY ALTERED HYDROLOGY

Issue: Risks associated with changes to surface flow and superficial aquifer beneath the supratidal flats.

Recommendation 13: The EPA should note that the proponent has not adequately addressed concerns raised in relation to the potential alteration to surface flows and the hydrology of the superficial aquifer which has the potential to result in changes to coastal processes, increased release of heavy metals and loss of productivity to the nutrient limited Exmouth Gulf ecosystem. Specifically, Recommendations 13, 14, 15, 17 and 18 of DEC's original submission on this project (DEC, 2007) have not been addressed in supplementary information.

Discussion

It is noted that the proponent has apparently attempted to address Recommendations 11 and 12 of DEC's original submission (DEC, 2007) by undertaking a hydrogeological investigation of the supratidal flats (PB, 2008). Based on an analysis of the results in the PB (2008) document, the following issues are highlighted for consideration:

- Confirmation that the superficial aquifer is underlain by a thick clay sequence and that the clay sequence is widespread and generally exceeds a thickness of 6 metres. This clay layer has very low permeability;
- The supratdial flats are underlain by a superficial aquifer 2.6 to 5 metres thick containing hypersaline water with significant levels of metals such as aluminium and iron which are currently being discharged into prawn and fish nursery areas in nearshore environments. Disturbance of coastal sediments by construction activities could potentially increase the rate of discharge of metals to levels that could cause harm to these areas and the industries they support;
- In addition to the current discharge of nitrogen, sediments in the superficial aquifer contain a substantial amount of stored nitrogen that may be available for release if the water balance is altered due to the operation of the salt field and/or sea level rise. Preliminary DEC calculations suggest that a 100 metre wide strip of shallow aquifer contains about 470 kilograms of N in storage per kilometre length of coastline. Furthermore, desktop estimation of the rate of nitrogen discharged by groundwater to Exmouth Gulf from the shallow aquifer is about 1200 kilogram/year from this section of coastline, or an average of about 34 kilograms per kilometre length of coastline each year. Therefore, the proposal has potential to result in substantial alteration to the nitrogen cycle and input into Exmouth Gulf (either by releasing nitrogen concentrations at a more rapid rate, or by removing/altering mechanisms that drive nitrogen release) which could have long-term ecological effects, particularly for prawn and fish nursery and conservation significant fauna habitat areas that are likely to be directly affected;
- PB (2008) also indicates that the superficial aquifer also contains elements such as boron and molybdenum which are potentially toxic to fauna. Impacts associated with the potential release from altered hydrology have not been discussed.
- The proponent has not addressed the risks associated with horizontal movement of water or modelled the impacts of pond construction on the superficial aquifer. Whilst it is acknowledged that the risk of heavy metal released from the deeper groundwater aquifer is low, there is still uncertainty with regard to the superficial aquifer. The question is whether dilution rates will be adequate to minimise toxicity over time. Without modelling and impact prediction on this issue, and in the absence of an understanding of how this

superficial aquifer will respond to the construction of the salt field, the risks described in section 2 of DEC's submission on the ERMP (DEC, 2007) are yet to be addressed.

- It is also noted that the superficial sediments contain substantial nitrogen concentrations which are likely to be released across the supratidal flats during pulses of sheet flow from heavy rainfall events. Although the proponent has revised the size of the salt field, there is still potential to interfere with surface water flows to over 30 kilometres of coastline, significantly reducing the physical area in which nitrogen can be effectively delivered to the nutrient limited Exmouth Gulf system on the eastern coastline. A comprehensive discussion on the potential impacts associated with altered surface water flow is provided in section 2 of DEC's original submission (DEC, 2007).

4. POTENTIAL RISK TO SUBTERRANEAN FAUNA

Issue: Inadequate information to indicate the risk of subterranean fauna occurrence and significance.

Recommendation 14: The EPA should recognise that the proponent has not implemented the agreed scope of works for subterranean fauna investigation (reviewed by DEC in July 2007) and has therefore not provided a high level of certainty that the risks to subterranean fauna can be considered low.

Discussion

The proponent has completed a supplementary report titled 'Yannarie Solar Project Subterranean Fauna Assessment' (Biota Environmental Sciences, 2008). This report identified the following limitations, indicating that confidence levels for this risk-based assessment cannot be considered high:

1. The limited level of geological and hydrogeological modelling, documentation and description available for the area of interest; and

2. The limited extent of subterranean fauna survey work that has previously been completed in the locality.

Furthermore, the proponent has apparently not addressed the scope of works for subterranean fauna sampling that was reviewed by DEC on 25 July 2007, which included a requirement for the implementation of a two-phased stygofauna survey including surveys at Hope Point (6 bores - 4 impact and 2 reference). The scope of works, as reviewed by DEC, has not been implemented and only a risk-based desk top analysis has been applied. Given the significant limitations with regard to understanding the hydrogeology, the lack of information with regard to the regional occurrence/extent of subterranean fauna within the locality, the known occurrence of conservation significant subterranean fauna communities within the Cape Range Bioregion (Cape Range Karst System) and the presence of limestone within the area of impact, it is DEC's expectation that the scope of works for subterranean fauna investigation should have been carried out for at least the first phase of sampling. As a minimum, preliminary results of the first phases of both troglofauna and stygofauna sampling should have been provided in this supplementary information.

Until subterranean fauna presence/absence and any conservation significance assessment can be reported with a high level of confidence, the potential risk to subterranean fauna is still considered a relevant factor for this assessment.

5. RISKS AND IMPACTS ASSOCIATED WITH TERRESTRIAL FLORA, VEGETATION AND FAUNA

Issue: Potential impacts to significant claypan communities.

Recommendation 15: The EPA should recognise the recent findings of the DEC Pilbara Biological Survey, which indicate that claypan communities along the Pilbara coast (Onslow to Port Hedland) display high levels of endemic freshwater invertebrates. The proponent has not considered the potential impacts of the solar salt development on claypan invertebrate fauna at Exmouth Gulf, which may demonstrate levels of endemism comparable to claypans along the Pilbara coast.

Discussion

The proponent has prepared a supplementary report titled 'Yannarie Solar Project: Additional Flora and Vegetation Assessment' (Biota Environmental Sciences, 2008). The report outlines the results of the additional terrestrial flora and vegetation assessment undertaken to capture data outside the project area, and in additional areas within the project area that were not surveyed as part of the original assessment.

Despite the reduced size of the amended project footprint, the development will have an impact on a number of communities that are considered to be of high priority for conservation (CALM, 2003). Of these, the conservation status of the claypans (Bare Areas: claypans) is considered to be at most risk from this proposal.

The interpretation of data collected from the Pilbara Biological Survey currently indicates that claypans surveyed in areas between Onslow and Port Hedland harbour freshwater invertebrate species that display short-range to regional range endemism, particularly fairy shrimp, ostracods and clam shrimp, some of which have been new to science. This was also the case for claypans surveyed during the Carnarvon Basin Survey (see Halse et al. 2000, Timms 2002) and for the Wheatbelt (Pinder et al. 2004). The area south of Onslow but north of the Carnarvon Basin has not been well surveyed for aquatic invertebrates, so claypans in this area are likely to also contain undescribed species which may have restricted distributions. Claypans are understood to display higher levels of regional endemism compared to other freshwater wetlands in the Pilbara, such as riverine/creek systems, which is believed to be due to both the isolation of claypans, and the specific conditions of claypan environments that taxa have become adapted to (e.g. high levels of turbidity, absence of fish, and prolonged dry periods after a short wet period).

The additional flora and vegetation assessment (Biota Environmental Sciences, 2008) recognises that claypans in the project area will likely be inundated and/or filled, and that they may also be used as borrow pits (page 33). The Modified Proposal (Straits, 2008) states that clay material will be sourced from 12 claypans, and that the total area of disturbance to claypans will be approximately 75 hectares (page 8). It is also likely that claypans in the area will be indirectly impacted by changes in surface hydrology due to the location of the diversion drain, and the location of bund walls.

It is considered likely that the Exmouth Gulf area may contain high levels of short-range endemism that are comparable to that found between Onlsow and Port Hedland in the Pilbara Biological Survey. As this factor has not been considered in the ERMP or supplementary information, the impacts of directly disturbing 75 hectares of claypans for borrow material, and an unknown area of claypans for development of evaporation ponds, are unknown.

The results of the Pilbara Biological Survey were not known at the time of reviewing the original Yannarie Solar Salt proposal, and therefore the ecological value of claypan communities was not well understood. Given that our knowledge about claypans in the Pilbara has increased substantially since the original assessment (completed by DEC in March 2007), there is need for the proponent to consider potential impacts of the modified proposal on short-range endemic claypan communities. Without this information, there is a potential for disturbance to claypan communities to cause environmental harm.

The results of the Pilbara Biological Survey will be available in the second half of 2008. In the interim, DEC is able to provide advice on further information (including survey methodology) on this factor to the EPA and the proponent.

CONCLUSION

Despite the reduced size of the proposal, this project presents significant risks and potential long-term impacts on biodiversity conservation values to the extent that it should be deemed environmentally unacceptable. The supplementary information provided by the proponent does not address all the significant concerns raised in DEC's submission on the ERMP document (DEC, 2007), nor has the proponent demonstrated that the recommendations and concerns raised with respect to the impacts and risks to significant biodiversity values have been or can be successfully managed within acceptable bounds.

As detailed in the original submission (DEC, 2007), there is insufficient detail for the Department to be satisfied that the risks to the significant ecological values of Exmouth Gulf can be successfully mitigated.

Finally, proceeding with this proposal would forego the opportunity to conserve a nationally significant, extensive and intact coastal ecosystem with significant potential for nature-based tourism and fisheries resource protection.

Department of Environment and Conservation
March 2008

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