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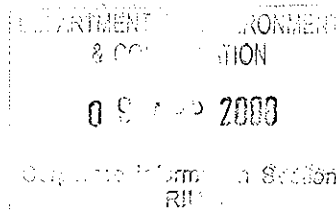
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DOC50084.

Minister for Employment Protection; Regional Development;
Fisheries; the Kimberley, Pilbara and Gascoyne

Ref: 2275864

The Chairman
Environmental Protection Authority
Locked Bag 33
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PERTH WA 6850



Attention: Dr Sue Osborne

**YANNARIE SOLAR SALT FARM PROPOSAL SUPPLEMENTARY INFORMATION
(Assessment No. 1521)**

Thank you for your letter of 22 February seeking my comments on the revised Yannarie Solar Salt Farm Proposal.

Having reviewed the proponents revised proposal, it is clear that a significant attempt has been made to address concerns raised through the Environmental Review and Management Program process.

However, it is my view and that of the Department of Fisheries, that the improvements in the new proposal are not sufficient to satisfy me that the project will not have significant and long lasting deleterious effects on the environment of Exmouth Gulf, its ecological processes and consequently the long standing and sustainable fishing and aquaculture activities that occur within the Gulf.

I have noted the response from the Department of Fisheries and fully support its contents to demonstrate the basis for my opposition to this proposal.


Hon Jon Ford JP MLC
MINISTER FOR FISHERIES

07 APR 2008

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Department of Fisheries
Government of Western Australia

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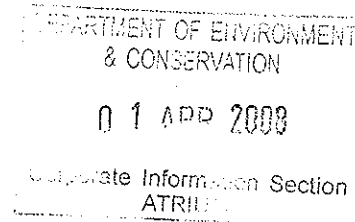
Fish for the future

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Our ref: 566/03-03
Your ref:
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Attention: Dr Sue Osborne

YANNARIE SOLAR SALT FARM PROPOSAL - COMMENT ON SUPPLEMENTARY INFORMATION

Thank you for the opportunity to comment on the supplementary information relevant to the proponent's revision of the scale and capacity of the Yannarie Solar Salt Farm Proposal.

The Department of Fisheries has previously expressed serious concerns in relation to this proposal. Having expressed these concerns we have appreciated the opportunity to engage with the proponent, so that where possible the proposal can be improved and these concerns addressed.

Throughout this process it is my view that the proponent has been professional and genuine in its efforts to balance the logistics and economics of the proposal with the environmental concerns.

In essence the proponent is now putting on the table a proposal that is significantly reduced in scale. Having considered the revised proposed this department acknowledges that the new proposed salt field and associated infrastructure will have reduced impacts including those associated with reduced shipping when compared to the original proposal.

That point made, the revisions and best efforts of the proponent have failed to address our concerns to a satisfactory level. I have formed this view haven given detailed consideration to the revised proposal within the context of the great significance of the Exmouth Gulf from a fisheries and ecological perspective.

The significance of Exmouth Gulf from this Department's perspective and our ongoing concerns are described below.

Significance of the Eastern Shore and Waters of Exmouth Gulf

Ecological Importance of the Eastern Waters of Exmouth Gulf

The eastern waters of Exmouth Gulf have been recommended as a Fish Habitat Protection Area in the draft Department of Fisheries report *Fisheries Environmental Management Plan for the Gascoyne Region – 2002*. This report discusses the importance of the habitats on the eastern waters and coast of the Gulf, specifically the transverse tidal creeks, the wide supra-tidal salt flats and the intertidal mudflats. These areas are the source of much of the nutrient that support the valuable prawn fishery in the Gulf and function as a nursery area for prawns, commercial and recreational fish species as well as other marine fauna. It is considered an area of substantial importance for nature conservation and for sustaining local fisheries.

The waters on the eastern side of the Gulf that are closed to trawling. This permanent nursery area closure has been in operation since 1983 and recognises the significance of this area from a conservation and system productivity perspective.

Specific values of the eastern waters of Exmouth Gulf include:

- habitat for juvenile prawn species that are captured in adjacent high value commercial trawl fishery;
- important nursery area for commercial and recreational fish species;
- recreational fishing area;
- valuable pearl oyster habitat;
- important to aquaculture and pearling leaseholders;
- minimal impact and disturbance from human activity;
- high value mangal habitat, sand habitat and coastal marine flora and fauna generally; and
- important habitat for species other than fish, including turtles, dugongs, whales and migratory wading birds.

Major Fisheries in Exmouth Gulf

The Exmouth Gulf Prawn Fishery is one of the State's most significant from an economic perspective. There are 17 managed fishery licenses that employ approximately 50 crew on vessels with additional processing and support staff based in Exmouth and Fremantle. Fishery scientists calculate the fishery can sustainably produce between 771 and 1,276 tonnes of prawns per year, worth \$15 – 20 million.

The prawn fishery is concentrated in the centre and northern areas of Exmouth Gulf. This is also the breeding area for adult prawns and after larval prawns are released they undergo a short series of planktonic stages where they live in the water column and are carried about by currents in the Gulf. While there may be some movement of larval prawns into and out of the Gulf, it is largely a self-sustaining system. The life cycle is completed in about a year, with each year's available harvest coming from the previous year's residual population and includes recruits of the same year.

It has been known for over 40 years that the planktonic larvae settle to the bottom and congregate in the extensive shallows along the eastern and southern margins on the Gulf, including the mangrove creeks. As they approach maturity, juvenile prawns migrate into the deeper central waters of the Gulf where they become adults and spawn.

In recognition of the annual cycle of movement, trawling in the eastern waters of the Gulf was prohibited to protect the substantial concentrations of juvenile prawns and as knowledge increased over the decades the protected areas have been extended. The closure to prawn trawling covering extensive areas along the eastern and southern portions of the Gulf is in recognition of the critical role this environment plays not only in the sustainability of the fishery but also in the ecological function of the Gulf.

The other major fishery in the Gulf is the pearl fishery, which produces world class South Sea pearls. There are a number of leases along the eastern side of the Gulf and in other areas of the Gulf. Traditionally there has been substantial collection of pearl oysters for seeding in Gales Bay and Giralia Bay at the southern end of the Gulf. This still occurs, despite the trend to increased use of hatchery produced oysters.

There is also substantial value in the grow out lease sites and high water quality is critical to the health of the pearl oyster and the development of the pearl.

Potentially Significant Impacts on Exmouth Gulf from the proposal

It is the view of this Department that the reduced size of the proposal reduces the impacts and the overall area over which impacts may occur. However our concerns are still pertinent to the areas adjacent to and north and south of the impoundment areas.

In particular, the Department of Fisheries has a number of concerns, which are detailed below, in relation to the possible impacts the proposal may have on Exmouth Gulf.

Research has demonstrated that the prawn fishery is sensitive to the level of spawning stock. Therefore any significant impacts on the spawning stock is of concern. Chief amongst these concerns are the impacts that the proposal may have on productivity and nutrient cycling in the Gulf, both of which are likely to be long term, cumulative impacts that may be difficult to quantify. For instance, decreased productivity of the Gulf may result in a gradual decrease in prawn catches.

The Department does not believe that the revised proposal and supporting information gives a sufficient level of comfort that these, and other, issues have been adequately addressed, particularly given the long timeframe of the proposal that may exacerbate cumulative impacts on the Gulf.

The Department acknowledges that issues associated with productivity of the Gulf are complex and requires a significant research effort to address. However, without further research, the Department believes that there is a high level of uncertainty related to the possible impacts of the proposal, particularly given the scale and lifespan of the proposal and its close proximity to valuable marine habitat and commercial fishing grounds.

Possible impact on productivity through altered hydrological processes

Despite the proponent's view that there will be minimal risk to the productivity of the Exmouth Gulf from altered overland and subsurface hydrological processes, there still remains some uncertainty over the information on which this claim is made.

Although the extent of the salt fields in this current proposal are reduced, changes in flow regimes are still expected in the reduced area, and the fact remains that it is unclear how significant overland flows are to the productivity of the Gulf and the impact the proposal will have on these flows to Exmouth Gulf.

To illustrate my point about this uncertainty, on the one hand the proponent cites Brunskill *et al* (2001) suggesting that the contribution is minimal. Noting that I have some reservations about the timeframe this study was undertaken and how soon after a cyclonic event samples were taken, Kangas *et al.* (2007) suggests that there is a likely link between cyclonic events and increases in productivity of both seagrass and algal communities. This is thought to be particularly pertinent a few years after a cyclonic event (productivity may initially decrease due to physical disturbance).

There is also evidence of an increased prawn catch following some cyclonic event due to good environmental conditions for prawns, including increased turbidity and subsequent larval/juvenile survival (Kangas *et al.*, 2007). This indicates a relationship between overland flows and increased productivity in the Gulf.

It is not suggested that overland flow is the only vector of nutrient cycling, but it is certainly likely that it is a significant one and while a high degree of uncertainty remains with respect to the impact of the proposal on the hydrology of the area with respect to quantity and location this Department cannot support the development.

Uncertainty over hydrological model used in ERMP

In a related point, our submission on the original proposal concern was expressed on the hydrological model used. Specifically, there is uncertainty over the hydrological linkage between the salt ponds and the Gulf. Work undertaken by V & C Semeniuk and summarised in Semeniuk (2007) raises uncertainty over the claim made that there is no hydrological link between the salt ponds and the Gulf. Considering the possible impact that long term subsurface discharge of highly saline groundwater could have on the near shore Gulf environment, any uncertainty related to this issue should be thoroughly investigated and be subject to independent review by hydrological experts.

The hydrological linkages have not been re-addressed in the revised proposal and therefore the uncertainty in the claims made in the original proposal remains.

Other Potential Impacts of the Proposal

The following list of concerns can be considered secondary to those already discussed but need mentioning nonetheless.

Bitterns disposal

A significant risk to Exmouth Gulf is the future possibility of bitterns discharge into coastal creeks and waters. The chemical composition of bitterns is particularly toxic to invertebrate species such as prawns and pearl oysters that are the mainstay of the commercial fisheries in the region. Bitterns discharge can result in acute short-term localised damage and the Department of Fisheries would not support the release of any bitterns to the Gulf.

It is acknowledged that the proponent has stated that bitterns disposal will not occur and the Department supports this approach. This is a point that cannot be compromised upon and consideration and management of risk of seepage into the groundwater system or the effect of cyclonic tide surge and associated flooding rainfall needs to be directly addressed.

Introduction of non-indigenous marine species (NIMS) and diseases

In our submission on the original proposal, a thorough description of the risks associated with the introduction of non-indigenous marine species and disease was provided. In providing that assessment of risk it was strongly recommended that the proponent should develop a more thorough NIMS and disease management strategy, including a risk assessment of all vessels to be used in the proposed operations and appropriate mitigation and management commitments.

The proponent has stated that the reduced capacity of the salt field in the new proposal will translate to mean less shipping. It follows that the associated risks are somewhat reduced. However, the revised proposal has not adopted the Department's recommended approach which remains relevant.

Entrainment of prawn larvae at pump stations

This issue (well described in the original submission) has been partially addressed by the reduced scale of the revised proposal, as only one creek will be used to pump water. The revised proposal notes that the volume of water required will be reduced but the specific details are not provided. If the proposal proceeds, a condition should be imposed that requires the proponent to monitor entrainment levels at the pump stations and, if found to be significant, would lead to the modification of pumping activities to decrease levels of entrainment. This may be of particular relevance during prawn spawning periods.

Impact of pump stations on near shore salinity

The impact that pumping significant volumes of seawater will have on salinity levels of the near shore marine environment of the gulf is not adequately assessed. It is likely that the high salinity levels of the near shore waters in the gulf are significant for the marine flora and fauna of this area, particularly with regard to the prawn nursery found in these waters. Any change to the salinity levels caused by the pumping of seawater to crystalliser ponds may have flow on impacts for the marine environment.

Start up pumping

In discussions between the Department of Fisheries and the proponent it was mentioned there would be a sustained six-week pumping period at the start of the project. Considering the volume of water that is likely to be pumped during this start up phase, and the impact this may have on entrainment of prawn larvae and near shore salinity levels, this issue should be more thoroughly considered.

Details of the proposed start up pumping requirements and an analysis of possible impacts from this pumping should be considered further. Start up pumping must avoid prawn spawning periods.

Dredging Operations

The additional habitat mapping conducted and summarised in the revised proposal has resulted in a re-alignment of the barge harbour dredging operation to minimise impacts on reef and algal communities. The barge harbour dredging and excavation is larger than in the original proposal in order to provide the material required for levee banks and therefore there may be additional short-term impacts that will need to be managed appropriately as will any ongoing dredging operations and maintenance.

Shipping movements and salt loading

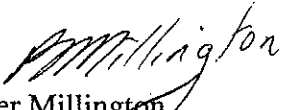
Due to the lower production capacity of the salt fields in the revised proposal, the shipping movements are less therefore reducing the level of risk. However, should this proposal move ahead, it would be vital for local trawl fishermen to be consulted with regard to mooring locations and the possible impact this may have on trawling activities.

Interactions with other users

The proposed site borders the main pearling farm leases in Exmouth Gulf and is adjacent to the pearl oyster fishing grounds and the eastern waters of Exmouth Gulf are an important area for recreational fishing. Should the proposal be approved, communication and consultation with these users would be essential if the proponent is to minimise impacts and promote understanding and harmony.

Should you wish to seek clarification on any of the matters raised in this submission, please do not hesitate to contact Mr Rob Tregonning, Senior Policy Officer Environmental Assessment on 9482 7375 or email: Rob.Tregonning@fish.wa.gov.au

Yours sincerely


Peter Millington
CHIEF EXECUTIVE OFFICER

31 March 2008

Appendix 1

References

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