WATER CORPORATION: SOUTHERN SEAWATER DESALINATION PLANT REVIEW OF REPORTS

1. Characterising the marine benthic habitats of the proposed Binningup desalination plant Site: Interpretation from underwater towed video: UWA. DEC-07

2. Characterising the marine benthic habitats of the proposed Binningup desalination plant Site: MAP INTERPOLATION OF SEAGRASS AND BENTHIC BIOTA DISTRIBUTION: UWA. JAN-08

1. INTRODUCTION

The Water Corporation of Western Australia (Water Corporation) is planning to construct the Southern Seawater Desalination Plant (SSDP) near Binningup, WA. Collection of background information for the design, construction and management of the plant commenced during 2007 and continues in support of the environmental approval process.

Initial surveys of marine habitats were undertaken and reported on in November 2007. The interpretation of the images obtained from this survey was severely compromised by a lack of water clarity. Further surveys were subsequently undertaken in December 2007 to improve the base of information for the development of habitat maps. In addition the December surveys concentrated on the area close to the proposed alignment of the intake and outlet structures. The results of the December surveys have been reported on in two separate reports, the first providing an interpretation of the video images that were collected, and the second, developing habitat maps based on the interpretive video information.

DA Lord and Ass Pty Ltd (DAL) were requested to review and provide comments on these reports.

2. GENERAL COMMENTS

The underwater surveys undertaken by UWA consist of towing an underwater video camera close to the sea floor and collecting images of the seafloor for subsequent interpretation. This is now a well used, reliable and suitable method for developing habitat maps of an area and identifying important biological features. UWA is probably the leading group in WA for this type of survey.

The reports describing these surveys should provide more information on the survey itself. The report should contain at least:

- An accurate chart of the area showing the individual survey lines, and
- A description of the procedures used in collecting the information such as dates of survey, previous and current sea and weather conditions, nature and method of position fixing details on camera towing such as towing speed and typical height above seafloor, and other ancillary information relevant to the survey.

Once again, this survey has been partially compromised by the quality of the imagery obtained. Table 4 of the first report shows that only 5% of the images were of "OK" quality, 33% were of "POOR" quality and the remaining 62% were of "VERY POOR" or "USELESS". It would seem to be unfortunate that the survey was undertaken in conditions far from ideal and that water clarity was not a more important issue in deciding when to undertake the survey.

This reviewer endeavoured to determine the sea and wind conditions prior to and during the survey to better understand the reason for the water conditions experienced. The absence of detail in the report on when the surveys were conducted precluded this investigation. It would be appreciated if the authors of the report were asked to consider the reasons for the poor water quality when they finalise their report

This survey went closer to shore but still did not completely cover the "gap" between the high water mark and the depth at which the survey commenced (need details in description of survey). It is recognised that this "missing" area will likely be devoid of any significant biological features but it would be expected that this will need to be demonstrated .

How will the proponent address the description of this area?

The important conclusions from this survey include:

- Sand habitat comprise the vast majority (85.5%) of the area surveyed
- The dominant benthic flora and fauna included algae and invertebrates (mainly sponges)
- Where seagrasses occur, the dominant species is *Posidonia angustifolia*

The interpreted information from the video surveys was then used to construct habitat maps, which are shown in the second report. The habitat maps are useful in that they show general trends in the distribution of habitats and particularly seagrasses. The procedures that have been used to construct these habitat maps are appropriate and employ the most effective methods for this purpose that are available. represent the best dev

However the limitations to the interpretation of the habitat maps include;

- Limited detail provided on maps, especially scale and coordinates, depths (e.g we assume blue line is 10m isobath)
- Limited information on shallow areas (in Figure 2 a large but very important area is declared as "can't discern"). We assume that this is because of poor image quality from the video surveys.
  This absence of more specific information in these shallow areas would appear to be a serious deficiency.

It would appear that the quality (and therefore usefulness and reliability) have been compromised by poor water clarity during video surveys. There still does not appear to be enough information to unequivocally draw important conclusions about the ambient environment and the possible effects of construction and operation of the SSDP. This is unfortunate. Logic would indicate that there is a very low probability of significant biological features in the shallower waters between the shore and the commencement of the habitat map, but this will require demonstration.