

PILOTAGE ADVISORY COMMITTEE

PAC Paper 1/98

25 February 1998

Artificial Reef Proposals for Sha Chau and Lung Kwu Chau Marine Park

Purpose

This paper outlines the Artificial Reef (AR) proposals for the Sha Chau and Lung Kwu Chau Marine Park made by the Agriculture and Fisheries Department (AFD). Members are invited to advise and comment on the deployment proposal.

Objectives of Pilot Artificial Reef Deployment

2. The principal objectives of the AR deployment proposals are as follows:-
 - (i) to evaluate the effectiveness of ARs in providing enhanced feeding opportunities for dolphins;
 - (ii) to assess the effectiveness of selected of AR types at enhancing fisheries resources;
 - (iii) to determine the stability, settling characteristics of ARs at the chosen locations;
 - (iv) to make a preliminary assessment of the effectiveness of ARs at preventing bottom trawling at Sha Chau & Lung Kwu Chau;

Benefits of Pilot AR Deployment to Chinese White Dolphins

3. Inshore areas such as Sha Chau and Lung Kwu Chau are important fish nursery areas and feeding areas for dolphins. There is a need to demonstrate the ability of AR to improve habitat, enhance fisheries resources and provide feeding opportunities for dolphins. The monitoring and evaluation of ARs deployed at Sha Chau and Lung Kwu

Chau will help provide the necessary information to assess their effectiveness and convince fishers and green groups of their benefits prior to any AR deployment at this location.

AR Deployment

4. Much of the area in the Sha Chau and Lung Kwu Chau Marine Park is shallow with depths of less than 7 metres and a substrate comprised of soft mud. However, a small number of deeper sites exist and areas of firm sandy substrate also occur. It would be prudent to deploy pilot ARs at Sha Chau and Lung Kwu Chau at suitable depths on firm substrates. Siting ARs at shallow depths and in the main navigation channel between the islands and the Urmston Road deep water area should be avoided. Two deployment scenarios are possible (i) deployment of low profile ARs, with a height of 1.5 m high or less, in areas deeper than 6.5m Chart Datum (CD) or (ii) deployment of large emergent ARs in areas shallower than 6.5 m, at least 2 m of emergent AR should be clearly visible at all stages of the tide and this style of ARs are navigation hazards and require the marking of navigation buoys.

5. The preferred AR deployment scenario is option (i) with ARs to be located in the area marked on the attached map (Figure 1). The site, about 12 ha in area is predominantly greater than 6.5 m³ depth. Marker buoys will not be required provided there is at least 5 metres clearance over the ARs. It is proposed that approximately 1,200 m³ of steel low profile reinforced concrete AR units, occupying an area of approximately 0.8 ha, will be deployed. The ARs will be designed with a high void space and large base to reduce sinkage to a minimum. The ARs will be designed to ensure that the structures do not present any physical threat to dolphins.

Foreshore and Sea-bed (Reclamations) Ordinance, Chapter 127.

6. The proposal to construct ARs at Sha Chau and Lung Kwu Chau will be gazetted under the Foreshore and Seabed (Reclamations) Ordinance (FSO). The AR units will be deployed within an area of approximately 12 ha as shown in the attached figure 1.

Deployment Programme

7. The deployment exercise will be carried out by AFD and the programme schedule is as follows:-

	1997	1998				1999
Consultation	●	●				
FSO gazettal			●	●		
Contract tendering				●		
AR deployment					●	

Recommendations

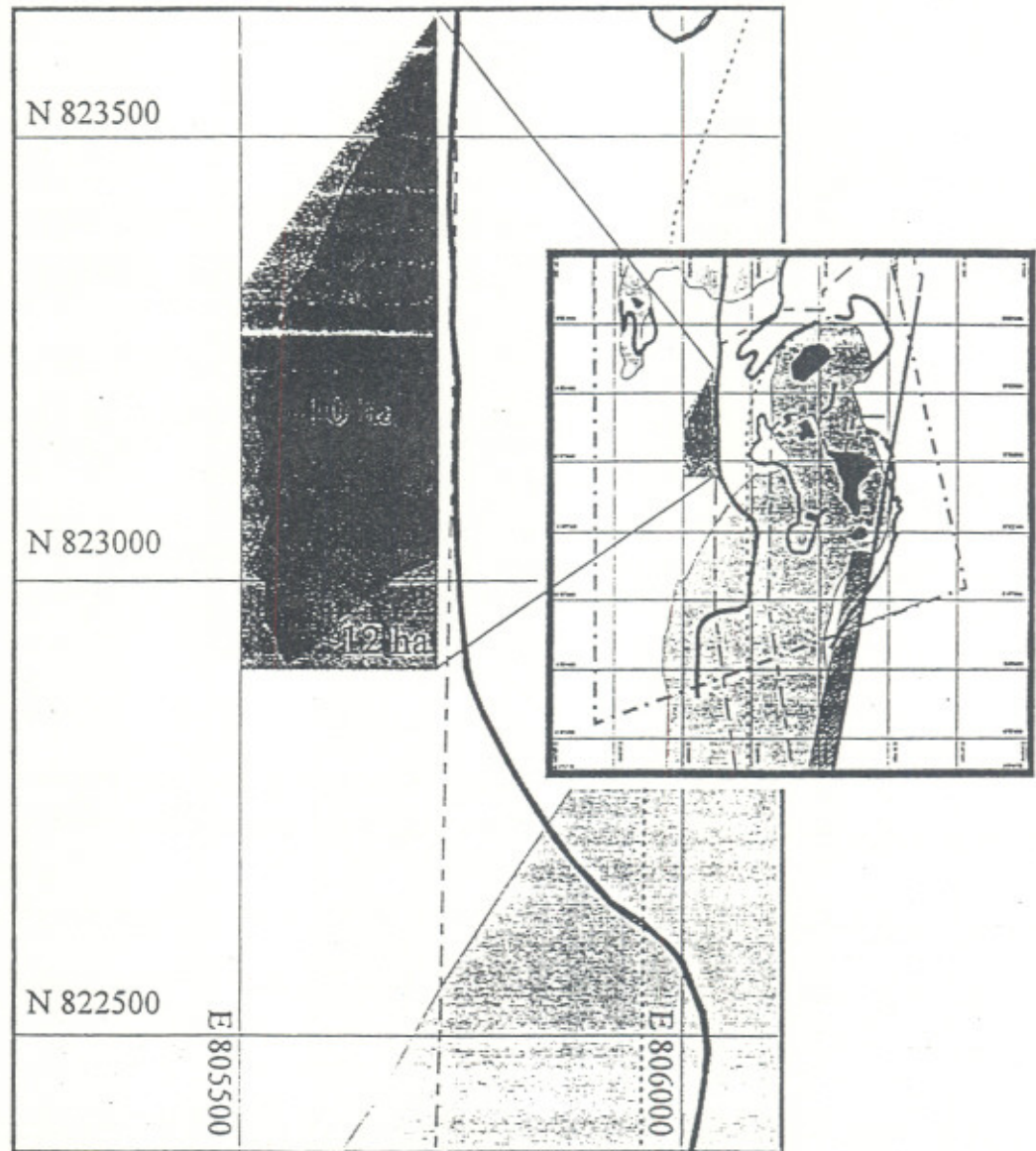
8. It is recommended that low profile steel reinforced concrete ARs are deployed in the locality detailed in the attached figure 1 within the Sha Chau and Lung Kwu Chau Marine Park.

Presentation

9. This paper will be presented by Mr. K.D.P. Wilson of Agriculture and Fisheries Department and accompanied by Mr L K Szeto, a Senior Marine Officer of Marine Department. Members are requested to provide their views and comments.

Figure 1 :

Sha Chau and Lung Kwu Chau
Marine Park (southern area)



Proposed Artificial Reef
Deployment
Depth over 6.5m
Depth over 5m
Depth under 5m

— Sea Bed with High Reflectivity
..... Oil Pipe
- - - Western limit of Gazetted AFRF area