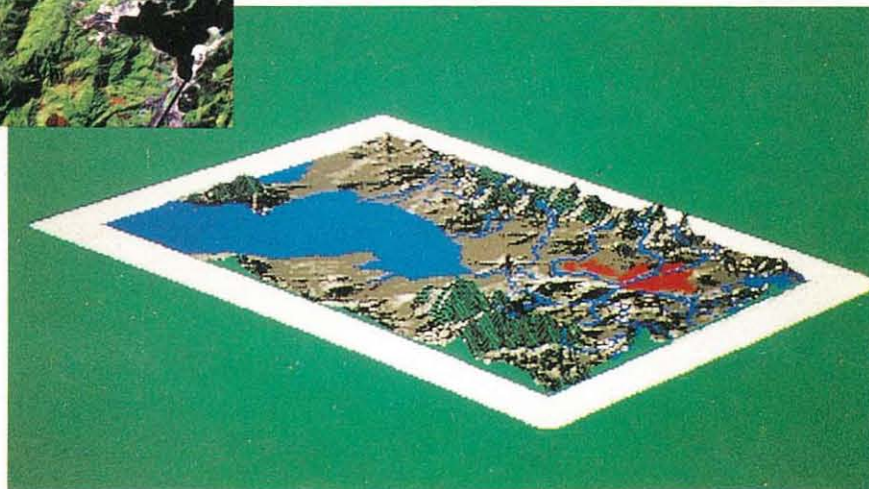


**SHENZHEN RIVER REGULATION OFFICE OF MUNICIPAL GOVERNMENT**

**ENVIRONMENTAL IMPACT ASSESSMENT STUDY**

**ON SHENZHEN RIVER REGULATION PROJECT**

ADDENDUM TO STAGE I EIA



**LEAD CONSULTANT**



**PEKING UNIVERSITY**

SUB-CONSULTANTS (HONG KONG)



AXIS ENVIRONMENTAL CONSULTANTS LTD.

CONSULTANTS IN ENVIRONMENTAL SCIENCES (ASIA) LTD.

EIA/07.6/94  
23/2660-472

---

**ADDENDUM TO STAGE I EIA**

*AUGUST 1994*

---

# FINAL EIA FOR STAGE I WORK - ADDENDUM NO. 1

## ADDITIONAL INFORMATION

<u>Section</u>	<u>Page</u>	<u>Additions</u>
4.2	4-1	<p>As stated in our report, NSR concentrations are at distances of 140 to 400 m from the construction site boundary. The limits on total source SWL shown in Table 6.4 permit the concurrent use of several pieces of PME on each task. In our report, we provided examples of permitted equipment combinations for embankment construction and revetment/slope protection works. Further permitted equipment combinations for other construction activities are:</p> <ul style="list-style-type: none"><li>• <i>Dredging</i>: 3 suction dredgers, 3 excavators and 6 petrol water pumps would produce a total SWL of about 119 dB(A), which would not exceed a 75 dB(A) daytime noise limit at villages on the Hong Kong side of the Shenzhen River.</li><li>• <i>Construction of Drainage Culverts</i>: 6 vibratory pokers and 2 each of concrete mixer trucks, lorries and concrete pumps would produce a total SWL of about 123 dB(A), which would not exceed a 75 dB(A) daytime noise limit at villages on the Hong Kong side.</li><li>• <i>Construction Haul Road</i>: 3 bulldozers, 6 dumptrucks and 3 road rollers generate a combined SWL of 121 dB(A), which would not exceed a 75 dB(A) daytime noise limit at villages on the Hong Kong side.</li></ul>

Excavations at Seung Ma Lei Yue Hill are expected to require blasting and the use of a substantial fleet of 20- and 24-tonne dumptrucks. The noise and vibration impacts of blasting have not been assessed, since no information is available concerning blasting techniques. In addition, the impulsive and intermittent nature of blasting noise is significantly different from the more steady nature of PME noise. Neglecting the noise from blasting, a fleet of 18 dumptrucks, 12 bulldozers and 12 excavators would generate a combined SWL of about 128 dB(A). At about 400m, representing the approximate distance between Seung Ma Lei Yue Hill and Lo Wu, this would produce an acceptable facade noise level.

These preliminary assessments are based on the assumption that PME is located within the construction site boundary shown in Drg SZR-01 (Stage I Works Location Plan). They also assume that NSRs are located in the main village settlements. Other assumptions on which the assessment is based, including assumed SWLs for individual pieces of equipment, are contained in the report.

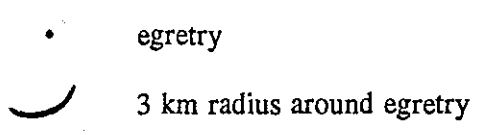
<u>Section</u>	<u>Page</u>	<u>Additions</u>
8.5.3	8-13	Para 1, line 3, " <u>....contaminated sediments and tight future land-use conditions should be imposed.</u> "
9.1.1	9-1	China already has entered into a number of bilateral agreements to protect migratory birds. These include agreements with both Japan and Australia. Birds passing through the Deep Bay area are known to migrate to/from both of these countries (see, for example: Melville, D.S. and Galsworthy, A.C. 1993. Report on bird ringing in Hong Kong in 1992. Hong Kong Bird Report 1992: 81-99) and thus these agreements are relevant in the context of this study. A list of birds occurring in the Deep Bay area protected under bilateral migratory bird agreements between China and Australia/Japan is given in Attachment 1.
9.6	9-18	Monitoring details are currently being revised with respect to future management of the Lok Ma Chau bend.
Appendix 9.3	Appe 9-6	Appendix 9.3 includes extracts from the relevant statutes in the PRC. It should be noted that in part 4, 'The National Protection List of Important Wild Animals', the list of species given is incomplete. Furthermore, we are unaware of any documented records from Deep Bay of the following species listed:

Chinese Merganser	<i>Mergus squamatus</i>
Golden Eagle	<i>Aquila chrysaetos</i>
White-tailed Eagle	<i>Haliaeetus albicilla</i>
Slavonian Grebe	<i>Podiceps auratus</i>
Painted Stork	<i>Ibis leucocephalus</i>
White-fronted Goose	<i>Anser albifrons</i>

None of these is known from Hong Kong (Chalmers, M.L. 1986. *Annotated Checklist of the Birds of Hong Kong*. Hong Kong Bird Watching Society, Hong Kong; Hong Kong Bird Watching Society unpublished records). Also none was recorded at Fu Tian by Deng Juxie and Guan Guanfen (1986) Preliminary study of the birds in the Futien mangrove and bird reserve, pp. 11-17 in: *Compilation of technological information on Neilingting Island (Futien) Nature Reserve, Shenzhen, Guangdong Province*. Compiled by Management Office of Neilingting Island (Futien) Nature Reserve, Shenzhen, Guangdong Province, September 1986. (in Chinese).

A number of other species included in the PRC protection list have been recorded from the Deep Bay area and these are listed in Attachment 2.



<u>Section</u>	<u>Page</u>	<u>Additions</u>
Appendix 9.4	Appe 9-10	Table 2. The following numbers should be shown for locality 5, Ka Po Tsuen: Little Egret 5 Cattle Egret 20 Chinese Pond Heron 2
	Appe 9-15	Source of data for Figures 1, 2 and 3 is 'Courtesy of the Hong Kong bird watching Society'.
	Appe 9-17	Source of data for Figure 4 is 'after Young (1994)'.
	Appe 9-18	Key for Figure 5 is as follows:  
	Appe 9-20	Source of data for Figure 8 is 'after Sutherland and Parker (1985)'
Appendix 9.6	Appe 9-28	The conversion from paddy to fish pond in the Lok Ma Chau bend area had begun by late 1979. By 1981, 2/3 of the area was fish pond and adjacent areas of paddy were similarly being converted to fish pond. By 1983 virtually all of the Lok Ma Chau bend and adjacent areas in Shenzhen were fish ponds (Hong Kong air photos ref. 28440R, 30 November 1979; 38074R/38053R, 19 May 1981, 4476, 10 October 1982; 51440R, 30 November 1983). During this same period the Shenzhen government was reported to be promoting the maximisation of fishery resources as a result of which "a vigorous programme of dike construction and pond excavation was being undertaken" (Wong, K.Y. (ed.).1982. Shenzhen Special Economic Zone. China's experiment in modernization. Hong Kong Geographical Association, Hong Kong). The low diversity of wetland plant species is thus expected.  As reported previously, the area of fish ponds in the Lok Ma Chau bend is used by waterfowl, notably egrets and herons including birds apparently breeding in the nearby colonies at Mai Po Village, Mai Po gei wai, Lok Ma Chau and Ho Sheung Heung.
	Appe 9-39	Missing maps included in Attachment 3.
Appendix 9.8		

<u>Section</u>	<u>Page</u>	<u>Additions</u>												
Appendix 9.9	Appe 9-43	Section 3.1: Missing Table 1 included in Attachment 4.												
	Appe 9-44	Section 6: Attempts are made in the present exclusion manipulations to reduce this problems. Cages are re-sampled after only two weeks to reduce the amount of other, confounding predators taking refuge in the cages masking the predation effects of the birds. Still, burrow densities appear elevated inside the cages after two weeks. Cage dimensions are 5 metres on a side to tend to reduce the numbers of invertebrate prey emigrating, and cages are sampled close to the centre. Watching bird behaviour around the cages indicates that birds are deterred from the cages: foraging individuals will turn around and walk the other way when they encounter a cage. Nevertheless, Black-headed Gulls <i>Larus ridibundus</i> occasionally have been seen fluttering down in flight to take inside two cages, and wader-sized bird droppings have been seen inside some cages. Still, the overall predation pressure is much greater outside the cages than within, and the experimental design is statistically powerful enough to detect an effect. the problem with birds preying within the cages only means that the birds are eating more than we can measure. Biomass comparisons within and outside cages will detect any bias, owing to differential juvenile settlement, in abundance within versus outside cages. The biomass analysis is incomplete.												
		Missing references included in Attachment 5.												
Appendix 9.11	Appe 9-54	Missing figures included in Attachment 6.												
Appendix 9.12	Appe 9-55	Table 2:  Missing data for 1993 and 1994 as follows:												
		<table border="0" style="margin-left: 40px;"> <thead> <tr> <th></th> <th>Ma Tso Lung</th> <th>Deep Bay</th> <th>%</th> </tr> </thead> <tbody> <tr> <td>1993</td> <td>1953</td> <td>49153</td> <td>4.0</td> </tr> <tr> <td>1994</td> <td>1046</td> <td>57493</td> <td>1.8</td> </tr> </tbody> </table>		Ma Tso Lung	Deep Bay	%	1993	1953	49153	4.0	1994	1046	57493	1.8
	Ma Tso Lung	Deep Bay	%											
1993	1953	49153	4.0											
1994	1046	57493	1.8											
	Appe 9-56	Table 3:  No. 1 = 5 February 1994      T: Teal No. 2 = 21 February 1994    K: Kestrel No. 3 = 4 March 1994        SE: Serpent Eagle No. 4 = 21 March 1994       P: Peregrine No. 5 = 20 April 1994       CG: Crested Goshawk No. 6 = 30 April 1994       BWS: Black-winged Stilt												
Chapter 9 Ecology		Missing references relating to ecology should be added as included in Attachment 7.												

FINAL EIA FOR STAGE I WORK - ADDENDUM NO. 2

REVISIONS TO THE EXISTING TEXT

<u>Section</u>	<u>Page</u>	<u>Revision</u>
S2.2 Para 2	S-1	Line 2: replace "relocation of the border fence " with "erection of temporary site fence"
Appendix 9.5	Appe 9-23	Section 2: <i>Vendronereis</i> should be spelled <i>Dendronereis</i> throughout.
	Appe 9-24	Section 3: Ruddy Shelduck <i>Tadorna ferruginea</i> should be Shelduck <i>Tadorna tadorna</i> . Goosander <i>Mergus merganser</i> should be Red-breasted Merganser <i>Mergus serrator</i> . Crimson-legged Crake <i>Amaurornis akool</i> should be White-breasted Waterhen <i>Amaurornis phoenicurus</i> .
Appendix 9.7	Appe 9-31	Line 4: " ?pi?" should read $\pi$
	Appe 9-32	Table 1, Line 3:  Text amended as "...Biomass is calculated from standard allometric equations (Anderson unpublished data; Lee 1992) and is represented as kg dry mass $\cdot$ ha <sup>-1</sup> ."
	Appe 9-35	Figure 1, titles and legends:  T1 = transect 1      T2 = transect 2 T3 = transect 3      T4 = transect 4 Y1 = transect (Young, unpublished) D1 = transect (Duke, unpublished) P1,2 and 3 = Ponds 1,2 and 3
	Appe 9-35	Figure 2:  Changes in area of Mangal A, Mangal B and Marsh in the Deep Bay area between 1903 and 1993.
	Appe 9-37	Figure 3:  Numerical species composition in Tansects 1,2,3 and 4 Plain bars = <i>Kandelia candel</i> Filled bars = <i>Aegiceras corniculatum</i> Light hatched bars = <i>Acanthus ilicifolius</i>

<u>Section</u>	<u>Page</u>	<u>Revision</u>
	Appe 9-38	Figure 5:  Mean Stand Diameter (cm <sup>2</sup> .quadrat <sup>-1</sup> ) on the fore transects
	Appe 9-38	Figure 6:  Basal area (cm <sup>2</sup> .quadrat) on the four transects
Appendix 9.9	Appe 9-42	Section 2.2, para 3, Line 1:  Text amended as "...As cages are erected, ocores of mud are collected to evaluate the benthic assemblage present at the start of the manipulation. <u>After two weeks, three replicate cores are collected from within each cage to estimate the abundance and biomass of the protected invertebrates, and 12 cores are collected from the surrounding mudflat (experimental control) to estimate invertebrate abundance and biomass affected by predation.</u> The cores collected....."
	Appe 9-43	Section 3.1, para 3:  <i>Leptochaetal</i> should be spelled <i>leptocaeta</i> .
	Appe 9-43	Section 3.1, para 4, line 1:  Figure 3 should be Figure 2
	Appe 9-43	Section 3.2, para 1:  Text amended as "Bird enclosure work in February 1994 was successful in detecting a difference in the <u>combined</u> abundance of the bivalves coded 'scon' ( <i>Sinonovacula constricta</i> ) and 'tcfi' ( <i>Theora cf. iridescens</i> )."
	Appe 9-43	Section 4, line 2:  Text to be amended as "...The mudflats of Deep Bay have by far the highest <u>polychaete worms of any shore listed. Nereidae polychaetes comprise the bulk of the Deep Bay polychaetes, and this family....</u> "
	Appe 9-44	Section 6, para 3, line 5:  Text amended as "...the mudflat. <u>Consumption</u> estimates are being refined and are not presented here...."



<u>Section</u>	<u>Page</u>	<u>Revision</u>
Appendix 9.10	Appe 9-47	Section 1, line 2:  Text to be amended as "....of Deep Bay for shorebirds. <u>Numbers of shorebirds using Deep Bay in spring counts have been conducted at a minimum frequency of once every three.....</u> "
	Appe 9-48	Section 3:  4) Lesser Sandplover <i>Charadrius fulva</i> = <i>Charadrius mongolus</i> 6) Great Knot, Line 8: Replace "verdee" with "Vendee".
	Appe 9-47	Table 1:  <i>Suatarola</i> replace with <i>squatarola</i> Oriental Plover replace with Oriental Pratincole Black-tailed Godwil replace with Black-tailed Godwit Nordmann Greenshank replace with Nordmann's Greenshank
	Appe 9-50 to Appe 9-53	Figure 1:  (3) "Marsh Sand Plover" replace with "Marsh Sandpiper" (11) "Great Knot" replace with "Red-necked Stint" (12) "Red-necked Stint" replace with "Great Knot" (13) "Curlew Sandpiper" replace with "Green shank" (14) "Green Shank" replace with "Curlew Sandpiper"
Appendix 9.11	Appe 9-54	Section 3.2, para 3, line 2:  "Peregeinus" replace with "peregrinus"

**ATTACHMENT 1**

ATTACHMENT 1

BIRDS OCCURRING IN THE DEEP BAY AREA PROTECTED UNDER BILATERAL  
MIGRATORY BIRD AGREEMENTS BETWEEN CHINA AND AUSTRALIA/JAPAN

Black-necked Grebe	<i>Podiceps nigricollis</i>	J
Great Crested Grebe	<i>Podiceps cristatus</i>	J
Lesser Frigatebird	<i>Fregata ariel</i>	A
Bittern	<i>Botaurus stellaris</i>	J
Cattle Egret	<i>Bubulcus ibis</i>	AJ
Reef Egret	<i>Egretta sacra</i>	A
Great Egret	<i>Egretta alba</i>	AJ
Yellow Bittern	<i>Ixobrychus sinensis</i>	AJ
Schrenck's Bittern	<i>Ixobrychus eurhythmus</i>	J
Little Green Heron	<i>Butorides striatus</i>	J
Intermediate Egret	<i>Egretta intermedia</i>	J
Night Heron	<i>Nycticorax nycticorax</i>	J
Purple Heron	<i>Ardea purpurea</i>	J
Black Stork	<i>Ciconia nigra</i>	J
Glossy Ibis	<i>Plegadis falcinellus</i>	A
White Spoonbill	<i>Platalea leucordia</i>	J
Black-faced Spoonbill	<i>Platalea minor</i>	J
Ruddy Shelduck	<i>Tadorna ferruginea</i>	J
Shelduck	<i>Tadorna tadorna</i>	J
Pintail	<i>Anas acuta</i>	J
Teal	<i>Anas crecca</i>	J
Baikal Teal	<i>Anas formosa</i>	J
Falcated Teal	<i>Anas falcata</i>	J
Mallard	<i>Anas platyrhynchos</i>	J
Gadwall	<i>Anas strepera</i>	J
Wigeon	<i>Anas penelope</i>	J
Garganey	<i>Anas querquedula</i>	AJ
Shoveler	<i>Anas clypeata</i>	AJ
Common Pochard	<i>Aythya ferina</i>	J
Baer's Pochard	<i>Aythya baeri</i>	J
Tufted Duck	<i>Aythya fuligula</i>	J
Scaup	<i>Aythya marila</i>	J
Red-breasted Merganser	<i>Mergus serrator</i>	J
White-bellied Sea Eagle	<i>Haliaeetus leucogaster</i>	A
Marsh Harrier	<i>Circus aeruginosus</i>	J
Hobby	<i>Falco subbuteo</i>	J
Japanese Quail	<i>Coturnix coturnix</i>	J
Watercock	<i>Gallicrex cinerea</i>	J
Moorhen	<i>Gallinula chloropus</i>	J
Pheasant-tailed Jacana	<i>Hydrophasianus chirurgus</i>	A
Painted Snipe	<i>Rostratula benghalensis</i>	AJ
Little Ringed Plover	<i>Charadrius dubius</i>	A
Ringed Plover	<i>Charadrius hiaticula</i>	A
Lesser Sand Plover	<i>Charadrius mongolus</i>	AJ
Greater Sand Plover	<i>Charadrius leschenaultii</i>	AJ
Oriental Plover	<i>Charadrius veredus</i>	A
Lapwing	<i>Vanellus vanellus</i>	J
Grey Plover	<i>Pluvialis squatarola</i>	A

Asiatic Golden Plover	<i>Pluvialis fulva</i>	AJ
Little Whimbrel	<i>Numenius (borealis) minutus</i>	A
Whimbrel	<i>Numenius phaeopus</i>	J
Curlew	<i>Numenius arquata</i>	AJ
Eastern Curlew	<i>Numenius madagascariensis</i>	AJ
Black-tailed Godwit	<i>Limosa limosa</i>	AJ
Bar-tailed Godwit	<i>Limosa lapponica</i>	AJ
Spotted Redshank	<i>Tringa erythropus</i>	J
Redshank	<i>Tringa totanus</i>	AJ
Marsh Sandpiper	<i>Tringa stagnatilis</i>	AJ
Greenshank	<i>Tringa nebularia</i>	AJ
Green Sandpiper	<i>Tringa ochropus</i>	J
Wood Sandpiper	<i>Tringa glareola</i>	AJ
Nordmann's Greenshank	<i>Tringa guttifer</i>	J
Common Sandpiper	<i>Tringa hypoleucos</i>	AJ
Grey-rumped Sandpiper	<i>Tringa brevipes</i>	AJ
Terek Sandpiper	<i>Xenus cinerea</i>	AJ
Turnstone	<i>Arenaria interpres</i>	AJ
Swinhoe's Snipe	<i>Gallinago megala</i>	AJ
Pintail Snipe	<i>Gallinago stenura</i>	A
Common Snipe	<i>Gallinago gallinago</i>	J
Woodcock	<i>Scolopax rusticola</i>	J
Asiatic Dowitcher	<i>Limnodromus semipalmatus</i>	A
Red Knot	<i>Calidris canutus</i>	AJ
Great Knot	<i>Calidris tenuirostris</i>	AJ
Red-necked Stint	<i>Calidris ruficollis</i>	AJ
Long-toed Stint	<i>Calidris subminata</i>	AJ
Temminck's Stint	<i>Calidris temminckii</i>	J
Sharp-tailed Sandpiper	<i>Calidris acuminata</i>	AJ
Dunlin	<i>Calidris alpina</i>	AJ
Curlew Sandpiper	<i>Calidris ferrugina</i>	AJ
Sanderling	<i>Calidris alba</i>	AJ
Spoon-billed Sandpiper	<i>Eurynorynchus pygmeus</i>	J
Broad-billed Sandpiper	<i>Limicola falcinellus</i>	AJ
Ruff	<i>Philomachus pugnax</i>	AJ
Black-winged Stilt	<i>Himantopus himantopus</i>	J
Avocet	<i>Recurvirostra avosetta</i>	J
Red-necked Phalarope	<i>Phalaropus lobatus</i>	AJ
Grey Phalarope	<i>Phalaropus fulicarius</i>	AJ
Oriental Pratincole	<i>Glareola maldivarum</i>	AJ
Common Gull	<i>Larus canus</i>	J
Herring Gull	<i>Larus argentatus</i>	J
Slaty-backed Gull	<i>Larus schistisagus</i>	J
Black-headed Gull	<i>Larus ridibundus</i>	J
Kittiwake	<i>Rissa tridactyla</i>	J
Common Tern	<i>Sterna hirundo</i>	AJ
Little Tern	<i>Sterna albifrons</i>	AJ
Ancient Auk	<i>Synthliboramphus antiquus</i>	J
Oriental Cuckoo	<i>Cuculus saturatus</i>	AJ
Short-eared Owl	<i>Asio flammeus</i>	J
White-throated Needletail	<i>Hirundapus caudacutus</i>	AJ
Pacific Swift	<i>Apus pacificus</i>	AJ
Little Swift	<i>Apus affinis</i>	J

Sand Martin	<i>Riparia riparia</i>	J
Swallow	<i>Hirundo rustica</i>	AJ
Red-rumped Swallow	<i>Hirundo daurica</i>	AJ
Asian House Martin	<i>Delichon dasypus</i>	J
Forest Wagtail	<i>Dendronanthus indica</i>	J
Yellow Wagtail	<i>Motacilla flava</i>	AJ
Citrine Wagtail	<i>Motacilla citreola</i>	AJ
White Wagtail	<i>Motacilla alba</i>	AJ
Richard's Pipit	<i>Anthus novaeseelandiae</i>	J
Olive-backed Pipit	<i>Anthus hodgsoni</i>	J
Pechora Pipit	<i>Anthus gustavi</i>	J
Red-throated Pipit	<i>Anthus cervinus</i>	J
Water Pipit	<i>Anthus spinoletta</i>	J
Ashy Minivet	<i>Pericrocotus divaricatus</i>	J
Tiger Shrike	<i>Lanius tigrinus</i>	J
Brown Shrike	<i>Lanius cristatus</i>	J
Black-naped Oriole	<i>Oriolus chinensis</i>	J
Chestnut-cheeked Starling	<i>Sturnus phillipensisq</i>	J
Red-tailed Robin	<i>Lucinia sibilans</i>	J
Siberian Rubythroat	<i>Lucinia calliope</i>	J
Siberian Blue Robin	<i>Lucinia cyane</i>	J
Red-flanked Bluetail	<i>Tarsiger cyanurus</i>	J
Daurian Redstart	<i>Pheonicurus aureus</i>	J
Stonechat	<i>Saxicola torquata</i>	J
Siberian Thrush	<i>Zoothera sibirica</i>	J
White's Thrush	<i>Zoothera dauma</i>	J
Grey-backed Thrush	<i>Turdus hortulorum</i>	J
Grey Thrush	<i>Turdus cardis</i>	J
Pale Thrush	<i>Turdus pallidus</i>	J
Eye-browed Thrush	<i>Turdus obscurus</i>	J
Dusky Thrush	<i>Turdus naumanni</i>	J
Short-tailed Bush Warbler	<i>Cettia squameiceps</i>	J
Middendorff's Grasshopper Warbler	<i>Locustella ochotensis</i>	J
Lanceolated Warbler	<i>Locustella lanceolata</i>	J
Great Reed Warbler	<i>Acrocephalus arundinaceus</i>	AJ
Black-browed Reed Warbler	<i>Acrocephalus bistrigiceps</i>	J
Yellow-browed Warbler	<i>Phylloscopus inornatus</i>	J
Arctic Warbler	<i>Phylloscopus borealis</i>	AJ
Pale-legged Leaf Warbler	<i>Phylloscopus tenellipes</i>	J
Eastern Crowned Warbler	<i>Phylloscopus coronatus</i>	J
Yellow-rumped Flycatcher	<i>Ficedula xanthopygia</i>	J
Narcissus Flycatcher	<i>Ficedula narcissina</i>	J
Mugimaki Flycatcher	<i>Ficedula mugimaki</i>	J
Blue-and-White Flycatcher	<i>Cyanoptila cyanomela</i>	J
Sooty Flycatcher	<i>Muscicapa sibirica</i>	J
Grey-streaked Flycatcher	<i>Muscicapa griseisticta</i>	J
Brown Flycatcher	<i>Muscicapa latirostris</i>	J
Japanese Paradise Flycatcher	<i>Terpsiphone atrocaudata</i>	J
Ruddy Sparrow	<i>Passer rutilans</i>	J
Brambling	<i>Fringilla montifringilla</i>	J
Siskin	<i>Carduelis spinus</i>	J
Black-tailed Hawfinch	<i>Eophona migratoria</i>	J
Yellow-breasted Bunting	<i>Emberiza aureola</i>	J

Black-faced Bunting	<i>Emberiza spodocephala</i>	J
Japanese Yellow Bunting	<i>Emberiza sulphurata</i>	J
Chestnut-eared Bunting	<i>Emberiza fucata</i>	J
Rustic Bunting	<i>Emberiza rustica</i>	J
Little Bunting	<i>Emberiza pusilla</i>	J
Tristram's Bunting	<i>Emberiza tristrami</i>	J
Pallas's Reed Bunting	<i>Emberiza pallasi</i>	J
Reed Bunting	<i>Emberiza scheoniculus</i>	J

\* These species are listed under:

(A) - Agreement between the Government of Australia and the Government of the People's Republic of China for the Protection of Migratory Birds and Their Environment

and

(J) - Agreement on the Protection of Migratory Birds and Their Habitats by the Governments of Japan and the People's Republic of China.



**ATTACHMENT 2**

ATTACHMENT 2

MAMMALS OCCURRING IN THE DEEP BAY AREA PROTECTED UNDER THE CHINA NATIONAL WILDLIFE PROTECTION LAW

	species	category
Otter	<i>Lutra lutra</i>	II
Small Indian Civet	<i>Viverricula indica</i>	II
Chinese White Dolphin	<i>Sousa chinensis</i>	I

BIRDS OCCURRING IN THE DEEP BAY AREA PROTECTED UNDER THE CHINA NATIONAL WILDLIFE PROTECTION LAW

Red-necked Grebe	<i>Podiceps grisegna</i>	II
Dalmatian Pelican	<i>Pelecanus (philippensis) crispus</i>	II
Swinhoe's Egret	<i>Egretta eulophotes</i>	II
Reef Egret	<i>Egretta sacra</i>	II
Oriental White Stork	<i>Ciconia (ciconia) boyciana</i>	I
Black Stork	<i>Ciconia nigra</i>	I
White Ibis	<i>Threskiornis (aethiopicus) melanocephalus</i>	II
Glossy Ibis	<i>Plegadis falcinellus</i>	II
European Spoonbill	<i>Platalea leucorodia</i>	II
Black-faced Spoonbill	<i>Platalea minor</i>	II
swan sp.	<i>Cygnus sp.</i>	II
Mandarin Duck	<i>Aix galericulata</i>	II
Imperial Eagle	<i>Aquila heliaca</i>	I
Black-shouldered Kite	<i>Elanus caeruleus</i>	II
Black Kite	<i>Milvus migrans</i>	II
White-bellied Sea Eagle	<i>Haliaeetus leucogaster</i>	II
Black Vulture	<i>Aegypius monachus</i>	II
Serpent Eagle	<i>Spilornis cheela</i>	II
Marsh Harrier	<i>Circus aeruginosus</i>	II
Hen Harrier	<i>Circus cyaneus</i>	II
Pied Harrier	<i>Circus melanoleucos</i>	II
Japanese Sparrowhawk	<i>Accipiter gularis</i>	II
Besra	<i>Accipiter virgatus</i>	II
Chinese Goshawk	<i>Accipiter soloensis</i>	II
Grey-faced Buzzard Eagle	<i>Butastur indicus</i>	II
Buzzard	<i>Buteo buteo</i>	II
Spotted Eagle	<i>Aquila clanga</i>	II
Bonelli's Eagle	<i>Hieraaetus fasciatus</i>	II
Osprey	<i>Pandion haliaetus</i>	II
Kestrel	<i>Falco tinnunculus</i>	II
Hobby	<i>Falco subbuteo</i>	II
Peregrine Falcon	<i>Falco peregrinus</i>	II
Saker Falcon	<i>Falco cherrug</i>	II
Common Crane	<i>Grus grus</i>	II
Little Whimbrel	<i>Numenius (borealis) minutus</i>	II
Nordmann's Greenshank	<i>Tringa guttifer</i>	II
Relict Gull	<i>Larus relictus</i>	I
Ring-necked Parakeet	<i>Psittacula krameri</i>	II
Greater Coucal	<i>Centropus sinensis</i>	II

Lesser Coucal	<i>Centropus bengalensis</i>	II
Short-eared Owl	<i>Asio flammeus</i>	II
Grass Owl	<i>Tyto capensis</i>	II
White-vented Needletail	<i>Hirundapus cochinchinensis</i>	II

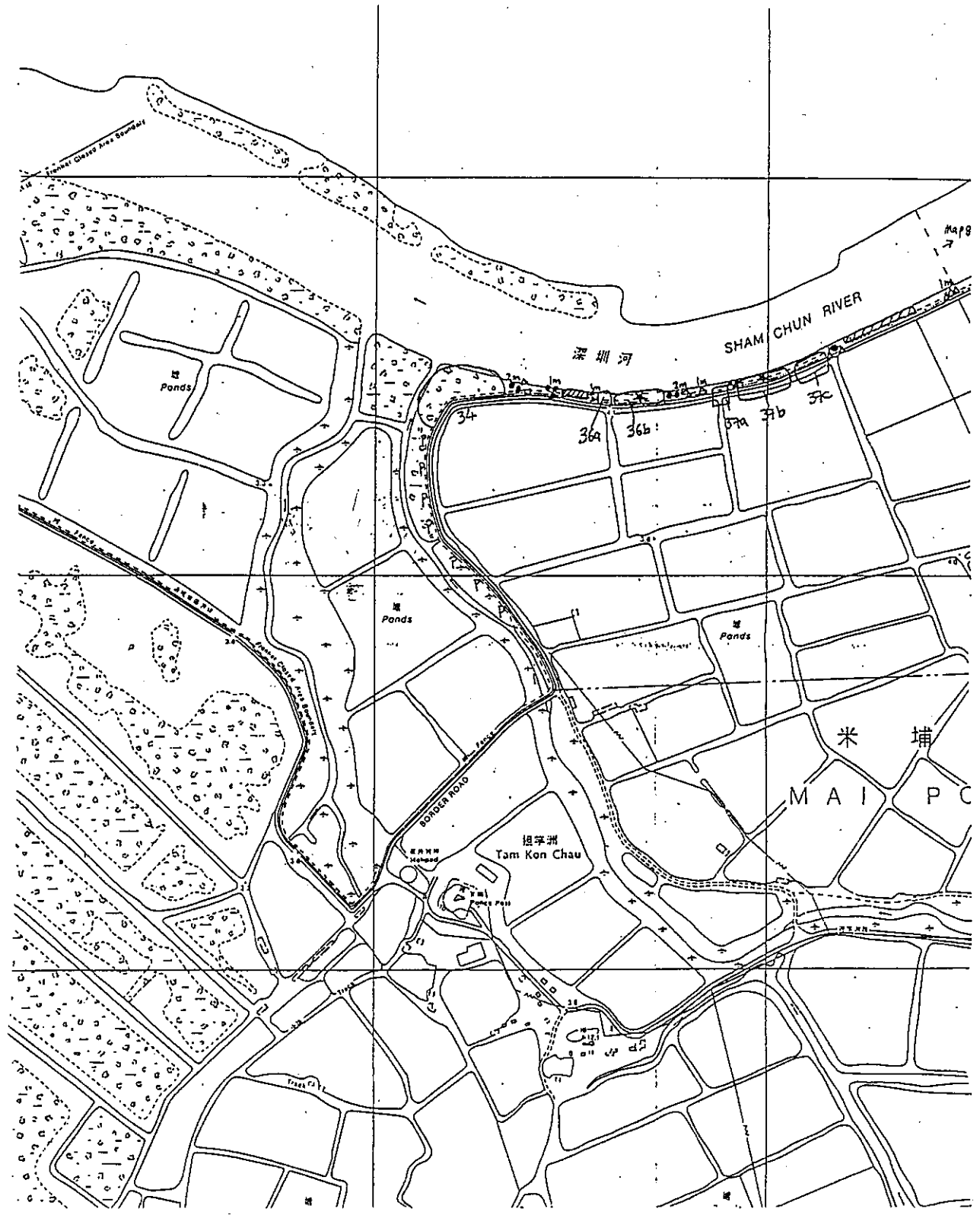
**REPTILES OCCURRING IN THE DEEP BAY AREA PROTECTED UNDER THE CHINA  
NATIONAL WILDLIFE PROTECTION LAW**

Water Monitor	<i>Varanus salvator</i>	II
Python	<i>Python molurus</i>	II

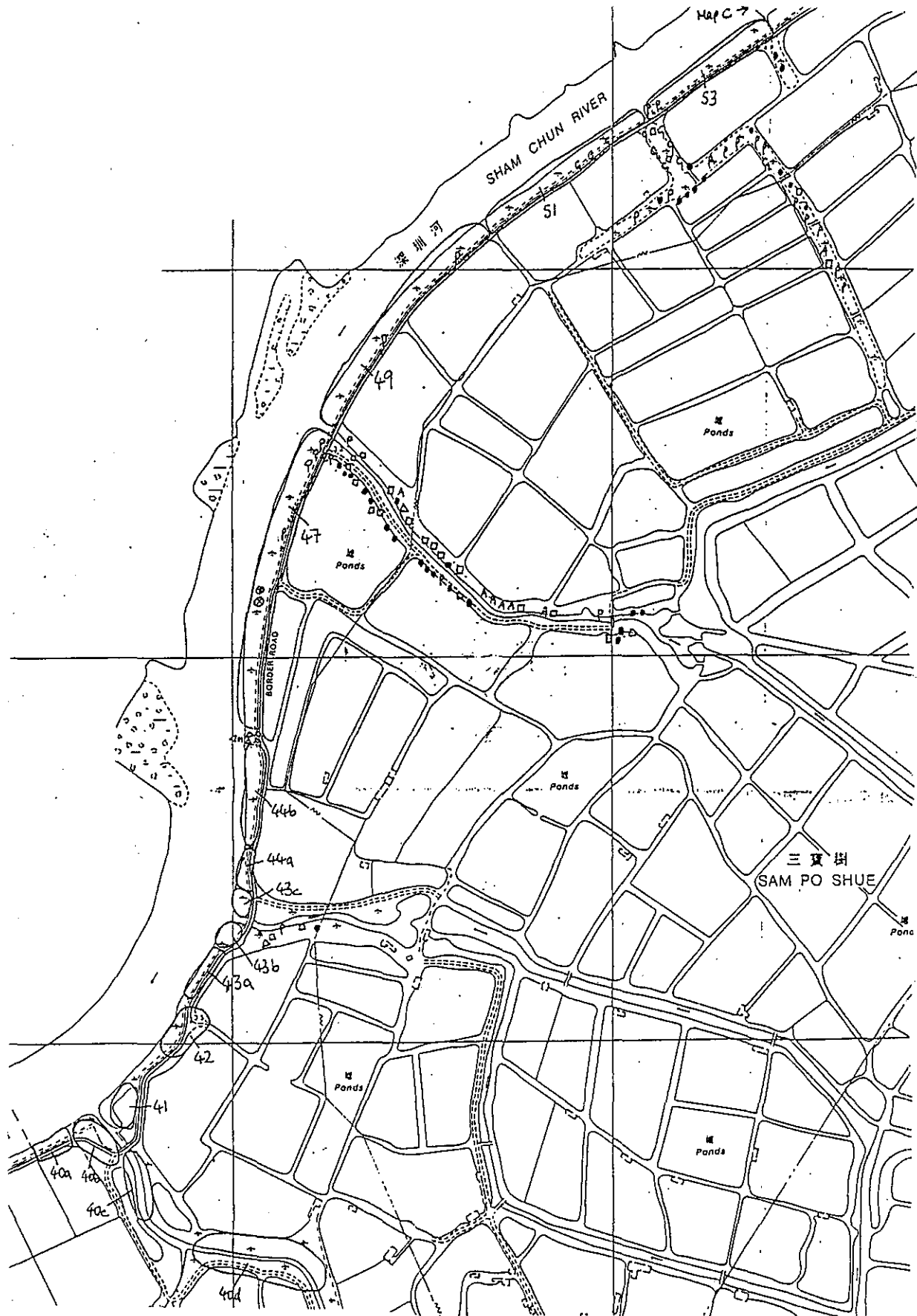


**ATTACHMENT 3**

SHENZHEN RIVER EIA MANGROVE SURVEY MAP A

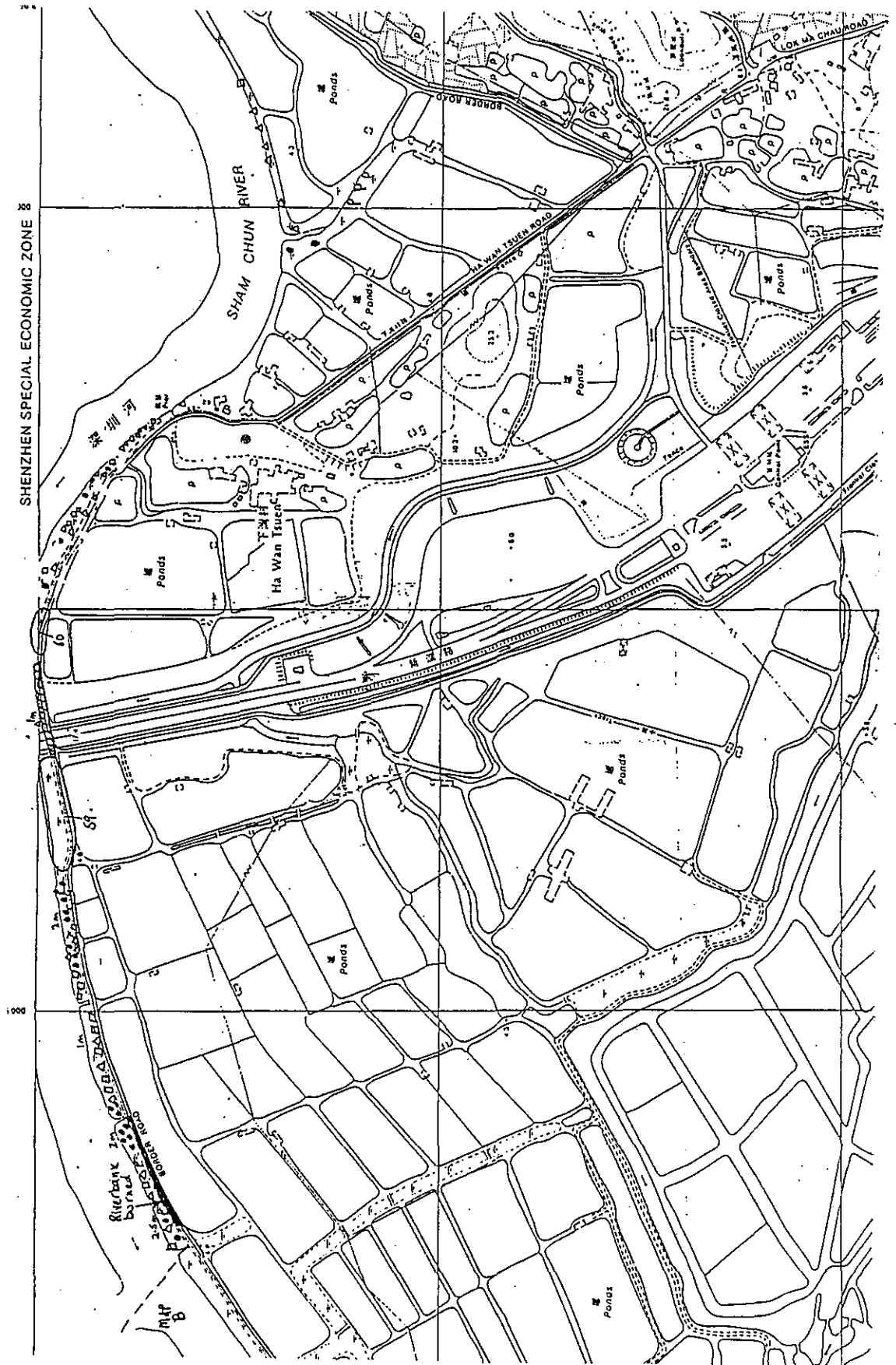


SHENZHEN RIVER EIA MANGROVE SURVEY MAP B



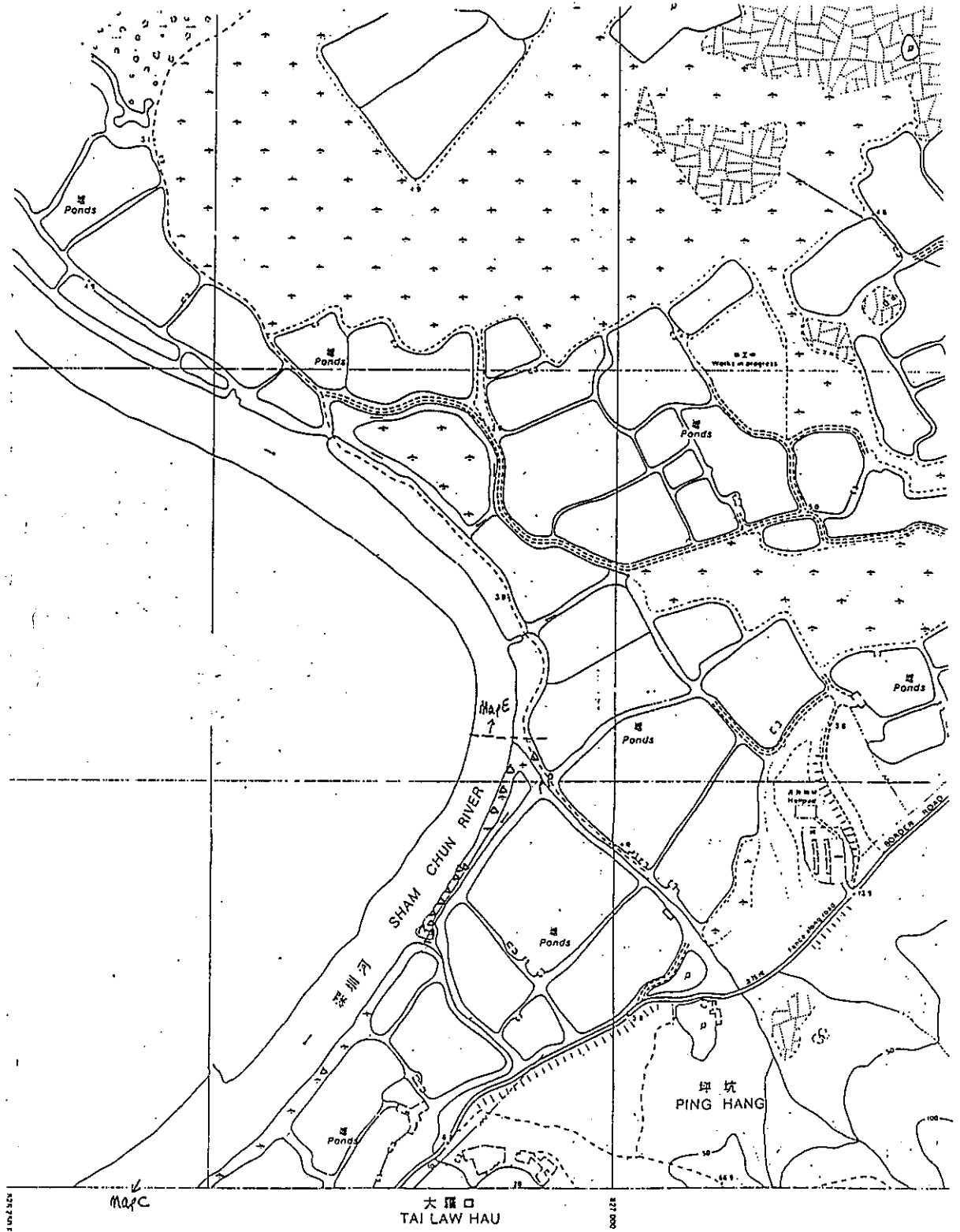


SHENZHEN RIVER EIA MANGROVE SURVEY MAP C

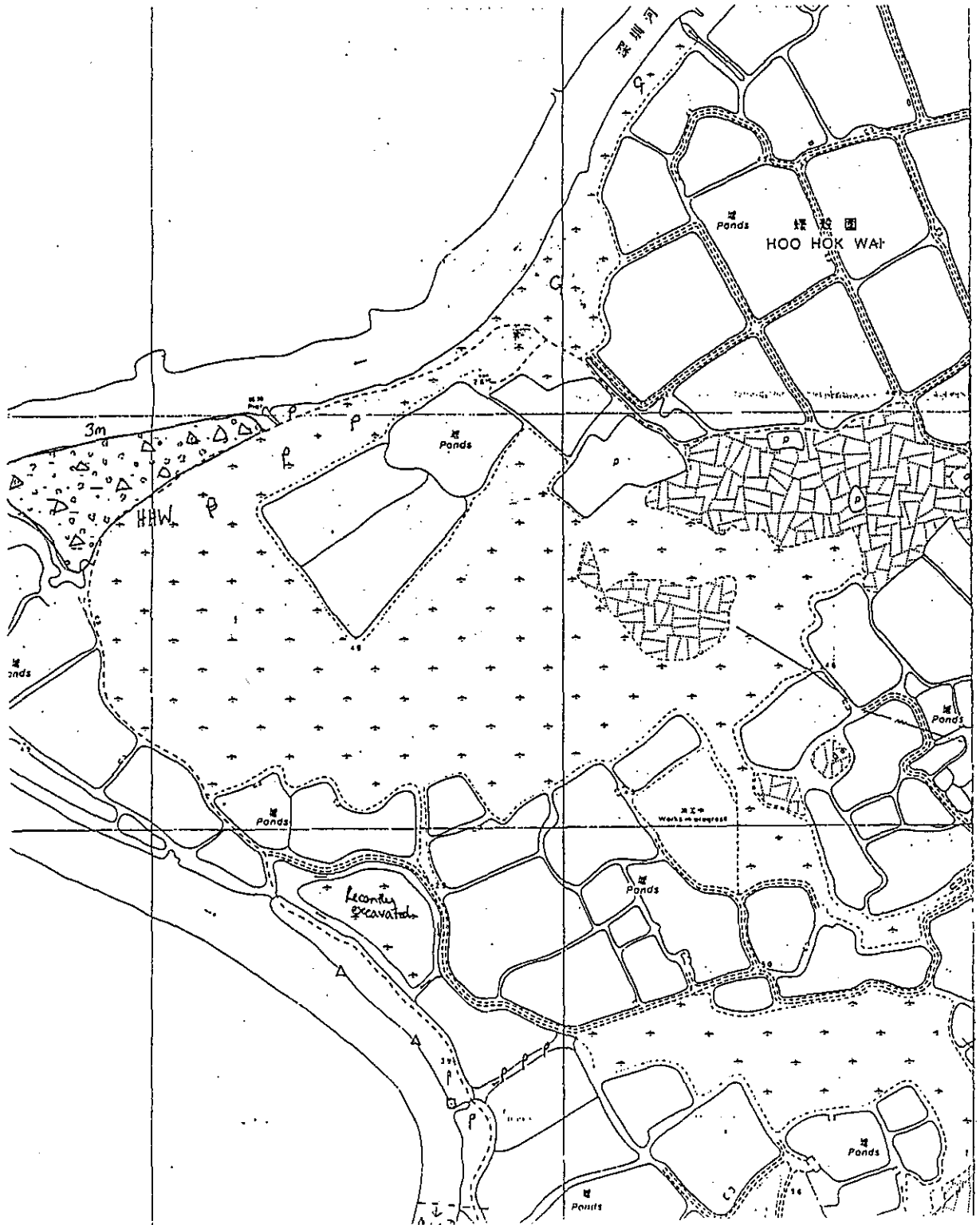


APPENDIX 9.8

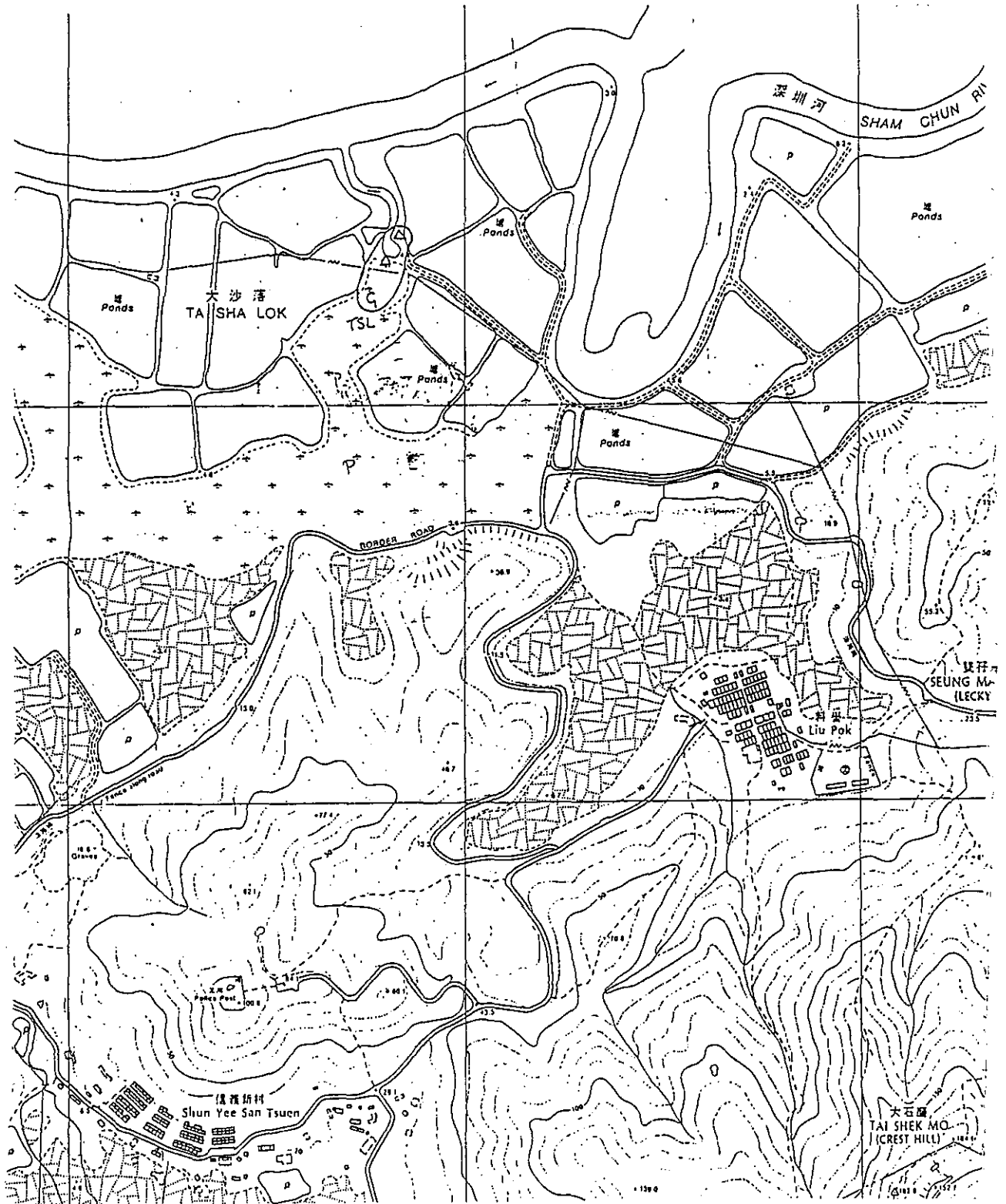
SHENZHEN RIVER EIA MANGROVE SURVEY MAP D



SHENZHEN RIVER EIA MANGROVE SURVEY MAP E



SHENZHEN RIVER EIA MANGROVE SURVEY MAP F



**ATTACHMENT 4**

APPENDIX 9.9 INTERIM REPORT INVERTEBRATE SURVEY - HONG KONG

Table 1 Alphabetical Listing of Morhospecies codes

code	Phylum	Class	Subclass	Order	(Super)Family	Genus	species
abre	Mollusca	Gastropoda	Prosobranchia	Mesogastropoda	Assimineidae	Assimineia	brevicula
acon	Annelida		Errantia		Pilargiidae	Ancistroylis	constricta
		Polychaeta					
anem	Echinodermata		Holothuroidea	Apoda			
asp	Mollusca	Gastropoda	Prosobranchia	Mesogastropoda	Assimineidae	Assimineia	sp.
asp1	Mollusca	Gastropoda	Prosobranchia	Mesogastropoda	Assimineidae	Assimineia	sp1.
asp2	Mollusca	Gastropoda	Prosobranchia	Mesogastropoda	Assimineidae	Assimineia	sp2.
asp3	Mollusca	Gastropoda	Prosobranchia	Mesogastropoda	Assimineidae	Assimineia	sp3.
asp4	Mollusca	Gastropoda	ProsobrPanchia	Mesogastropoda	Assimineidae	Assimineia	sp.4
biv1	Mollusca	Bivalvia	Lamellibranchia	Heterodonta			
blon	Mollusca	Gastropoda	Opisthobranchia	Cephalaspidea			
brog	Annelida	Oligochaeta					
cap?	Annelida	Polychaeta	Sedentaria		Capitellidae		
ccap	Annelida	Polychaeta	Sedentaria		Capitellidae		
ceph	Mollusca	Gastropoda	Opisthobranchia	Celphalaspidea			
clen	Mollusca	Gastropoda	Prosobranchia	Mesogastropoda	Hydobiidae		
dost	Mollusca	Gastropoda	Prosobranchia			Dostia	sp
dpin	Annelida	Polychaeta	Errantia		Nereidae	Dendronereis	pinnaticirrus
glau	Mollusca	Bivalvia	Lamellibranchia	Heterodonta	(Galeommatacea)		
euni	Annelida	Polychaeta	Errantia		Eunicidae		
goby	Vertebrata		Teleostei				
gly1	Annelida	Polychaeta	Errantia		(Glyceracea)		
hsim	Annelida	Polychaeta	Sedentaria		Maldanidae	Heteromastus	similis
ibom	Mollusca	Gastropoda	Prosobranchia	Mesogastropoda	Iravidiidae	Iravadia	bombayanna
iljv	Arthropoda	Crustacea	Malacostraca	Decapoda	Ocypodidae	Ilyoplax	sp.
ils2	Arthropoda	Crustacea	Malacostraca	Decapoda	Ocypodidae	Ilyoplax	sp.2
inin	Arthropoda	Crustacea	Malacostraca	Decapoda	Ocypodidae	Ilyoplax	ningpoensis
ins1	Arthropoda	Insecta					
ins2	Arthropoda	Insecta					
iorn	Mollusca	Gastropoda	Prosobranchia	Mesogastropoda	Iravidiidae	Iravadia	ornata
irs2	Mollusca	Gastropoda	Prosobranchia	Mesogastropoda	Iravidiidae	Iravadia	sp2
itan	Arthropoda	Crustacea	Malacostraca	Decapoda	Ocypodidae	Ilyoplax	tanshuiensis
laem	Mollusca	Gastropoda	Prosobranchia	Mesogastropoda		Laemodonta	sp.



laon	Annelida	Polychaeta	Sedentaria		Sabellidae	Laonome	sp.
lgog	Annelida	Polychaeta					
lin1	Mollusca	Gastropoda	Prosobranchia	Mesogastropoda	Pyramidellidae	Linopygra	sp.1
lin2	Mollusca	Gastropoda	Prosobranchia	Mesogastropoda	Pyramidellidae	Linopygra	sp.2
mac	Mollusca	Bivalvia	Lamellibranchia	Heterodonta		Macoma	sp.
mald	Annelida	Polychaeta	Sedentaria		Maldanidae		
mcro	Arthropoda	Crustacea	Malacostraea	Decapoda	Ocypodidae	Macrophthalmus	sp.
mnep	Annelida	Polychaeta			Capitellidae		
msan	Annelida	Polychaeta			Eunicidae	Marphysa	sanguinea
msen	Mollusca	Bivalvia	Lamellibranchia	Anisomyaria		Musculista	senhausia
nam1	Annelida	Polychaeta	Errantia		Neredidae		
nam2	Annelida	Polychaeta	Errantia		Nereidae		
nema	"nematoda"						
neme	Nemertean						
ngla	Annelida	Polychaeta	Errantia		Nereidae	Neanthes	glandicincta
nmn2	Annelida	Polychaeta	Errantia		Nereidae		
npol	Annelida	Polychaeta	Errantia		Syllidae	Nephtys	polybranchiata
odos	Mollusca	Gastropoda	Prosobranchia	Mesogastropoda	Pyramidellidae	Odostromia	sp.
olig	Annelida	Oligochaeta					
owen	Annelida	Polychaeta	Sedentaria		Oweniidae		
pcir	Annelida	Polychaeta	Sedentaria		Spionidae	Prionospio	cirrifera
phyl	Annelida	Polychaeta	Errantia		Phyllodocidae		
plan	Platyelminthes						
plep	Annelida	Polychaeta	Sedentaria		Sabellidae	Potamilla	leptochaeta
ply1	Annelida	Polychaeta	Errantia		Polynoidae		
ply2	Annelida	Polychaeta	Errantia		Polynoidae		
plyd	Annelida	Polychaeta	Sedentaria		Spionidae	Polydora	sp.
pmai	Mollusca	Bivalvia	Lamellibranchia	Heterodonta	(Galeommatacea)	Pseudopythna	maipoeneis
poto	Mollusca	Bivalvia	Lamellibranchia	Heterodonta		Potomocorbula	sp.
pull	Annelida	Polychaeta	Sedentaria		Capitellidae		
pyr2	Mollusca	Gastropoda	Prosobranchia	Mesogastropoda	Pyramidellidae		
sab?	Annelida	Polychaeta	Sedentaria		Sabellidae		
scon	Mollusca	Bivalvia	Lamellibranchia	Heterodonta	(Solenacea)	Sinonovacula	constricta
serm	Mollusca	Gastropoda	Prosobranchia	Mesogastropoda		Sermyla	tornatella
sesr	Arthropoda	Decapoda	Malacostraca	Decapoda	Grapsidae		
sfra	Mollusca	Gastropoda	Prosobranchia	Mesogastropoda	Amphibolidae	Salinator	fragilis
spi1	Arthropoda	Arachnida		Araneae			
spi2	Arthropoda	Arachnida		Araneae			
spio	Annelida	Polychaeta	Sedentaria		Spionidae		

ste1	Mollusca	Gastropoda	Prosobranchia	Mesogastropoda	Stenothyridae	Stenothyra	sp.1
ste2	Mollusca	Gastropoda	Prosobranchia	Mesogastropoda	Stenothyridae	Stenothyra	sp.2
ste3	Mollusca	Gastropoda	Prosobranchia	Mesogastropoda	Stenothyridae	Stenothyra	sp.3
tefi	Mollusca	Bivalvia	Lamellibranchia	Heterodonta		Theora	cf.iridescens
thar	Annelida	Polychaeta	Sedentaria		Cirratulidae		
that	Mollusca	Bivalvia	Lamellibranchia	Heterodonta		Theora	lata
uca	Arthropoda	Crustacea	Malacostraca	Deopoda	Ocypodidae	Uca	ap.

**ATTACHMENT 5**

## ATTACHMENT 5

### REFERENCES RELATING TO THE ECOLOGY SECTION

- Anon. 1988. *Environmental Review: Deep Bay Management*. ERL, Hong Kong.
- Anderson, C. 1989. *Sexual selection in Uca arcuata, a fiddler crab from a Hong Kong mangrove*. B.Sc. (Hons.) thesis, University of Southampton.
- Chan, K.Y. 1989. *The ecology of mudskippers (Pices: Periophthalmidae) at the Mai Po Marshes Nature Reserve, Hong Kong*. Unpublished thesis, University of Hong Kong.
- Chiu, K.T. 1992. *An assessment of the water pollution status of the Mai Po Marshes Nature Reserve, Hong Kong*. Ph.D. Thesis, University of Hong Kong.
- Choi, K.C. 1991. *The ecology of fiddler crabs (Crustacea: Ocypodidae) at the Mai Po Marshes Nature Reserve*. Unpublished thesis, University of Hong Kong.
- Crisp, D.J. 1971. Energy flow measurements. in Holme, N.A. and McIntyre, A.D. (eds.). *Methods for the study of marine benthos: IBP handbook No. 16*. Blackwell Scientific Publications, Oxford.
- Dekinga, A. and Piersma, T. 1993. Reconstructing diet composition on the basis of faeces in a mollusc-eating wader, the Knot *Calidris canutus*. *Bird Study* 40: 144-156.
- Erseus, C. 1984. The marine Tubificidae (Oligochaeta) of Hong Kong and southern China. *Asian Marine Biology* 1: 135-175.
- Green, P.T., Hill, D.A. and Clark, N.A. 1992. *The effects of organic inputs to estuaries on overwintering bird populations and communities*. British Trust for Ornithology Research Report No.59.
- Kalejta, B. 1993. Intense predation cannot always be detected experimentally: a case study of shorebird predation on Nereid polychaetes in South Africa. *Neth. J. Sea Res.* 31: 385-393.
- Leader, P.J. 1994. *Interim report on duck and wader distribution in Deep Bay*. WWF Hong Kong, Hong Kong. MS.
- Leuven, R.S.E.W., Brock, T.C.M. and van Druten, H.A.M. 1985. Effects of preservation on dry- and ash-free dry weight biomass of some common aquatic macro-invertebrates. *Hydrobiologia* 127: 151-159.
- Melville, D.S. and Morton, B. 1983. *Mai Po Marshes*. World Wildlife Fund Hong Kong, Hong Kong.
- Morton, B. and Scott, P.H. 1989. The Hong Kong Galeommatacea (Mollusca: Bivalvia) and their hosts, with descriptions of new species. *Asian Marine Biology* 6: 129-160.
- Pearson, T.H. and Rosenberg, R. 1978. Macrobenthic succession in relation to organic enrichment and pollution of the marine environment. *Oceanogr. Mar. Biol. Ann. Rev.* 16: 229-311.
- Piersma, T., de Goeij, P. and Tulp, I. 1993. An evaluation of intertidal feeding habitats from a shorebird perspective: towards relevant comparisons between temperate and tropical mudflats. *Neth. J. Sea Res.* 31: 503-512.

Reish, D.J. and Barnard, J.L. 1979. Amphipods (Arthropoda: Crustacea: Amphipoda). in Hart, C.W. and Fuller, S.L.H. (eds.). *Pollution ecology of estuarine invertebrates*. Academic Press, London.

Tsang, S.C. 1993. *Project report to monitor heavy metals contents in the polychaete D. pinnaticirrus in Mai Po mudflat*. Higher Diploma in Applied Science project report. City Polytechnic of Hong Kong.

Young, L. 1994. *The ecology of Hong Kong Ardeidae (Aves) with special reference to the Chinese Pond Heron at the Mai Po Marshes Nature Reserve*. Unpublished Ph.D. thesis, University of Hong Kong.



**ATTACHMENT 6**



APPENDIX 9.11

INTERIM REPORT ON DUCK AND WADER DISTRIBUTION IN DEEP BAY

▲ Mudflat Hide  
● Boardwalk Hide

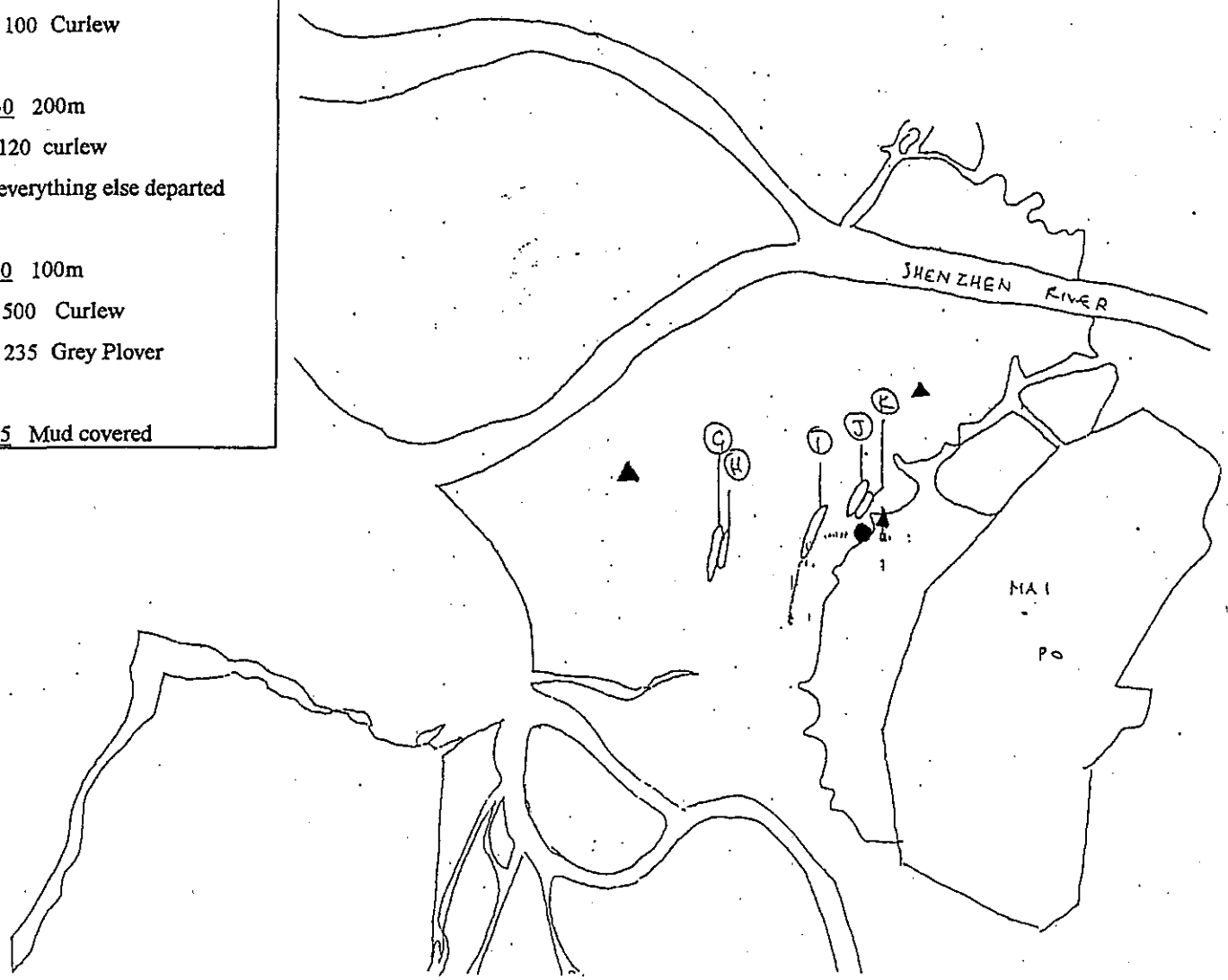
6 - March 1994

1400 500m  
(G) 716 Avocer  
(H) 140 Asiatic Golden Plover  
(I) 100 Curlew

1430 200m  
(I) 120 curlew  
everything else departed

1500 100m  
(J) 500 Curlew  
(K) 235 Grey Plover

1515 Mud covered

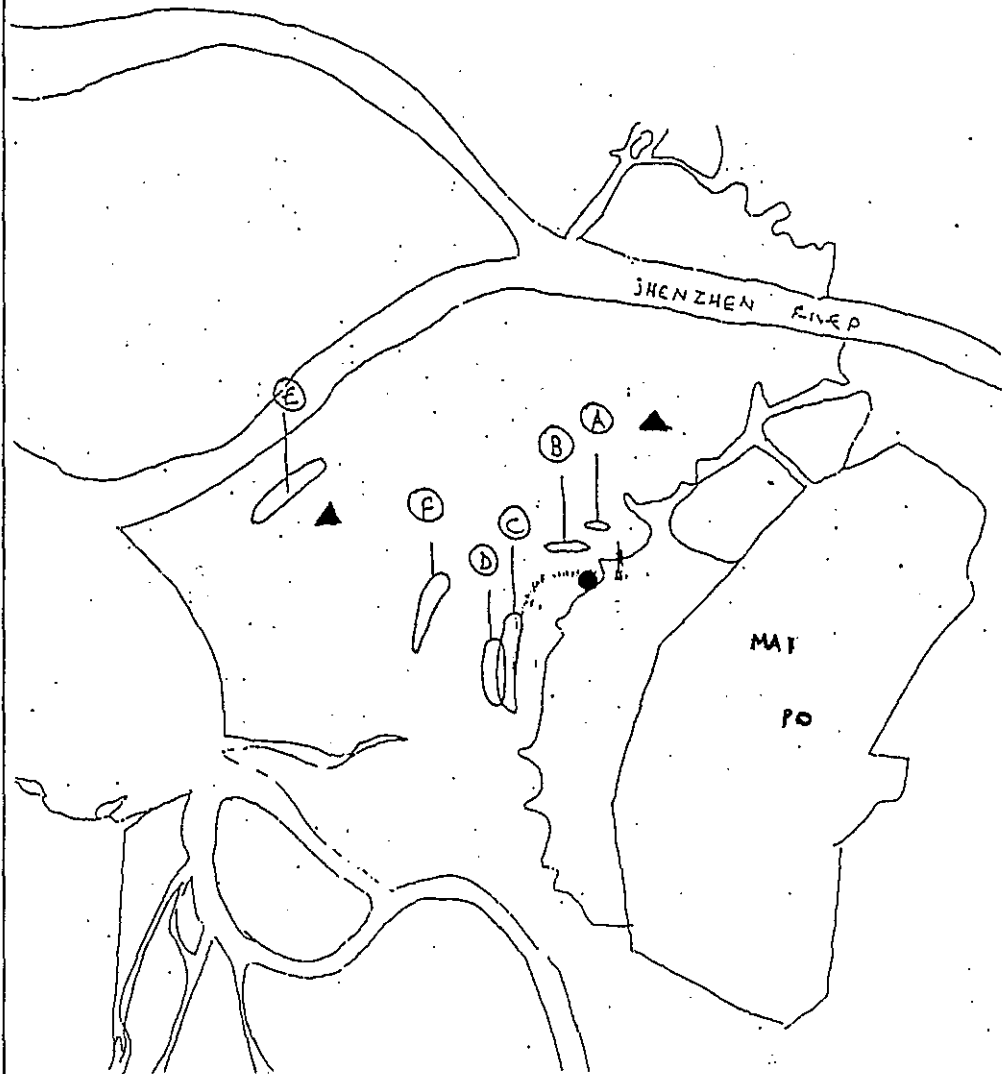


APPENDIX 9.11

INTERIM REPORT ON DUCK AND WADER DISTRIBUTION IN DEEP BAY

▲ Mud flat Hide  
● Boardwalk Hide

6- March 1994		
0145 Tide 1100m		
(A) 1310	Dunlin / Kentish Plover	70% foraging
(B) 140	Kentish Plover	70% foraging
(C) 100s	Kentish Plover	70% foraging
0940 Tide 1100m		
only flock A still present		
(A) 1710	Dunlin / Kentish Plover	70% foraging
1000 1100m		
No change		
030 1100m		
(A) unchanged		
(B) 511	Grey Plover	60% foraging
(C) 627	Avocet	100% foraging
1100-1200 1100m		
No change		
1215 1100m		
(A) 1930	Dunlin / Kentish Plover	60% foraging
230 1100m		
No change		
300 1100m		
Plus		
(F) 420	Dunlin / Kentish Plover	50% foraging
330 850m		
only (F) still present		
(F) 300	Dunlin	all foraging
150	Kentish Plover	all foraging



**ATTACHMENT 7**

## ATTACHMENT 7

### REFERENCES RELATING TO ECOLOGY

- Anderson, C. and Lee, S.Y. in press. Defoliation of the mangrove *Avicennia marina* in Hong Kong: cause and consequence. *Biotropica*
- Chiu, K.T. 1992. *An assessment of the water pollution status of the Mai Po Marshes Nature Reserve Hong Kong*. PhD thesis, University of Hong Kong.
- Groombridge, B. (ed.). 1993. 1994 IUCN *Red List of Threatened Animals*. IUCN, Gland.
- Lee, S.Y. 1993. Invertebrate species new to science recorded from the Mai Po Marshes, Hong Kong. pp. 199-209 in Morton, B. (ed.). *The Marine Biology of the South China Sea*. Hong Kong University Press, Hong Kong.
- McChesney, S. 1993. Mai Po mudflat invertebrate assemblage - changes through one year. *Asia-Pacific Symp. Mangrove Ecosystems, abstract*.
- McChesney, S. 1994. *Shenzhen River Regulation Project Environmental Impact Assessment Study. Invertebrate program interim report*. WWF Hong Kong, Hong Kong.
- Piersma, T., De Goeij, P. and Tulp, I. 1993. An evaluation of intertidal feeding habitats from a shorebird perspective: towards relevant comparisons between temperate and tropical mudflats. *Neth. J. Sea Res.* 31: 503-512.
- Wolff, W.J. 1969. Distribution of non-breeding waders in an estuarine area in relation to the distribution of their food organisms. *Ardea* 57: 1-28.

