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**SHEUNG SHUI TO LOK MA CHAU SPUR LINE**

**Environmental Committee**

Minutes of Meeting No. 20 held at 10:00am  
On Thursday, 16 December 2010,  
at Room A, 10/F, MTR Headquarters Building.

<b>Present:</b>		
Mr. Bena Smith	WWF Hong Kong	Member (NGO)
Ms. Karen Barretto	Friends of the Earth (Hong Kong	Member (NGO)
Dr. Ng Cho-nam	The University of Hong Kong	Member (NGO)
Dr. Michael Leven	Ecological Consultant	Member (consultant)
Ms. Shirley Lam	Ecological Consultant	Member (consultant)
Dr. Chan Kam-foon	Environmental Engineering Manager	Member (MTR)
Mr. Peter Choi	Environmental Engineer	Member (MTR)
<b>Absent with apology:</b>		
Mr. Michael Kilburn	The Hong Kong Bird Watching Society	Member (NGO)

	<u>Action By</u>
1. Welcomed Members to the No. 20 EC meeting.	
<p><b>Item 1 - <u>Confirmation of minutes of Meeting No. 19</u></b></p> <p>2. <u>A Member (MTR)</u> advised the Members that MTR had written to Planning Department concerning to the opening up of the Frontier Closed Area (FCA), such as the proposed hiking trail, potential illegal dumping, increased disturbance from other anthropogenic factors etc. in previous meeting. It was confirmed that the land use planning at Lok Ma Chau wetland and the surrounding areas has not proposed any changes.</p> <p>3. <u>A Member (MTR)</u> reported that the success of the nest boxes for White-shouldered Starlings was circulated among MTR staff through an internal newsletter as part of the Corporate Responsibility (CoR) Intranet Website.</p> <p>4. A concern was raised by <u>A Member (NGO)</u> about issues relating to the proposal to develop the Lok Ma Chau Loop. Members were particularly concerned about the loss of ecological connectivity, especially for the Eurasian Otter <i>Lutra lutra</i>. <u>A Member (consultant)</u> noted that MTR was consulted concerning transportation linkages issues; while ecological linkages were considered in details in the LMC Loop Project. It was concluded that there was a significant ecological linkage running east-west for Otters, while the linkage on a north-south orientation is less critical for the species. Members discussed further on the effectiveness of the otter underpass constructed for Eurasian Otters under the Lok Ma Chau Terminus project. <u>A Member (NGO)</u> noted that a current study by the Agricultural Fisheries &amp; Conservation Department on the movement of Eurasian Otter was being undertaken by the University of Hong Kong. The findings of this study are expected to greatly enhance the knowledge of the species in Hong Kong. <u>A Member (consultant)</u> noted that the movement and ensuring ecological linkages for Eurasian Otter was on a sub-regional scale and beyond the scope of the Project.</p> <p>5. There were no further comments on the minutes of Meeting No. 19, and it was confirmed.</p>	<p>Noted</p> <p>Noted</p> <p>Noted</p>
<p><b>Item 2 - <u>Ecological Enhancement Works and Monitoring - an Update on Management Works and Way Forward</u></b></p> <p>6. <u>A Member (consultant)</u> reported on the ecological monitoring and management work undertaken between July and December 2010 at the LMC EEA (detailed in <b>Annex A</b>). It was noted that:</p> <ul style="list-style-type: none"> <li>• Issues reported earlier on the performance of the maintenance contractor were substantially improved;</li> <li>• Most other management activities comprised routine management practices such as vegetation management, including grass cutting,</li> </ul>	<p>Noted</p>

	<u>Action By</u>
<p>weeding, and other micro-habitat management practices, pond drain down and fish stocking, and pest control.</p> <p>7. <u>A Member (MTR)</u> reported that MTR was in an attempt to build some new pipes in-house to solve sourcing issues of pipe parts in the long-run. Members would be notified of the results of this at a later stage.</p> <p>8. <u>A Member (consultant)</u> examined the LMC Wetlands performance in terms of target achievement, and proposed updating the management objectives which would be included in the 5-yearly Review of the HCMP. It was agreed unanimously that some species on the target species list were of lower conservation importance than others, and the Wetlands have gained importance for other species of conservation importance not listed as a target species. It was further agreed that to seek to update the target species list was not necessary (nor appropriate), but adaptation of the management objectives was required to reflect the above.</p> <p>9. In view of the upcoming HCMP review, proposed modifications to the habitat locations, and a general interest to re-visit the Wetlands, it was agreed that a site visit to the Wetlands would be arranged for all EC Members in the second half of March 2011.</p> <p>10. <u>A Member (NGO)</u> commended on the success of the Wetlands in attracting higher abundance and diversity of amphibians, but queried on the seemingly decreasing trend of one amphibian species (Paddy Frog <i>Fejervarya limnocharis</i>). Asia Ecological noted the comment and would report back to the Members.</p> <p>11. Following from the previous discussion on Eurasian Otters, <u>A Member (NGO)</u> queried if there were any signs of breeding at the Wetlands, and if there were otter dens. <u>A Member (consultant)</u> reported that though there were two constructed otter dens based on the recommendations and design of dens for the species in the United Kingdom, these dens were not used by otters. This was considered possibly due to a difference in micro-habitat requirement as the climatic conditions between the UK and HK were very different.</p> <p>12. <u>A Member (NGO)</u> noted that some herbicides were difficult to source in Hong Kong, and recommended that the herbicide they were using at the Mai Po Nature Reserve could be considered for use in the LMC Wetlands. Asia Ecological to follow-up with MPNR and review the options.</p> <p>13. It was agreed that a complete soft copy of the presentation material would be distributed to all Members for reference.</p> <p>[<i>Post-meeting note:</i> the presentation materials were circulated to members on 16<sup>th</sup> December 2010 via e-mail.]</p>	<p>MTR</p> <p>Noted</p> <p>MTR</p> <p>Asia Ecological</p> <p>Noted</p> <p>Asia Ecological</p> <p>MTR</p>
<p><b>Item 3 - <u>Any Other Business</u></b></p> <p>14. <u>Possibility of higher transparency and/or public involvement:</u> <u>A Member</u></p>	<p>MTR</p>

	<u>Action By</u>
<p><i>(NGO)</i> commended on the dedication of MTR in bringing about the success of the LMC Wetlands. Suggestions to publish some of the survey results (such as the ones presented at the meeting) at the Wetland Viewer and to enhance the functionality of the Wetland Viewers by allowing the public to view/control these viewers through the Internet were made. <i>A Member (MTR)</i> welcomed the recommendations; however, it was noted that permission from the Corporation to disclose data was required and some data could be considered ‘sensitive’. MTR to seek views internally and consider the recommendation and other alternatives.</p> <p>15. “Towards Sustainability”: <i>A Member (NGO)</i> noted MPNR was planning to publish a new book titled “Towards Sustainability”. The LMC Wetlands would form a very good success stories and might require some input from MTR/Asia Ecological.</p>	Noted
<p>16. <i>A Member (NGO)</i> raised concerns over bird collision with buildings and impacts of night-time lighting. <i>A Member (consultant)</i> reported that a bird collision with the terminus was a one-off incident and had never been a problem at LMC. It was also agreed that night-time lighting impact from the station was not of particular concern as ambient light around Shenzhen and general area outweighed that from the building.</p>	Noted
<p><b>Item 4 - <u>Date of Next Meeting</u></b></p> <p>17. The date of the next meeting is to be advised.</p>	Noted

**Lok Ma Chau Spur Line  
20<sup>th</sup> Environmental Committee Meeting  
16<sup>th</sup> December 2010**

**Report on Ecological Monitoring  
& Management & Works Programme  
Jul – Dec 2010**

**Asia Ecological Consultants Limited**

**Overview of Management Works  
Jul – Dec 2010**

Vegetation Management

- Routine grass cutting
- Routine weeding
- Routine removal of unwanted species (*Phragmites*, *Typha*, *Mimosa*, *Mikania* etc.)
- Reed Transplantation to West Rail Land Parcels

Wildlife Management

- Periodic pond drain down
- Trash fish stocking for winter food
- Provision of duck and starling Food

**Overview of Management Works  
Jul – Dec 2010**

General Site Management

- Golden Apple Snail removal at Ponds 14 – 22
- Fish stock management
- Water quality management
- Dog trapping

**Phragmites Control Trial**

- Control of *Phragmites* on the edges of Ponds 16 & 18 using herbicide 殺根死 (Ronall) in October 2010



Oct 2010



Nov 2010

**Nelumbo Control Trial  
Design of Experiment**

- Control of *Nelumbo* at Pond 21 using herbicide Ronall (連根殺)
- Aim: To find out a better herbicide dosages and portion of leaves for the herbicide application in order to control *Nelumbo*



**Nelumbo Control Trial  
Design of Experiment**

- 5 Plots (A-E) were established randomly at Pond 21
- All leaves within the plots were counted and marked before applying herbicide
- Two different dosages and two different application rate were designed:

Plot	Description
A	Control (i.e. No herbicide applied)
B	0.26% Herbicide & half of the lotus leaves applied
C	0.26% Herbicide & all lotus leaves applied
D	0.5% Herbicide & half of the lotus leaves applied
E	0.5% Herbicide & all lotus leaves applied



### Nelumbo Control Trial Design of Experiment

- Results were quantified by observing of degree of losing chlorophyll from their foliages. Percentage of chlorophyll remain on each leaf was recorded.
- 0% would be recorded when the leaf became fully wilted, with amber colored stem.
- Experiment started on 8<sup>th</sup> August 2010 (Day 1) and quantitative monitoring ended on 13<sup>th</sup> September 2010 (Day 27)



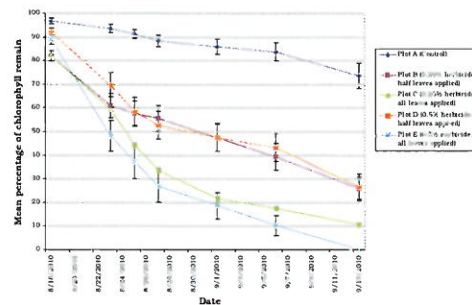
Day 1 after application  
(Plot E)



Day 27 after application  
(Plot E)

### Nelumbo Control Trial Results

Growth Response of Lotus Leaves after Herbicide Application  
from Day 1 to Day 27



### Scheduled Management Works for 2011 Dry Season

- Timely water level adjustment and fish stocking
- Provision of food for ducks and starlings
- Continue with routine grass cutting and general vegetation management
- Monitoring establishment of *Nymphaea* and control of *Nelumbo*
- Control & monitor of *Phragmites*
- Control of Apple Snails, Fire Ants and dog trapping
- Control of water quality

### Scheduled Management Works for 2011 Wet Season

- Nest boxes & breeding bird monitoring
- Additional *Bambusa* planting at selected location
- Monitor transplanted trees from other MTR projects
- Routine grass cutting and general vegetation management, including control of exotics
- Monitoring establishment of *Nymphaea*
- Monitoring success of herbicide trial and continuing control of *Nelumbo*
- Control & monitor of *Phragmites*
- Control of Apple Snails, Fire Ants and dog trapping
- Control of water quality

### Operational Stage Monitoring

- Required as off August 2007 when Spurline commenced operation (although operational stage monitoring started in January 2006)
- Wildlife targets extended to cover species of conservation importance detailed in the Environmental Impact Assessment:
  - Eurasian Otter
  - 26 bird species (c.f. Table 2.3 of the HCMP)
  - Burmese Python, Chinese Soft-shelled Turtle, Chinese Bullfrog
  - Dragonflies (increased numbers and species diversity)

### Monitoring of Target Waterbird Species: protocol

- Counts from towers at LMC at Mai Po San Tsuen (MPST) for larger waterbirds and raptors.
- Transect survey for smaller target species at LMC and MPST and for all species at San Tin.
- Methodology for calculation of targets reviewed in early 2007 (included in HCMP)





## 5-yearly Review of HCMP

According to EP-129/2002/B, clause 4.1 (b),

"a Five-yearly review programme for the HCMP, which shall include both qualitative and quantitative **review of management objectives and targets**, together with **measures necessary to accomplish any revised objectives**, and targets that are set, shall be submitted for the Director's approval."

Next review due:

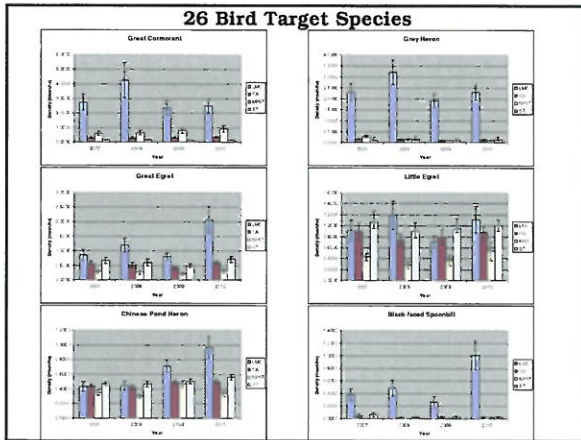
**Aug 2011**

## 5-yearly Review of HCMP

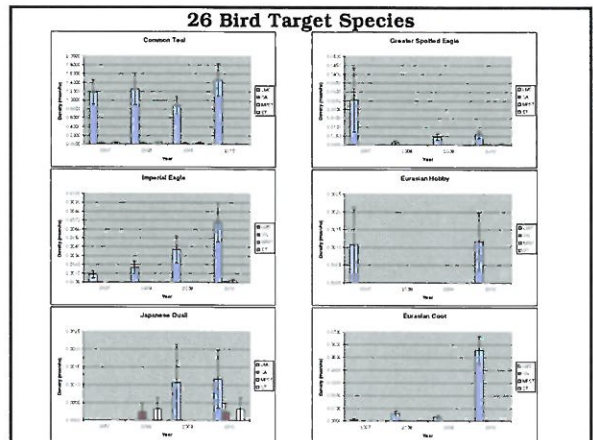
An overview of the conservation status of the 26 bird Target Species

Species Name	Fellows et al. (2002)	RUN (2010)
Chinese Woodpecker	Potential Regional Concern	-
Gray Heron	Potential Regional Concern	-
White Egret	Potential Regional Concern (Regional Concern)	-
Little Egret	Potential Regional Concern (Regional Concern)	-
Chinese Pond Heron	Potential Regional Concern (Global Concern)	-
Black-headed Spoonbill	Potential Global Concern	Endangered
Common Teal	Regional Concern	-
Greater Spotted Eagle	Global Concern	Vulnerable
Imperial Eagle	Global Concern	Vulnerable
Curlew Hobby	Local Concern	-
Japanese Quail	Local Concern	Near Threatened
Swamp Sparrow	Regional Concern	-
Phasian-tailed Jacana	Local Concern	-
Greater Painted-snipe	Local Concern	-
Black-winged Stilt	Regional Concern	-
Lesser Spotted Eagle	Regional Concern	-
Common Moor	Local Concern	-
Black-billed Stilt	Local Concern	-
Black-billed Plover	Local Concern	-
Black-billed Cuckoo	Local Concern	-
Lesser Yellow Plover	Global Concern	Vulnerable
Lesser Yellow Warbler	Potential Regional Concern	-
Black-billed Cuckoo	Local Concern	-

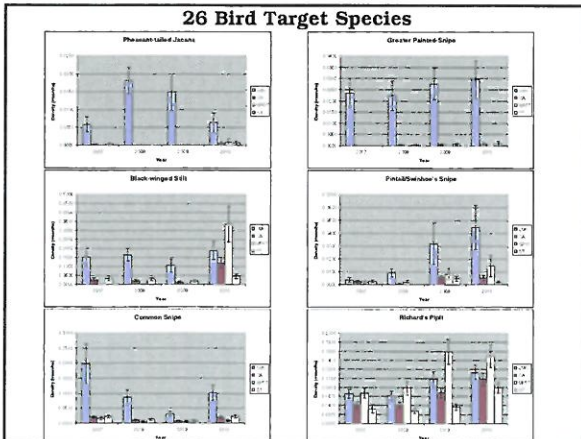
### 26 Bird Target Species



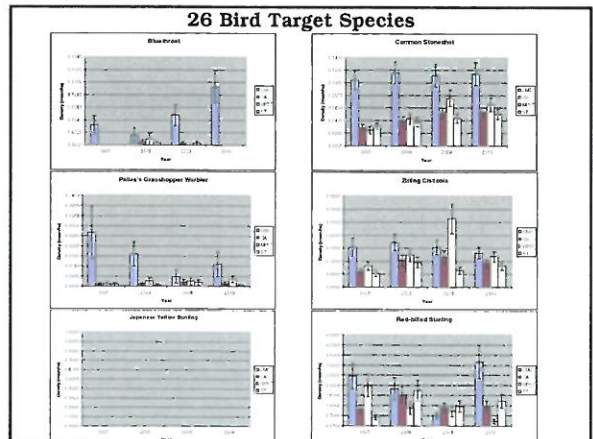
### 26 Bird Target Species



### 26 Bird Target Species

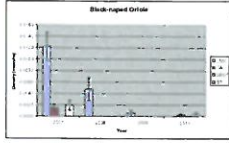


### 26 Bird Target Species





### 26 Bird Target Species



### 5-yearly Review of HCMP

#### Species for which targets are continuously met (13):

Species Name	Fellowes et al. (2002)	IUCN (2010)
Great Cormorant	Potential Regional Concern	
Grey Heron	Potential Regional Concern	
Black faced Spoonbill	Potential Global Concern	Endangered
Common Teal	Regional Concern	
Greater Spotted Eagle	Global Concern	Vulnerable
Imperial Eagle	Global Concern	Vulnerable
Eurasian Coot	Regional Concern	
Pheasant tailed Jacana	Local Concern	
Greater Painted snipe	Local Concern	
Common Snipe		
Blueshoat	Local Concern	
Common Stonechat		
Pallas's Grasshopper Warbler	Local Concern	

### 5-yearly Review of HCMP

#### Species for which targets are met in some years (9):

Species Name	Fellowes et al. (2002)	IUCN (2010)
Great Egret	Potential Regional Concern (Regional Concern)	
Chinese Pond Heron	Potential Regional Concern (Regional Concern)	
Common Kingfisher	(Local Concern)	
Japanese Quail	Local Concern	Near Threatened
Black-winged Stilt	Regional Concern	
Lesser White-headed Stork	PS: Local Concern	
Lesser Frigatebird	Potential Regional Concern	
Black-bellied Swallow	Local Concern	

### 5-yearly Review of HCMP

#### Species for which targets continuously fail (3):

Species Name	Fellowes et al. (2002)	IUCN (2010)
Little Egret	Potential Regional Concern (Regional Concern)	
Richard's Pigeon		
White-crowned Crane	Local Concern	

#### Species which are rarely/never recorded (1):

Species Name	Fellowes et al. (2002)	IUCN (2010)
Japanese Yellow Warbler	Global Concern	Vulnerable

### 5-yearly Review of HCMP

#### Mammal Target (max recorded):

Species Name/No. of records	2006	2007	2008	2009	2010
Eurasian Otter	2	2	2	1	3*

\* Up to 3 individuals recorded between Pond 1 and 2 by AFCD.

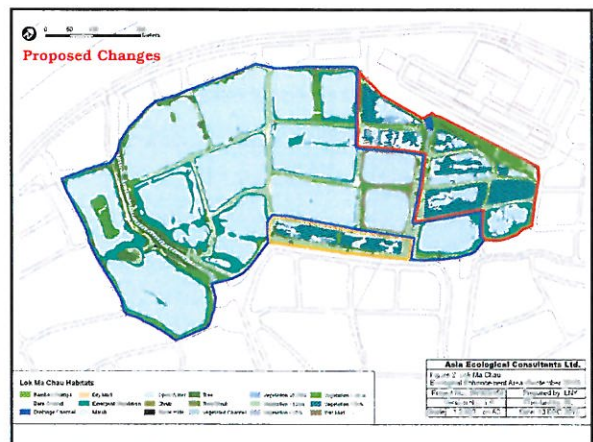
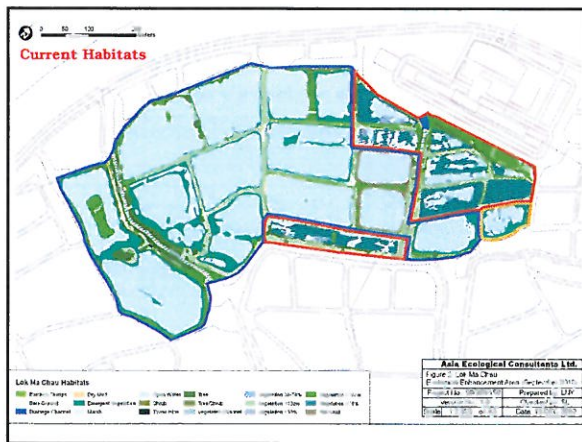
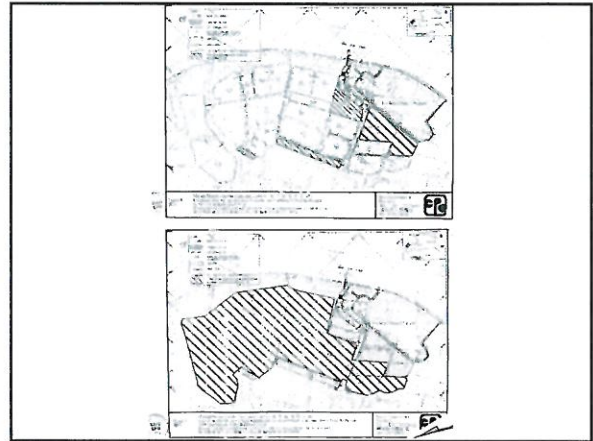
#### Herpetofauna Target:

Species Name/Maximum Count	2006	2007	2008	2009	2010
Chinese Bullfrog					
<i>Rhombophryne chinensis</i>	0	1	1	2	4
Burmese Python					
<i>Python molurus</i>	1	0	1	0	0

Sublot/Zone/area	Target Species (2008)	Other Target Species
Thresh drain down & fish stocking	Great Cormorant, Grey Heron, Lesser Spotted Eagle, Chinese Pond Heron, Black faced Spoonbill	
Ponds with large fringes of emergent vegetation	Chinese Pond Heron	
Deep water pond	Eurasian Coot	Eurasian Otter, Chinese Soft-shelled Turtle
Shallow water pond	Common Teal, Black-winged Stilt, Gallinago snipes, Greater spotted Eagle, Eastern Imperial Eagle	
Lily pond	Pheasant-tailed Jacana, Eurasian Coot	Emydidae
Fish-lee pond	Eurasian Coot	Amphibians, Chinese Bullfrog, <i>Myxobolus</i>
Strand	Greater painted snipe, Gallinago snipes, Bluethroat	Emydidae
Reedbed	Pallas's Grasshopper Warbler	
Shed areas or banks	Richard's Pigeon	
Refrain areas (tail grass)	Japanese Quail, King Eucalypt, Common Stonechat, Blue Jay	Repules, Burmese Python
Pond/mudly margins	Red-billed Stork	
Wooded area	Burmese Python, Red-billed Stork, Black-bellied Swallow, Chinese Kingfisher	
Dead trees at adjacent locations	Greater-spotted Eagle, Eastern Imperial Eagle	

Species in black: targets generally reached.  
 Species in green: targets not reached.

- ❖ Essentially, some target species are of more conservation importance than others:
  - ✓ Species with higher conservation concern on a global and local context
- ❖ Further, some ecological functions are more restricted in the Deep Bay area (and hence more valued) than others
  - ✓ Breeding habitats, winter roost
- ❖ Hence, in terms of management objectives, emphasis on some species and/or habitats of higher conservation values are stressed in this 5-yearly Review.



### 5-yearly Review of HCMP Management Objectives

#### 1. Propose solutions to some long-term management issues

- ✓ Recurrent issues with beetle infestation at Pond 22
- ✓ Long-term vegetation control of *Phragmites* at Pond 14

#### 2. Address other long-term management issues which are not currently covered in the HCMP

- ✓ The use and control of trees

### 5-yearly Review of HCMP Management Actions Required to Achieve Identified Objectives

#### 1. Additional Management Actions Proposed:

- ✓ Attract Little Egret/Chinese Pond Heron as a breeding species by using decoys and tape
- ✓ Provide more suitable habitat to encourage breeding of Pheasant-tailed Jacana, Greater-painted Snipe and Black-winged Still

#### 2. Management Actions to be Continued:

- ✓ Continue to provide ponds with large fringes of emergent vegetation
- ✓ Continue stocking and drain-down schedule
- ✓ Provide shallow water ponds throughout the dry season
- ✓ Provide shallow water marsh areas throughout the dry season
- ✓ Continue to provide food source
- ✓ Provide refugia areas in both dry and wet season

**5-yearly Review of HCMP  
Consequences**

**Management Implications**

**Marsh Area (Management Compartment C)**

- ✓ Pond 14 to be kept as reedbed, natural colonisation by *Phragmites*
- ✓ Pond 19 minor re-profiling to increase shallow water
- ✓ Current use be kept for other ponds, i.e. Pond 15 *Nymphaea* pond, Pond 16 & 18, fish-free pond, Pond 17 marsh
- ✓ Provide exuviae traps on all marsh ponds in 2011 to review the need to maintain Ponds 20 – 22 as *Nelumbo* pond

**Fishpond Area (Management Compartment B & A)**

- ✓ Continue current practice of food provision for ardeids, ducks and starlings;
- ✓ Manage trees to attract breeding egrets and ardeids wintering roost.
- ✓ Include winter ardeids roost count

**5-yearly Review of HCMP  
Consequences**

**Management Implications**

Active tree management on a bi-annual basis to:

- Remove, limit growth of trees in areas where not required
- Enhance tree cover/diversity in areas where required

**5-yearly Review of HCMP**

Current EM&A requirement (monitoring and targets)

- ✓ No change proposed at this point but comment welcomed