
SHEUNG SHUI TO LOK MA CHAU SPUR LINE

Environmental Committee

Minutes of Meeting No. 25 held at 4:00pm

On Tuesday, 23 July 2013,

at Room 23E, 23/F, MTR Headquarters Building, Telford Plaza, Kowloon Bay

Present:		
Mr. John Allcock	WWF Hong Kong	Member (NGO)
Ms. Karen Barretto	Friends of the Earth (Hong Kong)	Member (NGO)
Mr. Michael Kilburn	The Hong Kong Bird Watching Society	Member (NGO)
Dr. Ng Cho-nam	The University of Hong Kong	Member (NGO)
Mr. Chan Kam-foon	Environmental Engineering Manager	Member (MTR)
Ms. Janice Choi	Works Maintenance Manager	Member (MTR)
Mr. Peter Choi	Environmental Engineer	Member (MTR)
Mr. Paul Leader	Ecological Consultant	Member (consultant)
Ms. Lai Nga-yee	Ecological Consultant	Member (consultant)
Absent with apology:		
Ms. Kenny Yiu	Manager - Environmental Engineering	Member (MTR)

Attachments	
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Annex A	Presentation Material of 25 th EC Meeting
Annex B	Apple Snail Trap User Manual and Bait Ingredient List

<u>Item/Description</u>	<u>Action By</u>
1. Welcomed Members to the No. 25 EC meeting.	
Item 1 - <u>Confirmation of minutes of Meeting No. 24</u>	
2. There were no comments on the minutes of Meeting No. 24 and the minutes were confirmed.	Noted
Item 2 - <u>Ecological Enhancement Works and Monitoring - an Update on Management Works and Look Ahead</u>	
3. <u>A Member (consultant)</u> reported on the ecological monitoring and management work undertaken between January and June 2013 at the LMC EEA (detailed in Annex A). It was noted that:	
a) All management activities comprised routine management practices such as vegetation management, including grass cutting, weeding, and other micro-habitat management practices, pond drain down, fish stocking, and pest control.	Noted
b) Sourcing of fish continued to be a concern. It was difficult to source from fish supplier for consistent volumes of fish supply in weekly basis during the dry season.	Noted
c) An Apple Snail Trap has been purchased and is now being used as a trial to control apple snails in Pond 21. <u>A Member (NGO)</u> noted that the apple snail trap looks promising and would like to see the overall results of the trial later; if such traps are effective, it might be worth purchasing more traps. <u>EC members (NGO)</u> expressed concerns on the ingredients of the bait used in the Apple Snail trap; <u>A Member (consultant)</u> noted that the bait is non-toxic and the full list of ingredients can be provided.	Annex B
d) <u>A Member (NGO)</u> queried the method the site contractor is currently using to remove apple snails. <u>A Member (consultant)</u> reported that site workers use hand-nets to collect apple snails around each marsh pond once per week.	Noted
e) <u>A Member (consultant)</u> reported on the construction progress of the new site boundary fence. <u>EC members (NGO)</u> queried the completion date of the site boundary fence and <u>A Member (MTR)</u> noted that the work should be completed by October 2013.	Noted
f) <u>A Member (consultant)</u> reported on the scheduled bund maintenance works at Pond 3 and 4. <u>A Member (NGO)</u> queried on the water refilling after the work. <u>A Member (consultant)</u> noted that water from these ponds are retained in the other ponds on site and will be pumped back to the pond once the work is completed. <u>A Member (consultant)</u> further noted that proposed wet season works were	Noted

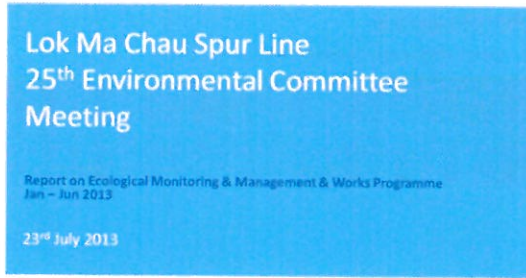
<u>Item/Description</u>	<u>Action By</u>
<p>often delayed and it is more feasible to do the work in early dry season. <u>A Member (NGO)</u> noted that such work delays also occur at Mai Po.</p> <p>g) <u>A Member (consultant)</u> reported that bird monitoring at Mai Po San Tsuen was conducted using transect count method since January 2013 after the observation tower there was reported unsafe. The change was reported to AFCDD who had no adverse comments. <u>A Member (NGO)</u> enquired whether the change in methodology would lead to a difference in number of birds recorded and <u>A Member (consultant)</u> concluded that it should make very little difference.</p> <p>h) <u>A Member (consultant)</u> reported on the densities of the bird target species at LMC EEA and Control Areas and several queries and comments were raised by EC members.</p> <p>i. <u>A Member (NGO)</u> noted a change in target bird densities in the reporting period and suggested that EEA could carry out additional management measure to reach the target level of some large waterbirds. <u>A Member (consultant)</u> reported that the densities of some target bird species were achieved. Proactive management for the stable supply of fish in drained ponds at EEA would benefit to attract those target species. <u>A Member (NGO)</u> concurred that proactive management measures at EEA are important.</p> <p><i>[Post-meeting note: Some of target bird species densities at EEA were ten to thirty times more than control areas. The suggested proactive management measure at EEA would be reviewed.]</i></p> <p>ii. <u>A Member (NGO)</u> enquired whether the drop in target bird density was due to the construction of site boundary fence. <u>A Member (consultant)</u> noted that site access by the contractor was controlled during the dry season; and any disturbances would be reflected in the numbers of all large waterbirds which was not the case (no significant change in the densities of Great Cormorant, Grey Heron, Eastern Imperial Eagle and Greater Spotted Eagle) suggesting that the construction work is not be the reason for the drop of certain target bird densities.</p> <p>iii. <u>A Member (NGO)</u> noted that three target bird species, Great Egret, Little Egret and Grey Heron have similar ecological niches but only Grey Heron reached the target level. <u>A Member (NGO)</u> noted the low density of Great Egret at LMC EEA could be due to the differences in the activity pattern of the two species. Grey Herons roost on-site in the morning and feed in drained ponds in the evening or after dark whereas Great Egrets roost at LMC EEA at night and feed during the day. Such activity pattern could lead to low density of Great Egret at LMC EEA but higher numbers at the control areas as the bird monitoring works were conducted in</p>	<p>Noted</p> <p>Noted</p>

<u>Item/Description</u>	<u>Action By</u>
<p>the morning when Great Egrets had left to forage elsewhere. <u>A Member (NGO)</u> noted that although the Grey Heron density was still reaching the target, the actual density had dropped by half in two years which is a cause for concern. <u>A Member (consultant)</u> noted that whilst the primary aim of EEA is to meet the targets set by the EP rather than maximizing the on-site density of target species. <u>A Member (NGO)</u> further noted that there was an increase in the Grey Heron density at Control Areas; he suggested attention should be paid on the long-term decline of Grey Heron density at LMC EEA even it is not a major concern at the moment.</p> <p><i>[Post-meeting note:</i></p> <p><i>Members (NGO) expressed concerns regarding the delay in draining ponds due to malfunctioning of pumps and problems with fish stocking and the impact of these on some target waterbirds. A Member (NGO) suggested having a more sustainable solution for fish sourcing, for example getting fish from fish farms closer to the EEA.</i></p> <p><i>A Member (MTR) reported that the pumps used at LMC are not used elsewhere in HK and all the spare parts have to be ordered from the manufacturer overseas which caused longer time required for fixing the pumps. Two sets of water pumps had been repaired and now working properly, the other water pumps will be delivered to the workshop for detail checking and overhaul. A Member (MTR) agreed that fish sourcing was a problem in the past few years as no local fish pond owners would sell their fish to EEA due to an agreement between the pond owners and the "Hong Kong & Kowloon Fresh Water Fish Association". A Member (MTR) reported that MTR is currently investigating the possibility to run a trial study on keeping and breeding fish fry on-site in order to have a more stable supply.]</i></p> <p>i) <u>A Member (consultant)</u> reported on modifications to the design of the boundary fence at compartment A with the aim to exclude dogs but permit otters to pass through. <u>A Member (NGO)</u> queried whether Eurasian Otters in other countries pass through such openings and <u>A Member (consultant)</u> reported that such designs are used in other countries. <u>A Member (NGO)</u> noted that Eurasian Otter use Pond 2 and queried whether the site boundary fence would change this. <u>A Member (consultant)</u> noted that the effect of the fence on Eurasian Otter is not yet known as the construction of fence is not yet completed but that otters have been considered in the design and that monitoring data will be reviewed to address this concern.</p> <p>j) <u>A Member (consultant)</u> reported on the results of herpetofauna monitoring.</p>	<p>Noted</p> <p>Noted</p>

<u>Item/Description</u>	<u>Action By</u>
<p>i. <u>A Member (NGO)</u> noted that he has spoken to Mr. Paul Crow of KFBG and noted that the exotic Red-eared Slider does not compete with Chinese Soft-shell Turtle. <u>A Member (NGO)</u> noted that invasive species may suddenly increase in numbers and it is good to control Red-eared Sliders at LMC. <u>A Member (consultant)</u> noted that there is no evidence to suggest that Red-eared Slider is becoming established at LMC and they were occasionally noted in Compartment A whereas Chinese Soft-shell Turtle were usually found in Compartments B and C and therefore the two species should not be competing with each other.</p> <p>ii. <u>A Member (NGO)</u> noted that the maximum number of amphibians had EEA declined over the years and queried the reason for such drop; and whether the amphibian decline could relate to the decline in Little Egrets. <u>A Member (consultant)</u> noted that this is unlikely to be the case as the numbers of Little Egrets recorded in the marshy ponds has never been high.</p> <p>iii. <u>A Member (NGO)</u> further noted that Paddy Frog at LMC EEA was declining, but the number of other amphibian species at EEA fluctuated over the years and no consistent pattern was observed. <u>A Member (consultant)</u> noted this could be due to the survey methodology as monitoring of amphibians was mainly done by recording the number of vocalizing individuals at night and that calls of amphibians were affected by a number of factors and that amphibians present may not always call and this may lead to the low numbers on some surveys. Furthermore observer bias could also have an effect on numbers recorded. <u>A Member (consultant)</u> noted focusing on the long-term trend in the number of species present is probably more relevant and that further information on the distribution of amphibians would be provided at the next EC meeting.</p> <p>k) <u>A Member (consultant)</u> reported that 50 new plastic egret decoys have arrived; one decoy will be erected after the typhoon season as a trial and the rest will be installed before the next breeding season.</p>	<p>Noted</p>
<p>Item 3 - <u>Discuss the LMC Management Review Report</u></p> <p>4. <u>A Member (MTR)</u> reported that the draft of the LMC Management Review Report has been circulated to EC members and that any further comments should be sent by 29 July 2013.</p> <p><u>A Member (NGO)</u> queried whether the Management Review Report needs to be submitted to ACE for review. <u>A Member (MTR)</u> reported that he has contacted the secretary of ACE before and the secretary advised him to send the report to EPD for forwarding to ACE. <u>A Member (consultant)</u> suggested</p>	<p>Noted</p>

<u>Item/Description</u>	<u>Action By</u>
<p>checking the requirements of the EP in this regard. <i>A Member (NGO)</i> recalled that it should be stated that the review HCMP should be sent to ACE. <i>A Member (MTR)</i> reported that EPD suggested only the review HCMP should be sent to ACE as per the EP requirement.</p> <p><i>[Post-meeting note:</i></p> <p><i>Further comments from the EC members were received in mid-August and the final report would be circulated for review after finalized.</i></p> <p><i>Prior to the submission of the 5-yearly review LMC HCMP, management review report for LMC Ecological Enhancement Area would be prepared for EPD, AFCD and EC members for comment.]</i></p>	
<p>Item 4 - <u>Any Other Business</u></p> <p>5. <i>A Member (consultant)</i> reported that the EIA study brief of a project near LMC EEA ('Drainage Improvement Works in San Tin (Remaining Works) (ESB-262/2013)) was issued but it did not specially refer to the potential impacts to the EEA. <i>A Member (MTR)</i> noted that the drainage work would be conducted in the dry season which is the peak season for target large waterbird species and that the construction period for the project also overlaps with that of the LMC Loop works on the eastern side of LMC EEA and this may lead to cumulative impacts to the EEA. MTR is drafting a letter to relevant government departments to express their concerns.</p> <p><i>[Post-meeting note: A letter was issued to the Drainage Services Department, Project Proponent of the Drainage Improvement Works in San Tin (Remaining Works), on 1 August 2013 to express the environmental concerns. The letter also copied to EPD and AFCD for record.]</i></p>	Noted
<p>Item 5 - <u>Date of Next Meeting</u></p> <p>6. The date of the next meeting is to be advised.</p>	Noted

Annex A----- P.1 of 6.



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Overview of Management Works Jan- Jun 2013

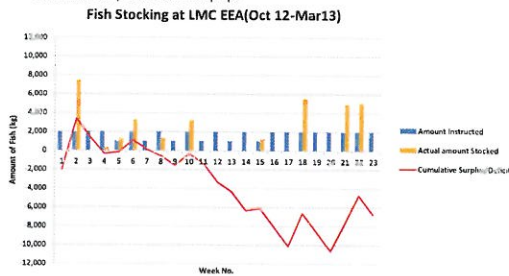
Vegetation Management

- Routine grass cutting & weeding
- Routine removal of unwanted species (*Phragmites*, *Typha*, *Mimosa*, *Mikania*, Parrot Feather etc.)
- Tree trimming and maintenance for damaged trees
- Removal of reeds and sedges from Ponds 17 & 19

Overview of Management Works Jan- Jun 2013

Winter Fish Stocking

- Fish stocked included Tilapia, Edible Goldfish, Silver Carp, Mud Carp, Common Carp and small carp sp.



- Substantial delay in sourcing of trash fish was again reported
- Resulted in prolonged period of no fish on-site
- Sudden influx of huge quantities of fish being stocked
- 40,000kg Instructed VS 33,284kg Actual Stocked

Overview of Management Works Jan- Jun 2013

Water Level Adjustment

Pond No.	Month First Instructed to Drain down	Action
7	Jan-13	(not fully drained)
8	Feb-13	(not drained)
3	Mar-13	Started draining in Jun 2013
4	Mar-13	Started draining in Jun 2013

Overview of Management Works Jan- Jun 2013

Summer Fish Stocking

Quantity Instructed & Actual Stocked.

	Quantity Instructed	Stocked Quantity
Tilapia	7,500 kg	6,980 kg*
Grass Carp	500 no.	500 no.

*Inadequate stocked quantity due to no stocking activities at Pond 3, 4 and 5

Overview of Management Works Jan- Jun 2013

General Site Management

- Provision of a big floating platform at Pond 10
- Pest Control: Red Fire Ant nests and Apple Snail
- Water quality management
- Dog trapping
- Water level adjustment
- Nest box maintenance

Annex A----- P.2 of 6.

Overview of Management Works Jan - Jun 2013

Provision of a large floating platform at Pond 10



Overview of Management Works Jan - Jun 2013

Pest Management

- Golden Apple Snail removal at Ponds 14 – 22

Quantity (kg) of Apple Snail Removed by Contractor

Pond No.	14	15	16	17	18	19	20	21	22	TOTAL
Jan	8	10	10	0	5	8	5	15	5	66
Feb	5	5	5	5	5	5	5	5	10	50
Mar	15	10	10	5	5	10	5	5	10	75
May	10	10	10	5	5	5	5	5	5	60
Total	38	35	35	15	20	28	20	30	30	251

Overview of Management Works Jan - Jun 2013

Pest Management

- Apple Snail Trap Trial



Overview of Management Works 2013

Erection of Permanent Site Boundary Fence



Scheduled Management Works for 2013

- Erection of Permanent Site Boundary Fence (Progress as of 30 Jun 2013)



Overview of Management Works Jan - Jun 2013

New Decoy

- 50 New Egret decoys have arrived
- One decoy will be erected as trial after the typhoon season
- The others will be erected before next breeding season



Annex A----- P.3 of 6.

Scheduled Management Works for 2013 Wet Season

Scheduled Bund Maintenance Works at Ponds 3, 4 & 5

- Delayed from 2012
- Draining suspended due to broken of electric panel (Mar-Early Jun 2013) and pumps (early-mid Jun 2013)
- Draining work started in late Jun 2013
- Hence, no fish was stocked in these ponds in summer 2012 and 2013

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

- Tower at Mai Po San Tsuen (MPST) was reported unsafe in January 2013
- Since then, tower counts at MPST were suspended and the bird monitoring was conducted using transect count.
- Subsequent checking by a certified professional in February 2013 confirmed that the tower was unsafe to use and might collapse
- Discussed the situation with AFCD in late March and the department has no adverse comment on the change in survey methodology



Monitoring of Target Waterbird Species: protocol

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



26 Bird Target Species

Species	Jul 2012 - Jun 2013		
	LMC	CA	Ratio
Demigrey Heron	5.47	0.18	15.11
Grey Heron	1.50	0.17	8.77
Great Egret	0.75	0.53	1.42
Little Egret	0.84	0.38	2.21
Chinese Pond Heron	0.71	0.02	36.56
Black-faced Spoonbill	1.35	0.005	275.29
Green Spadefish	0.02	0.00	LMC
Eastern Kingbird	0.02	0.00	LMC
Japanese Hobby	0.00	0.00	nr
Japanese Quail	0.00	0.00	nr
Eurasian Coot	0.01	0.005	16.95
Phalarope	0.00	0.005	7.95
Water Pipit	0.005	0.00	LMC
Black-winged Stilt	0.23	0.02	11.17
Plain Plover	0.01	0.005	5.78
Common Snipe	0.03	0.01	4.16
Richard's Plover	0.00	0.00	nr
Bluish Jay	<0.01	0.00	LMC
Japanese Sparrowhawk	0.00	0.004	4.58
Pallas's Grasshopper Warbler	0.31	0.003	119.1
Common Cuckoo	0.00	0.00	nr
Red-billed Stork	0.72	0.46	1.56
Black-necked Stork	<0.005	0.00	LMC

Key:
 NR - Not recorded within WCA or Control Areas during the period
 Blue - Target met (i.e. density in WCA at least twice that in Control Areas)
 Yellow - Target not met, although density higher than in Control Areas
 Red - Target not met and density lower than in Control Areas
 Casual observation only
 * One Japanese Yellow Warbler was recorded at Pond 1 by AFCD on 21 Apr 2013

26 Bird Target Species

Species	Jul 2012 - Jun 2013			Jul 2013 - Jun 2014			Jul 2014 - Jun 2015			Jul 2015 - Jun 2016		
	LMC	CA	Ratio	LMC	CA	Ratio	LMC	CA	Ratio	LMC	CA	Ratio
Demigrey Heron	5.47	0.18	15.11	2.72	0.25	10.88	2.12	0.22	9.64	1.95	0.31	6.32
Grey Heron	1.50	0.17	8.77	0.72	0.09	8.04	1.18	0.85	1.38	0.77	0.66	1.17
Great Egret	0.67	0.66	1.02	0.12	0.69	1.28	1.00	1.00	1.00	0.37	0.07	5.08
Little Egret	0.84	0.21	4.00	0.16	0.69	2.34	0.15	0.68	1.87	0.05	0.03	17.22
Chinese Pond Heron	0.69	0.00	nr	0.00	0.00	nr	0.00	0.00	nr	0.00	0.00	nr
Black-winged Stilt	0.23	0.02	11.17	2.53	1.00	2.53	3.67	0.90	1.82	2.11	1.29	1.72
Plain Plover	0.01	0.005	5.78	0.00	0.00	nr	0.00	0.00	nr	0.00	0.00	nr
Common Snipe	0.03	0.01	4.16	0.00	0.00	nr	0.00	0.00	nr	0.00	0.00	nr
Richard's Plover	0.00	0.00	nr	0.00	0.00	nr	0.00	0.00	nr	0.00	0.00	nr
Bluish Jay	<0.01	0.00	LMC	<0.01	0.00	LMC	<0.01	0.00	LMC	<0.01	0.00	LMC
Japanese Sparrowhawk	0.00	0.004	4.58	0.00	0.00	nr	0.00	0.00	nr	0.00	0.00	nr
Pallas's Grasshopper Warbler	0.31	0.003	119.1	0.00	0.00	nr	0.00	0.00	nr	0.00	0.00	nr
Common Cuckoo	0.00	0.00	nr	0.00	0.00	nr	0.00	0.00	nr	0.00	0.00	nr
Red-billed Stork	0.72	0.46	1.56	0.72	0.46	1.56	0.72	0.46	1.56	0.72	0.46	1.56
Black-necked Stork	<0.005	0.00	LMC	<0.005	0.00	LMC	<0.005	0.00	LMC	<0.005	0.00	LMC

Key:
 NR - Not recorded within WCA or Control Areas during the period
 Blue - Target met (i.e. density in WCA at least twice that in Control Areas)
 Yellow - Target not met, although density higher than in Control Areas
 Red - Target not met and density lower than in Control Areas
 Casual observation only
 * One Japanese Yellow Warbler was recorded at Pond 1 by AFCD on 21 Apr 2013

Annex A----- P.4 of 6.

Endangered Birds Jan - Jun 2013

Species name	Status	Maximum Count					
		Jan	Feb	Mar	Apr	May	Jun
Oriental Stork	Endangered	0	1	0	0	0	0
Black-faced Spoonbill	Endangered	69	140	103	6	0	0
Greater Spotted Eagle	Vulnerable	2	2	1	0	0	0
Eastern Imperial Eagle	Vulnerable	2	2	0	0	0	0
Collared Crow	Near Threatened	2	2	2	2	2	0

Endangered Birds 2009-2013

Species name	Status	2009	2010	2011	2012	2013 ^A
Oriental Stork	Endangered	0	0	0	0	1
Black-faced Spoonbill	Endangered	168	293	266	334	140
Greater Spotted Eagle	Vulnerable	2	2	2	2	2
Imperial Eagle	Vulnerable	2	2	3	2	2
Japanese Quail	Near Threatened	0	1	0	0	0
Yellow-breasted Bunting	Vulnerable	12	1	6	3	0
Collared Crow	Near Threatened	4	6	3	3	2

^A Up to Jun 2013
 Highlighted: Peak Count between 2009 and 2013

Mammal Observations

- New Infra-red cameras (without flash or glow) are now used at LMC.



Mammal Target and Observations



Mammal Target

- One dead Eurasian Otter found on the bund between Pond 10 and 14 on 5th March during site visit
- Carcass was sent to KFBG for detailed post mortem examination and preservation by veterinarian on the same day
- otter suffered numerous internal injury and wounds on the skin which were compatible with bite marks
- injuries were typical lesions of a dog bite, where the attacker grabs the victim from the top and shakes it



Mammal Target

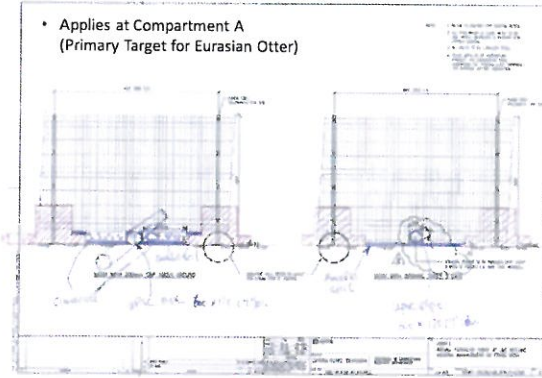
- Skin and Skeleton was sent to AFCD for preservation
- Specimens will probably be incorporated into the exhibition at the Hong Kong Wetland Park



Annex A----- P.5 of 6.

Dog-exclusive Fence at LMC

- Applies at Compartment A (Primary Target for Eurasian Otter)



Amphibian Observations

Maximum Total Number of Individuals recorded in all ponds in LMCEEA		2006	2007	2008	2009	2010	2011	2012	2013 ^a
Asian Common Toad	<i>Bufo melanostictus</i>	0	3	3	1	2	4	3	1
Asiatic Painted Frog	<i>Kaloula pulchra</i>	0	0	0	0	0	2	2	0
Buller's Pigmy Frog	<i>Microhyla butleri</i>	0	0	0	1	2	0	0	2
Ornate Pigmy Frog	<i>Microhyla ornata</i>	0	9	13	46	128	25	5	7
Paddy Frog	<i>Fejervarya limnocora</i>	85	25	23	14	12	7	20	6
Chinese Bullfrog	<i>Hoplobatrachus chinensis</i>	0	1	1	2	4	2	2	1
Gunther's Frog	<i>Rana guentheri</i>	130	157	145	74	137	86	132	108
Two-striped Grass Frog	<i>Rana talpehensis</i>	0	0	0	0	2	1	1	1
Brown Tree Frog	<i>Polypedates megacephalus</i>	12	16	32	33	27	33	12	14
No. of species recorded		7	6	6	7	8	8	8	8
Total No. of species recorded		9							

^a: Up to June 2013

Reptile Observations

Maximum Total Number of Individuals recorded in all ponds in LMCEEA		2006	2007	2008	2009	2010	2011	2012	2013 ^a
Red-eyed Slider	<i>Trachemys scripta</i>	0	0	0	0	1	2	0	1
Chinese Soft-shelled Turtle	<i>Pelodiscus sinensis</i>	1	1	1	1	1	1	1	1
Malayan Snail-eating Turtle	<i>Malayemys macrocephala</i>	0	0	0	1	0	0	0	0
Four-toed Gecko	<i>Gehyra maculata</i>	0	0	0	0	1	0	0	0
Chinese Gecko	<i>Gekko chinensis</i>	0	0	0	1	0	0	0	0
Bowring's Gecko	<i>Hemidactylus bowringii</i>	4	3	1	2	2	2	1	15
Chinese Skink	<i>Scincus chinensis</i>	0	0	1	0	0	0	0	0
Rever's Smooth Skink	<i>Scincella reverii</i>	0	0	0	0	1	0	0	0
Common Blind Snake	<i>Rhynchophthalmus brevirostris</i>	0	0	0	0	1	0	0	0
Burmese Python	<i>Python bivittatus</i>	1	1	1	0	0	0	0	0
Chinese Water Snake	<i>Cyrtoides chinensis</i>	0	1	0	1	0	1	0	0
Plumbeous Water Snake	<i>Cyrtoides plumbeo</i>	0	0	0	1	1	0	0	0
Indo-Chinese Rat Snake	<i>Ptyas korros</i>	1	1	0	0	0	0	0	0
Common Rat Snake	<i>Ptyas mucrosus</i>	1	1	1	0	1	1	1	0
Checkered Keelback	<i>Xenochrophis ascopteri</i>	1	2	1	2	6	3	1	1
Many-banded Krait	<i>Bungarus multicinctus</i>	0	1	0	0	0	0	1	1
Chinese Cobra	<i>Naja atra</i>	0	0	0	0	1	0	1	0
No. of species recorded		7	8	6	7	10	6	6	5
Total No. of species recorded		27							

^a: Up to June 2013

Dragonfly Monitoring

Species Diversity

Dragonfly recorded as adults or exuviae at LMC EEA	2006	2007	2008	2009	2010	2011	2012	2013 ^a
No. of Species Recorded	22	23	23	22	24	21	25	19
Total No. of Species Recorded	30							

^a In the first six months of 2013

Herpetofauna Targets

Species Name/ Maximum Count	2006	2007	2008	2009	2010	2011	2012	2013 ^a
Chinese Bullfrog <i>Hoplobatrachus chinensis</i>	0	1	1	2	4	2	2	1
Burmese Python <i>Python bivittatus</i>	1	0	1	0	0	0	0	0
Chinese Soft-shelled Turtle <i>Pelodiscus sinensis</i>	1	1	1	1	1	1	1	1

Remarks: ^a Up to Jun 2013

Mammal Targets

Eurasian Otter <i>Lutra lutra</i>	2006	2007	2008	2009	2010	2011	2012	2013 ^a
Maximum Count	1	1	2	1	3 ^b	0	1	1
No. of Records	2	2	2	1	2	0	1	4 [#]

Remarks:
^a Up to Jun 2013
^b Up to 3 individuals recorded between Pond 1 and 2 by AFCD.
[#] Including one dead individual found at LMC EEA



SNAIL BUSTERS APPLE SNAIL TRAP (Patent Pending)

INSTRUCTIONS

This trap effectively catches Apple Snails when the water temperature exceeds 20 C (68 F). The optimum feeding temperature is 25 -30 C (77-86 F). In terms of reducing the population of the invasive, exotic, apple snails (*Pomacea canaliculata* and *P. insularum*), the most effective time to trap is after winter aestivation and prior to reproduction, about a one month period (April here in NW Florida).

STEP 1. Insert the PVC pipe into the trap, so that the pipe passes through the floating grate within the trap (optional) and out of the hole in the bottom.

STEP 2. In knee-deep water (1 ½-2' deep), use a hammer to drive the PVC pipe into the bottom substrate until secure.

STEP 3. Push the trap down the PVC pipe until it is flush with the bottom and adjust O-ring on the PVC pipe down to the bottom of the trap. Make sure the grate is floating freely.

STEP 4. Place one packet of non-toxic, attractant feed into the trap.

STEP 5. After the trap has remained undisturbed overnight (or for as long as one week), remove the snails by pulling the trap to the surface of the water and rotating it on the PVC pipe. Remove snails and re-bait. Wear gloves because the edges of the snail shells can be very sharp. The floating grate is unnecessary, if the snails are removed often.

Please contact me for further information: jessvd@aol.com

Or go to our website: <http://snailbusters.wordpress.com/>



www.snailbusters.wordpress.com

Snail Busters Non-Toxic Attractant Bait

INGREDIENTS:

Ground Oats, Wheat Middlings, Ground Wheat, Cane Molasses, Soybean Oil, Calcium Carbonate, Dried Apple Pomace, Citric Acid, Artificial Flavoring, DL-Alpha Tocopheryl Acetate, Cholecalciferol, Vitamin A Acetate, Calcium Pantothenate, Vitamin B₁₂ Supplement, Riboflavin, Zinc Oxide, Copper Sulfate, Calcium Iodate, Natural Mixed Tocopherols (a Preservative), Ascorbic Acid, Magnesium Oxide, Rosemary Extract, Lecithin, Cobalt Carbonate, Ferrous Carbonate, Manganous Oxide, Sodium Selenite.