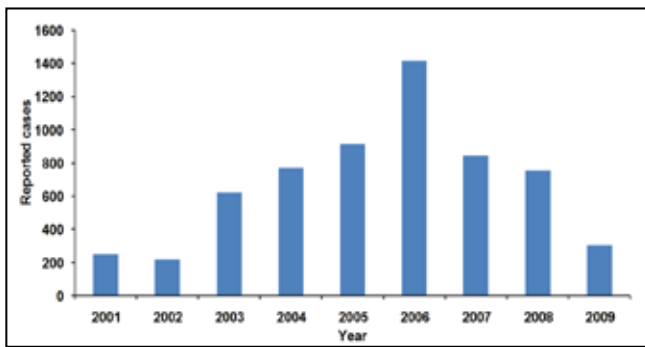


Fig. 12. Total number of macaque nuisance cases received by the AFCD from 2001 to 2009.



The AFCD is planning to extend the neutering programme to other areas, such as Shing Mun and Sai Kung Country Parks (西貢郊野公園) to neuter the macaques that belong to other smaller peripheral troops which are habituated to, and have learnt to forage in, urban fringe residential areas, with a view to controlling their population size. Surveys on the various populations of macaques will be continued annually, thus providing an important tool for monitoring the changes in the population structure and the effectiveness of the macaque contraceptive/neutering programme. Subject to the results of the population surveys and the number of nuisance cases in nearby suburban residential areas, the scope and scale of the contraceptive/neutering program will be reviewed for possible improvements in its effectiveness and/or robustness.

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Working Group Column

A Floristic Survey of Marshes in Hong Kong

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本署植物工作小組於2003至2009年間，在全港26片淡水及鹹淡水沼澤濕地，進行植物調查。小組蒐集了植物種類、環境數據及植物親水性等資料。調查共錄得372種植物，其中191種（共46科）為水生或濕生植物，本文根據其出現頻率分為「十分常見」、「常見」、「不常見」和「稀有」。調查結果補充了文獻的不足，並為沼澤濕地的保育建立數據基礎。

Introduction

The rapid decline of rice cultivation in Hong Kong in the 1960s and 1970s caused many paddy fields to be left fallow or converted for growing vegetables. Some of these abandoned fields, mostly located around villages, have gradually become marshes as a result of natural succession (自然演替).

Despite the growing interest in this unique wetland habitat, research on the vegetation of marshes in Hong Kong has been rather limited. A number of publications in the 1970s and 1980s gave an overview of wetland flora in Hong Kong during this period, including common aquatic plants (Hodgkiss, 1978), grasses and sedges (Griffiths, 1983), common

freshwater plants (Hill et al., 1978) and brackish water plants (Hu, 1974). As part of a territory-wide survey of freshwater wetlands, Dudgeon and Chan (1996) recorded 73 species of macrophytes (大型水生植物) in 33 freshwater wetlands. However, most wetland plants (except for Cyperaceae 莎草科) were identified to genus level only. Shaw (1998) conducted a taxonomic and ecological review of the family Cyperaceae, which consists of many wetland species. The Biodiversity Survey conducted by the University of Hong Kong (HKU) provided data on the distribution and commonness of vascular plants in Hong Kong (Corlett et al., 2000), but uncertainties still exist for many wetland plants which were either rare or unrecorded in the HKU survey. An unpublished consultancy report produced for the West Rail project (KCRC, 2001) also provided information on the local distribution of 80 species of plants associated with wetlands.

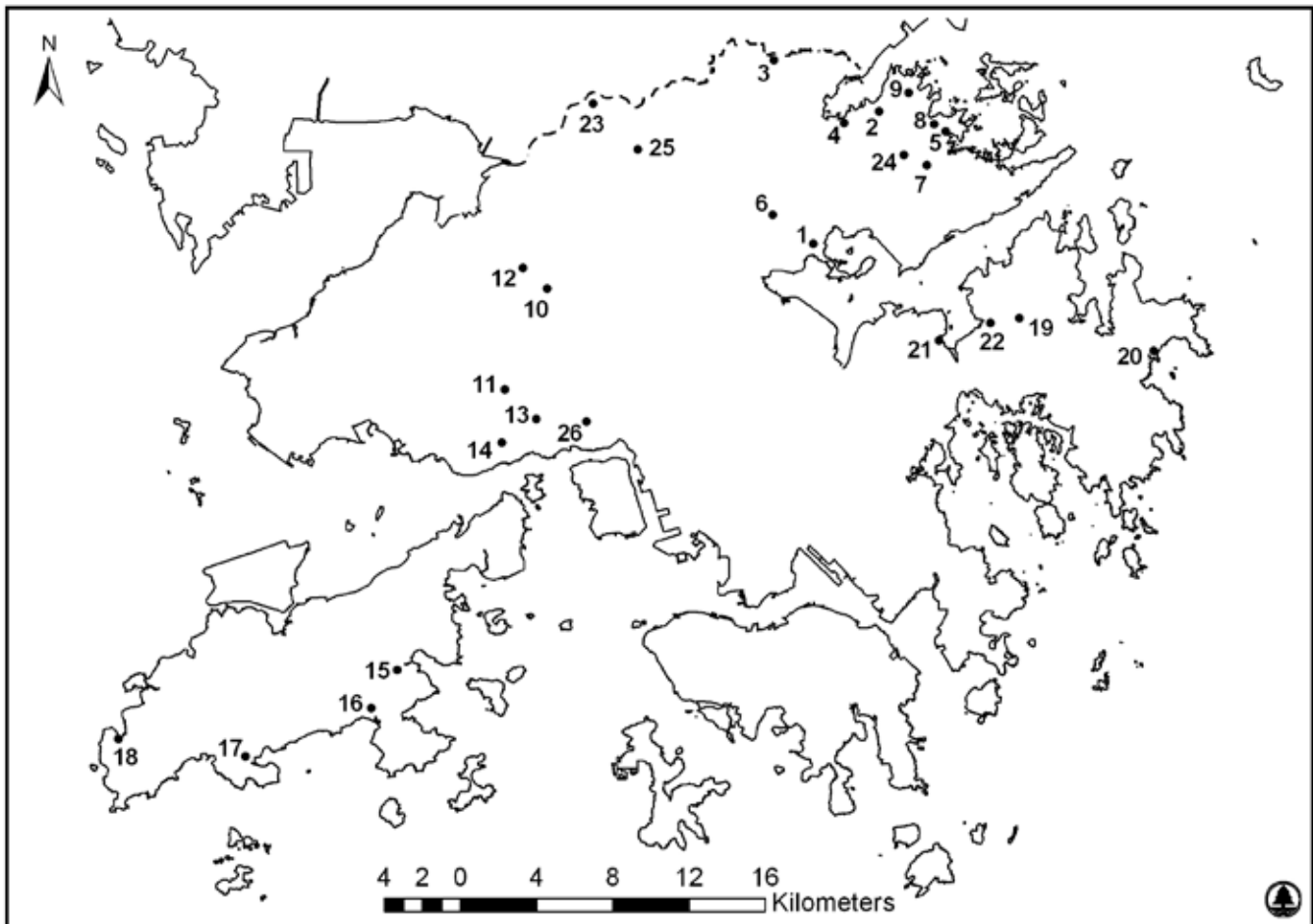
With the rapid succession of abandoned paddy fields to marshes as a result of hydrological changes and weed invasion, the available information is deemed insufficient to reflect the

floral characteristics of this fast-changing habitat. A territory-wide vegetation survey of marshes was conducted by the Agriculture, Fisheries and Conservation Department (AFCD), with the aim of better understanding the floristic composition of marshes. The survey also provided an opportunity to update the current status and distribution of plant species, information that had not been collected for a long time.

Methods and Analysis

A survey of 26 marshes (Fig. 12) was conducted from 2003 to 2009 by the AFCD Plant Working Group and staff of the Hong Kong Herbarium. The sites were chosen based on previous studies (e.g. Dudgeon & Chan, 1996; KCRC, 2001) and a desktop review of aerial photos and vegetation maps. Most of the sites were freshwater marshes located on low-lying ground (Fig. 13). Aerial photos taken in the 1970s indicated that all of the sites surveyed were wet agricultural fields or fish ponds at the time, whereas active agricultural activities remained only in Long Valley during our survey.

Fig 12. Location of marshes surveyed (Date(s) of survey for each site are given).



PLAN No. M_2010_016

- 1 - Ha Tei Ha 蝦地下 10.IX.2003; 2 - Kuk Po 谷埔 9.VII.2003; 3 - Lin Ma Hang 蓮麻坑 26.VI.2003; 4 - Luk Keng 鹿頸 20.V.2003, 5.V.2009; 5 - Sam A Tsuen 三桠村 29.X.2009; 6 - Sha Lo Tung 沙螺洞 18.VI.2003, 12.IX.2008; 7 - Sheung Ha Miu Tin 上下苗田 26.IX.2003; 8 - Siu Tan 小灘 8.X.2003; 9 - So Lo Pun 鎖羅盆 21.VII.2003, 2.X.2003; 10 - Kam Tin 錦田 22.X.2003, 4.VII.2008; 11 - Kat Hing Bridge 吉慶橋 12.XI.2003; 12 - Sha Po 沙埔 16.VII.2003; 13 - Tsing Fai Tong 清快塘 5.XI.2003, 27.VIII.2008, 22.X.2008; 14 - Yuen Tun 圓墩 5.XI.2003; 15 - Luk Tei Tong 鹿地塘 12.VIII.2003; 16 - Pui O 貝澳 27.VIII.2003, 23.VI.2008; 17 - Shui Hau 水口 17.IX.2003, 17.VII.2009; 18 - Yi O 二澳 6.XI.2008; 19 - Cheung Sheung 樟上 26.XI.2003; 20 - Ham Tin & Tai Wan 鹹田及大灣 15.X.2003, 10.X.2008, 2.IX.2009; 21 - Sai Keng 西徑 3.VII.2003; 22 - Yung Shue O 榕樹澳 27.V.2003, 25.VII.2008, 1.IX.2009; 23 - Hoo Hok Wai 蠔殼圍 11.VIII.2008; 24 - Wu Kau Tang 烏蛟騰 30.X.2008, 15.VII.2009; 25 - Long Valley 塱原 12.II.2009; 26 - Shek Lung Kung 石龍拱 21.XI.2009

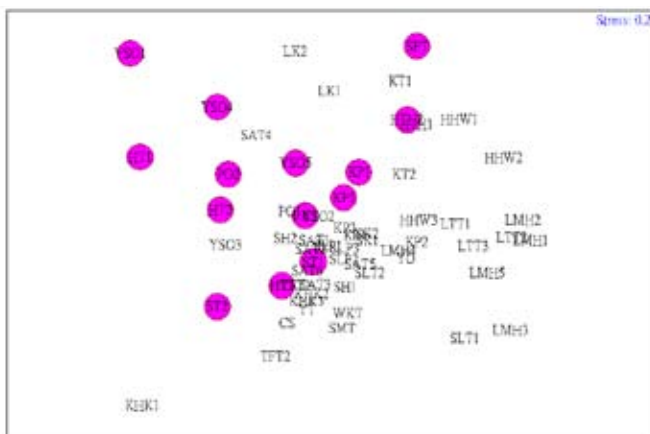
Fig 13. Luk Keng Marsh – freshwater marsh on low-lying ground.



The survey effort was not consistent across sites, as the sites varied in size and habitat complexity. While most of the sites were visited only once in 2003, a few sites were revisited in 2008 and 2009 in order to capture the flowering or fruiting period of certain target species. In order to cover as many sites and species as possible, a walk-through survey was conducted, instead of a quantitative survey, such as quadrat and transect. Surveyors walked around the sites and recorded all species along the route until no more new species were encountered. Plants were identified on site or collected for further identification in the Hong Kong Herbarium. When significant variations in environmental conditions (such as water depth and tidal influence) were observed within a site, the site was further divided into different parcels (sub-site) with similar site conditions, and plant species were recorded for each sub-site. A total of 64 sub-sites within the 26 sites were recorded.

The frequency of occurrence of each species in the surveyed sites was calculated. In addition, analysis of species composition was conducted using Non-metric Multidimensional Scaling (NMDS) (PRIMER 5 for Windows, version 5.2.9, 2002). Species composition was analysed for sites at higher ($\geq 100\text{m}$) and lower ($< 100\text{m}$) altitudes, as well as for sub-sites with and without tidal influence.

Fig 14. NMDS plot of wetland plant species composition in sub-sites with (circled sub-sites in pink) and without (not circled) tidal influence



Results

A total of 372 plant species were recorded in the 26 sites surveyed. These included wetland species and terrestrial species that colonise drying-up marshes. Excluding plant species that were widespread or commonly found in non-wetland habitats, a total of 191 wetland species in 46 families were recorded (Annex 1). Major plant families were Cyperaceae (51 species), Poaceae (禾本科, 32 species), Scrophulariaceae (玄參科, 16 species) and Polygonaceae (蓼科, 12 species).

Commonness of wetland plants

Annex 1 summarises the commonness of wetland plant species in Hong Kong, primarily based on the frequency of occurrence in the sites surveyed. It should be noted, however, that some species recorded in marshes were also present in other types of wetlands, such as mangroves, streams and constructed wetlands. The distribution of these species in other habitats was also taken into account when evaluating their frequency of occurrence in Hong Kong. Around 11% (21 species) of the 191 species shown in Annex 1 are exotic species. Annex 1 also indicates the life form of plant species (submerged, floating, floating-leaved, emergent, hygrophytic), as observed during the survey.

Species associated with brackish marshes

The NMDS plot in Fig. 14 shows a clear distinction between the species composition in freshwater marshes and marshes under tidal influence. A number of species, mostly Cyperaceae, were confined to sub-sites under tidal influence (Table 1), so they could be considered indicator species for brackish marshes. Mangroves and mangrove associates were also found at the fringe of brackish marshes, but they are not shown in Table 2, as the focus of this study was marsh species.

Table 1. Wetland plant species restricted to brackish marshes

Family	Species Name	Chinese Name
Cyperaceae 莎草科	<i>Cladium mariscus</i> subsp. <i>jamaicense</i>	華克拉莎
	<i>Cyperus stoloniferus</i>	粗根莖莎草
	<i>Eleocharis geniculata</i>	黑籽荸薺
	<i>Eleocharis spiralis</i>	螺旋鱗荸薺
	<i>Fimbristylis ferruginea</i>	銹鱗飄拂草
	<i>Fimbristylis subbispicata</i>	雙穗飄拂草
	<i>Fimbristylis tetragona</i>	四稜飄拂草
	<i>Scirpus littoralis</i>	鑽苞蘆草
	Poaceae 禾本科	<i>Paspalum vaginatum</i>
<i>Sporobolus virginicus</i>		鹽地鼠尾粟
<i>Zoysia sinica</i>		中華結縷草
Scrophulariaceae 玄參科	<i>Lindernia angustifolia</i>	狹葉母草

Species associated with disturbed or drying-up marshes

Table 2 shows the common terrestrial species of trees, shrubs, herbs and climbers recorded during the survey. These species were recorded mainly at the fringe of the marshes, or in the portion of the marshes that had started to dry up. The trees species recorded were tolerant of relatively wet soil, but the climbers and herbs were mainly weedy species ubiquitous in Hong Kong. The dominance of these species in a wetland indicates that the wetland has been disturbed or is in the process of drying up.

Some plants appeared to be associated with wetlands, but were usually found at the drier portion of marshes. Among them were some members of the Poaceae family, including *Ischaemum* spp. (鴨嘴草屬), *Microstegium ciliatum* (剛莠竹), and *Apluda mutica* (水蔗草), as well as members of various other families, including *Cyclosorus interruptus* (間斷毛蕨), *Ludwigia octovalvis* (毛草龍) and *Polygonum pubescens* (伏毛蓼). The dominance of these species also indicates that the wetlands were drying up.

Table 2. Terrestrial plants commonly recorded during the survey.

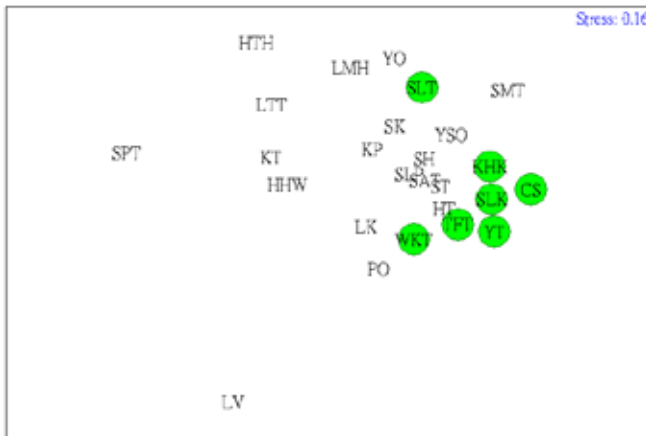
Habit	Family	Species Name	Chinese Name
Tree	Myrtaceae 桃金娘科	<i>Cleistocalyx operculatus</i>	水翁
	Moraceae 桑科	<i>Ficus hispida</i>	對葉榕
	Euphorbiaceae 大戟科	<i>Glochidion hirsutum</i>	厚葉算盤子
		<i>Glochidion zeylanicum</i>	香港算盤子
		<i>Sapium sebiferum</i>	烏柏
	Shrub	Verbenaceae 馬鞭草科	<i>Clerodendrum inerme</i>
Melastomataceae 野牡丹科		<i>Melastoma candidum</i>	野牡丹
Malvaceae 錦葵科		<i>Urena lobata</i>	肖梵天花
Climber	Cuscutaceae 菟絲子科	<i>Cuscuta australis</i>	南方菟絲子
	Convolvulaceae 旋花科	<i>Ipomoea cairica</i> *	五爪金龍
	Lygodiaceae 海金沙科	<i>Lygodium scandens</i>	小葉海金沙
		<i>Lygodium japonicum</i>	海金沙
	Asteraceae 菊科	<i>Mikania micrantha</i> *	薇甘菊
	Rubiaceae 茜草科	<i>Paederia scandens</i>	雞矢藤
	Polygonaceae 蓼科	<i>Polygonum perfoliatum</i>	杠板歸
Herb	Asteraceae 菊科	<i>Ageratum conyzoides</i> *	藿香薷
		<i>Bidens alba</i> *	白花鬼針草
		<i>Wedelia chinensis</i>	蟛蜞菊
		<i>Wedelia trilobata</i> *	三裂葉蟛蜞菊
		<i>Conyza sumatrensis</i> *	蘇門白酒草
		<i>Crassocephalum crepidioides</i>	野茼蒿
	Araceae 天南星科	<i>Alocasia macrorrhiza</i>	海芋
	Fabaceae 蝶形花科	<i>Desmodium heterophyllum</i>	異葉山螞蟻
		<i>Mimosa pudica</i>	含羞草
	Poaceae 禾本科	<i>Digitaria</i> spp.	馬唐屬
		<i>Eleusine indica</i>	牛筋草
		<i>Panicum maximum</i>	大黍
		<i>Paspalum conjugatum</i>	兩耳草
		<i>Pennisetum alopecuroides</i> *	狼尾草
		<i>Sporobolus fertilis</i>	鼠尾粟
Polygonaceae 蓼科	<i>Polygonum chinense</i>	火炭母	
Solanaceae 茄科	<i>Solanum torvum</i> *	水茄	

*indicates exotic species

Species at higher and lower altitudes

The NMDS plot in Fig. 15 shows differentiation between species composition of sites at higher altitude (100m or above) and those at low altitudes. Notably absent from the higher-altitude sites were brackish species, including *Cyperus malaccensis* (茳芏) and *Acrostichum aureum* (鹵蕨), and common lowland weeds, such as *Brachiaria mutica* (巴拉草), *Alternanthera philoxeroides* (空心莧), *Aster subulatus* (鑽形紫苑), *Apluda mutica* (水蔗草) and *Eclipta prostrata* (鱧腸).

Fig 15. NMDS plot of wetland plant species composition in sites at higher altitudes of 100 m and above (circled sites in green) and lower altitudes (not circled).

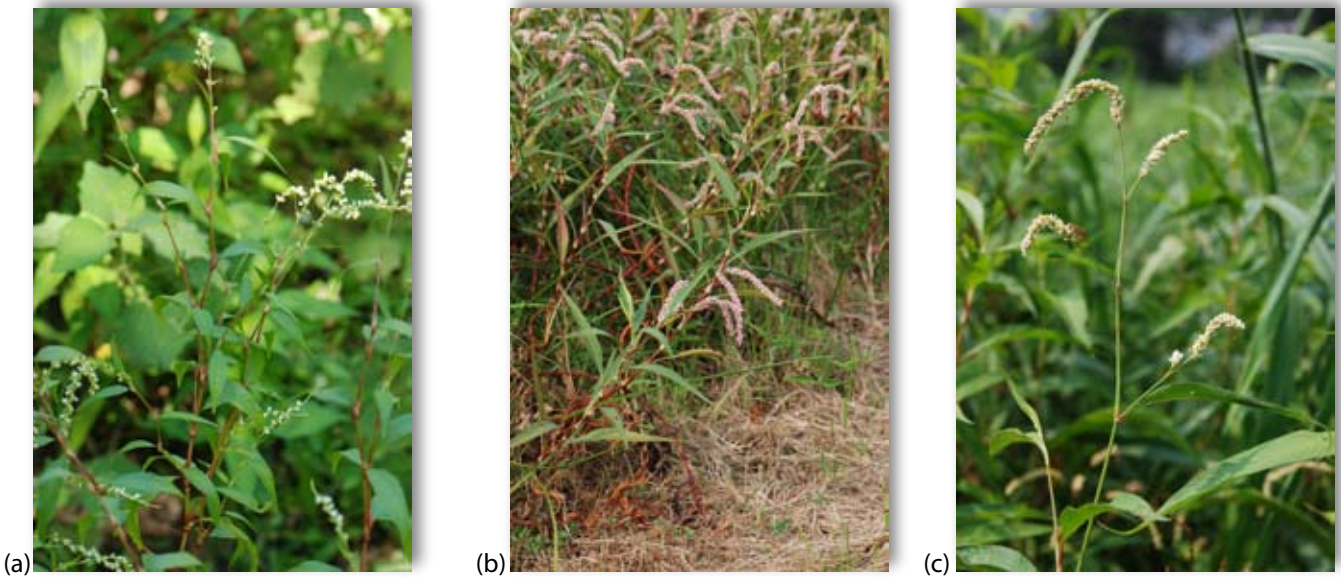


Discussion

Rarity and conservation status

Most of the wetland plants in Hong Kong are small herbs that can be easily overlooked. Many are annuals with short flowering/fruitletting periods, so their occurrence can be highly seasonal. The rarity of some species in the existing literature might reflect the lack of surveys. For example, some species considered "rare", e.g. *Eleocharis acutangula* (銳稜荸薺), *Fimbristylis acuminata* (披針穗飄拂草), in Corlett et al. (2000) were found in a number of sites during this study. On the other hand, some rare or uncommon species might have previously been recognised as "common" due to confusion in identification. For example, *Polygonum hydropiper* (水蓼), which is easily confused with *P. glabrum* (光蓼) or *P. lapathifolium* (大馬蓼) (Fig. 16), was found in only one site in this survey, and *Ludwigia perennis* (細花丁香蓼), which is easily confused with *L. hyssopifolia* (草龍), was not recorded in any of the surveyed sites.

Fig 16. Easily confused *Polygonum* species: (a) *P. hydropiper*; (b) *P. glabrum*; (c) *P. lapathifolium*.



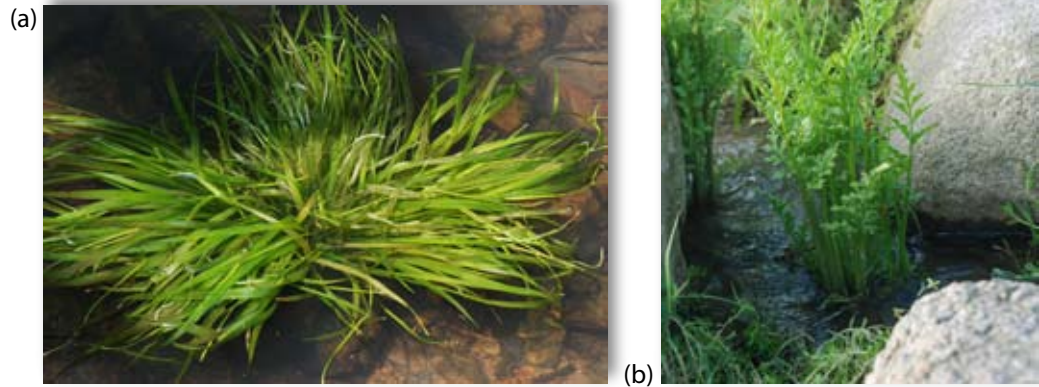
In general, the wetland flora in Hong Kong consists mainly of cosmopolitan or pantropical species. Some paddy field weeds have become uncommon locally due to the decline of agricultural activities, but they are not considered to be of major conservation concern if they are widespread globally or regionally. However, the study results indicate that the population of many floating or submerged plants is seemingly in decline locally, probably as a result of the abandonment of paddy fields. For instance, species listed as "common" or "very common" in Hill et al. (1976), including *Vallisneria spiralis* (苦草), *Utricularia aurea* (黃花狸藻) and *Wolffia arrhiza* (微萍), could not be found in this survey. *Callitriche stagnalis* (now *C. palustris*) (水馬齒), *Marsilea quadrifolia* (田字草) and *Salvinia natans* (槐葉蘋) were previously considered "common" or "very common" (Hill et al., 1976), but were only recorded in one or two sites in this survey. Similarly, some of the plants previously classified as problematic "paddy weeds" are now listed as threatened

in Japan as a result of the abandonment of paddy fields (Yamada et al., 2007). Some wetland species listed in the Red Data Book of Japan (Ministry of the Environment, 1997) are regarded as rare or becoming rare in Hong Kong. These include the Critically Endangered *Potamogeton* spp. (眼子菜屬), *Ruppia maritima* (川蔓藻), *Panicum paludosum* (水生黍), *Lobelia hancei* (假半邊蓮); the Endangered *Najas minor* (小茨藻), *Utricularia exoleta* (少花狸藻); the Vulnerable *Marsilea quadrifolia*, *Salvinia natans*, *Azolla imbricata* (滿江紅), *Utricularia uliginosa* (濕地挖耳草), and *Blyxa aubertii* (無尾水節); and the Near Threatened *Veronica undulata* (水苦蕒).

Generally speaking, studies of wetland plants are relatively limited. The *List of Plants under State Protection* in China (國家重點保護野生植物名錄, 1999) consists of few wetland species, among which only two species have been recorded in Hong Kong – *Ceratopteris thalictroides*

(水蕨, Fig. 17a) and *Liparis ferruginea* (銹色羊耳蒜). *C. thalictroides* is considered "Vulnerable" (VU) in the Mainland (Yu et al., 1998), but despite its declining population in the Mainland as a result of habitat destruction, this species is fairly widespread in Hong Kong. Another species listed as "VU" in the Mainland (Yu et al., 1998), *Blyxa aubertii* (無尾水箭, Fig. 17b), is now considered rare in Hong Kong, due to the disappearance of suitable habitat (that is, shallow pools with clear water).

Fig 17. Two nationally threatened species that have been recorded in Hong Kong: (a) *Blyxa aubertii*; (b) *Ceratopteris thalictroides*



The Red Data Book of Taiwan, now in preparation, includes many wetland plant species. The listed species that are also rare or uncommon in Hong Kong include *Utricularia uliginosa*, *Salvinia natans*, *Potamogeton* spp., *Ludwigia perennis*, and *Cladium jamaicense* (華克拉莎). On the other hand, the following Red Data Book listed species are fairly common and widespread in Hong Kong: *Utricularia bifida* (挖耳草), *Hygrophila lancea* (now *H. salicifolia*, 水蓴衣), *Floscopa scandens* (聚花草), *Eriocaulon sexangulare* (華南穀精草) and *Philydrum lanuginosum* (田蔥).

Exotic species

Another observation from the current study is the rapid colonisation of exotic plants in the marshes of Hong Kong, especially in disturbed sites and constructed wetlands. A few exotic species first sighted in Hong Kong in the 1990s, including *Typha angustifolia* (水燭), *Lindernia rotundifolia* (圓葉母草), *Kyllinga aromatica* (香根水蜈蚣), *Cyperus imbricatus* (疊穗莎草) and *Aster subulatus* (鑽形紫苑), have become fairly common in abandoned fields and ponds in the New Territories. Some exotic species introduced by the aquarium or horticultural trade have also become naturalised: e.g. *Egeria densa* (水蘊草), *Cyperus flabelliformis* (風車草), *Lindernia rotundifolia* (圓葉母草) and *Hydrocotyle ranunculoides*. Some of the exotic species were observed to have proliferated in constructed wetlands. Managers of constructed wetlands are advised to remove the naturally colonising exotic species regularly, to avoid further expansion of these aggressive species.

Wetland Indicator Categories

The Wetland Indicator Categories defined by the US Fish and Wildlife Service (Reed, 1988) indicate the probability of a species occurring in wetlands versus non-wetlands. Wetland plants are divided into the following categories based on their affinity to wetlands: Obligate wetland (OBL), Facultative wetland (FACW), Facultative (FAC) and Facultative upland (FACU). In the US, these categories were decided based on consensus among experts. While

the current study does not provide sufficient data for the determination of Wetland Indicator Categories for the species in Hong Kong, the life form of each species was recorded during the survey. The composition of species in a wetland, including the percentage cover of hygrophytes (濕生植物) and hydrophytes (水生植物) (i.e. submerged, floating, floating-leaved, emergent), could indicate the degree of "wetness" of wetlands. This information would be useful in evaluating the ecological value and monitoring the ecological function of natural and constructed wetlands.

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Annex1. List of wetland plants recorded at the 26 surveyed marshes.

Family	Species Name	Chinese Name	Exotic	Life Form ¹	Commonness ²
Acanthaceae 爵床科	<i>Hygrophila salicifolia</i>	水蓑衣		E	C
Acrostichaceae 鹵蕨科	<i>Acrostichum aureum</i>	鹵蕨		E	C*
Alismataceae 澤瀉科	<i>Sagittaria guayanensis</i> subsp. <i>lappula</i>	冠果草		FL	U
	<i>Sagittaria sagittifolia</i> subsp. <i>leucopetala</i>	慈姑		E	U*
Amaranthaceae 莧科	<i>Alternanthera philoxeroides</i>	空心莧	✓	E	C
	<i>Alternanthera sessilis</i>	蝦鉗菜		E/H	C
Apiaceae 傘形科	<i>Centella asiatica</i>	積雪草		H	C*
	<i>Hydrocotyle ranunculoides</i>		✓	FL/E	C*
	<i>Hydrocotyle sibthorpioides</i>	天胡荽		H	C
	<i>Oenanthe javanica</i>	水芹		E	U*
Araceae 天南星科	<i>Colocasia esculenta</i>	芋		E/H	C
	<i>Pistia stratiotes</i>	大藻	✓	F	C*
Asteraceae 菊科	<i>Adenostemma lavenia</i>	下田菊		E	C
	<i>Aster subulatus</i>	鑽形紫苑	✓	E/H	C*
	<i>Eclipta prostrata</i>	鱧腸		E/H	C
	<i>Pluchea indica</i>	闊苞菊		H	C*
	<i>Spilanthes paniculata</i>	金鈕扣		E/H	C
Athyriaceae 蹄蓋蕨科	<i>Callipteris esculenta</i>	菜蕨		H	U*
Azollaceae 滿江紅科	<i>Azolla imbricata</i>	滿江紅		F	U*
Balsaminaceae 鳳仙花科	<i>Impatiens chinensis</i>	華鳳仙		E	C
Brassicaceae 十字花科	<i>Cardamine flexuosa</i>	彎曲碎米薺		H	C*
	<i>Rorippa cantoniensis</i>	廣州蔞菜		H	R
Callitricheaceae 水馬齒科	<i>Callitriche palustris</i> var. <i>elegans</i>	東北水馬齒		E/H	R
Campanulaceae 桔梗科	<i>Lobelia hancei</i>	假半邊蓮		E	R
	<i>Sphenoclea zeylanica</i>	尖瓣花		E	U*
Caryophyllaceae 石竹科	<i>Drymaria diandra</i>	荷蓮豆		E/H	C*
	<i>Myosoton aquaticum</i>	鵝腸菜		H	C*
Clusiaceae 山竹子科	<i>Hypericum japonicum</i>	地耳草		E/H	C
Commelinaceae 鴨跖草科	<i>Commelina diffusa</i>	節節草		E/H	VC
	<i>Commelina paludosa</i>	大苞鴨跖草		H	R
	<i>Floscopa scandens</i>	聚花草		E	VC

Family	Species Name	Chinese Name	Exotic	Life Form ¹	Commonness ²
	<i>Murdannia bracteata</i>	大苞水竹葉		H	U*
	<i>Murdannia loriformis</i>	牛軛草		H	U*
	<i>Murdannia nudiflora</i>	裸花水竹葉		E/H	C*
	<i>Murdannia vaginata</i>	細柄水竹葉		E/H	U
Convolvulaceae 旋花科	<i>Ipomoea aquatica</i>	蕹菜	✓	FL/H	C*
Cyperaceae 莎草科	<i>Cladium mariscus</i> subsp. <i>jamaicense</i>	華克拉莎		E	R
	<i>Cyperus difformis</i>	異型莎草		E/H	C*
	<i>Cyperus distans</i>	疏穗莎草		H	C*
	<i>Cyperus flabelliformis</i>	風車草	✓	E/H	C*
	<i>Cyperus haspan</i>	畦畔莎草		E/H	C
	<i>Cyperus imbricatus</i>	疊穗莎草	✓	E	U*
	<i>Cyperus iria</i>	碎米莎草		E/H	C*
	<i>Cyperus malaccensis</i>	茳芏		E	U
	<i>Cyperus malaccensis</i> var. <i>brevifolius</i>	短葉茳芏		E	C
	<i>Cyperus odoratus</i>	斷節莎	✓	E	U*
	<i>Cyperus pilosus</i>	毛軸莎草		E	VC
	<i>Cyperus rotundus</i>	香附子		H	C*
	<i>Cyperus stoloniferus</i>	粗根莖莎草		H	C*
	<i>Diplacrum caricinum</i>	裂穎茅		H	R
	<i>Eleocharis acutangula</i>	銳稜荸薺		E	C
	<i>Eleocharis congesta</i>	密花荸薺		E	R
	<i>Eleocharis dulcis</i>	荸薺	✓	E	C
	<i>Eleocharis equisetina</i>	木賊荸薺		E/H	U
	<i>Eleocharis geniculata</i>	黑籽荸薺		E	R
	<i>Eleocharis ochrostachys</i>	假荸薺		E	U
	<i>Eleocharis retroflexa</i>	貝殼葉荸薺		H	U
	<i>Eleocharis spiralis</i>	螺旋鱗荸薺		E/H	U*
	<i>Fimbristylis acuminata</i>	披針穗飄拂草		E/H	C*
	<i>Fimbristylis aestivalis</i>	夏飄拂草		H	U*
	<i>Fimbristylis complanata</i>	扁鞘飄拂草		H	C*
	<i>Fimbristylis cymosa</i>	黑果飄拂草		H	C*
	<i>Fimbristylis dichotoma</i>	兩歧飄拂草		H	C
	<i>Fimbristylis ferruginea</i>	銹鱗飄拂草		E/H	C*
	<i>Fimbristylis miliacea</i>	日照飄拂草		H	C
	<i>Fimbristylis nutans</i>	垂穗飄拂草		E/H	R
	<i>Fimbristylis schoenoides</i>	少穗飄拂草		H	U
	<i>Fimbristylis subbispicata</i>	雙穗飄拂草		E/H	U*
	<i>Fimbristylis tetragona</i>	四稜飄拂草		E/H	R
	<i>Fuirena ciliaris</i>	毛芙蘭草		E	R
	<i>Fuirena umbellata</i>	芙蘭草		E	C
	<i>Gahnia tristis</i>	黑莎草		H	C*
	<i>Kyllinga aromatica</i>	香根水蜈蚣	✓	E/H	C*
	<i>Kyllinga brevifolia</i>	短葉水蜈蚣		H	C
	<i>Kyllinga monocephala</i>	單穗水蜈蚣		H	C*
	<i>Lepidosperma chinense</i>	鱗子莎		H	C*
	<i>Lipocarpa chinensis</i>	華湖瓜草		E/H	U
	<i>Lipocarpa microcephala</i>	湖瓜草		E/H	R
	<i>Pycnus flavidus</i>	球穗扁莎		H	C
	<i>Pycnus polystachyus</i>	多穗扁莎		H	VC
	<i>Pycnus sanguinolentus</i>	紅鱗扁莎		E/H	C
	<i>Rhynchospora chinensis</i>	華刺子莞		H	R
	<i>Rhynchospora corymbosa</i>	傘房刺子莞		H	U*
	<i>Rhynchospora rugosa</i>	皺果刺子莞		E/H	U*
	<i>Scirpus juncooides</i>	螢藺		E	U

Family	Species Name	Chinese Name	Exotic	Life Form ¹	Common-ness ²
	<i>Scirpus littoralis</i>	鑽苞蘆草		E/H	R
	<i>Scirpus mucronatus</i>	北水毛花		E	R
Equisetaceae 木賊科	<i>Equisetum debile</i>	筆管草		E/H	U*
Eriocaulaceae 穀精草科	<i>Eriocaulon merrillii</i>	菲律賓穀精草		E/H	C*
	<i>Eriocaulon nantoense</i>	南投穀精草		E/H	U*
	<i>Eriocaulon sexangulare</i>	華南穀精草		E/H	C*
Fabaceae 蝶形花科	<i>Geissapis cristata</i>	睫苞豆		E/H	R*
	<i>Smithia conferta</i>	密花坡油甘		E	C
Hydrocharitaceae 水鼈科	<i>Blyxa aubertii</i>	無尾水節		S	R
	<i>Egeria densa</i>	水蘊草	✓	S	C*
	<i>Hydrilla verticillata</i>	黑藻	✓	S	U*
Juncaceae 燈心草科	<i>Juncus effusus</i>	燈心草		E	U*
	<i>Juncus prismatocarpus</i>	筭石菖		E/H	U
Lamiaceae 唇形科	<i>Mosla scabra</i>	石薺		H	C
	<i>Pogostemon auricularius</i>	水珍珠菜		E/H	C
Lemnaceae 浮萍科	<i>Lemna minor</i>	青萍		F	C*
	<i>Spirodela polyrrhiza</i>	紫萍		F	R
Lentibulariaceae 狸藻科	<i>Utricularia bifida</i>	挖耳草		H	U
	<i>Utricularia caerulea</i>	短梗挖耳草		H	R
	<i>Utricularia gibba</i>	少花狸藻		S	R*
	<i>Utricularia uliginosa</i>	濕地挖耳草		H	U
Lythraceae 千屈菜科	<i>Ammannia arenaria</i>	耳基水莧		E	U*
	<i>Rotala rotundifolia</i>	圓葉節節菜		E	C*
Marsileaceae 蘋科	<i>Marsilea quadrifolia</i>	田字草		FL/E	R
Najadaceae 茨藻科	<i>Najas graminea</i>	草茨藻		S	R
Nymphaeaceae 睡蓮科	<i>Nymphaea</i> spp.	睡蓮	✓	FL	C*
Onagraceae 柳葉菜科	<i>Ludwigia adscendens</i>	水龍		FL/E	C*
	<i>Ludwigia decurrens</i>	翼莖水丁香	✓	E	R
	<i>Ludwigia hyssopifolia</i>	草龍		E/H	VC
	<i>Ludwigia octovalvis</i>	毛草龍		H	VC
Orchidaceae 蘭科	<i>Liparis ferruginea</i>	銹色羊耳蒜		E/H	R
Parkeriaceae 水蕨科	<i>Ceratopteris thalictroides</i>	水蕨		E	C
Philydraceae 田蔥科	<i>Philydrum lanuginosum</i>	田蔥		E/H	C
Poaceae 禾本科	<i>Alopecurus aequalis</i>	看麥娘		E/H	C*
	<i>Apluda mutica</i>	水蔗草		H	C
	<i>Arthraxon hispidus</i>	藎草		H	C*
	<i>Brachiaria mutica</i>	巴拉草	✓	H	C*
	<i>Coix lacryma-jobi</i>	薏苡		H	C*
	<i>Diplachne fusca</i>	雙稈草		E	U*
	<i>Echinochloa colona</i>	光頭稗		H	C*
	<i>Echinochloa crusgalli</i>	稗		E/H	C*
	<i>Echinochloa crusgalli</i> var. <i>brevisetata</i>	短芒稗		E/H	C*
	<i>Echinochloa glabrescens</i>	硬稈稗		E/H	C*
	<i>Eragrostis atrovirens</i>	鼠婦草		H	C*
	<i>Hemarthria compressa</i>	扁穗牛鞭草		E/H	U*
	<i>Isachne globosa</i>	柳葉箬		E/H	VC
	<i>Ischaemum aristatum</i> var. <i>glaucum</i>	鴨嘴草		H	U*
	<i>Ischaemum barbatum</i>	粗毛鴨嘴草		H	VC*
	<i>Ischaemum indicum</i>	細毛鴨嘴草		H	VC*
	<i>Leersia hexandra</i>	李氏禾		E	C
	<i>Leptochloa chinensis</i>	千金子		H	C*
	<i>Microstegium ciliatum</i>	剛莠竹		H	C
	<i>Neyraudia reynaudiana</i>	類蘆		H	C*
	<i>Panicum bisulcatum</i>	糠稷	✓	H	U

Family	Species Name	Chinese Name	Exotic	Life Form ¹	Commonness ²
	<i>Panicum brevifolium</i>	短葉黍		H	C*
	<i>Panicum paludosum</i>	水生黍		E	U*
	<i>Panicum repens</i>	鋪地黍		E/H	VC
	<i>Paspalum orbiculare</i>	圓果雀稗		H	C
	<i>Paspalum paspaloides</i>	雙穗雀稗		E/H	C*
	<i>Paspalum vaginatum</i>	海雀稗		E/H	C*
	<i>Phragmites australis</i>	蘆葦		E/H	C
	<i>Phragmites karka</i>	卡開蘆		E/H	C
	<i>Sacciolepis indica</i>	囊穎草		E/H	VC
	<i>Sphaerocaryum malaccense</i>	稗蓋		H	C*
	<i>Sporobolus virginicus</i>	鹽地鼠尾粟		H	C*
Polygonaceae 蓼科	<i>Polygonum barbatum</i>	毛蓼		E/H	C
	<i>Polygonum dichotomum</i>	二歧蓼		H	U*
	<i>Polygonum hastato-sagittatum</i>	長葉箭蓼		H	R
	<i>Polygonum hydropiper</i>	水蓼		E	R
	<i>Polygonum jucundum</i>	愉悅蓼		H	U*
	<i>Polygonum lapathifolium</i>	大馬蓼		E	C*
	<i>Polygonum muricatum</i>	小花蓼		E/H	C*
	<i>Polygonum orientale</i>	紅蓼		E/H	R*
	<i>Polygonum plebeium</i>	腋花蓼		H	U*
	<i>Polygonum pubescens</i>	伏毛蓼		H	C
	<i>Polygonum tenellum</i> var. <i>micranthum</i>	柔莖蓼		E	C*
	<i>Rumex trisetifer</i>	長刺酸模		H	C*
	Pontederiaceae 雨久花科	<i>Eichhornia crassipes</i>	鳳眼藍	✓	F
<i>Monochoria vaginalis</i>		鴨舌草		E	U
Ranunculaceae 毛茛科	<i>Ranunculus cantoniensis</i>	禺毛茛		E/H	R
	<i>Ranunculus sceleratus</i>	石龍芮		E	U*
Rubiaceae 茜草科	<i>Hedyotis diffusa</i>	白花蛇舌草		E/H	C
Salviniaceae 槐葉蘋科	<i>Salvinia cucullata</i>	勾葉槐葉蘋	✓	F	U*
	<i>Salvinia natans</i>	槐葉蘋		F	R
Saururaceae 三白草科	<i>Houttuynia cordata</i>	蕺菜		H	U*
	<i>Saururus chinensis</i>	三白草		E	R
Scrophulariaceae 玄參科	<i>Bacopa monnieri</i>	假馬齒莧		E/H	C
	<i>Bacopa repens</i>	田玄參		E	R
	<i>Limnophila aromatica</i>	紫蘇草		E	C
	<i>Limnophila chinensis</i>	中華石龍尾		E	C
	<i>Limnophila rugosa</i>	大葉石龍尾		H	R
	<i>Lindernia anagallis</i>	長蒴母草		E/H	VC
	<i>Lindernia angustifolia</i>	狹葉母草		H	R
	<i>Lindernia antipoda</i>	泥花草		E/H	C*
	<i>Lindernia crustacea</i>	母草		H	C*
	<i>Lindernia procumbens</i>	陌上菜		H	C
	<i>Lindernia pusilla</i>	細莖母草		H	U
	<i>Lindernia rotundifolia</i>	圓葉母草	✓	E/H	C
	<i>Lindernia ruellioides</i>	旱田草		H	C*
	<i>Mazus pumilus</i>	通泉草		H	C*
	<i>Scoparia dulcis</i>	野甘草		H	C
	<i>Veronica undulata</i>	水苦蕒		E/H	R
Thelypteridaceae 金星蕨科	<i>Cyclosorus interruptus</i>	間斷毛蕨		E/H	VC
Typhaceae 香蒲科	<i>Typha angustifolia</i>	水燭	✓	E	C*
Xyridaceae 黃眼草科	<i>Xyris pauciflora</i>	蔥草		E/H	U*
Zingiberaceae 薑科	<i>Hedychium coronarium</i>	薑花	✓	E/H	C

Note 1 S - Submerged; F - Floating; FL - Floating-leaved; E - Emergent; H - Hygrophytic

Note 2 Commonness in Hong Kong: Rare (R): 1-2 site(s); Uncommon (U): 3-5 sites; Common (C): 6-15 sites; Very Common (VC): >15 sites.

* commonness evaluated based on data from surveyed sites and other known localities in Hong Kong.