



Plant species and communities in Poyang Lake, the largest freshwater lake in China

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Abstract

PLANT SPECIES AND COMMUNITIES IN POYANG LAKE, THE LARGEST FRESHWATER LAKE IN CHINA.— Studying plant species richness and composition of a wetland is essential when estimating its ecological importance and ecosystem services, especially if a particular wetland is subjected to human disturbances. Poyang Lake, located in the middle reaches of Yangtze River (central China), constitutes the largest freshwater lake of the country. It harbours high biodiversity and provides important habitat for local wildlife. A dam that will maintain the water capacity in Poyang Lake is currently being planned. However, the local biodiversity and the likely effects of this dam on the biodiversity (especially on the endemic and rare plants) have not been thoroughly examined. Therefore, in order to assess the richness of plant species and plant communities in Poyang Lake, we conducted a detailed field investigation combined with a literature review. A total of 124 families, 339 genera, and 512 species (including sub-species, varieties and forms) as well as eight dominant plant communities were identified, confirming the lake's wetland as a regional hotspot of plant diversity. It is imperative to carry out further research on the impact of damming on the vegetation, particularly research focusing on protecting local biodiversity, maintaining the lake's ecosystem services, controlling the spread of invasive species, and restoring degraded ecosystems.

Key words: conservation; dam; plant diversity; species richness; Yangtze River.

Resumen

ESPECIES Y COMUNIDADES VEGETALES DEL LAGO POYANG, EL LAGO DE AGUA DULCE MÁS GRANDE DE CHINA.— El estudio de la riqueza y la composición de especies vegetales de un humedal es esencial a la hora de estimar su importancia ecológica y sus servicios ecosistémicos, especialmente cuando éste está sujeto a perturbaciones humanas. El lago Poyang, situado en el curso medio del río Yangtsé (China central) constituye la mayor superficie de agua dulce del país. Alberga una elevada biodiversidad y proporciona hábitats importantes para la flora y fauna locales. En la actualidad existen planes de construir una presa que mantendrá el volumen de agua del lago estable. Sin embargo, y hasta la fecha, apenas existen estudios que hayan abordado la biodiversidad del lago y los posibles efectos negativos de la presa sobre ésta (y en especial sobre las especies endémicas y raras). Así pues, se ha llevado a cabo una intensa campaña de campo combinada con una búsqueda bibliográfica con el objetivo de evaluar la riqueza de especies y comunidades vegetales del lago Poyang y sus humedales asociados. Se han identificado un total de 124 familias, 339 géneros y 512 especies (incluyendo subespecies, variedades y formas) así como ocho comunidades vegetales dominantes, confirmándose así el papel de los humedales del lago Poyang como *hotspot* regional de biodiversidad. Resulta imperativo estudiar los efectos del represado sobre la vegetación, y, de manera especial, todo aquello concerniente a la protección de la biodiversidad local, el mantenimiento de los servicios ecosistémicos, el control de las especies invasoras y la restauración de los ecosistemas degradados.

Palabras clave: conservación; diversidad vegetal; presa; río Yangtsé; riqueza de especies.

摘要

中国最大淡水湖泊鄱阳湖的植物物种和群落。— 研究湿地的植物丰富度和组成对评估其生态重要性和生态系统服务功能很有必要，特别是对于那些受人类干扰的湿地。位于中国长江中游的鄱阳湖是中国最大的淡水湖，其生物多样性较高，同时也是当地野生动物的重要栖息地。目前，为了维持鄱阳湖的水容量，中国相关部门正在计划修建一个大坝。然而，鄱阳湖的生物多样性本底情况还不清楚，大坝对当地生物多样性（特别是珍稀植物）可能产生的潜在影响也还没有查清。为了评估鄱阳湖植物物种和群落的丰富度，我们进行了详尽的野外调查和相关文献分析。研究发现：鄱阳湖湿地植物分属124科，339属，512种（包括亚种，变种和变型）以及八种主要的植物群落，进一步确认了鄱阳湖湿地是区域性的植物多样性热点地区。水坝对鄱阳湖湿地植物与群落的影响研究势在必行，尤其应聚焦于保护当地的生物多样性、维持湖泊的生态系统服务、控制外来入侵物种传播、恢复退化生态系统这四个方面。

关键词: 保护; 大坝; 生物多样性; 物种丰富度; 长江。

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INTRODUCTION

During the past century, approximately fifty percent of the world's wetlands have been destroyed, largely as a result of human activities (UNWWAP, 2003; Fraser & Keddy, 2005). An increased human population coupled with habitat loss and fragmentation has led to shrinkage of wetland areas, and data show that as they decrease, their key functions decline (Fraser & Keddy, 2005). Reduced wetland area does not only cause more flooding in spring, less available water during drought, greater risk of water pollution, less food production, and reduced carbon storage, but also leads to the loss of habitats for many animals and plants and the loss of wetland's capacity for regulating the regional climate (MEA, 2005; Ramsar, 2011). Much of the remaining pristine wetland systems are found in the world's largest wetlands, and yet these areas have been subjected to surprisingly little scientific research (Fraser & Keddy, 2005). Therefore, studying the floristic richness and composition of a given wetland is essential when a major human impact is expected to take place, especially if it is known that endemic and threatened plants are present. Such a study is a mandatory preliminary step in order to implement adequate conservation measures.

The middle reaches of the Yangtze River is an extensive network of rivers, shallow lakes and wetlands, and constitutes one of the main Asian

hotspots of biodiversity (Olson & Dinerstein, 2002; Xie, 2003; Fang *et al.*, 2006; López-Pujol & Ren, 2009). The huge human-driven transformation of this region (including intensive land reclamation and the construction of numerous dams and dikes) has altered most of the water network connections and, at present, the Poyang and Dongting lakes are the only sizable lakes that remain linked to the Yangtze River (Fang *et al.*, 2006; Li, 2009; Finlayson *et al.*, 2010). The considerable biodiversity in these big lakes is also under threat by dam construction (e.g. López-Pujol & Ren, 2009). Such is the case for Poyang Lake, the biggest freshwater lake in China.

Poyang Lake is located at the south bank of the middle reaches of the Yangtze River, the largest river in China. This lake constitutes one of the six largest wetlands in China, with a maximum area of up to 4125 km² and a highest water depth of 20 m (Li, 2009; Finlayson *et al.*, 2010). The ecological importance of the lake and the associated wetland has been recognized at both national and international levels; in 1983 the Poyang Lake National Nature Reserve was established, and in 1992 it was listed as a Ramsar site (www.ramsar.org/). However, the local government has proposed to build a big dam at the northern end of Poyang Lake, 27 km from the Yangtze River (Li, 2009). The main purpose of this planned dam is to stabilize the lake's water level. During the last decade (and especially during

2011; Xinhua, 2011; China Daily, 2012; Feng *et al.*, 2012), large sections of the lake have dried up; in January 2012, the inundation area dropped below 200 km² (China Daily, 2012), which is less than 5% of its maximum extension. This drought produced losses in fisheries and other industries (Li, 2009; People's Daily 2011; China Daily, 2012). However, disrupting the seasonal water flow by damming would also likely have severe negative impacts on the local climate and biodiversity (Li, 2009; Harris & Hao, 2010), and thus the central government has suspended the project pending further studies.

The aim of this study is two-fold: (1) to survey the floristic richness of the whole region of Poyang Lake, by cataloguing both plant species and the dominant community types; and (2) to provide recommendations for the protection of plant diversity prior to the building of the dam based on our data gathering and analysis.

MATERIALS AND METHODS

Study area

Poyang Lake, while considered a shallow lake, does have flowing water and is the catchment for most of the surface water pooling in Jiangxi Province (CPLRE, 1988). The lake also functions in sediment transport (from the rivers flowing into the lake to the Yangtze River), and serves as a water accumulation center. The lake is located in a very flat area (the Middle-Lower Yangtze Plain) characterized by a mild subtropical monsoon climate. The water level of Poyang Lake is mainly influenced by the local watershed as well as by the Yangtze River's water level. Inter-year and annual water level variation changes dramatically, with the inter-annual maximum amplitude reaching 16.69 m, which is mainly driven by the local precipitation regime and water level of Yangtze main channel (Feng *et al.*, 2012). Its flood season is from April to September, and its dry season is from October to the following March. The lake area differs substantially between flood season and dry season: its maximum area is up to 22 times that of the minimum area (Liu *et al.*, 2006). On average, the lake has a surface of over 3000 km² in the rainy season and less than 1000 km² in the dry season (Feng *et al.*, 2011).

Sampling site selection

Based on Poyang Lake's geographical features, we selected nine areas (Table 1) within its wetland to conduct surveys of both plant species and community types. We used the broad definition provided by the Ramsar Convention to define the wetland; namely, wetlands are not only the areas permanently or temporarily covered by water (wetlands in the strict sense), but also the coastal or riparian zones adjacent to wetlands (RCS, 2013). The nine selected areas were the following: (1) Ganjiang River bank near Nanchang Bridge, (2) Taizi River of Hongwei Village in Nanji Mountain, (3) west branch of Ganjiang River in Wucheng Town of Yongxiu County, (4) Old petrochemical wharf in Xingzi County, (5) Shizhong Mountain in Hukou County, (6) Changjiang in Poyang County, (7) East River of Xinjiang River, (8) Sub-river of Chenjia Lake, and (9) Sanyang Bridge of Fuhe River (Fig. 1 and Table 1). In the above nine areas, we selected a number of sampling sites according to the shape and size of the local water bodies. Sites were randomly located along a transect from the central core of the wetland to its edge. Additional sampling sites were selected both in areas with very large wetlands and in cases where we detected that the distribution of plant species was uneven (Table 1). We set at least three plots (of 1 × 1 m) at each of the sampling sites. In total, 317 sampling plots were established, which were representative of three main habitats or ecological zones of the Poyang Lake wetland system: permanent aquatic areas, seasonally aquatic areas (that is, those covered during the flood season, e.g. lakeshore areas), and areas adjacent to wetlands (i.e. those areas only flooded occasionally) (Table 1).

Plant species and plant community measures

For each plot, we catalogued all the plant taxa occurring there; plants were identified following *Moss Flora of China* (MFCEC, 1999–2011), *Flora of China* (<http://flora.huh.harvard.edu/china/>), and *Flora of Jiangxi* (ECFJ, 1993). We also recorded the dominant plant community types for each plot, which were identified following the criteria of *Vegetation of China* (Wu, 1980). For each plant taxon, a series of characteristics useful for recognizing

Table 1. Location and sampling characteristics for the nine study areas of Poyang Lake.

Study area (and number in Fig. 1)	Latitude	Longitude	Altitude (m)	Number of sites sampled per area	Number of vegetation sample plots per area	Main type of habitat represented
Ganjiang River bank near Nanchang Bridge (1)	28° 38' 37.8"	115° 50' 57.8"	15	10	33	Seasonally aquatic areas
Taizi River of Hongwei Village in Nanji Mountain (2)	28° 57' 26.1"	116° 20' 41.5"	15	13	39	Seasonally aquatic areas
West branch of Ganjiang River in Wucheng Town of Yongxiu County (3)	29° 11' 32"	116° 00' 53"	14	9	27	Permanent aquatic areas
Old petrochemical wharf in Xingzi County (4)	29° 26' 45.2"	116° 03' 8.3"	12	8	24	Seasonally aquatic areas
Shizhong Mountain in Hukou County (5)	29° 44' 56.1"	116° 13' 08.1"	13	9	27	Seasonally aquatic areas
Changjiang in Poyang County (6)	28° 58' 28.7"	116° 41' 47.9"	14	7	21	Seasonally aquatic areas
East river of Xinjiang River (7)	28° 55' 1.2"	116° 45' 33.2"	25	13	44	Permanent aquatic areas
Sub-river of Chenjia Lake (8)	28° 39' 25.1"	116° 20' 57.6"	15	14	42	Seasonally aquatic areas
Sanyang Bridge of Fuhe River (9)	28° 37' 9.4"	116° 16' 20.1"	12	20	60	Areas adjacent to wetlands

the plant community types and defining their features (community structure, composition) were determined, including: habit (annual, biennial, or perennial), life-form (herb, shrub, tree, or vine), origin (see below), hydro-ecotype (see below), coverage, height, phenology, and abundance. Some of these traits were determined with the aid of the *Higher aquatic plants in Jiangxi Province* (Guan & Zhang, 1989) and other relevant sources (e.g. *Flora of China*; <http://flora.huh.harvard.edu/china/>). For the origin, we assigned each taxon to one of the following categories: endemic to China, native to China, and alien; the alien taxa, in turn were classified in three groups: naturalized, invasive, and cultivated. The hydro-ecotypes of the identified plant species were determined depending on their water requirements: plant species that grow in moist environments and that cannot endure long term water deficiency were regarded as hygrophytes, those that grow in moderately moist habitats as mesophytes, those that grow in arid environments and show drought tolerance as xerophytes, and those truly aquatic as hydrophytes (Li *et al.*, 2004).

All the fieldwork was conducted in October 2011. In addition, several relevant works (i.e. Guan & Zhang, 1989; Ge & Wu, 2006; JPLNNRA, 2008; Ge *et al.*, 2010; Hu *et al.*, 2010; Wu *et al.*, 2010a; Li *et al.*, 2011) were also consulted to complete the list of plant species and communities occurring within the Poyang Lake wetland. Intraspecific taxa (i.e. subspecies, varieties, and forms) were treated as equivalent to species to simplify the analyses.

RESULTS

Species richness

Poyang Lake harbored a high diversity of plants: up to 124 families, 339 genera, and 512 species (including sub-species, varieties and forms) were found in the study area (see Appendix). The number of species belonging to bryophyta, pteridophyta, gymnospermae, and angiospermae was two, 16, 13, and 481, respectively, which accounted for 0.4%, 3.1%, 2.5%, and 93.9% of all species, respectively. Of the angiosperms, eight were basal angiosperms,

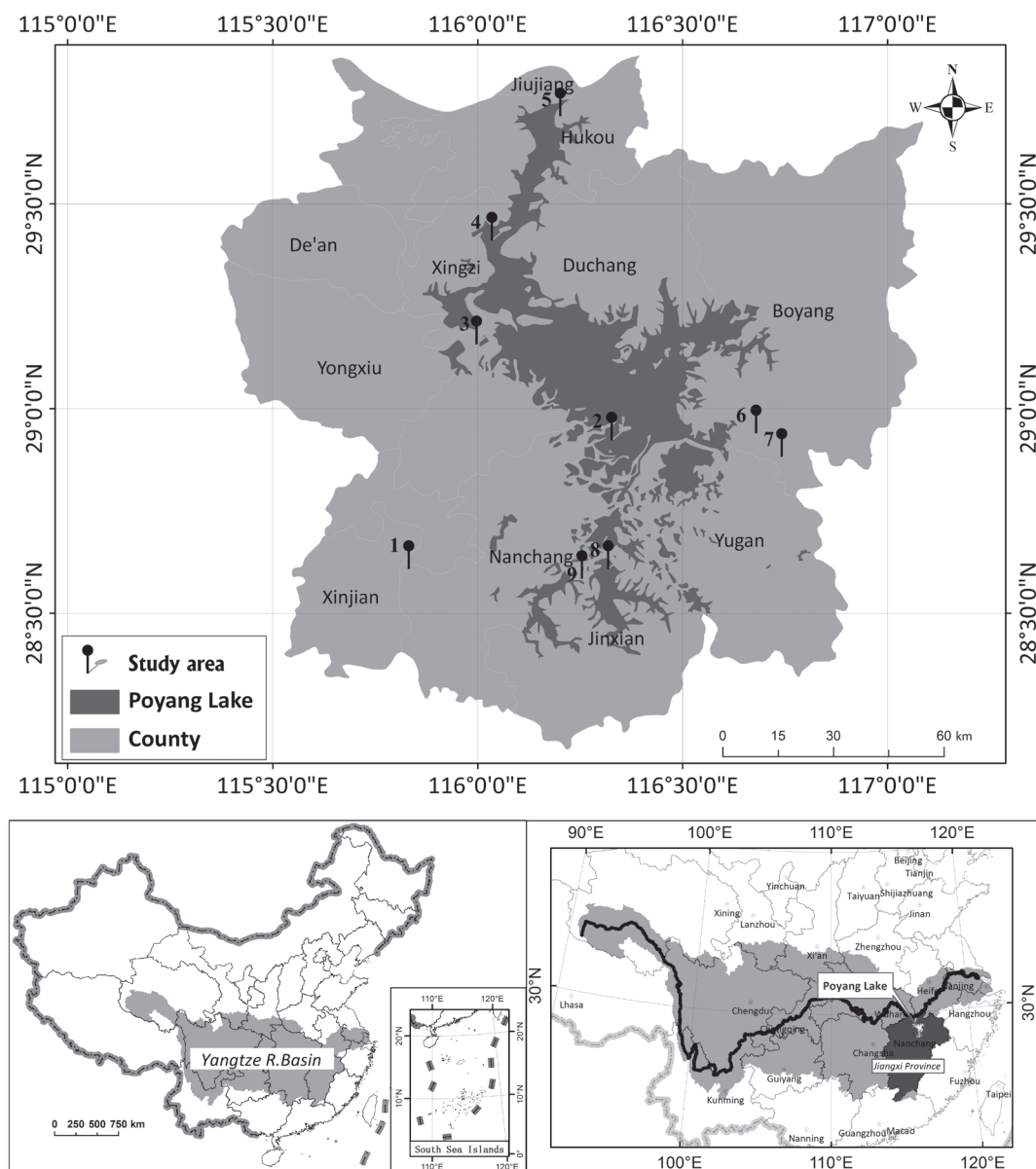


Figure 1. Location of the nine study areas within the Poyang Lake wetland. The location of Poyang Lake within the Yangtze River Basin and the location of Yangtze River Basin within China are also shown (smaller maps below the larger map).

123 were monocots, and 350 were eudicots. The plant families with the greatest number of species were Asteraceae (38 species), Poaceae (35), Cyperaceae (25), and Fabaceae (24). These, together with other six families (Fig. 2), contained a total of 208 species, which accounted for 40.6% of all plant species. *Polygonum* L., *Carex* L., and *Potamogeton* L. were the genera with the largest number of representatives in the wetland, with 10, nine, and seven species, respectively.

The habits and life-forms of all plant species in the Poyang Lake wetland were also diverse. Most of the species recorded in the wetland were herbs (371 out of 512 species), although these greatly differed regarding the habit (Fig. 3). Shrubs represented about 11.3% of the total number of species (58 species), trees about 13.3% (68 species), and vines ca. 2.9% (15 species) (Fig. 3). Regarding the hydro-ecotype, the bulk of the plants in the wetland were mesophytes, which accounted for up to 62.7%

of the total number of species (321 species); moreover, plants that were either classified as mesophytes or hygrophytes represented 13.7%, those that were either mesophytes or xerophytes represented 9.8%, and those that were either mesophytes, xerophytes, or hygrophytes accounted for 0.4%. Species with strict water requirements constituted a relatively low percentage of the Poyang wetland plants: hydrophytes accounted for 7.0%, hygrophytes for 3.7%, and those species that were either classified as hydrophytes or hygrophytes, for 2.7%.

As for the origin, most of the plant taxa that occur in the Poyang Lake wetland were native to

China (402 taxa, 78.5%), whereas only 31 (6.1%) were endemic to China. Among the endemics, there were several rare, threatened, and/or nationally protected species; some outstanding examples include (1) the fern *Isoetes sinensis* Palmer (which is ‘critically endangered’ according to IUCN criteria, and included both in the *National List of Rare and Endangered Plant Species* of 1984 and in the *Catalogue of the National Protected Key Wild Plants* of 1999), as well as (2) the gymnosperms *Ginkgo biloba* L. and *Metasequoia glyptostroboides* Hu & W. C. Cheng (which are ‘endangered’ and included in both protection

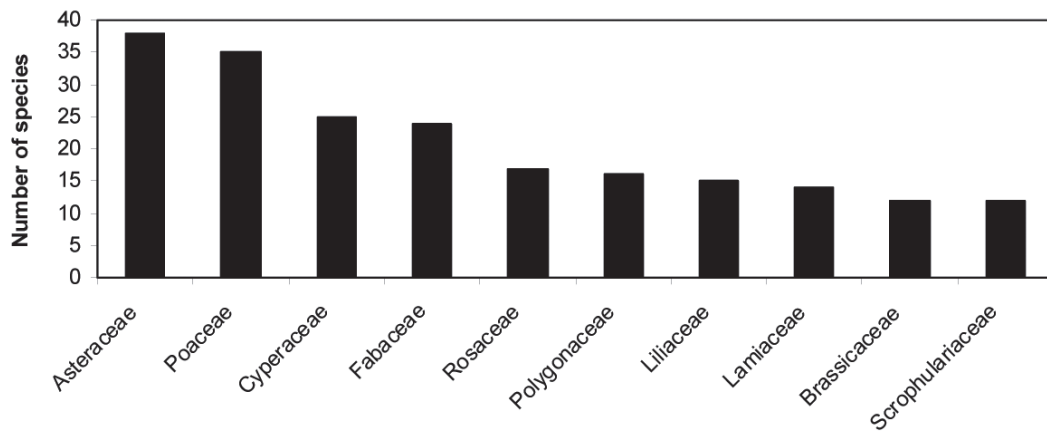


Figure 2. Taxonomic structure of Poyang Lake flora. Only the 10 largest families in number of plant taxa in Poyang Lake are shown.

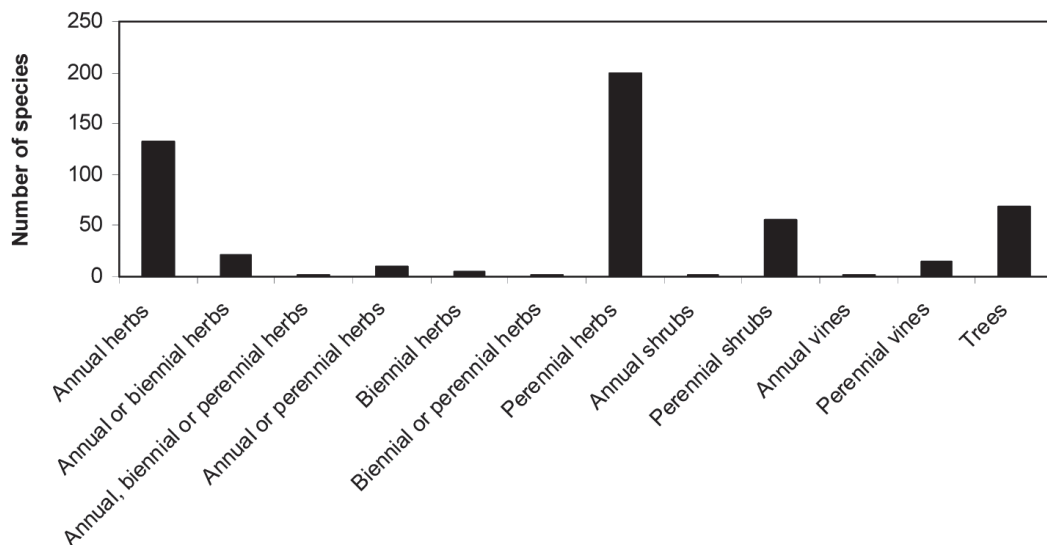


Figure 3. Habit and life-form of Poyang Lake flora.

lists). A total of 79 species of the 512 recorded within the wetland (that is, 15.4%) were of alien origin; of these, 25 were cultivated, 31 were invasive, 11 were naturalized, and 12 were of uncertain nature, which accounted for 4.9%, 6.1%, 2.1%, and 2.3% of all species, respectively. Although not very large, we found some differences regarding the origin of plant taxa between ecological zones (Fig. 4): the percentage of native taxa decreases from permanent aquatic areas to areas adjacent to wetlands, whereas the reverse trend was observed for the alien plants.

Plant communities

Based on the species composition in the Poyang Lake wetlands, eight dominant plant communities can be distinguished:

(1) *Phalaris arundinacea* L. – *Polygonum criopolitanum* Hance – *Cardamine lyrata* Bunge communities. These communities, typically of seasonally aquatic areas (Table 2), were mainly

distributed in the northern low marshland and southern delta islands, with a height of 60–80 cm and total vegetative coverage per unit area of up to 60 to 80% (Figs. 5 and 6). The companion species were *Carex argyi* H. Lév. & Vaniot and *Cardamine lyrata*.

(2) *Nymphoides peltata* (S. G. Gmel.) Kuntze – *Potamogeton wrightii* Morong – *Hydrilla verticillata* (L. f.) Royle + *Vallisneria natans* (Lour.) H. Hara communities. These were primarily distributed on the edges and marshland of rivers, exclusively on permanent aquatic areas (Table 2). *Nymphoides peltata* (Fig. 5), a floating-leaved plant, was the dominant species occupying the upper layer. *Potamogeton wrightii*, *Hydrilla verticillata*, and *Vallisneria natans* were common species showing under-water stratification.

(3) *Carex* spp. communities. These comprised widely distributed communities that occupy the largest area in the Poyang Lake wetlands (Fig. 6), mainly on seasonally aquatic areas (Table 2). The height of the community was between

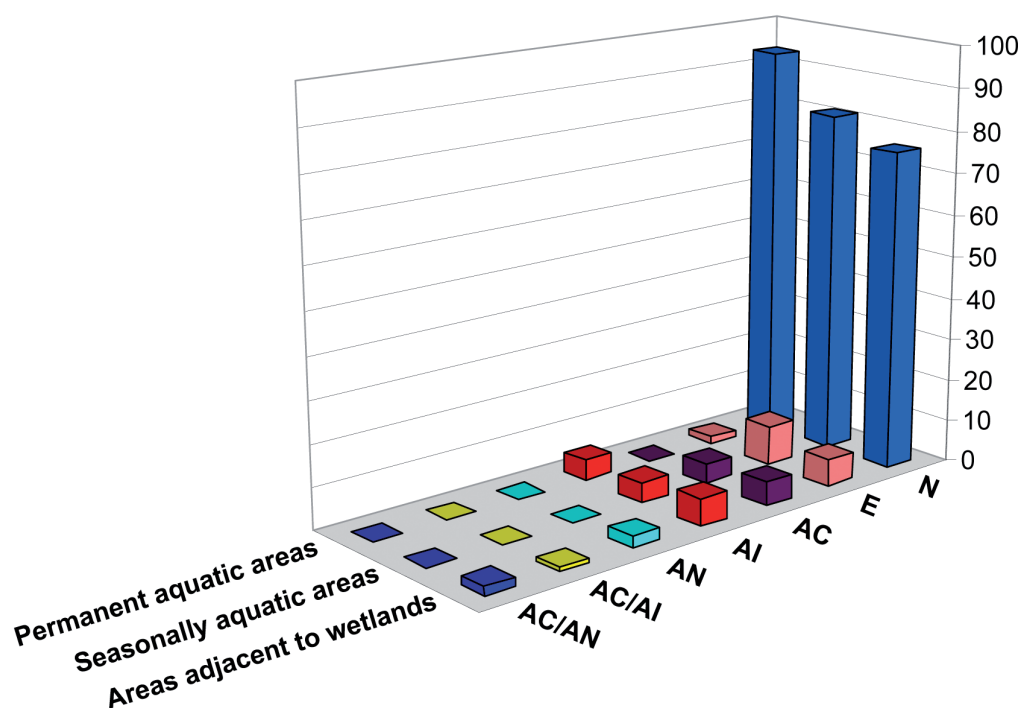


Figure 4. Histogram showing the percentage of plant taxa native to China (N), endemic to China (E), alien cultivated (AC), alien invasive (AI), alien naturalized (AN), alien cultivated or invasive (AC/AI), and alien cultivated or naturalized (AC/AN) for the three ecological areas in the Poyang Lake wetland system (permanent aquatic areas, seasonally aquatic areas, and areas adjacent to wetlands).

- 40–60 cm with a vegetative cover of 100%. The structure was simple, usually composed of six to eight species per square meter, with the following common companion species: *Cardamine lyrata*, *Polygonum hydropiper* L., *Polygonum japonicum* Meisn., *Panicum bisulcatum* Thunb., and *Viola philippica* Cav.
- (4) *Polygonum criopolitanum* communities. These were mainly distributed in the marshes of river banks with a total vegetative coverage of about 40%, a height of 5–10 cm and a single-layer structure (Fig. 6). The companion species of these communities, mainly occurring on seasonally aquatic areas (Table 2), were *Lapsanastrum apogonoides* (Maxim.) Pak & K. Bremer, *Rorippa indica* (L.) Hiern, and *Alopecurus aequalis* Sobol.
- (5) *Phragmites australis* (Cav.) Trin. ex Steud. – *Miscanthus lutarioriparius* L. Liu ex Renvoize & S. L. Chen communities. These were mainly distributed on seasonally aquatic areas (particularly in the levee embankment; Table 2), and were mainly located in the southwest corner of Mopanzhou and Dashahuang islands (Fig. 6). The dominant species were *Phragmites australis* and *Miscanthus lutarioriparius*, the community structure was complex, and the companion species included *Artemisia selengensis* Turcz. ex Besser, among others.
- (6) *Cynodon dactylon* (L.) Pers. communities. These were single-layer structure communities typically occurring on seasonally aquatic areas (Table 2), with a height of 20–30 cm, distributed near the levee and the high beaches (Fig. 6). The total vegetative cover per unit area of these communities was typically 80–90%, dominated by *C. dactylon*. Companion species included *Eremochloa ophiuroides* (Munro) Hack., *Hemarthria altissima* (Poir.) Stapf & C. E. Hubb., *Hemistephia lyrata* (Bunge) Fisch. & C. A. Mey., *Aster indicus* L., *Hydrocotyle sibthorpioides* Lam., and *Mollugo stricta* L.
- (7) *Eleocharis vallecuculosa* Ohwi communities. These were the most common communities in the Poyang Lake marsh, mainly found on seasonally aquatic areas (Table 2). The species composition was complex, having a height of 20–30 cm and total vegetative cover per unit area of 70–80%. The vertical structure, in contrast, was simple, with only one layer.
- (8) *Vallisneria* spp. L. communities. These comprised the most widespread submerged plant communities in Poyang Lake (Table 2). Mainly distributed in the southern section of the lake, the community structure was simple, consisting of a single layer, and the companion species were *Utricularia aurea* Lour., *Potamogeton crispus* L., and *Potamogeton distinctus* A. Benn.

Table 2. Occurrence of the eight dominant plant communities on the three main habitats or ecological zones of the Poyang Lake wetland system (permanent aquatic areas, seasonally aquatic areas, and areas adjacent to wetlands). ++, high occurrence; +, intermediate occurrence; –, low or no occurrence.

Communities	Permanent aquatic areas	Seasonally aquatic areas	Areas adjacent to wetlands
<i>Phalaris arundinacea</i> – <i>Polygonum criopolitanum</i> – <i>Cardamine lyrata</i> communities	–	++	+
<i>Nymphoides peltata</i> – <i>Potamogeton wrightii</i> – <i>Hydrilla verticillata</i> + <i>Vallisneria natans</i> communities	++	–	–
<i>Carex</i> spp. communities	–	++	+
<i>Polygonum criopolitanum</i> communities	–	++	+
<i>Phragmites australis</i> – <i>Miscanthus lutarioriparius</i> communities	+	++	+
<i>Cynodon dactylon</i> communities	+	++	+
<i>Eleocharis vallecuculosa</i> communities	+	++	+
<i>Vallisneria</i> spp. communities	++	+	–

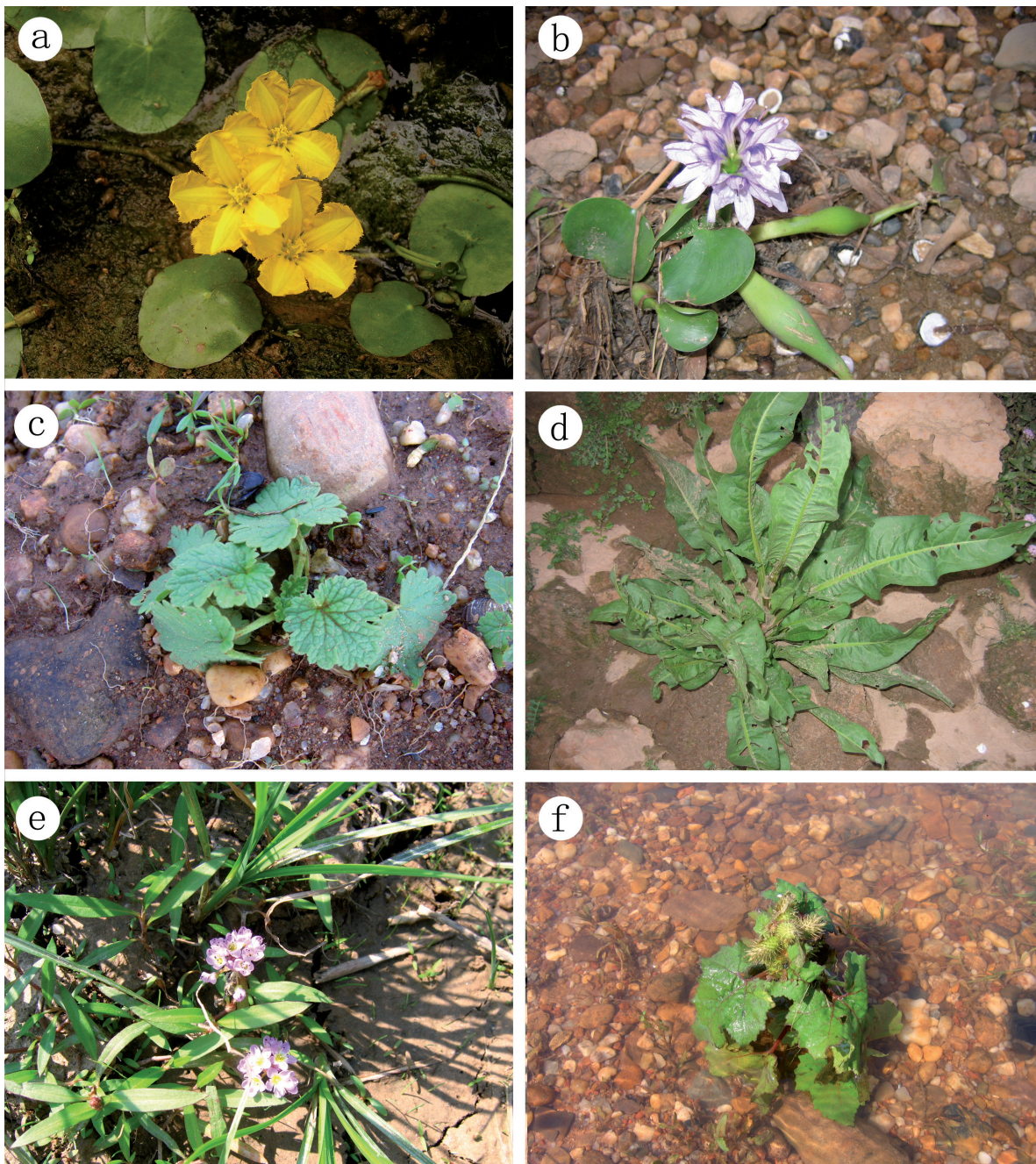


Figure 5. Some plant species in the Poyang Lake wetland, Jiangxi Province. (A), *Nymphoides peltata*; (B), *Eichhornia crassipes*; (C), *Lagopsis supina* (Steph. ex Willd.) Ikonn.-Gal. ex Knorr; (D), *Rumex acetosa* L.; (E), *Polygonum criopolitatum*; (F), *Xanthium strumarium* L.

DISCUSSION

Floristic and vegetation features of Poyang Lake

The vegetation resources in Jiangxi Province are abundant, possessing a high taxonomic richness along with numerous and complex vegetation types

that are closely related to the floristic origin and evolution of this region (ECFJ, 1993; Wang, 2004; Peng, 2007; Hu *et al.*, 2010). The regional vegetation of Jiangxi Province belongs to subtropical evergreen broad-leaved forest, with some warm temperate plant elements (deciduous broad-leaved forest) that are mixed gradually in the northern part of the

Poyang Lake wetland (i.e. in the northern part of Jiangxi Province) (Wu, 1980; Hou, 1983). The vegetation of the province can be regarded as unique in the sense that there are many subtropical endemic genera, relic plant species, and ancient tropical flora elements (ECFJ, 1993); in fact, the province harbours some of the main centres of plant endemism in China (López-Pujol *et al.*, 2011; Huang *et al.*, 2012). Our study confirms that these features (high species richness, endemism and presence of relict elements) also characterize the flora of Poyang Lake.

The Poyang Lake wetland is very rich in terms of total plant species, and harbours a significant part of the total flora of the province. Of the 49 families, 114 genera, and 400 species of ferns recorded in Jiangxi Province (ECFJ, 1993), 12 families, 13 genera and 16 species have been identified in the present study (which accounts for 22.5%, 11.4%, and 4%, respectively). Regarding gymnosperms,

the provincial flora contains eight families, 23 genera and 30 gymnosperm species (ECFJ, 1993); in the Poyang Lake wetland, five families, 10 genera and 13 species are found, accounting for 62.5%, 43.5%, and 43.3%, respectively. The wetland flora is also rich in angiosperms: of the 220 families, 1309 genera, and 2373 species included in *Flora of Jiangxi* (Guan & Zhang, 1989; ECFJ, 1993), we have found 106 families, 314 genera, and 481 species, which accounts for 48.2%, 24.0%, and 20.3%, respectively. The large number of plant taxa identified in the present study (512) is in agreement with recent studies (Ge & Wu, 2006; JPLNNRA, 2008; Jiang *et al.*, 2009; see Table 3), although our work is the first covering all the wetlands range and all the major plant communities in Poyang Lake.

As mentioned, many endemic (up to 38 species, 7.4% of the total) and relict floristic elements are present in Poyang Lake. For example, we found

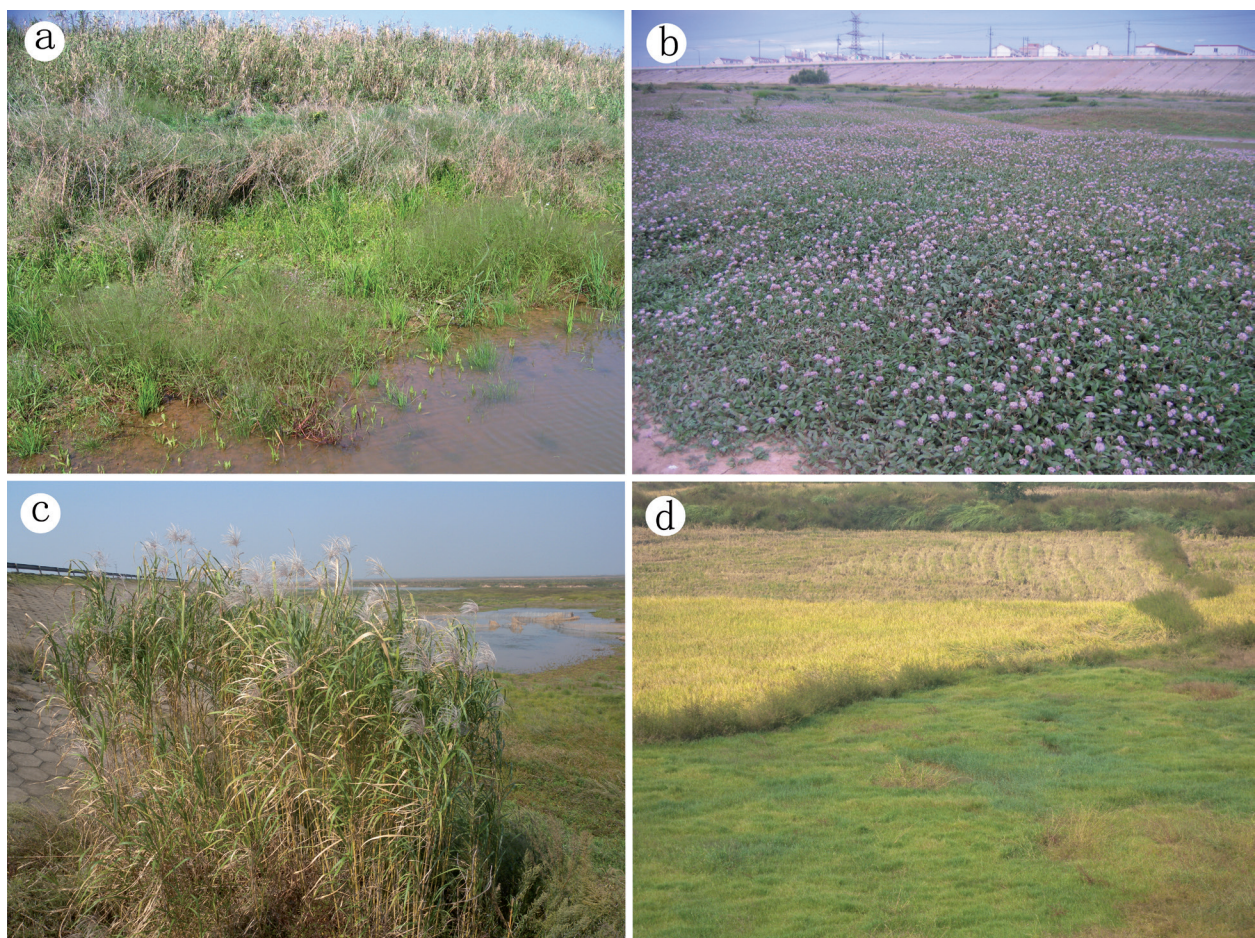


Figure 6. Representative plant communities in the Poyang Lake wetland. (A), *Miscanthus lutarioriparius* + *Carex cinerascens* Kük. community; (B), *Polygonum criopolitanum* community; (C), *Phalaris arundinacea* + *Carex cinerascens* community; (D), *Oryza sativa* L. + *Cynodon dactylon* community.

Table 3. Plant species diversity in the Poyang Lake wetland and in other lake wetlands of the Yangtze River basin.

Number of plant species	Area (km ²)	Research site	Research year	References
443	4125	Poyang Lake, Jiangxi Province	2006	Ge & Wu (2006)
444	4125	Poyang Lake, Jiangxi Province	2008	JPLNNRA (2008)
>600	4125	Poyang Lake, Jiangxi Province	2009	Jiang <i>et al.</i> (2009)
512	4125	Poyang Lake, Jiangxi Province	2011	This study
192	4040	Dongting Lake, Hunan Province	1999	ECWVC (1999)
74 ¹	2425	Tai Lake, Jiangsu Province	1999	Zhang <i>et al.</i> (1999)
96 ¹	482.5	Liangzi Lake, Hubei Province	2002	Peng <i>et al.</i> (2005)
163 ¹	413	Hong Lake, Hubei Province	Since 1992	WPRHLW (2011)
183 ¹	223.2	Longgan Lake, Anhui Province	2010	Li <i>et al.</i> (2010)
56 ¹	114.2	Datong Lake, Hunan Province	1999–2000	Jian <i>et al.</i> (2002)
42 ¹	53.3	Chi Lake, Jiangxi Province	1996	Wu & Wu (1996)
61 ¹	23.2	Dong Lake, Hunan Province	1999–2000	Jian <i>et al.</i> (2002)
32 ¹	12	Nan Lake, Hunan Province	1999–2000	Jian <i>et al.</i> (2002)

¹ Only permanent and seasonally aquatic areas have been studied.

Cryptomeria japonica (Thunb. ex L. f.) D. Don var. *sinensis* Miq., a conifer lineage that might date from the Cretaceous according to molecular data (Ran *et al.*, 2010). At present, only a single species with two varieties exists in the world; one is native to Japan [i.e. *Cryptomeria japonica* (Thunb. ex L. f.) D. Don var. *japonica*], and the other one (*Cryptomeria japonica* var. *sinensis*) is widespread in China, including Jiangxi Province. Another relict species that occurs within the Poyang Lake wetland is *Cunninghamia lanceolata* (Lamb.) Hook., a companion species in the evergreen broad-leaved forest now widely cultivated as a plantation tree. It has become one of the most important and valuable fast-growing species in subtropical China. *Metasequoia glyptostroboides* and *Ginkgo biloba* are also relict species that have lineages likely dating from the Cretaceous (Ran *et al.*, 2010). These rare and nationally protected species (Fu & Jin, 1992; YNCC, 2011) are widely found within the Poyang Lake wetland.

When Poyang Lake is at its normal water level (14 to 15 meters), the inundated area is over 3000 km² (Feng *et al.*, 2011), which represents about 2% of the total land mass of Jiangxi Province. Because of the high plant diversity in this small area, it is of vital importance to ensure an adequate protection of Poyang Lake. Indeed, the wetland represents a regional hotspot of biodiversity and its species richness is higher than that of other wetlands within the

Yangtze Basin. Poyang wetland alone harbours a very important part of China's wetland flora: 65% of the gymnosperms (13 out of 20; An *et al.*, 2007), and 40% of the angiosperms (481 out of 1200; An *et al.*, 2007). For example, Dongting Lake, the second largest freshwater lake in China (and with a similar area to Poyang; Table 3), has considerably less plant diversity, with only about 192 plant species reported (ECWVC, 1999). Another sizable lake (Taihu Lake, which is located in the Yangtze Delta plain) also has a much lower plant species richness (74 species; Zhang *et al.*, 1999), although for the Taihu Lake study only the permanent and seasonally aquatic areas were studied (Table 3).

In addition to biogeographical and ecological reasons, the wealth of species in Poyang wetland may be partly due to its relatively good conservation status (Li, 2009). Mirroring this, most of the species present in the wetland are native (around 80%), a percentage that increases from areas adjacent to wetlands (the most disturbed due to their strong cultivation, especially rice) to permanent aquatic areas (the less disturbed ones; Fig. 4). On the contrary, the reverse trend occurs for the alien plants, which peak in the areas adjacent to wetlands. Human disturbances, such as fires, urbanization, or agricultural practices, may encourage invasions because new ecological niches are available for alien species (Mack *et al.* 2000, Simberloff & Rejmánek, 2011).

Up to 15 regional and non-regional vegetation types defined in the provincial flora (ECFJ, 1993) have been recorded in Jiangxi, of which four (meadows, aquatic plant communities, herb marshes and peat swamps) are present in the Poyang Lake wetland. In fact, Poyang Lake harbors a representative sample of the vegetation types reported for China as a whole (two of the 11 vegetation type groups, and 55 of the 960 formations and sub-formations; Zhang, 2007; Hu *et al.*, 2010; Zhang *et al.*, 2012). In our study, up to eight dominant plant community types have been identified in the Poyang Lake wetland, and these eight communities belong to the above four vegetation types. *Cynodon dactylon* communities, *Carex* spp. communities, and *Polygonum criopolitanum* communities belong to the meadow vegetation type; *Phragmites australis* – *Miscanthus lutarioriparius* communities belong to the herb marsh vegetation type; *Nymphoides peltata* – *Potamogeton wrightii* – *Hydrilla verticillata* + *Vallisneria natans* communities, *Eleocharis valleculosa* communities, and *Vallisneria* spp. communities belong to the aquatic plant vegetation type; and *Phalaris arundinacea* – *Polygonum criopolitanum* – *Cardamine lyrata* communities belong to the peat swamp vegetation type.

Conservation implications

If the reservoir is built with the purpose of stabilizing lake levels, the original habitats of many species will be permanently flooded: most of the mesophytes and hygrophytes that live in the currently seasonally flooded areas will lose their habitat. Flooding will have a severe impact on several rare and endangered plants, e.g. *Cryptomeria japonica* var. *sinensis*, *Ginkgo biloba*, and *Metasequoia glyptostroboides*. Hydrophytes will also be affected, as the water levels and flood regime of Poyang Lake will be deeply modified. Regarding the vegetation, *Phragmites australis* – *Miscanthus lutarioriparius* communities, and *Cynodon dactylon* communities would be among the most affected by the potential flooding because these occur on the shore. On the other hand, those communities that may survive at a very wide variety of hydrological conditions, such as *Carex* ssp. communities, would not be seriously affected; these *Carex* spp. communities, which are the dominant type in Poyang Lake wetland, can be found at depths ranging from 0 to nearly 15 m, with the percent time inundated between 0 and 100% (Zhang *et al.*, 2012).

If the dam is constructed, water flow will be slower and the regime of water-level fluctuations will change in Poyang Lake and related rivers. These modifications can accelerate eutrophication and will likely facilitate clonal reproduction and spread of invasive plants (Mack *et al.*, 2000), especially of the floating macrophytes such as the water hyacinth, *Eichhornia crassipes* (Mart.) Solms, and the water lettuce, *Pistia stratiotes* L., both of which were already found in Poyang Lake (see Appendix and Fig. 5). These two noxious plant invaders can seriously threaten the local plant diversity and ecosystem functioning (Barrett, 1989). Serious attention should be paid to these invasive plants and the other alien species that may likely cause similar environmental problems after the reservoir is built. Construction of the Three Gorges Dam, about 900 km upstream on the Yangtze River, have facilitated the establishment of highly invasive alien species in its reservoir region, including the above-mentioned *Eichhornia crassipes*, *Alternanthera philoxeroides* (Mart.) Griseb., or *Erigeron sumatrensis* Retz. (Ding *et al.*, 2008). In this sense, appropriate management strategies to minimize further invasions in Poyang wetland, including setting up early detection methods and enforcing quarantines and inspection procedures, should be urgently implemented. Clearly, more specific research is needed (e.g. vegetation succession and biophysical and ecological modelling; Kummur *et al.*, 2006) to precisely identify and quantify the possible impacts on the biodiversity that damming will exert.

Disappearance or disturbance of forests, shrublands, grasslands, and aquatic communities due to permanent flooding will lead to great ecological losses. Therefore, in order to minimize these impacts, it is imperative to set up a series of in situ conservation measures that might include enhancing nature reserves, restoring degraded ecosystems, and optimizing artificial ecosystems. Setting up new nature reserves and expanding existing ones seems an urgent and necessary task given that new pressures on Poyang wetland are arising, such as the massive sand dredging currently being undertaken in an effort to cope with the demand for sand used in construction (Harris & Hao, 2010). Constructed and restored wetlands, e.g. paddy fields and fishing grounds, often lack, however, the ecological functions provided by natural habitats (Zedler, 1993; Kentula, 1996) and thus additional research should be conducted in this direction. The ex situ conservation of the rare

and interesting species affected by damming could be accomplished by transplanting these species into botanical gardens and keeping their seeds in germplasm banks. These measures, in addition to contributing to the plant diversity protection, would also serve for economic development.

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Appendix. List of the plant taxa in the Poyang Lake wetland identified in this study. For the identification of the plants, we used *Moss Flora of China* (MFCEC, 1999–2011), *Flora of China* (<http://flora.huh.harvard.edu/china/>), and *Flora of Jiangxi* (ECFJ, 1993). Authors' names follow the standards given by the *International Plant Names Index* (<http://www.ipni.org/index.html>). For the habit, A: annual, B: biennial, P: perennial. For the life-form, H: herb, S: shrub, T: tree, V: vine. For the origin, E: endemic to China ('widespread', if present in more than 3 provinces; 'narrow', if present in three provinces or fewer), N: native to China, AN: alien naturalized, AI: alien invasive, AC: alien cultivated. The origin (and the native ranges for alien taxa) were mainly obtained from the Germplasm Resources Information Network (GRIN) of the United States Department of Agriculture (www.ars-grin.gov), *Flora of China* (<http://flora.huh.harvard.edu/china/>) as well as authoritative lists or compendiums on naturalized and invasive plants in China (e.g. Lin *et al.*, 2007; Weber *et al.*, 2008; Wu *et al.*, 2010b; Jiang *et al.*, 2011; Xu *et al.*, 2012). In the column 'Origin', the native range of the alien species are included in brackets. For the hydro-ecotypes, Hd: hydrophytes, Hg: hygrophytes, M: mesophytes, X: xerophytes.

Family	Latin name	Chinese name	Habit	Life form	Origin	Hydro-ecotypes	Notes
Bryophyta							
Funariaceae	<i>Funaria hygrometrica</i> Hedw.	葫芦藓	A	H	N	M	
Funariaceae	<i>Physcomitrium japonicum</i> (Hedw.) Mitt.	日本立碗藓	A	H	N	M	
Pteridophyta							
Azollaceae	<i>Azolla imbricata</i> (Roxb. ex Griff.) Nakai	满江红	A	H	N	Hd	
Drynariaceae	<i>Drynaria roosii</i> Nakaike	槲蕨	P	H	N	M	
Dryopteridaceae	<i>Cyrtomium fortunei</i> J. Sm.	贯众	P	H	N	M/X	
Equisetaceae	<i>Equisetum arvense</i> L.	问荆	P	H	N	M/X	
Equisetaceae	<i>Equisetum ramosissimum</i> Desf.	节节草	P	H	N	Hg/M	
Gleicheniaceae	<i>Dicranopteris pedata</i> (Houtt.) Nakaike	芒萁	P	H	N	M/X	
Isoetaceae	<i>Isoetes sinensis</i> Palmer	中华水韭	A	H	E (widespread)	Hg	
Lygodiaceae	<i>Lygodium japonicum</i> (Thunb.) Sw.	海金沙	P	H	N	M/X	
Marsileaceae	<i>Marsilea quadrifolia</i> L.	蘋	P	H	N	Hd/Hg	
Parkeriaceae	<i>Ceratopteris pteridoides</i> (Hook.) Hieron.	粗梗水蕨	A	H	N	Hd/Hg	
Parkeriaceae	<i>Ceratopteris thalictroides</i> (L.) Brongn.	水蕨	A	H	N	Hd/Hg	
Polypodiaceae	<i>Pyrrosia angustissima</i> (Giesenh. ex Diels) Tagawa & K. Iwats.	石蕨	P	H	N	M/X	
Pteridaceae	<i>Pteridium aquilinum</i> (L.) Kuhn var. <i>latiusculum</i> (Desv.) Underw. ex A. Heller	蕨	P	H	N	M/X	
Pteridaceae	<i>Pteris multifida</i> Poir.	井栏边草	P	H	N	M/X	
Pteridaceae	<i>Pteris vittata</i> L.	蜈蚣草	P	H	N	M/X	
Salviniaceae	<i>Salvinia natans</i> (L.) All.	槐叶蘋	A	H	N	Hd	
Gymnospermae							
Cupressaceae	<i>Juniperus virginiana</i> L. 'Pendula'	北美圆柏	P	T	AC [N America]	M/X	Cultivated in the study area
Cupressaceae	<i>Platycladus orientalis</i> (L.) Franco	侧柏	P	T	N	M/X	Probably cultivated in the study area

Appendix. (Cont.)

Family	Latin name	Chinese name	Habit	Life form	Origin	Hydro-ecotypes	Notes
Ginkgoaceae	<i>Ginkgo biloba</i> L.	银杏	P	T	E (widespread)	M/X	Probably cultivated in the study area
Pinaceae	<i>Cedrus deodara</i> (Roxb.) G. Don	雪松	P	T	AC [SW Asia] ¹	M/X	Cultivated in the study area
Pinaceae	<i>Pinus elliotii</i> Engelm.	湿地松	P	T	AC [N America]	M/X	Cultivated in the study area
Pinaceae	<i>Pinus massoniana</i> Lamb. var. <i>massoniana</i>	马尾松	P	T	N	M/X	Probably cultivated in the study area
Pinaceae	<i>Pinus tabuliformis</i> Carrière var. <i>tabuliformis</i>	油松	P	T	N	M/X	
Podocarpaceae	<i>Podocarpus macrophyllus</i> (Thunb.) Sweet var. <i>macrophyllus</i>	罗汉松	P	T	N	M/X	
Podocarpaceae	<i>Podocarpus neriifolius</i> D. Don	百日青	P	T	N	M/X	
Taxodiaceae	<i>Cryptomeria japonica</i> (Thunb. ex L. f.) D. Don var. <i>sinensis</i> Miq.	柳杉	P	T	N	M/X	
Taxodiaceae	<i>Cunninghamia lanceolata</i> (Lamb.) Hook. var. <i>lanceolata</i>	杉木	P	T	N	M/X	
Taxodiaceae	<i>Metasequoia glyptostroboides</i> Hu & W. C. Cheng	水杉	P	T	E (narrow)	Hg/M/X	Probably cultivated in the study area
Taxodiaceae	<i>Taxodium distichum</i> (L.) Rich. var. <i>imbricatum</i> (Nutt.) Croom	池杉	P	T	AC [N America]	Hg/M/X	Cultivated in the study area
Angiospermae – Basal angiosperms							
Aristolochiaceae	<i>Aristolochia debilis</i> Siebold & Zucc.	马兜铃	P	H	N	M/X	
Ceratophyllaceae	<i>Ceratophyllum demersum</i> L.	金鱼藻	P	H	N	Hd	
Ceratophyllaceae	<i>Ceratophyllum platyacanthum</i> Cham. subsp. <i>oryzetorum</i> (V. Komarov) Les	五刺金鱼藻	P	H	N	Hd	
Lauraceae	<i>Cinnamomum camphora</i> (L.) J. Presl	樟	P	T	N	M/X	
Lauraceae	<i>Lindera glauca</i> (Siebold & Zucc.) Blume	山胡椒	P	T	N	M/X	
Magnoliaceae	<i>Magnolia grandiflora</i> L.	广玉兰, 荷花玉兰	P	T	AC [N America]	M/X	Cultivated in the study area
Magnoliaceae	<i>Michelia figo</i> (Lour.) Spreng.	含笑花	P	T	N	M/X	
Nymphaeaceae	<i>Euryale ferox</i> Salisb.	芡实	A	H	N	Hd	
Angiospermae – Monocots							
Acoraceae	<i>Acorus calamus</i> L.	菖蒲	P	H	N	Hg	

Appendix. (Cont.)

Family	Latin name	Chinese name	Habit	Life form	Origin	Hydro-ecotypes	Notes
Alismataceae	<i>Alisma canaliculatum</i> A. Braun & C. D. Bouché	窄叶泽泻	P	H	N	Hg	
Alismataceae	<i>Sagittaria pygmaea</i> Miq.	矮慈姑	A	H	N	Hg	
Alismataceae	<i>Sagittaria trifolia</i> L. subsp. <i>leucopetala</i> (Miq.) Q. F. Wang	华夏慈姑	P	H	N	Hg	
Alismataceae	<i>Sagittaria trifolia</i> L. subsp. <i>trifolia</i>	野慈姑	P	H	N	Hg	
Amaryllidaceae	<i>Curculigo orchioides</i> Gaertn.	仙茅	P	H	N	M/X	
Amaryllidaceae	<i>Lycoris radiata</i> (L'Hér.) Herb.	石蒜	P	H	N	M/X	
Araceae	<i>Arisaema erubescens</i> (Wall.) Schott	一把伞南星	P	H	N	M/X	
Araceae	<i>Colocasia antiquorum</i> Schott	野芋	P	H	N	M/X	
Araceae	<i>Pinellia pedatisecta</i> Schott	虎掌	P	H	N	M/X	
Araceae	<i>Pinellia ternata</i> (Thunb.) Ten. ex Breitenb.	半夏	P	H	N	M/X	
Araceae	<i>Pistia stratiotes</i> L.	大藻	P	H	AI [N Africa, S Asia, Neotropics]	Hd	
Arecaceae	<i>Trachycarpus fortunei</i> (Hook.) H. Wendl.	棕榈	P	T	N	M/X	
Cannaceae	<i>Canna indica</i> L.	美人蕉	P	H	AN [Neotropics]	M/X	
Commelinaceae	<i>Commelina communis</i> L.	鸭跖草	A	H	N	Hg/M	
Commelinaceae	<i>Commelina maculata</i> Edgew.	地地藕	P	H	N	M/X	
Commelinaceae	<i>Commelina paludosa</i> Blume	大叶鸭跖草	P	H	N	Hg/M	
Cyperaceae	<i>Carex argyi</i> H. Lév. & Vaniot	阿齐藁草	P	H	N	M/X	
Cyperaceae	<i>Carex cinerascens</i> Kük.	灰化藁草	P	H	N	M/X	
Cyperaceae	<i>Carex doniana</i> Spreng.	笠草	P	H	N	M/X	
Cyperaceae	<i>Carex duriuscula</i> C. A. Mey. subsp. <i>rigescens</i> (Franch.) S. Yun Liang & Y. C. Tang	白颖藁草	P	H	N	M/X	
Cyperaceae	<i>Carex laticeps</i> C. B. Clarke ex Franch.	弯喙藁草	P	H	N	M/X	
Cyperaceae	<i>Carex longerostrata</i> C. A. Mey. var. <i>longerostrata</i>	长嘴藁草	P	H	N	M/X	
Cyperaceae	<i>Carex neurocarpa</i> Maxim.	翼果藁草	P	H	N	M/X	
Cyperaceae	<i>Carex scabrifolia</i> Steud.	糙叶藁草	P	H	N	M/X	
Cyperaceae	<i>Carex unisexualis</i> C. B. Clarke	单性藁草	P	H	N	M/X	
Cyperaceae	<i>Cyperus cyperoides</i> (L.) Kuntze	砖子苗	P	H	N	Hg/M	
Cyperaceae	<i>Cyperus glomeratus</i> L.	头状穗莎草	P	H	N	Hg/M	
Cyperaceae	<i>Cyperus iria</i> L.	碎米莎草	A	H	N	Hg/M	
Cyperaceae	<i>Cyperus rotundus</i> L.	香附子	P	H	N	M/X	
Cyperaceae	<i>Eleocharis dulcis</i> (Burm. f.) Trin. ex Hensch.	荸荠	P	H	N	Hg	
Cyperaceae	<i>Eleocharis valleculosa</i> Ohwi var. <i>setosa</i> Ohwi	具刚毛荸荠	P	H	N	Hg	

Appendix. (Cont.)

Family	Latin name	Chinese name	Habit	Life form	Origin	Hydro-ecotypes	Notes
Cyperaceae	<i>Eleocharis yokoscensis</i> (Franch. & Savat.) Tang & F. T. Wang	牛毛毡	P	H	N	Hd/Hg	
Cyperaceae	<i>Fimbristylis aestivalis</i> (Retz.) Vahl	夏飘拂草	A	H	N	Hd/Hg	
Cyperaceae	<i>Fimbristylis dichotoma</i> (L.) Vahl subsp. <i>dichotoma</i>	两歧飘拂草	A	H	N	Hd/Hg	
Cyperaceae	<i>Fimbristylis littoralis</i> Gaudich. var. <i>littoralis</i>	水虱草	A	H	N	Hd/Hg	
Cyperaceae	<i>Kobresia macrantha</i> Boeckeler	大花嵩草	P	H	N	M/X	
Cyperaceae	<i>Kyllinga brevifolia</i> Rottb. var. <i>brevifolia</i>	短叶水蜈蚣	P	H	N	Hg/M	
Cyperaceae	<i>Kyllinga nemoralis</i> (J. R. Forst. & G. Forst.) Dandy ex Hutch. & Dalziel	单穗水蜈蚣	A	H	N	Hg/M	
Cyperaceae	<i>Schoenoplectus juncooides</i> (Roxb.) Palla	萤蔺	P	H	N	Hg/M	
Cyperaceae	<i>Schoenoplectus mucronatus</i> (L.) Palla subsp. <i>robustus</i> (Miq.) T. Koyama	水毛花	P	H	N	Hg/M	
Cyperaceae	<i>Schoenoplectus triqueter</i> (L.) Palla	蔗草	P	H	N	Hg/M	
Dioscoreaceae	<i>Dioscorea japonica</i> Thunb. var. <i>japonica</i>	日本薯蓣	P	H	N	M/X	
Eriocaulaceae	<i>Eriocaulon buergerianum</i> Körn.	谷精草	P	H	N	Hd/Hg	
Hydrocharitaceae	<i>Hydrilla verticillata</i> (L. f.) Royle var. <i>verticillata</i>	黑藻	P	H	N	Hd	
Hydrocharitaceae	<i>Hydrocharis dubia</i> (Blume) Backer	水鳖	P	H	N	Hd	
Hydrocharitaceae	<i>Najas marina</i> L. var. <i>marina</i>	大茨藻	A	H	N	Hd	
Hydrocharitaceae	<i>Najas minor</i> All.	小茨藻	A	H	N	Hd	
Hydrocharitaceae	<i>Ottelia alismoides</i> (L.) Pers.	龙舌草	A	H	N	Hd/Hg	
Hydrocharitaceae	<i>Vallisneria natans</i> (Lour.) H. Hara	苦草	P	H	N	Hd	
Hydrocharitaceae	<i>Vallisneria spinulosa</i> S. Z. Yan	刺苦草	P	H	N	Hd	
Iridaceae	<i>Belamcanda chinensis</i> (L.) Redouté	射干	P	H	N	M/X	
Juncaceae	<i>Juncus minimus</i> Buchenau	矮灯心草	P	H	N	Hd/Hg	
Juncaceae	<i>Juncus prismatocarpus</i> R. Br. subsp. <i>prismatocarpus</i>	筭石菖	A	H	N	Hd/Hg	
Juncaceae	<i>Juncus setchuensis</i> Buchenau ex Diels var. <i>setchuensis</i>	野灯心草	P	H	N	Hd/Hg	
Lemnaceae	<i>Lemna minor</i> L.	浮萍	A	H	N	Hd	
Lemnaceae	<i>Spirodela polyrhiza</i> (L.) Schleid.	紫萍	A	H	N	Hd	

Appendix. (Cont.)

Family	Latin name	Chinese name	Habit	Life form	Origin	Hydro-ecotypes	Notes
Lemnaceae	<i>Wolffia arrhiza</i> (L.) Horkel ex Wimm.	芜萍	A	H	N	Hd	
Liliaceae	<i>Aletris spicata</i> (Thunb.) Franch.	粉条儿菜	P	H	N	M	
Liliaceae	<i>Allium cepa</i> L. var. <i>cepa</i>	洋葱	P	H	AC [SW Asia]	M	Cultivated in the study area
Liliaceae	<i>Allium chinense</i> G. Don	芥头	P	H	N	M	
Liliaceae	<i>Allium macrostemon</i> Bunge	薤白	P	H	N	M	
Liliaceae	<i>Allium sativum</i> L.	蒜	P	H	AC [C Asia]	M	Cultivated in the study area
Liliaceae	<i>Allium tuberosum</i> Rottler ex Spreng.	韭菜	P	H	N	M	Cultivated in the study area
Liliaceae	<i>Asparagus cochinchinensis</i> (Lour.) Merr.	天门冬	P	H	N	M	
Liliaceae	<i>Barnardia japonica</i> (Thunb.) Schult. & Schult. f.	绵枣儿	P	H	N	M	
Liliaceae	<i>Hemerocallis citrina</i> Baroni	黄花菜	P	H	N	M	Cultivated in the study area
Liliaceae	<i>Lilium brownii</i> F. E. Br. ex Miellez var. <i>viridulum</i> Baker	百合	P	H	N	M	
Liliaceae	<i>Ophiopogon bodinieri</i> H. Lév.	沿阶草	P	H	N	M	
Liliaceae	<i>Smilax</i> sp.	菝葜一种	P	H	N	M	
Liliaceae	<i>Smilax riparia</i> A. DC. var. <i>riparia</i>	牛尾菜	P	H	N	M	
Liliaceae	<i>Tulipa edulis</i> (Miq.) Baker	老鸦瓣	P	H	N	M	
Liliaceae	<i>Yucca gloriosa</i> L.	凤尾丝兰	P	T	AC [N America]	M	Cultivated in the study area
Musaceae	<i>Musa basjoo</i> Siebold & Zucc.	芭蕉	P	H	N	M	
Orchidaceae	<i>Spiranthes sinensis</i> (Pers.) Ames	绶草	P	H	N	M	
Poaceae	<i>Alopecurus aequalis</i> Sobol.	看麦娘	A	H	N	M	
Poaceae	<i>Arundinella hirta</i> (Thunb.) Tanaka var. <i>hirta</i>	野古草	P	H	N	M	
Poaceae	<i>Arundinella pubescens</i> Merr. & Hack.	毛野古草	P	H	N	M	
Poaceae	<i>Avena fatua</i> L. var. <i>fatua</i>	野燕麦	A	H	AI [Europe]	M	
Poaceae	<i>Bambusa multiplex</i> (Lour.) Raeusch. ex Schult. & Schult. f. var. <i>multiplex</i>	凤尾竹	P	H	N	M	
Poaceae	<i>Beckmannia syzigachne</i> (Steud.) Fernald var. <i>syzigachne</i>	蔺草	A	H	N	M	
Poaceae	<i>Cynodon dactylon</i> (L.) Pers. var. <i>dactylon</i>	狗牙根	P	H	AC/AN [Africa?]	M	Probably cultivated in the study area

Appendix. (Cont.)

Family	Latin name	Chinese name	Habit	Life form	Origin	Hydro-ecotypes	Notes
Poaceae	<i>Digitaria</i> sp.	马唐一种	A/P	H	N	M/X	
Poaceae	<i>Digitaria ciliaris</i> (Retz.) Koeler var. <i>ciliaris</i>	升马唐	A	H	N	M/X	
Poaceae	<i>Echinochloa crusgalli</i> (L.) P. Beauv. var. <i>crusgalli</i>	稗	A	H	N	Hg/M	
Poaceae	<i>Elymus kamoji</i> (Ohwi) S. L. Chen var. <i>kamoji</i>	鹅观草	P	H	N	M	
Poaceae	<i>Eragrostis</i> sp.	画眉草一种	A/P	H	N	M	
Poaceae	<i>Eremochloa ophiuroides</i> (Munro) Hack.	假俭草	P	H	N	M	
Poaceae	<i>Hemarthria altissima</i> (Poir.) Stapf & C. E. Hubb.	牛鞭草	P	H	N	M	
Poaceae	<i>Hemarthria compressa</i> (L. f.) R. Br.	扁穗牛鞭草	P	H	N	M	
Poaceae	<i>Hordeum vulgare</i> L. var. <i>vulgare</i>	大麦	A	H	AC [SW Asia]	M	Cultivated in the study area
Poaceae	<i>Imperata cylindrica</i> (L.) Raeusch. var. <i>cylindrica</i>	白茅	P	H	N	M	
Poaceae	<i>Indocalamus</i> sp.	箬竹一种	P	H	N	M	
Poaceae	<i>Indocalamus longiauritus</i> Hand.-Mazz. var. <i>longiauritus</i>	箬叶竹	P	H	N	M	
Poaceae	<i>Miscanthus floridulus</i> (Labill.) Warb. ex K. Schum. & Lauterb.	五节芒	P	H	N	M	
Poaceae	<i>Miscanthus lutarioriparius</i> L. Liu ex Renvoize & S. L. Chen	南荻	P	H	N	Hg/M	
Poaceae	<i>Oryza sativa</i> L.	水稻	A	H	N	Hg	Cultivated in the study area
Poaceae	<i>Panicum bisulcatum</i> Thunb.	糠稷	A	H	N	M/X	
Poaceae	<i>Panicum dichotomiflorum</i> Michx.	洋野黍	A	H	AI [America]	M/X	
Poaceae	<i>Paspalum distichum</i> L.	双穗雀稗	P	H	N	Hg/M	
Poaceae	<i>Phalaris arundinacea</i> L.	藨草	P	H	N	Hg	
Poaceae	<i>Phragmites australis</i> (Cav.) Trin. ex Steud.	芦苇	P	H	N	Hg	
Poaceae	<i>Phyllostachys edulis</i> (Carrière) J. Houz.	毛竹	P	H	N	M	
Poaceae	<i>Phyllostachys nidularia</i> Munro	篔竹	P	T	N	M	
Poaceae	<i>Phyllostachys sulphurea</i> (Carrière) Rivière & C. Rivière var. <i>viridis</i> R. A. Young	刚竹	P	T	N	M	
Poaceae	<i>Pleioblastus solidus</i> S. Y. Chen	实心苦竹	P	H	N	M	
Poaceae	<i>Poa annua</i> L.	早熟禾	A/B	H	N	M	

Appendix. (Cont.)

Family	Latin name	Chinese name	Habit	Life form	Origin	Hydro-ecotypes	Notes
Poaceae	<i>Saccharum narenga</i> (Nees ex Steud.) Wall. ex Hack.	河八王	P	H	N	M	
Poaceae	<i>Setaria viridis</i> (L.) P. Beauv. subsp. <i>viridis</i>	狗尾草	A	H	N	M	
Poaceae	<i>Zizania latifolia</i> (Griseb.) Turcz. ex Stapf	菰	P	H	N	Hg	
Pontederiaceae	<i>Eichhornia crassipes</i> (Mart.) Solms	凤眼莲	P	H	AI [S America]	Hd	
Pontederiaceae	<i>Monochoria korsakowii</i> Regel & Maack	雨久花	P	H	N	Hd	
Pontederiaceae	<i>Monochoria vaginalis</i> (Burm. f.) C. Presl ex Kunth	鸭舌草	P	H	N	Hd	
Potamogetonaceae	<i>Potamogeton crispus</i> L.	菹草	P	H	N	Hd	
Potamogetonaceae	<i>Potamogeton cristatus</i> Regel & Maack	鸡冠眼子菜	P	H	N	Hd	
Potamogetonaceae	<i>Potamogeton distinctus</i> A. Benn.	眼子菜	P	H	N	Hd	
Potamogetonaceae	<i>Potamogeton lucens</i> L.	光叶眼子菜	P	H	N	Hd	
Potamogetonaceae	<i>Potamogeton maackianus</i> A. Benn.	微齿眼子菜	P	H	N	Hd	
Potamogetonaceae	<i>Potamogeton oxyphyllus</i> Miq.	尖叶眼子菜	P	H	N	Hd	
Potamogetonaceae	<i>Potamogeton wrightii</i> Morong	竹叶眼子菜	P	H	N	Hd	
Potamogetonaceae	<i>Stuckenia pectinata</i> (L.) Börner	篦齿眼子菜	P	H	N	Hd	
Typhaceae	<i>Typha orientalis</i> C. Presl	香蒲	P	H	N	Hd	
Typhaceae	<i>Typha angustifolia</i> L.	水烛	P	H	N	Hd	
Angiospermae – Eudicots							
Adoxaceae	<i>Viburnum</i> sp.	荚蒾一种	P	S	N	M	
Amaranthaceae	<i>Achyranthes bidentata</i> Blume var. <i>bidentata</i>	牛膝	P	H	N	M	
Amaranthaceae	<i>Achyranthes longifolia</i> (Makino) Makino	柳叶牛膝	P	H	N	M	
Amaranthaceae	<i>Alternanthera philoxeroides</i> (Mart.) Griseb.	喜旱莲子草	P	H	AI [S America]	Hd/Hg	
Amaranthaceae	<i>Alternanthera sessilis</i> (L.) R. Br. ex DC.	莲子草	P	H	N	Hd/Hg	
Amaranthaceae	<i>Amaranthus hybridus</i> L.	绿穗苋	A	H	AI [America]	M	
Amaranthaceae	<i>Amaranthus spinosus</i> L.	刺苋	A	H	AI [Neotropics]	M	
Amaranthaceae	<i>Amaranthus tricolor</i> L.	苋	A	H	AI [tropical Asia]	M	
Amaranthaceae	<i>Celosia argentea</i> L.	青葙	A	H	AN [India]	M	

Appendix. (Cont.)

Family	Latin name	Chinese name	Habit	Life form	Origin	Hydro-ecotypes	Notes
Amaranthaceae	<i>Celosia cristata</i> L.	鸡冠花	A	H	AC/AN [India]	M	Probably cultivated in the study area
Anacardiaceae	<i>Pistacia chinensis</i> Bunge	黄连木	P	T	N	M	
Anacardiaceae	<i>Rhus chinensis</i> Mill. var. <i>chinensis</i>	盐肤木	P	T	N	M	
Apiaceae	<i>Centella asiatica</i> (L.) Urb.	积雪草	P	H	N	Hg/M	
Apiaceae	<i>Daucus carota</i> L. var. <i>carota</i>	野胡萝卜	B	H	AI [N Africa, W & S Asia, Europe]	M	
Apiaceae	<i>Hydrocotyle sibthorpioides</i> Lam. var. <i>sibthorpioides</i>	天胡荽	P	H	N	M	
Apiaceae	<i>Oenanthe javanica</i> (Blume) DC. subsp. <i>javanica</i>	水芹	P	H	N	M	
Apiaceae	<i>Torilis japonica</i> (Houtt.) DC.	小窃衣	A/P	H	N	M	
Apocynaceae	<i>Nerium oleander</i> L.	夹竹桃	P	S	AC [Africa, Asia, S Europe] ¹	M	Cultivated in the study area
Apocynaceae	<i>Trachelospermum jasminoides</i> (Lindl.) Lem.	络石	P	V	N	M	
Aquifoliaceae	<i>Ilex asprella</i> (Hook. & Arn.) Champ. ex Benth. var. <i>asprella</i>	秤星树	P	S	N	M	
Aquifoliaceae	<i>Ilex chinensis</i> Sims	冬青	P	S	N	M	
Aquifoliaceae	<i>Ilex cornuta</i> Lindl. & Paxton	枸骨	P	S	N	M	
Araliaceae	<i>Eleutherococcus nodiflorus</i> (Dunn) S. Y. Hu	细柱五加	P	S	E (widespread)	M	
Asclepiadaceae	<i>Cynanchum auriculatum</i> Royle ex Wight	牛皮消	P	H	N	M	Cultivated in the study area
Asclepiadaceae	<i>Cynanchum glaucescens</i> (Decne.) Hand.-Mazz.	白前	P	H	E (widespread)	M	
Asclepiadaceae	<i>Cynanchum paniculatum</i> (Bunge) Kitag.	徐长卿	P	H	N	M	
Asclepiadaceae	<i>Tylophora floribunda</i> Miq.	多花娃儿藤	P	V	N	M	
Asteraceae	<i>Ambrosia artemisiifolia</i> L.	豚草	A	H	AI [America]	M	
Asteraceae	<i>Artemisia argyi</i> H. Lévl. & Vaniot	艾	P	H	N	M	
Asteraceae	<i>Artemisia capillaris</i> Thunb.	茵陈蒿	P	H	N	M	
Asteraceae	<i>Artemisia caruifolia</i> Buch.-Ham. ex Roxb. var. <i>caruifolia</i>	青蒿	A	H	N	M	
Asteraceae	<i>Artemisia japonica</i> Thunb. var. <i>japonica</i>	牡蒿	P	H	N	M	
Asteraceae	<i>Artemisia lavandulifolia</i> DC.	野艾蒿	P	H	N	M	
Asteraceae	<i>Artemisia selengensis</i> Turcz. ex Besser var. <i>selengensis</i>	萎蒿	P	H	N	M	
Asteraceae	<i>Aster indicus</i> L. var. <i>indicus</i>	马兰	P	H	N	M	

Appendix. (Cont.)

Family	Latin name	Chinese name	Habit	Life form	Origin	Hydro-ecotypes	Notes
Asteraceae	<i>Bidens bipinnata</i> L.	婆婆针	A	H	AN [N America]	M	
Asteraceae	<i>Bidens pilosa</i> L.	三叶鬼针草	A	H	AI [Neotropics]	M	
Asteraceae	<i>Bidens tripartita</i> L.	狼把草	A	H	N	M	
Asteraceae	<i>Carduus crispus</i> L.	丝毛飞廉	B/P	H	N	M	
Asteraceae	<i>Carpesium abrotanoides</i> L.	天名精	P	H	N	M	
Asteraceae	<i>Carpesium velutinum</i> C. Winkl.	绒毛天名精	P	H	N	M	
Asteraceae	<i>Centipeda minima</i> (L.) A. Braun & Asch.	石胡荽	A	H	N	M	
Asteraceae	<i>Chrysanthemum indicum</i> L.	野菊	P	H	N	M	
Asteraceae	<i>Cirsium arvense</i> (L.) Scop. var. <i>integrifolium</i> Wimm. & Grab.	刺儿菜	P	H	N	M	
Asteraceae	<i>Cirsium japonicum</i> DC.	蓟	P	H	N	M	
Asteraceae	<i>Cotula anthemoides</i> L.	茼蒿菊	A	H	N	M	
Asteraceae	<i>Crepidiastrum sonchifolium</i> (Maxim.) Pak & Kawano subsp. <i>sonchifolium</i>	尖裂假还阳参	P	H	N	M	
Asteraceae	<i>Eclipta prostrata</i> (L.) L.	鳢肠	A	H	AN [America]	M	
Asteraceae	<i>Erigeron annuus</i> (L.) Pers.	一年蓬	A/B	H	AI [N America]	M	
Asteraceae	<i>Erigeron bonariensis</i> L.	香丝草	A/B	H	AN [S America]	M	
Asteraceae	<i>Gynura japonica</i> (Thunb.) Juel	三七草, 菊三七	P	H	N	M	
Asteraceae	<i>Hemisteptia lyrata</i> (Bunge) Fisch. & C. A. Mey.	泥胡菜	A	H	N	M	
Asteraceae	<i>Ixeris polycephala</i> Cass. ex DC.	苦苣菜	A/B	H	N	M	
Asteraceae	<i>Lapsanastrum apogonoides</i> (Maxim.) Pak & K. Bremer	稻槎菜	A/P	H	N	M	
Asteraceae	<i>Pseudognaphalium affine</i> (D. Don) Anderb.	鼠麴草	A	H	N	M	
Asteraceae	<i>Senecio scandens</i> Buch.-Ham. ex D. Don var. <i>scandens</i>	千里光	P	H	N	M	
Asteraceae	<i>Sigesbeckia glabrescens</i> (Makino) Makino	毛梗豨莶	A	H	N	M	
Asteraceae	<i>Sigesbeckia orientalis</i> L.	豨莶	A	H	N	M	
Asteraceae	<i>Soliva anthemifolia</i> (Juss.) R. Br.	裸柱菊	A	H	AI [S America]	M	
Asteraceae	<i>Sonchus oleraceus</i> L.	苦苣菜	A/B	H	AI [N Africa, temperate & tropical Asia, Europe]	M	
Asteraceae	<i>Symphotrichum subulatum</i> (Michx.) G. L. Nesom	美洲紫菀, 钻叶紫菀	P	H	AI [N America]	M	

Appendix. (Cont.)

Family	Latin name	Chinese name	Habit	Life form	Origin	Hydro-ecotypes	Notes
Asteraceae	<i>Taraxacum mongolicum</i> Hand.-Mazz.	蒲公英	P	H	N	M	
Asteraceae	<i>Turczaninovia fastigiata</i> (Fisch.) DC.	女苑	P	H	N	M	
Asteraceae	<i>Xanthium strumarium</i> L.	苍耳	A	H	AI [N America]	M	
Asteraceae	<i>Youngia japonica</i> (L.) DC. subsp. <i>japonica</i>	黄鹌菜	A	H	N	M	
Berberidaceae	<i>Mahonia fortunei</i> (Lindl.) Fedde	十大功劳	P	S	E (widespread)	M	Probably cultivated in the study area
Berberidaceae	<i>Nandina domestica</i> Thunb.	南天竹	P	S	N	M	
Boraginaceae	<i>Ehretia dicksonii</i> Hance	粗糠树	P	T	N	M	
Boraginaceae	<i>Trigonotis peduncularis</i> (R. Trevis.) Benth. ex Baker & S. Moore var. <i>peduncularis</i>	附地菜	A/B	H	N	M	
Brassicaceae	<i>Brassica rapa</i> L. var. <i>glabra</i> Regel	白菜	B	H	N	M	Cultivated in the study area
Brassicaceae	<i>Brassica rapa</i> L. var. <i>oleifera</i> DC.	芸薹	B	H	N	M	Cultivated in the study area
Brassicaceae	<i>Capsella bursa-pastoris</i> (L.) Medik.	芥菜	A/B	H	AI [N Africa, C & W Asia, Europe]	M	
Brassicaceae	<i>Cardamine hirsuta</i> L.	碎米荠	A	H	N	M	
Brassicaceae	<i>Cardamine impatiens</i> L.	弹裂碎米荠	A/B	H	N	M	
Brassicaceae	<i>Cardamine lyrata</i> Bunge	水田碎米荠	P	H	N	M	
Brassicaceae	<i>Coronopus didymus</i> (L.) Sm.	臭芥	A/B	H	AI [S America]	M	
Brassicaceae	<i>Lepidium virginicum</i> L.	北美独行菜	A/B	H	AI [America]	M	
Brassicaceae	<i>Raphanus sativus</i> L.	萝卜	A/B	H	AC/AN [Europe?]	M	Probably cultivated in the study area
Brassicaceae	<i>Rorippa cantoniensis</i> (Lour.) Ohwi	广州蔊菜	A/B	H	N	M	Cultivated in the study area
Brassicaceae	<i>Rorippa globosa</i> (Turcz. ex Fisch. & C. A. Mey.) Hayek	风花菜	A/B	H	N	M	
Brassicaceae	<i>Rorippa indica</i> (L.) Hiern	蔊菜	A/B	H	N	M	Cultivated in the study area
Buxaceae	<i>Buxus bodinieri</i> H. Lév.	雀舌黄杨	P	S	N	M	
Callitrichaceae	<i>Callitriche hermaphroditica</i> L. subsp. <i>hermaphroditica</i>	线叶水马齿	A	H	N	Hd	

Appendix. (Cont.)

Family	Latin name	Chinese name	Habit	Life form	Origin	Hydro-ecotypes	Notes
Callitricaceae	<i>Callitriche palustris</i> L. var. <i>palustris</i>	水马齿	A	H	N	Hd	
Campanulaceae	<i>Codonopsis lanceolata</i> (Siebold & Zucc.) Trautv.	羊乳	P	H	N	M	
Campanulaceae	<i>Lobelia chinensis</i> Lour.	半边莲	P	H	N	M	
Campanulaceae	<i>Wahlenbergia marginata</i> (Thunb.) A. DC.	蓝花参	P	H	N	M	
Cannabaceae	<i>Humulus scandens</i> (Lour.) Merr.	葎草	A	H	N	M	
Caprifoliaceae	<i>Lonicera japonica</i> Thunb. var. <i>japonica</i>	忍冬	P	S	N	M	
Caryophyllaceae	<i>Arenaria serpyllifolia</i> L.	无心菜	A/P	H	N	M	
Caryophyllaceae	<i>Cerastium fontanum</i> Baumg. subsp. <i>vulgare</i> (Hartm.) Greuter & Burdet	簇生卷耳	A/B/P	H	N	M	
Caryophyllaceae	<i>Dianthus superbus</i> L. subsp. <i>superbus</i>	瞿麦	P	H	N	M	
Caryophyllaceae	<i>Lychnis senno</i> Siebold & Zucc.	剪红纱花	P	H	N	M	
Caryophyllaceae	<i>Myosoton aquaticum</i> (L.) Moench	鹅肠菜	P	H	N	M	
Caryophyllaceae	<i>Polycarphaea corymbosa</i> (L.) Lam.	白鼓钉	A	H	N	M	
Caryophyllaceae	<i>Sagina japonica</i> (Sw.) Ohwi	漆姑草	A/B	H	N	M	
Caryophyllaceae	<i>Spergularia marina</i> (L.) Griseb.	拟漆姑	A	H	N	M	
Caryophyllaceae	<i>Stellaria alsine</i> Grimm var. <i>alsine</i>	雀舌草	B	H	N	M	
Caryophyllaceae	<i>Stellaria media</i> (L.) Vill. var. <i>media</i>	繁缕	A/B	H	N	M	
Celastraceae	<i>Euonymus fortunei</i> (Turcz.) Hand.-Mazz.	扶芳藤	P	V	N	M	
Celastraceae	<i>Euonymus japonicus</i> Thunb.	大叶黄杨	P	S	AC [Japan]	M	Cultivated in the study area
Celastraceae	<i>Euonymus maackii</i> Rupr.	丝棉木, 白杜	P	S	N	M	
Chenopodiaceae	<i>Chenopodium album</i> L.	藜	A	H	N	M	
Chenopodiaceae	<i>Dysphania ambrosioides</i> (L.) Mosyakin & Clemants	土荆芥	A/B	H	AI [America]	M	
Chenopodiaceae	<i>Kochia scoparia</i> (L.) Schrad. f. <i>trichophylla</i> (Voss) Stapf ex Schinz & Thell.	扫帚苗	A	H	N	M	
Cleomaceae	<i>Arivela viscosa</i> (L.) Raf. var. <i>viscosa</i>	黄花草	A	H	N	M	
Clusiaceae	<i>Hypericum ascyron</i> L. subsp. <i>ascyron</i>	黄海棠	P	H	N	M	
Clusiaceae	<i>Hypericum erectum</i> Thunb.	小连翘	P	H	N	M	

Appendix. (Cont.)

Family	Latin name	Chinese name	Habit	Life form	Origin	Hydro-ecotypes	Notes
Clusiaceae	<i>Hypericum japonicum</i> Thunb.	地耳草	A/P	H	N	M	
Clusiaceae	<i>Hypericum sampsonii</i> Hance	元宝草	P	H	N	M	
Convolvulaceae	<i>Calystegia hederacea</i> Wall.	打碗花	A	H	N	M	
Convolvulaceae	<i>Cuscuta chinensis</i> Lam.	菟丝子	A	H	N	M	
Convolvulaceae	<i>Ipomoea aquatica</i> Forssk.	蕹菜	A	H	N	Hg/M	
Convolvulaceae	<i>Ipomoea batatas</i> (L.) Lam.	番薯	A	H	AC [Neotropics]	M	Cultivated in the study area
Convolvulaceae	<i>Merremia hederacea</i> (Burm. f.) Hallier f.	篱栏网	A	V	N	M	
Crassulaceae	<i>Hylotelephium erythrostictum</i> (Miq.) H. Ohba	八宝	P	H	N	M	
Crassulaceae	<i>Phedimus aizoon</i> (L.) 't Hart var. <i>aizoon</i>	费菜	P	H	N	M	
Crassulaceae	<i>Sedum bulbiferum</i> Makino	珠芽景天	P	H	N	M	
Cucurbitaceae	<i>Benincasa hispida</i> (Thunb.) Cogn.	冬瓜	A	H	AC [tropical Asia]	M	Cultivated in the study area
Cucurbitaceae	<i>Citrullus lanatus</i> (Thunb.) Matsum. & Nakai	西瓜	A	H	AC [S Africa]	M	Cultivated in the study area
Cucurbitaceae	<i>Cucumis melo</i> L. subsp. <i>melo</i>	甜瓜	A	H	AC/AN [tropical Asia]	M	Probably cultivated in the study area
Cucurbitaceae	<i>Cucurbita moschata</i> Duchesne	南瓜	A	H	AC [S America]	M	Cultivated in the study area
Cucurbitaceae	<i>Lagenaria siceraria</i> (Molina) Standl.	葫芦	A	H	N	M	Cultivated in the study area
Cucurbitaceae	<i>Luffa aegyptiaca</i> Mill.	丝瓜	A	H	AC [India?]	M	Cultivated in the study area
Cucurbitaceae	<i>Momordica charantia</i> L.	苦瓜	A	H	AN [tropical Africa, tropical Asia, Australia, Pacific]	M	
Cucurbitaceae	<i>Trichosanthes kirilowii</i> Maxim.	栝楼	P	V	N	M	
Ebenaceae	<i>Diospyros kaki</i> Thunb. var. <i>kaki</i>	柿	P	T	N	M	Probably cultivated in the study area
Ebenaceae	<i>Diospyros oleifera</i> Cheng	油柿	P	T	E (widespread)	M	
Elaeagnaceae	<i>Elaeagnus pungens</i> Thunb.	胡颓子	P	S	N	M	

Appendix. (Cont.)

Family	Latin name	Chinese name	Habit	Life form	Origin	Hydro-ecotypes	Notes
Ericaceae	<i>Rhododendron molle</i> (Blume) G. Don subsp. <i>molle</i>	羊躑躅	P	S	E (widespread)	M	
Ericaceae	<i>Rhododendron simsii</i> Planch. var. <i>simsii</i>	杜鹃花	P	S	N	M	Probably cultivated in the study area
Euphorbiaceae	<i>Acalypha australis</i> L.	铁苋菜	A	H	N	M	
Euphorbiaceae	<i>Euphorbia griffithii</i> Hook. f.	圆苞大戟	P	H	N	M	
Euphorbiaceae	<i>Euphorbia hirta</i> L.	飞扬草	A	H	AI [Neotropics]	M	
Euphorbiaceae	<i>Euphorbia humifusa</i> Willd.	地锦	A	H	N	M	
Euphorbiaceae	<i>Euphorbia pekinensis</i> Rupr.	大戟	P	H	N	M	
Euphorbiaceae	<i>Flueggea suffruticosa</i> (Pall.) Baill.	一叶萩	P	S	N	M	
Euphorbiaceae	<i>Glochidion puberum</i> (L.) Hutch.	算盘子	P	S	N	M	
Euphorbiaceae	<i>Phyllanthus glaucus</i> Wall. ex Müll. Arg.	青灰叶下珠	P	S	N	M	
Euphorbiaceae	<i>Phyllanthus urinaria</i> L.	叶下珠	A	H	N	M	
Euphorbiaceae	<i>Triadica sebifera</i> (L.) Small	乌柏	P	T	N	M	Probably cultivated in the study area
Euphorbiaceae	<i>Vernicia fordii</i> (Hemsl.) Airy Shaw	油桐	P	T	N	M	Probably cultivated in the study area
Fabaceae	<i>Aeschynomene indica</i> L.	合萌	A	H	AI [Unknown]	M	
Fabaceae	<i>Amorpha fruticosa</i> L.	紫穗槐	P	S	AN [N America]	M	
Fabaceae	<i>Arachis hypogaea</i> L.	落花生	A	H	AC/AN [S America]	M	Probably cultivated in the study area
Fabaceae	<i>Astragalus sinicus</i> L.	紫云英	B	H	N	M	
Fabaceae	<i>Cercis chinensis</i> Bunge	紫荆	P	S	E (widespread)	M	Probably cultivated in the study area
Fabaceae	<i>Dalbergia hupeana</i> Hance	黄檀	P	T	E (widespread)	M	
Fabaceae	<i>Kummerowia striata</i> (Thunb.) Schindl.	鸡眼草	A	H	N	M	
Fabaceae	<i>Lathyrus odoratus</i> L.	香豌豆	A	H	AC [S Europe]	M	Cultivated in the study area
Fabaceae	<i>Lespedeza bicolor</i> Turcz.	胡枝子	P	S	N	M	

Appendix. (Cont.)

Family	Latin name	Chinese name	Habit	Life form	Origin	Hydro-ecotypes	Notes
Fabaceae	<i>Lespedeza buergeri</i> Miq.	绿叶胡枝子	P	S	N	M	
Fabaceae	<i>Lespedeza cuneata</i> (Dum. Cours.) G. Don	截叶铁扫帚	P	S	N	M	
Fabaceae	<i>Medicago minima</i> (L.) Bartał.	小苜蓿	A	H	N	M	
Fabaceae	<i>Medicago polymorpha</i> L.	南苜蓿	A/P	H	AI [N Africa, C & W Asia, Europe]	M	
Fabaceae	<i>Phaseolus vulgaris</i> L.	菜豆	A	H	AN [America]	M	Cultivated in the study area
Fabaceae	<i>Pisum sativum</i> L.	豌豆	A	H	AC [N Africa, W Asia, Europe]	M	Cultivated in the study area
Fabaceae	<i>Pueraria alopecuroides</i> Craib	密花葛	P	V	N	M	
Fabaceae	<i>Rhynchosia volubilis</i> Lour.	鹿藿	P	H	N	M	
Fabaceae	<i>Robinia pseudoacacia</i> L.	刺槐	P	T	AC/AI [N America]	M	Probably cultivated in the study area
Fabaceae	<i>Vicia sativa</i> L. subsp. <i>sativa</i>	救荒野豌豆	A/B	H	AC/AI [Unknown]	M	Probably cultivated in the study area
Fabaceae	<i>Vicia tetrasperma</i> (L.) Schreb.	四籽野豌豆	A	H	N	M	
Fabaceae	<i>Vigna radiata</i> (L.) R. Wilczek var. <i>radiata</i>	绿豆	A	H	AC [Asia]	M	Cultivated in the study area
Fabaceae	<i>Vigna unguiculata</i> (L.) Walp. subsp. <i>unguiculata</i>	豇豆	A	H	AC [Africa]	M	Cultivated in the study area
Fabaceae	<i>Wisteria sinensis</i> (Sims) Sweet	紫藤	P	V	N	M	
Fabaceae	<i>Zornia gibbosa</i> Span.	丁癸草	P	H	N	M	
Fagaceae	<i>Castanea mollissima</i> Blume	板栗	P	T	N	M	Probably cultivated in the study area
Fagaceae	<i>Castanopsis sclerophylla</i> (Lindl. & Paxton) Schottky	苦槠	P	T	E (widespread)	M	
Fagaceae	<i>Quercus acrodonta</i> Seemen	岩栎	P	T	E (widespread)	M	
Fagaceae	<i>Quercus chenii</i> Nakai	小叶栎	P	T	E (widespread)	M	
Fagaceae	<i>Quercus fabri</i> Hance	白栎	P	T	N	M	
Flacourtiaceae	<i>Xylosma congesta</i> (Lour.) Merr.	柞木	P	T	N	M	
Geraniaceae	<i>Geranium carolinianum</i> L.	野老鹳草	A	H	AI [N America]	M	
Haloragaceae	<i>Myriophyllum ussuriense</i> (Regel) Maxim.	乌苏里狐尾藻	P	H	N	M	
Haloragaceae	<i>Myriophyllum verticillatum</i> L.	狐尾藻	P	H	N	M	

Appendix. (Cont.)

Family	Latin name	Chinese name	Habit	Life form	Origin	Hydro-ecotypes	Notes
Hamamelidaceae	<i>Liquidambar formosana</i> Hance	枫香树	P	T	N	M	
Hamamelidaceae	<i>Loropetalum chinense</i> (R. Br.) Oliv. var. <i>chinense</i>	檵木	P	T	N	M	
Juglandaceae	<i>Pterocarya stenoptera</i> C. DC.	枫杨	P	T	N	M	
Lamiaceae	<i>Ajuga decumbens</i> Thunb.	金疮小草	A/P	H	N	M	
Lamiaceae	<i>Clinopodium chinense</i> (Benth.) Kuntze	风轮菜	P	H	N	M	
Lamiaceae	<i>Elsholtzia ciliata</i> (Thunb.) Hyl.	香薷	A	H	N	M	
Lamiaceae	<i>Lagopsis supina</i> (Steph. ex Willd.) Ikonn.-Gal. ex Knorring	夏至草	P	H	N	M	
Lamiaceae	<i>Leonurus japonicus</i> Houtt.	益母草	A/B	H	N	M	
Lamiaceae	<i>Mosla scabra</i> (Thunb.) C. Y. Wu & H. W. Li	石荠苎	A	H	N	M	
Lamiaceae	<i>Origanum vulgare</i> L.	牛至	P	H	N	M	
Lamiaceae	<i>Perilla frutescens</i> (L.) Britton var. <i>crispa</i> (Benth.) Deane ex Bailey	回回苏	A	H	N	M	Cultivated in the study area
Lamiaceae	<i>Perilla frutescens</i> (L.) Britton var. <i>frutescens</i>	紫苏	A	H	N	M	Probably cultivated in the study area
Lamiaceae	<i>Prunella vulgaris</i> L. var. <i>vulgaris</i>	夏枯草	P	H	N	M	
Lamiaceae	<i>Salvia bowleyana</i> Dunn var. <i>bowleyana</i>	南丹参	P	H	E (widespread)	M	
Lamiaceae	<i>Salvia plebeia</i> R. Br.	荔枝草	A/B	H	N	M	
Lamiaceae	<i>Scutellaria indica</i> L. var. <i>indica</i>	韩信草	P	H	N	M	
Lamiaceae	<i>Teucrium viscidum</i> Blume var. <i>viscidum</i>	血见愁	P	H	N	M	
Lentibulariaceae	<i>Utricularia aurea</i> Lour.	黄花狸藻	A	H	N	Hd	
Lentibulariaceae	<i>Utricularia vulgaris</i> L. subsp. <i>macrorhiza</i> (Leconte) R. T. Clausen	弯距狸藻	P	H	N	Hd	
Lythraceae	<i>Ammannia baccifera</i> L.	水苋菜	A	H	N	Hd	
Lythraceae	<i>Lagerstroemia indica</i> L.	紫薇	P	S	N	M	
Lythraceae	<i>Rotala</i> sp.	节节菜一种	A	H	N	M	
Malvaceae	<i>Abutilon theophrasti</i> Medik.	苘麻	A	S	AC/AI [N Africa, C & W Asia, Europe]	M	Probably cultivated in the study area
Malvaceae	<i>Hibiscus mutabilis</i> L.	木芙蓉	P	S	N	M	Probably cultivated in the study area

Appendix. (Cont.)

Family	Latin name	Chinese name	Habit	Life form	Origin	Hydro-ecotypes	Notes
Malvaceae	<i>Hibiscus syriacus</i> L.	木槿	P	S	N	M	Probably cultivated in the study area
Malvaceae	<i>Hibiscus trionum</i> L.	野西瓜苗	A	S	AI [Unknown]	M	
Meliaceae	<i>Melia azedarach</i> L.	苦楝	P	T	N	M	
Meliaceae	<i>Toona sinensis</i> (Juss.) M. Roem.	香椿	P	T	N	M	
Menispermaceae	<i>Cocculus orbiculatus</i> (L.) DC. var. <i>orbiculatus</i>	木防己	P	V	N	M	
Menispermaceae	<i>Stephania japonica</i> (Thunb.) Miers var. <i>japonica</i>	千金藤	P	V	N	M	
Menispermaceae	<i>Stephania tetrandra</i> S. Moore	粉防己	P	V	E (widespread)	M	
Menyanthaceae	<i>Nymphoides peltata</i> (S. G. Gmel.) Kuntze	苻菜	P	H	N	Hd	
Molluginaceae	<i>Mollugo stricta</i> L.	粟米草	A	H	N	M	
Moraceae	<i>Broussonetia kazinoki</i> Siebold	楮	P	T	N	M	
Moraceae	<i>Ficus pumila</i> L. var. <i>pumila</i>	薜荔	P	S	N	M	
Moraceae	<i>Morus alba</i> L. var. <i>alba</i>	桑	P	T	N	M	Probably cultivated in the study area
Myrsinaceae	<i>Ardisia japonica</i> (Thunb.) Blume	紫金牛	P	S	N	M	
Nelumbonaceae	<i>Nelumbo nucifera</i> Gaertn.	莲	P	H	N	Hd	Probably cultivated in the study area
Nyctaginaceae	<i>Mirabilis jalapa</i> L.	紫茉莉	A	H	AC/AI [Neotropics]	M	Probably cultivated in the study area
Oleaceae	<i>Ligustrum lucidum</i> W. T. Aiton	女贞	P	S	E (widespread)	M	
Oleaceae	<i>Ligustrum quihoui</i> Carrière	小叶女贞	P	S	N	M	
Oleaceae	<i>Ligustrum sinense</i> Lour. var. <i>sinense</i>	小蜡	P	S	N	M	
Onagraceae	<i>Ludwigia epilobioides</i> Maxim.	假柳叶菜	A	H	N	M	
Onagraceae	<i>Ludwigia ovalis</i> Miq.	卵叶丁香蓼	P	H	N	M	
Oxalidaceae	<i>Oxalis corniculata</i> L.	酢浆草	P	H	AN [Unknown]	M	
Papaveraceae	<i>Corydalis decumbens</i> (Thunb.) Pers.	夏天无	P	H	N	M	
Papaveraceae	<i>Corydalis edulis</i> Maxim.	紫堇	A	H	N	M	
Papaveraceae	<i>Corydalis incisa</i> (Thunb.) Pers.	刻叶紫堇	P	H	N	M	
Papaveraceae	<i>Corydalis racemosa</i> (Thunb.) Pers.	小花黄堇	A	H	N	M	

Appendix. (Cont.)

Family	Latin name	Chinese name	Habit	Life form	Origin	Hydro-ecotypes	Notes
Pedaliaceae	<i>Sesamum indicum</i> L.	芝麻	A	H	AC [Unknown]	M	Cultivated in the study area
Pedaliaceae	<i>Trapella sinensis</i> Oliv.	茶菱	P	H	N	Hd	
Phytolaccaceae	<i>Phytolacca acinosa</i> Roxb.	商陆	P	H	N	M	
Phytolaccaceae	<i>Phytolacca americana</i> L.	垂序商陆	P	H	AI [N America]	M	
Pittosporaceae	<i>Pittosporum tobira</i> (Thunb.) W. T. Aiton var. <i>tobira</i>	海桐	P	T	N	M	
Plantaginaceae	<i>Plantago asiatica</i> L. subsp. <i>asiatica</i>	车前	B/P	H	N	M	
Plantaginaceae	<i>Plantago lanceolata</i> L.	长叶车前	P	H	AI [N Africa, Asia & Europe]	M	
Plantaginaceae	<i>Plantago virginica</i> L.	北美车前	P	H	AI [N America]	M	
Platanaceae	<i>Platanus occidentalis</i> L.	一球悬铃木	P	T	AC [N America]	M	Cultivated in the study area
Platanaceae	<i>Platanus orientalis</i> L.	三球悬铃木	P	T	AC [SW Asia, S Europe]	M	Cultivated in the study area
Polygalaceae	<i>Polygala japonica</i> Houtt.	瓜子金	A/P	H	N	M	
Polygonaceae	<i>Fallopia multiflora</i> (Thunb.) Haraldson var. <i>multiflora</i>	何首乌	P	H	N	M	
Polygonaceae	<i>Polygonum aviculare</i> L. var. <i>aviculare</i>	篇蓄	A	H	AN [N America, Europe]	M	
Polygonaceae	<i>Polygonum criopolitanum</i> Hance	蓼子草	A	H	E (widespread)	Hg/M	
Polygonaceae	<i>Polygonum hydropiper</i> L.	水蓼	A	H	N	Hg/M	
Polygonaceae	<i>Polygonum japonicum</i> Meisn. var. <i>japonicum</i>	蚕茧蓼	A	H	N	Hg/M	
Polygonaceae	<i>Polygonum maackianum</i> Regel	长戟叶蓼	A	H	N	Hg/M	
Polygonaceae	<i>Polygonum nepalense</i> Meisn.	尼泊尔蓼	A	H	N	Hg/M	
Polygonaceae	<i>Polygonum plebeium</i> R. Br.	习见蓼	A	H	N	Hg/M	
Polygonaceae	<i>Polygonum sagittatum</i> L. var. <i>sieboldii</i> (Meisn.) Maxim. ex Kom.	箭叶蓼	A	H	N	Hg/M	
Polygonaceae	<i>Polygonum senticosum</i> (Meisn.) Franch. & Sav.	刺蓼	P	H	N	Hg/M	
Polygonaceae	<i>Polygonum strigosum</i> R. Br.	糙毛蓼	A	H	N	Hg/M	
Polygonaceae	<i>Reynoutria japonica</i> Houtt.	虎杖	P	H	N	Hg/M	
Polygonaceae	<i>Rumex acetosa</i> L.	酸模	P	H	N	Hg/M	
Polygonaceae	<i>Rumex dentatus</i> L.	齿果酸模	A	H	N	Hg/M	
Polygonaceae	<i>Rumex japonicus</i> Houtt.	羊蹄	P	H	N	Hg/M	

Appendix. (Cont.)

Family	Latin name	Chinese name	Habit	Life form	Origin	Hydro-ecotypes	Notes
Polygonaceae	<i>Rumex trisetifer</i> Stokes	长刺酸模	A	H	N	Hg/M	
Portulacaceae	<i>Portulaca oleracea</i> L.	马齿苋	A	H	AN [Unknown]	Hg/M	
Primulaceae	<i>Lysimachia candida</i> Lindl.	泽珍珠菜	A/B	H	N	Hg/M	
Primulaceae	<i>Lysimachia christinae</i> Hance	过路黄	P	H	E (widespread)	Hg/M	
Primulaceae	<i>Lysimachia congestiflora</i> Hemsl.	临时救	P	H	N	Hg/M	
Primulaceae	<i>Lysimachia davurica</i> Ledeb.	黄莲花	P	H	N	Hg/M	
Primulaceae	<i>Lysimachia klattiana</i> Hance	轮叶过路黄	P	H	E (widespread)	Hg/M	
Primulaceae	<i>Lysimachia parvifolia</i> Franch.	小叶珍珠菜	P	H	E (widespread)	Hg/M	
Ranunculaceae	<i>Delphinium anthriscifolium</i> Hance var. <i>anthriscifolium</i>	还亮草	A	H	E (widespread)	Hg/M	
Ranunculaceae	<i>Ranunculus podocarpus</i> W. T. Wang	柄果毛茛	A	H	E (narrow)	Hg/M	
Ranunculaceae	<i>Ranunculus sceleratus</i> L.	石龙芮	A	H	N	Hg/M	
Ranunculaceae	<i>Ranunculus ternatus</i> Thunb. var. <i>ternatus</i>	猫爪草	A	H	N	Hg/M	
Ranunculaceae	<i>Semiaquilegia adoxoides</i> (DC.) Makino	天葵	P	H	N	Hg/M	
Rhamnaceae	<i>Paliurus ramosissimus</i> (Lour.) Poir.	马甲子	P	S	N	Hg/M	
Rhamnaceae	<i>Sageretia thea</i> (Osbeck) M.C. Johnst. var. <i>thea</i>	雀梅藤	P	S	N	Hg/M	
Rhamnaceae	<i>Ziziphus jujuba</i> Mill. var. <i>inermis</i> (Bunge) Rehder	无刺枣	P	S	E (widespread)	Hg/M	Probably cultivated in the study area
Rhamnaceae	<i>Ziziphus jujuba</i> Mill. var. <i>spinosa</i> (Bunge) Hu ex H. F. Chow	酸枣	P	S	E (widespread)	Hg/M	Probably cultivated in the study area
Rosaceae	<i>Agrimonia pilosa</i> Ledeb. var. <i>pilosa</i>	龙牙草	P	H	N	Hg/M	
Rosaceae	<i>Amygdalus persica</i> L.	桃	P	T	N	M	Probably cultivated in the study area
Rosaceae	<i>Crataegus cuneata</i> Siebold & Zucc. var. <i>cuneata</i>	野山楂	P	T	N	M	
Rosaceae	<i>Duchesnea indica</i> (Andrews) Focke var. <i>indica</i>	蛇莓	P	H	N	M	
Rosaceae	<i>Eriobotrya japonica</i> (Thunb.) Lindl.	枇杷	P	T	N	M	Probably cultivated in the study area

Appendix. (Cont.)

Family	Latin name	Chinese name	Habit	Life form	Origin	Hydro-ecotypes	Notes
Rosaceae	<i>Potentilla anserina</i> L.	蕨麻	P	H	N	M	
Rosaceae	<i>Potentilla discolor</i> Bunge	翻白草	P	H	N	M	
Rosaceae	<i>Potentilla freyniana</i> Bornm. var. <i>sinica</i> Migo	中华三叶委陵菜	P	H	E (widespread)	M	
Rosaceae	<i>Potentilla kleiniana</i> Wight & Arn.	蛇含委陵菜	A/B/P	H	N	M	
Rosaceae	<i>Pyrus betulifolia</i> Bunge	杜梨	P	T	N	M	
Rosaceae	<i>Pyrus calleryana</i> Decne. var. <i>calleryana</i>	豆梨	P	T	N	M	
Rosaceae	<i>Rosa cymosa</i> Tratt. var. <i>cymosa</i>	小果蔷薇	P	S	N	M	
Rosaceae	<i>Rosa laevigata</i> Michx.	金樱子	P	S	N	M	
Rosaceae	<i>Rosa multiflora</i> Thunb. var. <i>multiflora</i>	野蔷薇	P	S	N	M	
Rosaceae	<i>Rubus coreanus</i> Miq. var. <i>coreanus</i>	插田泡	P	S	N	Hg/M	
Rosaceae	<i>Rubus parvifolius</i> L. var. <i>parvifolius</i>	茅莓	P	S	N	M	
Rosaceae	<i>Sanguisorba officinalis</i> L. var. <i>longifolia</i> (Bert.) T. T. Yu & C. L. Li	长叶地榆	P	H	N	M	
Rubiaceae	<i>Adina rubella</i> Hance	细叶水团花	P	S	N	Hg/M	
Rubiaceae	<i>Galium bungei</i> Steud. var. <i>bungei</i>	四叶葎	P	H	N	Hg/M	
Rubiaceae	<i>Galium spurium</i> L.	猪殃殃	A	H	N	Hg/M	
Rubiaceae	<i>Galium trifidum</i> L.	小叶猪殃殃	P	H	N	Hg/M	
Rubiaceae	<i>Gardenia jasminoides</i> J. Ellis var. <i>jasminoides</i>	栀子花	P	T	N	M	
Rubiaceae	<i>Gardenia stenophylla</i> Merr.	狭叶栀子	P	T	N	M	
Rubiaceae	<i>Hedyotis diffusa</i> Willd.	白花蛇舌草	A	H	N	M	
Rubiaceae	<i>Paederia foetida</i> L.	鸡矢藤	P	V	N	M	
Rubiaceae	<i>Serissa serissoides</i> (DC.) Druce	白马骨	P	S	N	M	
Rutaceae	<i>Citrus × aurantiifolia</i> (Christm.) Swingle	来檬	P	T	AC/AN [S Asia (India)]	M	Probably cultivated in the study area
Rutaceae	<i>Citrus × junos</i> Siebold ex Tanaka	香橙	P	T	N	M	
Rutaceae	<i>Citrus reticulata</i> Blanco	柑橘	P	T	N	M	
Rutaceae	<i>Zanthoxylum simulans</i> Hance	野花椒	P	S	E (widespread)	M	
Salicaceae	<i>Populus × canadensis</i> Moench	加杨	P	T	AC/AN [Europe]	M	Probably cultivated in the study area
Salicaceae	<i>Populus tomentosa</i> Carrière var. <i>tomentosa</i>	毛白杨	P	T	E (widespread)	M	
Salicaceae	<i>Salix babylonica</i> L. var. <i>babylonica</i>	垂柳	P	T	N	M	

Appendix. (Cont.)

Family	Latin name	Chinese name	Habit	Life form	Origin	Hydro-ecotypes	Notes
Salicaceae	<i>Salix dunnii</i> C. K. Schneid. var. <i>dunnii</i>	长梗柳	P	T	E (widespread)	M	Probably cultivated in the study area
Salicaceae	<i>Salix matsudana</i> Koidz. var. <i>matsudana</i>	旱柳	P	T	N	M	Probably cultivated in the study area
Scrophulariaceae	<i>Gratiola japonica</i> Miq.	白花水八角	A	H	N	Hg	
Scrophulariaceae	<i>Limnophila sessiliflora</i> (Vahl) Blume	石龙尾	P	H	N	Hg	
Scrophulariaceae	<i>Lindernia antipoda</i> (L.) Alston	泥花草	A	H	N	Hg	
Scrophulariaceae	<i>Lindernia crustacea</i> (L.) F. Muell.	母草	A	H	N	Hg	
Scrophulariaceae	<i>Lindernia procumbens</i> (Krock.) Borbás	陌上菜	A	H	N	Hg	
Scrophulariaceae	<i>Mazus miquelii</i> Makino	匍茎通泉草	P	H	N	Hg	
Scrophulariaceae	<i>Mazus pumilus</i> (Burm. f.) Steenis var. <i>pumilus</i>	通泉草	A	H	N	Hg	
Scrophulariaceae	<i>Paulownia</i> sp.	泡桐一种	P	T	N	M	
Scrophulariaceae	<i>Paulownia fortunei</i> (Seem.) Hemsl.	白花泡桐	P	T	N	M	
Scrophulariaceae	<i>Torenia asiatica</i> L.	光叶蝴蝶草	A	H	N	M	
Scrophulariaceae	<i>Veronica peregrina</i> L.	蚊母草	A	H	AI [America]	Hg/M	
Scrophulariaceae	<i>Veronica polita</i> Fr.	婆婆纳	A	H	AI [N Africa, Asia, Europe]	Hg/M	
Solanaceae	<i>Capsicum annuum</i> L.	辣椒	A	H	AC/AN [America]	M	Probably cultivated in the study area
Solanaceae	<i>Datura stramonium</i> L.	曼陀罗	A	H	AI [N America]	M	
Solanaceae	<i>Lycium chinense</i> Mill. var. <i>chinense</i>	枸杞	P	S	N	M	Probably cultivated in the study area
Solanaceae	<i>Solanum lyratum</i> Thunb.	白英	P	H	N	M	
Solanaceae	<i>Solanum melongena</i> L.	茄	A	H	N	M	Probably cultivated in the study area
Solanaceae	<i>Solanum nigrum</i> L.	龙葵	A	H	N	M	
Solanaceae	<i>Solanum tuberosum</i> L.	马铃薯	A	H	AC [S America]	M	Cultivated in the study area
Staphyleaceae	<i>Euscaphis japonica</i> (Thunb.) Kanitz	野鸦椿	P	S	N	M	Probably cultivated in the study area

Appendix. (Cont.)

Family	Latin name	Chinese name	Habit	Life form	Origin	Hydro-ecotypes	Notes
Theaceae	<i>Camellia japonica</i> L. var. <i>japonica</i>	山茶	P	S	N	M	Probably cultivated in the study area
Theaceae	<i>Camellia sinensis</i> (L.) Kuntze var. <i>sinensis</i>	茶树	P	S	N	M	Probably cultivated in the study area
Theaceae	<i>Schima brevipedicellata</i> Hung T. Chang	短梗木荷	P	T	N	M	
Theaceae	<i>Schima superba</i> Gardner & Champ.	木荷	P	T	N	M	
Thymelaeaceae	<i>Daphne genkwa</i> Siebold & Zucc.	芫花	P	S	N	M	Probably cultivated in the study area
Thymelaeaceae	<i>Daphne odora</i> Thunb.	瑞香	P	S	N	M	Probably cultivated in the study area
Tiliaceae	<i>Grewia biloba</i> G. Don var. <i>biloba</i>	扁担杆	P	S	N	M	
Trapaceae	<i>Trapa incisa</i> Siebold & Zucc.	细果野菱	A	H	N	M	
Trapaceae	<i>Trapa natans</i> L.	欧菱	A	H	N	M	
Ulmaceae	<i>Celtis sinensis</i> Pers.	朴树	P	T	N	M	
Ulmaceae	<i>Ulmus parvifolia</i> Jacq.	榔榆	P	T	N	M	
Ulmaceae	<i>Ulmus pumila</i> L.	榆树	P	T	N	M	Probably cultivated in the study area
Urticaceae	<i>Boehmeria nivea</i> (L.) Gaudich. var. <i>nivea</i>	苎麻	P	S	N	Hg/M	Probably cultivated in the study area
Valerianaceae	<i>Patrinia scabiosifolia</i> Link	败酱	P	H	N	Hg/M	
Verbenaceae	<i>Clerodendrum bungei</i> Steud. var. <i>bungei</i>	臭牡丹	P	S	N	Hg/M	
Verbenaceae	<i>Clerodendrum cyrtophyllum</i> Turcz. var. <i>cyrtophyllum</i>	大青	P	S	N	Hg/M	
Verbenaceae	<i>Clerodendrum mandarinorum</i> Diels	海通	P	S	N	Hg/M	
Verbenaceae	<i>Verbena officinalis</i> L.	马鞭草	P	H	N	Hg/M	
Verbenaceae	<i>Vitex negundo</i> L. var. <i>cannabifolia</i> (Siebold & Zucc.) Hand.-Mazz.	牡荆	P	S	N	Hg/M	
Verbenaceae	<i>Vitex rotundifolia</i> L. f.	单叶蔓荆	P	S	N	Hg/M	
Violaceae	<i>Viola philippica</i> Cav. var. <i>philippica</i>	紫花地丁	P	H	N	Hg/M	
Violaceae	<i>Viola stewardiana</i> W. Becker	庐山堇菜	P	H	E (widespread)	Hg/M	

Appendix. (Cont.)

Family	Latin name	Chinese name	Habit	Life form	Origin	Hydro-ecotypes	Notes
Vitaceae	<i>Ampelopsis glandulosa</i> (Wall.) Momiy. var. <i>glandulosa</i>	蛇葡萄	P	V	N	Hg/M	
Vitaceae	<i>Ampelopsis megalophylla</i> Diels & Gilg var. <i>megalophylla</i>	大叶蛇葡萄	P	V	E (widespread)	Hg/M	
Vitaceae	<i>Cayratia japonica</i> (Thunb.) Gagnep. var. <i>japonica</i>	乌莓	P	H	N	Hg/M	
Vitaceae	<i>Vitis bryoniifolia</i> Bunge var. <i>bryoniifolia</i>	蓼蓂	P	V	E (widespread)	Hg/M	
Vitaceae	<i>Vitis flexuosa</i> Thunb.	葛藟	P	H	N	Hg/M	
Vitaceae	<i>Vitis vinifera</i> L.	葡萄	P	V	AC [N Africa, W Asia, SE Europe]	Hg/M	Cultivated in the study area

¹ Taxon not strictly alien to China but native only to a very small area (not more than one province) far away from Poyang Lake.