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Flora of Vascular Plants in Ridgelines in the Palgongsa Provincial Park, Korea

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Abstract: We investigated and analyzed the flora of vascular plants around ridgelines in the Palgongsan Provincial Park to suggest fundamental data for establishing preservation plans of them. The flora of vascular plants around ridgelines was a total of 587 taxa including 102 families, 314 genera, 518 species, 58 varieties, 7 forma, and 4 subspecies. Rare plants designated by Korea Forest Service were 27 taxa including *Semiquilegia mandshurica* and *Aristolochia manshuriensis*. Endemic plants were 15 taxa including *Clematis trichotoma* and *Carex okamotoi*. Floristic special plants were a total of 100 taxa including all five classes. Naturalized plants were 13 taxa including *Phytolacca Americana*, *ambrosia*, and *Taraxacum officinale*.

Keywords: palgongsan, vascular plants, ridge, rare plants and endemic plants

Introduction

Provincial parks are designated as regions that can represent the landscape and natural ecosystems in provinces to preserve them and to promote sustainable use of them. According to the site of the Ministry of Environment (<http://www.me.go.kr/web/92/me/deptdata/deptDataUserList.do>), a total of 31 provincial parks was designated as of September in 2012 since the Keumoh mountain was designated in June, 1970. The total area of entire provincial parks is 1,040.54 km².

Palgongsan Provincial Park (1,193 m) was designated in May, 1980, which is located in the southwest of Korea peninsula and makes a northern boundary with the Daegu basin. The park extends to five cities including Daegu Metroplatan City, Gyeongsan, Yeongcheon, Gunwe, and Chilgok: its total area is 125.6 km² and the total length of its ridgelines is 20 km. It is located at the latitude 35°57'33"~36°04'30" and the longitude 128°31'10"~128°48'00" (Daegu, 1994). Its bedrock is composed of Bulguksa granites that penetrate into sedimentary rocks formed in the Cretaceous period of the Mesozoic Era (Jo, 2002). From the weather data of Daegu meteorological observatory for the last 30

years, the average temperature is 13.7°C and the average rainfall is 85.7 mm in a year. Vegetation in the park is as follows: there are natural deciduous forests above an elevation of 950 m; mixed forests of pines and deciduous trees at the elevation of 750~950 m; pines dominate below an elevation of 750 m (<http://www.gbpalgong.go.kr/>). In addition, the Palgong mountain is adjacent to Gyeongsangbukdo and there are many persons as there are many small temples as well as famous temples such as Gatbawe, Pagyesa, and Dongwhasa. In particular, citizens and hikers are increasing because hiking routes are connected to everywhere (Kim, 2008).

Previous studies on the flora of major provincial parks include these: 477 taxa in the Seonwoon mountain (Kim *et al.*, 1988), 605 taxa in the Moak mountain (Sun *et al.*, 1993), 573 taxa in the Gaji mountain (Kim *et al.*, 2010), and 618 taxa in the Moodeung mountain (Seo, 2012).

Studies on the flora of the Palgong mountain were carried out by Oh (1972), Lee (1989), Kim *et al.* (1990), Daegu (1994, 1995), and Yu (2012), starting from Lee (1958). Most of preceding research, however, were done a long time ago and studies on the flora around ridgelines where many interference by persons occur through hiking routes are still insufficient.

In this study, we investigated and analyzed the flora of vascular plants that were distributed around main ridgelines in the Palgongsan Provincial Park. Determining whether plants afford to be preserved or threaten ecosystems, basic

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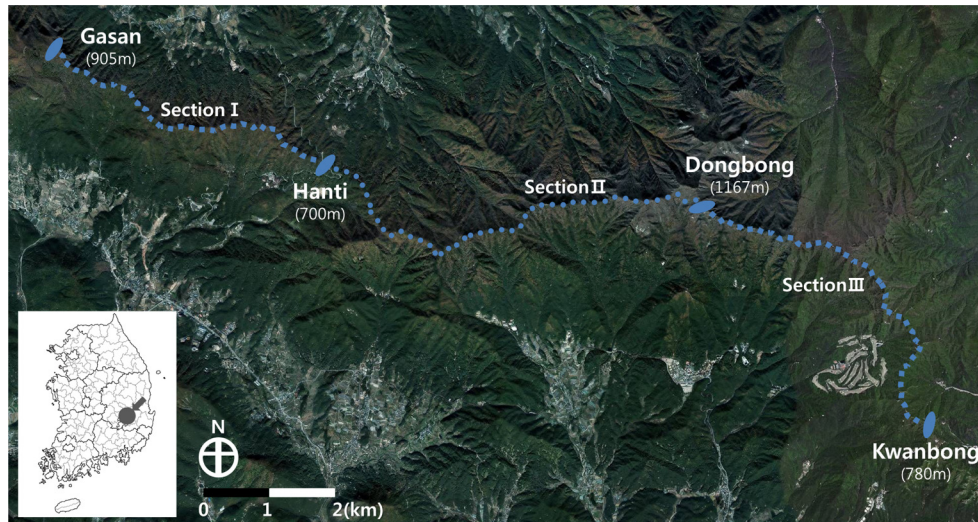


Fig. 1. A map of the survey paths in Palgongsan

Table 1. The sections of the surveys in Palgongsan

No.	Section	Distance (km)
I	Gasansan to Hantijae	5.8
II	Hantijae to Dongbong	8.3
III	Dongbong to Gwanbong	7.3

data for establishing plans of preservation in the future would be provided.

Materials and Methods

Surveys were performed by 6 times from April to October in 2012: two times at every section in every season (April, July, and September). Plants were investigated within about 10 m around hiking roads. The surveyed paths were set as shown in Fig. 1: the 1st section was Gasansan to Hantijae (5.8 km), the 2nd section was Hantijae to Dongbong (8.3 km), and the 3rd section was Dongbong to Gwanbong (7.3 km).

The flora was identified in sites according to Lee (2003): identification was done by collection and image data when it was impossible in sites. List of plants were made according to the Egler classification system (Melchior, 1964). Plant names were denoted according to Korea Plant Name Index of Korea National Arboretum and The Korean Society of Plant Taxonomists (2007); scientific names in the family

were denoted in alphabetical order.

Endemic plants were arranged according to Korea Biodiversity Information System. Following Korea Red Data Book according to the IUCN Red List Categories, rare plants were divided into these species: EW (extinct in the wild), CR (critically endangered), EN (endangered), VU (vulnerable), LC (least concern), and DD (data deficient). Floristic special plants were classified according to Kim (2000); naturalized plants were classified according to Lee *et al.* (2011).

Results and Discussions

Flora of vascular plants

Vascular plants around ridgelines in the Palgongsan Provincial Park include a total of 102 families, 314 genera, 518 species, 4 subspecies, 58 varieties, 7 forma, and 587 taxa: 49 taxa of pteridophytes including 12 families, 24 genera, 46 species, and 3 variety; 5 taxa of gymnosperms including 3 families, 5 genera, and 5 species; 94 taxa of dicotyledons in angiosperms including 9 families, 53 genera, and 85 species, 8 varieties, and 1 forma; 439 taxa of monocotyledons in angiosperms including 78 families, 232 genera, 382 species, 4 subspecies, 47 varieties, and 6 forma (Table 2, Appendix 1). These plants occupy 11.9% of 4,961 taxa of all vascular plants (http://www.nature.go.kr/kpni/general/Pr gb01/Pr gb1_1.jsp) that are listed in Korean Plant

Table 2. The number of vascular plants distributed in Palgongsan

Taxa	Family	Genus	Species	Subspecies	Variety	Forma	Total
Pteridophyta	12	24	46	-	3	-	49
Gymnospermae	3	5	5	-	-	-	5
Angiospermae	Monocotyledonae	9	53	85	-	8	94
	Dicotyledonae	78	232	382	4	47	439
Total	102	314	518	4	58	7	587

Table 3. The number of vascular plants distributed in Palgongsan

No.	Family	Genus	Species	Subspecies	Variety	Forma	Total
I	101	251	362	3	32	7	404
II	102	264	392	3	41	7	443
III	102	216	299	3	32	6	340

Name Index.

Flora in three sections are as followings: 404 taxa including 101 families, 251 genera, 362 species, 3 subspecies, 32 varieties, and 7 forma in the 1st section; 443 taxa including 102 families, 264 genera, 392 species, 3 subspecies, 41 varieties, and 7 forma in the 2nd section; 340 taxa including 102 families, 216 genera, 299 species, 3 subspecies, 32 varieties, and 6 forms in the 3rd section. The number of species in the 1st section was less than the 2nd and 3rd sections since it is the summit of the mountain (Table 3).

Previous studies on the flora in the Palgongsan Provincial Park reported these results: 680 taxa by Lee

(1958), 771 taxa by Oh (1972), 952 taxa by Lee (1989), and 1,080 taxa by Daegu (1994). Kim *et al.* (1990) reported 616 taxa around Gasan; Daegu (1995) reported 603 taxa around Seonggigol and Pokpogol; and recently Yu (2012) reported 134 taxa around roads to Gatbawe.

The highest family in diversity among investigated vascular plants was Compositae (58 taxa), and followed by Rosaceae (37 taxa), Liliaceae (32 taxa), Gramineae (31 taxa), Ranunculaceae (27 taxa), Leguminosae (23 taxa), Labiatae (23 taxa), Umbelliferae (19 taxa), Violaceae (18 taxa), and Cyperaceae (14 taxa) (Table 4). All these top 10 families occupies 48.0% of entire investigated vascular plant.

Rare plants

Rare plants designated by Korea Forest Service were 27 taxa including *Pseudostellaria japonica*, *Isopyrum manshuricum*, *Iris minutiaurea*, *Aristolochia manshuriensis*, and *Lloydia triflora*: critically endangered species (CR) was one taxa;

Table 4. The list of major families in Palgongsan

Family	Taxa (No.)	Ratio (%)	Family	Taxa (No.)	Ratio (%)
Compositae	58	9.9	Leguminosae	23	3.9
Rosaceae	37	6.3	Labiatae	23	3.9
Liliaceae	32	5.5	Umbelliferae	19	3.2
Gramineae	31	5.3	Violaceae	18	3.1
Ranunculaceae	27	4.6	Cyperaceae	14	2.4

Table 5. The list of rare plants in Palgongsan

Family name	Scientific name	Korean name	Degree
Caryophyllaceae	<i>Pseudostellaria japonica</i> Pax	긴개별꽃	CR
Ranunculaceae	<i>Isopyrum manshuricum</i> (Kom.) Kom.	만주바람꽃	EN
Berberidaceae	<i>Jeffersonia dubia</i> (Maxim.) Benth. & Hook.f. ex Baker & S.Moore	깽깽이풀	EN
Paeoniaceae	<i>Paeonia japonica</i> (Makino) Miyabe & Takeda	백작약	VU
Umbelliferae	<i>Bupleurum falcatum</i> L.	시호	VU
Pyrolaceae	<i>Monotropastrum humile</i> (D.Don) Hara	나도수정초	VU
Asclepiadaceae	<i>Cynanchum inamoenum</i> (Maxim.) Loes.	선백미꽃	VU
Labiatae	<i>Mosla japonica</i> (Benth.) Maxim.	산들깨	VU
Scrophulariaceae	<i>Euphrasia coreana</i> W.Becker	갈끔좁쌀풀	VU
Dipsacaceae	<i>Dipsacus japonicus</i> Miq.	산토끼꽃	VU
Iridaceae	<i>Belamcanda chinensis</i> (L.) DC.	범부채	VU
Iridaceae	<i>Iris minutiaurea</i> Makino	금붓꽃	VU
Iridaceae	<i>Iris odaesanensis</i> Y.N.Lee	노랑무늬붓꽃	VU
Ophioglossaceae	<i>Botrychium virginianum</i> (L.) Sw.	늦고사리삼	LC
Polypodiaceae	<i>Crypsinus hastatus</i> (Thunb.) Copel.	고란초	LC
Ranunculaceae	<i>Clematis koreana</i> Kom.	세잎종덩굴	LC
Ranunculaceae	<i>Eranthis stellata</i> Maxim.	너도바람꽃	LC
Aristolochiaceae	<i>Aristolochia contorta</i> Bunge	취방울덩굴	LC
Aristolochiaceae	<i>Aristolochia manshuriensis</i> Kom.	등꿩	LC
Rosaceae	<i>Potentilla discolor</i> Bunge	숨양지꽃	LC
Violaceae	<i>Viola albida</i> Palib.	태백제비꽃	LC
Pyrolaceae	<i>Monotropa uniflora</i> L.	수정난풀	LC
Boraginaceae	<i>Trigonotis icumae</i> (Maxim.) Makino	덩굴꽃마리	LC
Labiatae	<i>Salvia chanryonica</i> Nakai	참배암차즈기	LC
Liliaceae	<i>Lilium distichum</i> Nakai ex Kamib.	말나리	LC
Liliaceae	<i>Lloydia triflora</i> (Ledeb.) Baker	나도개감채	LC
Compositae	<i>Gnaphalium hypoleucum</i> DC.	금떡쑥	DD

Table 6. The list of endemic plants in Palgongsan

Family name	Scientific name	Korean name
Caryophyllaceae	<i>Pseudostellaria coreana</i> (Nakai) Ohwi	참개별꽃
Ranunculaceae	<i>Clematis trichotoma</i> Nakai	할미밀망
Ranunculaceae	<i>Thalictrum uchiyamae</i> Nakai	자주평의다리
Theaceae	<i>Stewartia pseudocamellia</i> Maxim.	노각나무
Fumariaceae	<i>Corydalis maculata</i> B.U.Oh & Y.S.Kim	점현호색
Saxifragaceae	<i>Chrysosplenium pilosum</i> var. <i>fulvum</i> (N.Terracc.) H.Hara	흰괘이눈
Saxifragaceae	<i>Philadelphus schrenkii</i> Rupr.	고광나무
Leguminosae	<i>Vicia chosenensis</i> Ohwi	노랑갈퀴
Umbelliferae	<i>Angelica cartilagino-marginata</i> var. <i>distans</i> (Nakai) Kitag.	흰바디나물
Labiatae	<i>Salvia chanryonica</i> Nakai	참배암차즈기
Scrophulariaceae	<i>Euphrasia coreana</i> W.Becker	갈금좁쌀풀
Caprifoliaceae	<i>Lonicera subsessilis</i> Rehder	청괴불나무
Caprifoliaceae	<i>Weigela subsessilis</i> L.H.Bailey	병꽃나무
Compositae	<i>Cirsium setidens</i> (Dunn) Nakai	고려엉겅퀴
Cyperaceae	<i>Carex okamotoi</i> Ohwi	지리대사초

Table 7. The list of specific plants in Palgongsan

Degree	Scientific name / Korean name
V	<i>Jeffersonia dubia</i> (Maxim.) Benth. & Hook.f. ex Baker & S.Moore 깽깽이풀, <i>Iris odaesanensis</i> Y.N.Lee 노랑무늬붓꽃
IV	<i>Ulmus pumila</i> L. 비술나무, <i>Anemone reflexa</i> Steph. & Willd. 회리바람꽃, <i>Cimicifuga heracleifolia</i> Kom. 승마, <i>Isopyrum manshuricum</i> (Kom.) Kom. 만주바람꽃, <i>Corydalis maculata</i> B.U.Oh & Y.S.Kim 점현호색, <i>Sedum middendorffianum</i> Maxim. 애기기린초, <i>Dipsacus japonicus</i> Miq. 산토끼꽃
III	<i>Dryopteris gymophylla</i> (Baker) C.Chr. 금죽제비고사리, <i>Pyrrosia petiolosa</i> (H.Christ & Baroni) Ching애기석위, <i>Betula chinensis</i> Maxim. 개박달나무, <i>Betula costata</i> Trautv. 거제수나무, <i>Betula davurica</i> Pall. 볼박달나무, <i>Celtis aurantiaca</i> Nakai 산팽나무, <i>Lychnis fulgens</i> Fisch. ex Spreng. 털동자꽃, <i>Aconitum longecassidatum</i> Nakai 흰진범, <i>Eranthis stellata</i> Maxim. 너도바람꽃, <i>Aristolochia manshuriensis</i> Kom. 등취, <i>Stewartia pseudocamellia</i> Maxim. 노각나무, <i>Sanguisorba hakusanensis</i> Makino 산오이풀, <i>Sorbaria sorbifolia</i> var. <i>stellipila</i> Maxim. 쉬망나무, <i>Spiraea fritschiana</i> Schneid. 참조팝나무, <i>Vicia chosenensis</i> Ohwi 노랑갈퀴, <i>Acer komarovii</i> Pojark. 시닥나무, <i>Vaccinium hirtum</i> var. <i>koreanum</i> (Nakai) Kitam. 산앵도나무, <i>Cynanchum inamoenum</i> (Maxim.) Loes. 선백미꽃, <i>Brachybotrys paridiformis</i> Maxim. ex Oliv. 당개지치, <i>Salvia chanryonica</i> Nakai 참배암차즈기, <i>Lonicera subsessilis</i> Rehder 청괴불나무, <i>Adoxa moschatellina</i> L. 연복초, <i>Cirsium setidens</i> (Dunn) Nakai 고려엉겅퀴, <i>Lloydia triflora</i> (Ledeb.) Baker 나도개갈채
II	<i>Lycopodium chinense</i> H.Christ 다람쥐꼬리, <i>Crepidomanes minutum</i> (Blume) K.Iwats. 부채괴불이끼, <i>Thelypteris phegopteris</i> (L.) Sloss. 가래고사리, <i>Lychnis cognata</i> Maxim. 동자꽃, <i>Pseudostellaria coreana</i> (Nakai) Ohwi 참개별꽃, <i>Caltha palustris</i> L. 동의나물, <i>Paeonia japonica</i> (Makino) Miyabe & Takeda 백작약, <i>Arunucus dioicus</i> var. <i>kamtschaticus</i> (Maxim.) H.Hara 눈개승마, <i>Potentilla dickinsii</i> Franch. & Sav. 돌양지꽃, <i>Oxalis obtusangulata</i> Maxim. 큰괘이밥, <i>Viola orientalis</i> (Maxim.) W.Becker 노랑제비꽃, <i>Viola tokubuchiana</i> var. <i>takedana</i> (Makino) F.Maek. 민둥피제비꽃, <i>Circaea alpina</i> L. 취털이슬, <i>Angelica tenuissima</i> Nakai 고본, <i>Bupleurum longeradiatum</i> Turcz. 개시호, <i>Cymopterus melanotilingia</i> (H.Boissieu) C.Y.Yoon 큰참나물, <i>Primula jesoana</i> Miq. 큰앵초, <i>Galium kamtschaticum</i> Steller ex Roem. & Schult. 털둥근갈퀴, <i>Galium paradoxum</i> Maxim. 두메갈퀴, <i>Veronica longifolia</i> L. 긴산꼬리풀, <i>Weigela florida</i> (Bunge) A.DC. 붉은병꽃나무, <i>Cirsium chamroenicum</i> (L.) Nakai 정영엉겅퀴, <i>Ligularia fischeri</i> (Ledeb.) Turcz. 곱취, <i>Lilium distichum</i> Nakai ex Kamib. 말나리
I	<i>Botrychium virginianum</i> (L.) Sw. 늦고사리삼, <i>Asplenium ruprechtii</i> Sa.Kurata 거미고사리, <i>Cyrtomium fortunei</i> J.Sm. 쇠고비, <i>Cephalotaxus koreana</i> Nakai 개비자나무, <i>Quercus variabilis</i> Blume 굴참나무, <i>Pseudostellaria davidii</i> (Franch.) Pax ex Pax & Hoffm. 덩굴개별꽃, <i>Aconitum jaluense</i> Kom. 투구꽃, <i>Anemone raddeana</i> Regel 평의바람꽃, <i>Cimicifuga simplex</i> (DC.) Turcz. 쫄대승마, <i>Clematis patens</i> C.Morren & Decne. 큰꽃오아리, <i>Caulophyllum robustum</i> Maxim. 평의다리아재비, <i>Chloranthus japonicus</i> Siebold 홀아비꽃대, <i>Aristolochia contorta</i> Bunge 취방울덩굴, <i>Hylomecon vernalis</i> Maxim. 피나물, <i>Corydalis ambigua</i> Cham. & Schleht. 왜현호색, <i>Sisymbrium luteum</i> (Maxim.) O.E.Schulz. 노란장대, <i>Hylotelephium verticillatum</i> (L.) H.Ohba 세잎평의비름, <i>Chrysosplenium flagelliferum</i> F.Schmidt 애기괘이눈, <i>Malus baccata</i> Borkh. 야광나무, <i>Prunus pendula</i> for. <i>ascendens</i> (Makino) Ohwi 올벚나무, <i>Pyrus ussuriensis</i> Maxim. 산돌배, <i>Spiraea blumei</i> GDon 산조팝나무, <i>Euphorbia pekinensis</i> Rupr. 대극, <i>Dictamnus dasycarpus</i> Turcz. 백선, <i>Ilex macropoda</i> Miq. 대팻집나무, <i>Euonymus macropterus</i> Rupr. 나래회나무, <i>Circaea cordata</i> Royle 쇠털이슬, <i>Eleutherococcus sessiliflorus</i> (Rupr. & Maxim.) S.Y.Hu 오갈피나무, <i>Monotropa uniflora</i> L. 수정난풀, <i>Monotropastrum humile</i> (D.Don) Hara 나도수정초, <i>Syringa patula</i> (Palib.) Nakai 털개회나무, <i>Trigonotis icumae</i> (Maxim.) Makino 덩굴꽃마리, <i>Ajuga multiflora</i> Bunge 조개나물, <i>Lonicera praeflorens</i> Batalin 울괴불나무, <i>Weigela praecox</i> (Lemoine) L.H.Bailey 소영도리나무, <i>Campanula punctata</i> Lam. 초롱꽃, <i>Rhaponiticum uniflorum</i> (L.) DC. 뽕꼭채, <i>Erythronium japonicum</i> (Balrer) Decne. 얼레지, <i>Gagea lutea</i> (L.) KerGawl. 중의무릇, <i>Hosta capitata</i> (Koidz.) Nakai 일월비비추, <i>Polygonatum inflatum</i> Kom. 통동굴레, <i>Iris minutiaurea</i> Makino 금붓꽃, <i>Diarrhena mandshurica</i> Maxim. 껌질용수염

endangered species (EN) were two taxa; vulnerable species (VU) were 10 taxa; least concern species (LC) were 13 taxa; data deficient species (DD) was one taxa (Table 5).

Endemic plants

Endemic plants are plants indigenous to a district and should be investigated to preserve life diversity and make globally competent species to resources (Kim *et al.*, 2010). A total of 15 taxa including *Clematis trichotoma*, *Stewartia pseudocamellia*, *Weigela subsessilis*, and *Carex okamotoi* was found in the Palgongsan Provincial Park (Table 6).

Floristic special plants

Floristic special plants have different representation types depending on the environment of districts (Kim *et al.*, 2010). A total of 100 taxa of floristic special plants are classified to five classes in which the 1st class is the lowest while the 5th class is the highest in the value of preservation: 43 taxa including *Aristolochia contorta*, *Eleutherococcus sessiliflorus*, and *Gagea lutea* belong to the 1st class; 24 taxa including *Arunucus dioicus* var. *kamtschaticus*, *Viola orientalis*, and *Weigela florida* belong to the 2nd class; 24

taxa including *Betula chinensis*, *Aristolochia manshuriensis*, and *Vaccinium hirtum* var. *koreanum* belong to the 3rd class; 7 taxa including *Ulmus pumila*, *Isopyrum manshuricum*, and *Sedum middendorffianum* belong to the 4th class; 2 taxa including *Jeffersonia dubia* and *Iris odaesanensis* belong to the 5th class (Table 7). Few *Iris odaesanensis* were found along hiking roads around the Hantijae resting place: it is likely to damage them by hikers.

Naturalized plants

Naturalized plants were intentionally or unintentionally moved from foreign countries to Korea and then settled down for several generations (Park, 2011). Kariyama and Kobatake method (1988) was used for calculation of naturalized degree (Table 8). Introduction periods are divided into three ones: the 1st period from the opening of ports in 1876 to the domestic surveys by Mori (1921), the 2nd period from 1922 to Nimina Plantarum Korearum presentation in 1962, and the 3rd period from 1964 to the present.

Naturalized plants found in the Palgongsan Provincial Park were 13 taxa including *Phytolacca americana*, *Ambrosia artemisiifolia*, and *Taraxacum officinale* (Table 9). Multiple naturalized plants were found at the entrance of hiking routes: in particular, *Rumex acetosella* and *Ambrosia artemisiifolia* that are the ecosystem disturbance wild plants were found. It is desirable to remove *Ambrosia artemisiifolia* in April before it blossoms and *Rumex acetosella* should be

removed in May or June while it is young. Naturalized degree of 587 taxa found in the Palgongsan Provincial Park was 2.2%: it was lower than the average naturalized degree 10.3% of forests in Korea (Koh *et al.*, 1995). Urbanization index of the 321 taxa of naturalized plants in Korea was 4.0%.

Conclusions

We investigated and analyzed the flora of vascular plants around ridgelines in the Palgong Provincial Park to suggest fundamental data for establishing preservation plans of them. Survey period was from April to October in 2012 and surveys were performed six times by two times in every season: identifiable plants by eyes were investigated within 10m from hiking routes. Survey paths were divided into three sections: the 1st section from Gasan to Hantijae (5.8 km), the 2nd section from Hantijae to Dongbong (8.3 km), and the 3rd section from Dongbong to Gwanbong (7.3 km). As a result, a total of 587 taxa was found including 102 families, 314 genera, 518 species, 58 varieties, 7 forma, and 4 subspecies. Rare plants designated by Korea Forest Service were 27 taxa; endemic plants were 15 taxa; floristic special plants were a total of 100 taxa; naturalized plants were 13 taxa. Since most of naturalized plants were found at the entrance of hiking routes where human interference was frequent, it needs to prepare management plans of the entrance so that naturalized plants do not spread to disturb growth of native plants.

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Table 8. The naturalized degree

Degree	Distribution type
5	Common and abundant plant
4	Local but abundant plant
3	Common but not abundant plant
2	Local and not abundant plant
1	Rare plant

Table 9. The list of naturalized plants in Palgongsan

Family name	Scientific name	Korean name	Life-form	Origin	Degree	Introduction period
Polygonaceae	<i>Rumex acetosella</i> L.	애기수영	Perennial	Europe	3	1
Phytolaccaceae	<i>Phytolacca americana</i> L.	미국자리공	Perennial	North america	3	3
Cruciferae	<i>Thlaspi arvense</i> L.	말냉이	2	Europe	3	1
Simaroubaceae	<i>Ailanthus altissima</i> (Mill.) Swingle	가죽나무	Tree	Asia	5	1
Onagraceae	<i>Oenothera biennis</i> L.	달맞이꽃	2	North america	5	1
Compositae	<i>Ambrosia artemisiifolia</i> L.	돼지풀	1	North america	5	2
Compositae	<i>Carduus crispus</i> L.	지느러미영경귀	2	Europe-Asia	3	1
Compositae	<i>Conyza canadensis</i> (L.) Cronquist	망초	2	North america	5	1
Compositae	<i>Erigeron annuus</i> (L.) Pers.	개망초	2	North america	5	1
Compositae	<i>Galinsoga parviflora</i> Cav.	별꽃아재비	1	Tropical america	3	3
Compositae	<i>Sonchus oleraceus</i> L.	방가지똥	1	Europe	3	1
Compositae	<i>Taraxacum officinale</i> Weber	서양민들레	Perennial	Europe	5	1
Compositae	<i>Xanthium strumarium</i> L.	도꼬마리	1	Asia	2	1

References

- Daegu. 1994. The Report of Ecosystem Research in Palgongsan Nature Park, Daegu.
- Daegu. 1995. The Report of Ecosystem Research in Natural resting-year-Seongjigol · Pokpogol-, Dague · The Korean Association for Conservation of Nature.
- Jo WY. 2002. Rock-controlling Geomorphology and Alluvial Fans in Mt. Palgong, Daegu city, Korea, Thesis for the Degree of Master, Univ. of Kyunghee
- Kariyama S, Kobatake H. 1988. Naturalized plants of Gagyu-zan, Takahashi-City, Okayama Prefecture, Japan. Bull. Kurashiki Mus. Nat. Hist. 3: 31-40.
- Koh KS, Kang IG, Suh MH, Kim JH, Kim KD, Kil JH, Rhu HI, Kong DS, Lee, EB and Chun ES. 1995. Survey for Ecological Impact by Naturalized Organisms (I)-Naturalized plants-. National Institute of Environmental Research, p.215
- Korea national arboretum and The Korean Society of Plant Taxonomists, 2007, A Synonymic List of Vascular Plants in Korea, pp. 1-534.
- Kim, KE. 2008, Flora and conservation in Daegu Gyeongbuk Palgongsan, Thesis for the Degree of Master, Univ. of Yeoungnam.
- Kim JU, Yim YJ and Kil BS, 1988. The Flora of Seonunsan Provincial Park Area, Korea. The journal of the natural science 7(1): 33-36.
- Kim WH, 1989. Forest Vegetation and Flora of Mt. Kasan, Thesis for the Degree of Master, Univ. of Kyungpook.
- Kim JH, Lee JY, Lee BY, Yoon CY and Kim MH. 2010, The Vascular Plants in Mt. Gaji(Gyeongsang nam-do), Korean J. Plant Res 23(4): 303-326.
- Kim JU, Yim YJ and Kil BS. 1988, The Flora of Seonunsan Provincial Park Area, Korea. The J. of Natural Science 7(1): 33-45.
- Kim CH. 2000, Selection of Plant Taxa=Assessment of Natural Environment. Korean J. Environ. Biol. 18(1): 163-198.
- Korea forest service and Korea national arboretum (2009) Rare plants data book in Korea. Geobook Publishing Co., Seoul, Korea. p. 332.
- Lee HC, Hwang IC, Lim DO and Chung CU. 2011. The Specific Plant Species and Conservation of Juwangsang National Park, Korea, Kor. J. Env. Eco. 25(4): 498-515.
- Lee KJ. 1958. Study of Plants around Palgongsan, Thesis for the Degree of Master, Univ. of Kyungpook p.51.
- Lee YK. 1989. Existing Forest Communities and Flora in Palgongsan, Thesis for the Degree of Master, Univ. of Kyungpook p. 47.
- Lee YM, Park SH, Jung SY, Oh, SH and Yang JC. 2011. Study on the current status of naturalized plants in South Korea, Korean J. Pl. Taxon 41(1): 87-101.
- Melchior H. 1964. A Engler's syllabus der pflanzenfamilien band II. Berlin: Gebruder Borntraeger.
- Oh SY. 1972. The Report of plants Investigate in Palgongsan, Collection of dissertation Andong University 5(1): 313-351.
- Park SH. 2011. New illustration and photographs of naturalized plants of Korea. Ilchokak, 575.
- Seo SY. 2012. Floristic study of Mt. Mudeung. Thesis for the Degree of Master, Univ. of Chonnam.
- Sun BY, Kim CH, Kim TJ and Lim DO. 1993. Flora and Conservation of Mt. Moak, Chunbuk, Korean J. Environ. Biol. 11(1): 68-81.
- Yu JH. 2012. Vascular Plants around Gatbawi, Palgongsan, Korea, The Plant Resources Society of Korea Spring scholarship symposium p. 31.
- Yim KB. 2011, Rising Tree, Seoul: Different World.
<http://www.gbpalgong.go.kr/>
<http://www.me.go.kr/web/92/me/deptdata/deptDataUserList.do>
<http://www.nature.go.kr/wkbik1/wkbik1611t1.leaf>

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Appendix 1. The list of vascular plants in Palgongsan

Scientific-Korean name	I	II	III	A	B	C	D
Lycopodiaceae 석송과							
<i>Lycopodium chinense</i> H.Christ 다람쥐꼬리		0	0			2	
<i>Lycopodium serratum</i> Thunb. 뱀톱		0					
Selaginellaceae 부처손과							
<i>Selaginella rossii</i> (Baker) Warb. 구실사리	0	0	0				
<i>Selaginella tamariscina</i> (P.Beauv.) Spring 부처손	0	0	0				
Equisetaceae 속새과							
<i>Equisetum arvense</i> L. 쇠뜨기	0	0	0				
Ophioglossaceae 고사리삼과							
<i>Botrychium virginianum</i> (L.) Sw. 늦고사리삼		0		LC		1	
<i>Sceptridium nipponicum</i> (Makino) Holub 단풍고사리삼		0	0				
<i>Sceptridium ternatum</i> (Thunb.) Lyon 고사리삼		0	0				
Osmundaceae 고비과							
<i>Osmunda cinnamomea</i> var. <i>forkiensis</i> Copel. 꿩고비	0	0	0				
<i>Osmunda japonica</i> Thunb. 고비	0	0	0				
Hymenophyllaceae 처녀이끼과							
<i>Crepidomanes minutum</i> (Blume) K.Iwats. 부채괴불이끼		0				2	
Pteridaceae 고사리과							
<i>Cheilanthes argentea</i> (Gmel.) G.Kunze 부싧깃고사리		0	0				
Dennstaedtiaceae 잔고사리과							
<i>Demstaedtia hirsuta</i> (Sw.) Mett. ex Miq. 잔고사리	0	0	0				
<i>Demstaedtia wilfordii</i> (T.Moore) H.Christ 황고사리	0	0	0				
<i>Deparia conilii</i> (Franch. & Sav.) M.Kato 좁진고사리		0					
<i>Deparia coreana</i> (H.Christ) M.Kato 곱새고사리			0				
<i>Deparia japonica</i> (Thunb.) M.Kato 진고사리	0	0	0				
<i>Deparia pterorachis</i> (H.Christ) M.Kato 왕고사리		0					
<i>Deparia pycnosora</i> (H.Christ) M.Kato 털고사리		0					
<i>Lepisorus onoei</i> (Franch. & Sav.) Ching 애기일엽초	0		0				
<i>Lepisorus ussuriensis</i> (Regel & Maack) Ching 산일엽초	0						
Davalliaceae 넉줄고사리과							
<i>Davallia mariesii</i> T.Moore ex Baker 넉줄고사리	0	0	0				
<i>Thelypteris japonica</i> (Baker) Ching 지네고사리	0	0	0				
<i>Thelypteris palustris</i> (Salisb.) Schott 처녀고사리	0	0	0				
<i>Thelypteris phegopteris</i> (L.) Sloss. 가래고사리		0	0			2	
<i>Woodsia manchuriensis</i> Hook. 만주우드풀		0	0				
<i>Woodsia polystichoides</i> D.C.Eaton 우드풀		0					
Aspleniaceae 꼬리고사리과							
<i>Asplenium incisum</i> Thunb. 꼬리고사리	0	0	0				
<i>Asplenium ruprechtii</i> Sa.Kurata 거미고사리		0				1	
<i>Athyrium niponicum</i> (Mett.) Hance 개고사리	0	0	0				
<i>Athyrium yokoscense</i> (Franch. & Sav.) H.Christ 뱀고사리	0	0	0				
<i>Pteridium aquilinum</i> var. <i>latiusculum</i> (Desv.) Underw. ex Hell. 고사리	0	0	0				
Dryopteridaceae 면마과							
<i>Dryopteris bissetiana</i> (Baker) C.Chr. 산족제비고사리	0	0	0				
<i>Dryopteris chinensis</i> (Baker) Koidz. 가는잎족제비고사리	0	0	0				
<i>Dryopteris crassirhizoma</i> Nakai 관중	0	0	0				
<i>Dryopteris gymophylla</i> (Baker) C.Chr. 금족제비고사리	0	0				3	
<i>Dryopteris lacera</i> (Thunb.) Kuntze 비늘고사리		0	0				
<i>Dryopteris monticola</i> (Makino) C.Chr. 왕지네고사리	0						
<i>Dryopteris sacrosanta</i> Koidz. 애기족제비고사리	0						
<i>Dryopteris uniformis</i> (Makino) Makino 곰비늘고사리	0						
<i>Onoclea orientalis</i> (Hook.) Hook. 개면마	0	0					
<i>Onoclea sensibilis</i> var. <i>interrupta</i> Maxim. 야산고비		0					
Polypodiaceae 고란초과							
<i>Cornopteris cremuloserrulata</i> (Makino) Nakai 응달고사리	0						
<i>Crypsinus hastatus</i> (Thunb.) Copel. 고란초		0	0	LC		5	
<i>Cyrtomium fortunei</i> J.Sm. 쇠고비	0					1	
<i>Polystichum braunii</i> (Spenn.) Fee 좁나도희초미	0						
<i>Polystichum tripterum</i> (Kunze) C.Presl 십자고사리	0	0					

Appendix 1. Continued

Scientific-Korean name	I	II	III	A	B	C	D
<i>Pyrrhosia linearifolia</i> (Hook.) Ching 우단일엽	0						
<i>Pyrrhosia petiolosa</i> (H.Christ & Baroni) Ching 애기석위	0		0			3	
Pinaceae 소나무과							
<i>Larix kaempferi</i> (Lamb.) Carriere 일본잎갈나무	0		0				
<i>Pinus densiflora</i> Siebold & Zucc. 소나무	0	0	0				
Cupressaceae 측백나무과							
<i>Chamaecyparis obtusa</i> (Siebold & Zucc.) Endl. 편백		0					
<i>Juniperus rigida</i> Siebold & Zucc. 노간주나무	0	0					
Cephalotaxaceae 개비자나무과							
<i>Cephalotaxus koreana</i> Nakai 개비자나무		0	0			1	
Juglandaceae 가래나무과							
<i>Platycarya strobilacea</i> Siebold & Zucc. 굴피나무		0	0				
Salicaceae 버드나무과							
<i>Salix caprea</i> L. 호랑버들	0	0	0				
Betulaceae 자작나무과							
<i>Alnus firma</i> Siebold & Zucc. 사방오리	0	0					
<i>Alnus sibirica</i> Fisch. ex Turcz. 물오리나무		0	0				
<i>Betula chinensis</i> Maxim. 개박달나무		0	0			3	
<i>Betula costata</i> Trautv. 거제수나무	0	0				3	
<i>Betula davurica</i> Pall. 물박달나무	0	0	0			3	
<i>Carpinus cordata</i> Blume 까치박달	0	0	0				
<i>Carpinus laxiflora</i> (Siebold & Zucc.) Blume 처어나무	0	0	0				
<i>Corylus heterophylla</i> Fisch. ex Trautv. 개암나무	0	0					
<i>Corylus sieboldiana</i> Blume 참개암나무	0		0				
Fagaceae 참나무과							
<i>Castanea crenata</i> Siebold & Zucc. 밤나무		0	0				
<i>Quercus acutissima</i> Carruth. 상수리나무	0	0	0				
<i>Quercus aliena</i> Blume 갈참나무	0	0	0				
<i>Quercus dentata</i> Thunb. ex Murray 떡갈나무	0	0	0				
<i>Quercus mongolica</i> Fisch. ex Ledeb. 신갈나무	0	0	0				
<i>Quercus serrata</i> Thunb. ex Murray 졸참나무	0	0	0				
<i>Quercus variabilis</i> Blume 굴참나무	0	0	0			1	
Ulmaceae 느릅나무과							
<i>Celtis aurantiaca</i> Nakai 산팽나무	0	0				3	
<i>Ulmus davidiana</i> var. <i>japonica</i> (Rehder) Nakai 느릅나무	0		0				
<i>Ulmus pumila</i> L. 비술나무	0	0				4	
<i>Zelkova serrata</i> (Thunb.) Makino 느티나무		0					
Moraceae 뽕나무과							
<i>Morus bombycis</i> Koidz. 산뽕나무	0	0	0				
Cannabaceae 삼과							
<i>Humulus japonicus</i> Siebold & Zucc. 환삼덩굴	0	0	0				
Urticaceae 켄기풀과							
<i>Boehmeria spicata</i> (Thunb.) Thunb. 쯤깨잎나무	0	0	0				
<i>Boehmeria tricuspis</i> (Hance) Makino 거북꼬리			0				
<i>Boehmeria tricuspis</i> var. <i>unicuspis</i> Makino 풀거북꼬리	0						
<i>Urtica thunbergiana</i> Siebold & Zucc. 켄기풀	0						
Loranthaceae 겨우살이과							
<i>Viscum album</i> var. <i>coloratum</i> (Kom.) Ohwi 겨우살이	0		0				
Polygonaceae 마디풀과							
<i>Aconogonon alpinum</i> (All.) Schur 싱아		0					
<i>Persicaria debilis</i> (Meisn.) H.Gross ex Mori 세뿔여뀌			0				
<i>Persicaria dissitiflora</i> (Hemsl.) H.Gross ex Mori 가시여뀌		0	0				
<i>Persicaria filiformis</i> (Thunb.) Nakai ex Mori 이삭여뀌		0	0				
<i>Persicaria hydropiper</i> (L.) Spach 여뀌	0	0					
<i>Persicaria lapathifolia</i> (L.) Gray 흰여뀌		0	0				
<i>Persicaria longiseta</i> (Brujin) Kitag. 개여뀌	0	0	0				
<i>Persicaria nepalensis</i> (Meisn.) H.Gross 산여뀌		0	0				
<i>Persicaria perfoliata</i> (L.) H.Gross 머느리배꼽	0		0				
<i>Persicaria posumbu</i> var. <i>laxiflora</i> (Meisn.) H.Hara 장대여뀌			0				

Appendix 1. Continued

Scientific-Korean name	I	II	III	A	B	C	D
<i>Persicaria senticosa</i> (Meisn.) H.Gross ex Nakai 머느리밀씻개	0	0					
<i>Rumex acetosa</i> L. 수영		0					
<i>Rumex acetosella</i> L. 애기수영	0		0				0
Phytolaccaceae 자리공과							
<i>Phytolacca americana</i> L. 미국자리공	0	0	0				0
Caryophyllaceae 석죽과							
<i>Lychnis cognata</i> Maxim. 동자꽃		0	0				2
<i>Lychnis fulgens</i> Fisch. ex Spreng. 털동자꽃	0						3
<i>Pseudostellaria coreana</i> (Nakai) Ohwi 참개별꽃	0	0	0		0		2
<i>Pseudostellaria davidii</i> (Franch.) Pax ex Pax & Hoffm. 덩굴개별꽃			0				1
<i>Pseudostellaria heterophylla</i> (Miq.) Pax ex Pax & Hoffm. 개별꽃	0	0	0				
<i>Pseudostellaria japonica</i> Pax 긴개별꽃	0			CR			
<i>Pseudostellaria palibiniana</i> (Takeda) Ohwi 큰개별꽃	0		0				
<i>Silene firma</i> Siebold & Zucc. 장구채	0		0				
<i>Silene seoulensis</i> Nakai 가는장구채	0						
Amaranthaceae 비름과							
<i>Achyranthes fauriei</i> H.Lev. & Vaniot 털쇠무릎	0						
Magnoliaceae 목련과							
<i>Magnolia sieboldii</i> K.Koch 함박꽃나무	0	0	0				
Schisandraceae 오미자과							
<i>Schisandra chinensis</i> (Turcz.) Baill. 오미자	0						
Lauraceae 녹나무과							
<i>Lindera erythrocarpa</i> Makino 비목나무	0	0	0				
<i>Lindera glauca</i> (Siebold & Zucc.) Blume 감태나무	0	0	0				
<i>Lindera obtusiloba</i> Blume 생강나무	0	0	0				
Ranunculaceae 미나리아재비과							
<i>Aconitum jaluense</i> Kom. 투구꽃	0	0					1
<i>Aconitum longecassidatum</i> Nakai 흰진범		0	0				3
<i>Aconitum pseudolaeve</i> Nakai 진범	0		0				
<i>Actaea asiatica</i> H.Hara 노루삼	0		0				
<i>Adonis amurensis</i> Regel & Radde 복수초	0						
<i>Anemone raddeana</i> Regel 평의바람꽃	0	0	0				1
<i>Anemone reflexa</i> Steph. & Willd. 회리바람꽃	0						4
<i>Caltha palustris</i> L. 동의나물	0						2
<i>Cimicifuga dahurica</i> (Turcz. ex Fisch. & C.A.Mey.) Maxim. 눈빛승마		0	0				
<i>Cimicifuga heracleifolia</i> Kom. 승마	0						4
<i>Cimicifuga simplex</i> (DC.) Turcz. 쫓대승마	0						1
<i>Clematis apiifolia</i> DC. 사위질빵		0	0				
<i>Clematis fusca</i> var. <i>violacea</i> Maxim. 종덩굴	0						
<i>Clematis heracleifolia</i> DC. 병조희풀	0	0	0				
<i>Clematis koreana</i> Kom. 세잎종덩굴		0		LC			
<i>Clematis patens</i> C.Morren & Decne. 큰꽃으아리	0	0	0				1
<i>Clematis trichotoma</i> Nakai 할미밀망	0		0		0		
<i>Eranthis stellata</i> Maxim. 너도바람꽃	0	0		LC			3
<i>Hepatica asiatica</i> Nakai 노루귀	0	0	0				
<i>Isopyrum manshuricum</i> (Kom.) Kom. 만주바람꽃	0	0		EN			4
<i>Pulsatilla koreana</i> (Yabe ex Nakai) Nakai ex Mori 할미꽃		0	0				
<i>Ranunculus japonicus</i> Thunb. 미나리아재비		0	0				
<i>Thalictrum actaeifolium</i> var. <i>brevistylum</i> Nakai 은평의다리	0	0					
<i>Thalictrum aquilegifolium</i> var. <i>sibiricum</i> Regel & Tiling 평의다리	0	0					
<i>Thalictrum filamentosum</i> var. <i>tenerum</i> (Huth) Ohwi 산평의다리		0	0				
<i>Thalictrum kemense</i> var. <i>hypoleucum</i> (Siebold & Zucc.) Kitag. 쯤평의다리	0	0	0				
<i>Thalictrum uchiyamai</i> Nakai 자주평의다리	0				0		
Paeoniaceae 작약과							
<i>Paeonia japonica</i> (Makino) Miyabe & Takeda 백작약		0		VU			2
Berberidaceae 매자나무과							
<i>Caulophyllum robustum</i> Maxim. 평의다리아재비		0	0				1
<i>Jeffersonia dubia</i> (Maxim.) Benth. & Hook.f. ex Baker & S.Moore 갯쟁이풀	0			EN			5

Appendix 1. Continued

Scientific-Korean name	I	II	III	A	B	C	D
Lardizabalaceae 으름덩굴과							
<i>Akebia quinata</i> (Thunb.) Decne. 으름덩굴	0	0	0				
Menispermaceae 방기과							
<i>Cocculus trilobus</i> (Thunb.) DC. 땡땡이덩굴	0	0	0				
<i>Menispermum dauricum</i> DC. 새모래덩굴	0	0					
Chloranthaceae 홀아비꽃대과							
<i>Chloranthus japonicus</i> Siebold 홀아비꽃대	0	0	0				1
Aristolochiaceae 쥐방울덩굴과							
<i>Aristolochia contorta</i> Bunge 쥐방울덩굴	0	0		LC			1
<i>Aristolochia manshuriensis</i> Kom. 등취	0			LC			3
<i>Asarum sieboldii</i> Miq. 족도리풀	0	0	0				
Actinidiaceae 다래나무과							
<i>Actinidia arguta</i> (Siebold & Zucc.) Planch. ex Miq. 다래	0	0	0				
<i>Actinidia polygama</i> (Siebold & Zucc.) Planch. ex Maxim. 개다래	0						
Theaceae 차나무과							
<i>Stewartia pseudocamellia</i> Maxim. 노각나무	0	0			0		3
Guttiferae 몰레나물과							
<i>Hypericum ascyron</i> L. 몰레나물		0	0				
<i>Hypericum erectum</i> Thunb. 고추나물	0	0	0				
Papaveraceae 양귀비과							
<i>Hylomecon vernalis</i> Maxim. 피나물		0	0				1
Fumariaceae 현호색과							
<i>Corydalis ambigua</i> Cham. & Schleht. 왜현호색	0	0					1
<i>Corydalis maculata</i> B.U.Oh & Y.S.Kim 점현호색	0				0		4
<i>Corydalis ochotensis</i> Turcz. 눈피불주머니		0	0				
<i>Corydalis remota</i> Fisch. ex Maxim. 현호색	0						
<i>Corydalis speciosa</i> Maxim. 산피불주머니	0						
Cruciferae 십자화과							
<i>Arabis glabra</i> Bernh. 장대나물		0					
<i>Arabis hirsuta</i> (L.) Scop. 털장대	0						
<i>Cardamine fallax</i> L. 좁쌀냉이	0	0					
<i>Cardamine leucantha</i> (Tausch) O.E.Schulz 미나리냉이	0						
<i>Draba nemorosa</i> L. 꽃다지	0	0	0				
<i>Sisymbrium luteum</i> (Maxim.) O.E.Schulz 노란장대		0					1
<i>Thlaspi arvense</i> L. 말냉이	0						0
Crassulaceae 돌나물과							
<i>Hylotelephium verticillatum</i> (L.) H.Ohba 세잎평의비름		0					1
<i>Hylotelephium viviparum</i> (Maxim.) H.Ohba 새끼평의비름	0						
<i>Orostachys japonica</i> (Maxim.) A.Berger 바위솔	0	0					
<i>Sedum kamtschaticum</i> Fisch. & Mey. 기린초	0	0					
<i>Sedum middendorffianum</i> Maxim. 애기기린초		0					4
<i>Sedum oryzifolium</i> Makino 땅채송화		0	0				
<i>Sedum polytrichoides</i> Hemsl. 바위채송화	0	0					
<i>Sedum sarmentosum</i> Bunge 돌나물	0	0					
Saxifragaceae 범의귀과							
<i>Astilbe koreana</i> (Kom.) Nakai 숙은노루오줌		0	0				
<i>Astilbe rubra</i> Hook.f. & Thomson 노루오줌	0	0	0				
<i>Chrysosplenium flagelliferum</i> F.Schmidt 애기괭이눈		0	0				1
<i>Chrysosplenium grayanum</i> Maxim. 괭이눈	0						
<i>Chrysosplenium macrostemon</i> Maxim. ex (Franch. & Sav.) 바위괭이눈			0				
<i>Chrysosplenium pilosum</i> var. <i>fulvum</i> (N.Terracc.) H.Hara 흰괭이눈		0			0		
<i>Deutzia glabrata</i> Kom. 물참대	0	0	0				
<i>Deutzia uniflora</i> Shirai 매화말발도리	0	0	0				
<i>Hydrangea serrata</i> for. <i>acuminata</i> (Siebold & Zucc.) Wilson 산수국	0	0	0				
<i>Philadelphus schrenkii</i> Rupr. 고광나무	0	0	0		0		
<i>Ribes fasciculatum</i> var. <i>chinense</i> Maxim. 까마귀밥나무		0	0				
<i>Ribes maximowiczianum</i> Kom. 명자순	0						
<i>Saxifraga fortunei</i> var. <i>incislobata</i> (Engl. & Irmsch.) Nakai 바위떡풀		0	0				

Appendix 1. Continued

Scientific-Korean name	I	II	III	A	B	C	D
Rosaceae 장미과							
<i>Agrimonia pilosa</i> Ledeb. 짚신나물	0	0	0				
<i>Aruncus dioicus</i> var. <i>kamtschaticus</i> (Maxim.) H.Hara 눈개승마		0				2	
<i>Crataegus pinnatifida</i> Bunge 산사나무		0	0				
<i>Duchesnea indica</i> (Andr.) Focke 뱀딸기	0		0				
<i>Filipendula glaberrima</i> (Nakai) Nakai 터리풀	0	0	0				
<i>Geum aleppicum</i> Jacq. 큰뽕나무		0	0				
<i>Malus baccata</i> Borkh. 야광나무	0	0				1	
<i>Malus sieboldii</i> (Regel) Rehder 아그배나무	0						
<i>Potentilla chinensis</i> Ser. 딱지꽃		0	0				
<i>Potentilla dickinsii</i> Franch. & Sav. 돌양지꽃	0	0	0			2	
<i>Potentilla discolor</i> Bunge 솜양지꽃		0		LC			
<i>Potentilla fragarioides</i> var. <i>major</i> Maxim. 양지꽃	0	0	0				
<i>Potentilla freyniana</i> Bornm. 세잎양지꽃		0	0				
<i>Potentilla yokusaina</i> Makino 민눈양지꽃	0	0					
<i>Prunus mandshurica</i> (Maxim.) Koehne 개살구나무		0					
<i>Prunus padus</i> L. 귀룽나무		0	0				
<i>Prunus pendula</i> for. <i>ascendens</i> (Makino) Ohwi 올벚나무	0	0				1	
<i>Prunus persica</i> (L.) Batsch 복사나무	0	0					
<i>Prunus sargentii</i> Rehder 산벚나무	0	0	0				
<i>Prunus verecunda</i> (Koidz.) Koehne 개벚나무		0	0				
<i>Pyrus calleryana</i> var. <i>fauriei</i> (C.K.Schneid.) Rehder 콩배나무	0						
<i>Pyrus pyrifolia</i> (Burm.f.) Nakai 돌배나무		0					
<i>Pyrus ussuriensis</i> Maxim. 산돌배	0					1	
<i>Rosa multiflora</i> Thunb. 철레꽃	0	0	0				
<i>Rubus crataegifolius</i> Bunge 산딸기	0						
<i>Rubus oldhamii</i> Miq. 줄딸기	0		0				
<i>Rubus parvifolius</i> L. 멩석딸기	0	0	0				
<i>Rubus phoenicolasius</i> Maxim. 곰딸기		0	0				
<i>Sanguisorba hakusanensis</i> Makino 산오이풀		0				3	
<i>Sanguisorba officinalis</i> L. 오이풀	0	0	0				
<i>Sorbaria sorbifolia</i> var. <i>stellipila</i> Maxim. 쉬땅나무	0					3	
<i>Sorbus alnifolia</i> (Siebold & Zucc.) K.Koch 팔배나무	0	0	0				
<i>Sorbus commixta</i> Hedl. 마가목		0	0				
<i>Spiraea blumei</i> G.Don 산조팝나무		0	0			1	
<i>Spiraea fritschiana</i> Schneid. 참조팝나무	0	0				3	
<i>Spiraea prunifolia</i> for. <i>simpliciflora</i> Nakai 조팝나무	0	0	0				
<i>Stephanandra incisa</i> (Thunb.) Zabel 국수나무	0	0	0				
Leguminosae 콩과							
<i>Aeschynomene indica</i> L. 자귀풀	0						
<i>Amphicarpaea bracteata</i> subsp. <i>edgeworthii</i> (Benth.) H.Ohashi 새콩		0					
<i>Crotalaria sessiliflora</i> L. 활나물	0						
<i>Desmodium oldhami</i> Oliv. 큰도둑놈의갈고리			0				
<i>Desmodium podocarpum</i> DC. 개도둑놈의갈고리	0						
<i>Desmodium podocarpum</i> var. <i>oxyphyllum</i> (DC.) H.Ohashi 도둑놈의갈고리		0					
<i>Glycine soja</i> Siebold & Zucc. 들콩		0	0				
<i>Glycyrrhiza uralensis</i> Fisch. 감초	0						
<i>Kummerowia striata</i> (Thunb. ex Murray) Schindl. 매듭풀		0	0				
<i>Lathyrus davidii</i> Hance 활랑나물		0					
<i>Lespedeza bicolor</i> Turcz. 싸리	0	0	0				
<i>Lespedeza cuneata</i> G.Don 비수리	0	0					
<i>Lespedeza cyrtobotrya</i> Miq. 참싸리	0	0	0				
<i>Lespedeza maximowiczii</i> C.K.Schneid. 조록싸리	0	0	0				
<i>Lespedeza maximowiczii</i> var. <i>tomentella</i> Nakai 털조록싸리		0	0				
<i>Lespedeza tomentosa</i> (Thunb.) Siebold ex Maxim. 개싸리	0						
<i>Maackia amurensis</i> Rupr. & Maxim. 다릅나무	0	0	0				
<i>Pueraria lobata</i> (Willd.) Ohwi 칩	0	0	0				
<i>Vicia angustifolia</i> var. <i>minor</i> (Bertol.) Ohwi 가는갈퀴		0					
<i>Vicia chosensis</i> Ohwi 노랑갈퀴	0	0	0		0	3	

Appendix 1. Continued

Scientific-Korean name	I	II	III	A	B	C	D
<i>Vicia nipponica</i> Matsum. 네잎갈퀴나물	0	0					
<i>Vicia unijuga</i> A.Braun 나비나물	0	0	0				
<i>Vicia venosa</i> var. <i>cuspidata</i> Maxim. 광릉갈퀴		0	0				
Oxalidaceae 썩이밥과							
<i>Oxalis obtriangulata</i> Maxim. 큰썩이밥	0	0	0			2	
Geraniaceae 쥐손이풀과							
<i>Geranium koreanum</i> Kom. 둥근이질풀	0	0					
<i>Geranium koreanum</i> var. <i>hirsutum</i> Nakai 털둥근이질풀	0						
<i>Geranium thunbergii</i> Siebold & Zucc. 이질풀	0	0					
<i>Geranium wilfordii</i> Maxim. 세잎쥐손이	0						
Euphorbiaceae 대극과							
<i>Euphorbia pekinensis</i> Rupr. 대극	0	0				1	
<i>Euphorbia sieboldiana</i> Morren & Decne. 개감수	0	0	0				
<i>Securinega suffruticosa</i> (Pall.) Rehder 광대싸리	0	0	0				
Rutaceae 운향과							
<i>Dictamnus dasycarpus</i> Turcz. 백선	0	0	0			1	
<i>Zanthoxylum schinifolium</i> Siebold & Zucc. 산초나무	0	0	0				
Simaroubaceae 소태나무과							
<i>Ailanthus altissima</i> (Mill.) Swingle 가죽나무		0					0
<i>Picrasma quassioides</i> (D.Don) Benn. 소태나무		0	0				
Polygalaceae 원지과							
<i>Polygala japonica</i> Houtt. 애기풀	0	0	0				
Anacardiaceae 옷나무과							
<i>Rhus javanica</i> L. 붉나무	0	0	0				
<i>Rhus tricocarpa</i> Miq. 개옷나무	0	0	0				
Aceraceae 단풍나무과							
<i>Acer komarovii</i> Pojark. 시닥나무		0	0			3	
<i>Acer pictum</i> subsp. <i>mono</i> (Maxim.) Ohashi 고로쇠나무	0	0	0				
<i>Acer pseudosieboldianum</i> (Pax) Kom. 당단풍나무	0	0	0				
<i>Acer tataricum</i> subsp. <i>ginnala</i> (Maxim.) Wesm. 신나무	0		0				
Balsaminaceae 봉선화과							
<i>Impatiens textori</i> Miq. 물봉선	0	0	0				
Aquifoliaceae 감탕나무과							
<i>Ilex macropoda</i> Miq. 대팻집나무	0	0	0			1	
Celastraceae 노박덩굴과							
<i>Celastrus flagellaris</i> Rupr. 푼지나무		0					
<i>Celastrus orbiculatus</i> Thunb. 노박덩굴	0	0	0				
<i>Euonymus alatus</i> (Thunb.) Siebold 화살나무		0	0				
<i>Euonymus alatus</i> for. <i>ciliatodentatus</i> (Franch. & Sav.) Hiyama 회잎나무	0	0	0				
<i>Euonymus hamiltonianus</i> Wall. 참빗살나무	0	0					
<i>Euonymus macropterus</i> Rupr. 나래회나무	0	0				1	
<i>Euonymus oxyphyllus</i> Miq. 참회나무	0	0					
<i>Euonymus sachalinensis</i> (F.Schmidt) Maxim. 회나무		0					
<i>Tripterygium regelii</i> Sprague & Takeda 미역줄나무	0		0				
Staphyleaceae 고추나무과							
<i>Staphylea bumalda</i> DC. 고추나무	0	0	0				
Rhamnaceae 갈매나무과							
<i>Rhamnus davurica</i> Pall. 갈매나무	0	0					
Vitaceae 포도과							
<i>Ampelopsis brevipedunculata</i> (Maxim.) Trautv. 개머루	0	0	0				
<i>Parthenocissus tricuspidata</i> (Siebold & Zucc.) Planch. 담쟁이덩굴	0	0	0				
<i>Vitis ficifolia</i> var. <i>sinuata</i> (Regel) H.Hara 까마귀머루		0					
<i>Vitis flexuosa</i> Thunb. 새머루		0					
Tiliaceae 피나무과							
<i>Tilia amurensis</i> Rupr. 피나무	0	0	0				
Elaeagnaceae 보리수나무과							
<i>Elaeagnus umbellata</i> Thunb. 보리수나무	0	0	0				
Violaceae 제비꽃과							
<i>Viola acuminata</i> Ledeb. 줄방제비꽃	0	0	0				

Appendix 1. Continued

Scientific-Korean name	I	II	III	A	B	C	D
<i>Viola albida</i> Palib. 태백제비꽃	0	0	0	LC			
<i>Viola albida</i> var. <i>chaerophylloides</i> (Regel) F.Maek. ex Hara 남산제비꽃	0	0	0				
<i>Viola collina</i> Besser 둥근털제비꽃	0	0					
<i>Viola grypoceras</i> A.Gray 낚시제비꽃	0						
<i>Viola hirtipes</i> S.Moore 흰털제비꽃		0					
<i>Viola japonica</i> Langsd. ex Ging. 왜제비꽃	0	0	0				
<i>Viola keiskei</i> Miq. 잔털제비꽃	0	0	0				
<i>Viola lactiflora</i> Nakai 흰젓제비꽃	0	0	0				
<i>Viola mandshurica</i> W.Becker 제비꽃	0	0	0				
<i>Viola orientalis</i> (Maxim.) W.Becker 노랑제비꽃	0	0	0			2	
<i>Viola patrinii</i> DC. ex Ging. 흰제비꽃		0					
<i>Viola phalacrocarpa</i> Maxim. 털제비꽃			0				
<i>Viola rossii</i> Hemsl. 고깔제비꽃	0	0	0				
<i>Viola selkirkii</i> Pursh ex (Goldie) 뽕제비꽃	0	0	0				
<i>Viola tokubuchiana</i> var. <i>takedana</i> (Makino) F.Maek. 민둥뽕제비꽃	0		0			2	
<i>Viola verecunda</i> A.Gray 콩제비꽃	0	0	0				
<i>Viola yedoensis</i> Makino 호제비꽃	0						
Onagraceae 바늘꽃과							
<i>Circaea alpina</i> L. 쥐털이슬		0				2	
<i>Circaea cordata</i> Royle 쇠털이슬	0					1	
<i>Circaea mollis</i> Slebold & Zucc. 털이슬	0						
<i>Epilobium pyrricholophum</i> Franch. & Sav. 바늘꽃	0						
<i>Oenothera biennis</i> L. 달맞이꽃	0	0	0				0
Alangiaceae 박취나무과							
<i>Alangium plataniifolium</i> var. <i>trilobum</i> (Miq.) Ohwi 박취나무	0	0	0				
Cornaceae 층층나무과							
<i>Cornus controversa</i> Hemsl. ex Prain 층층나무	0	0	0				
<i>Cornus walteri</i> F.T.Wangerin 말채나무	0	0	0				
Araliaceae 두릅나무과							
<i>Aralia elata</i> (Miq.) Seem. 두릅나무	0	0	0				
<i>Eleutherococcus sessiliflorus</i> (Rupr. & Maxim.) S.Y.Hu 오갈피나무		0	0			1	
Umbelliferae 산형과							
<i>Angelica cartilagino-marginata</i> var. <i>distans</i> (Nakai) Kitag. 흰바디나물		0			0		
<i>Angelica dahurica</i> (Fisch. ex Hoffm.) Benth. & Hook.f. ex Franch. & Sav. 구릿대		0	0				
<i>Angelica decursiva</i> (Miq.) Franch. & Sav. 바디나물	0	0	0				
<i>Angelica polymorpha</i> Maxim. 궁궁이		0					
<i>Angelica tenuissima</i> Nakai 고본		0	0			2	
<i>Bupleurum falcatum</i> L. 시호		0	0	VU			
<i>Bupleurum longeradiatum</i> Turcz. 개시호	0	0	0			2	
<i>Cryptotaenia japonica</i> Hassk. 파드득나물		0	0				
<i>Cymopterus melanotilingia</i> (H.Boissieu) C.Y.Yoon 큰참나물		0	0			2	
<i>Heracleum moellendorffii</i> Hance 어수리		0					
<i>Ostericum grosseserratum</i> (Maxim.) Kitag. 신감채	0	0	0				
<i>Ostericum sieboldii</i> (Miq.) Nakai 뿔미나리	0						
<i>Peucedanum terebinthaceum</i> (Fisch.) Fisch. ex DC. 기름나물	0	0	0				
<i>Pimpinella brachycarpa</i> (Kom.) Nakai 참나물	0	0	0				
<i>Pimpinella gustavohegiana</i> Koidz. 노루참나물	0	0					
<i>Pimpinella koreana</i> (Yabe) Nakai 가는참나물	0						
<i>Sanicula chinensis</i> Bunge 참반디		0					
<i>Sium ninsi</i> L. 감자개발나물	0						
<i>Torilis japonica</i> (Houtt.) DC. 사상자	0						
Pyrolaceae 노루발과							
<i>Chimaphila japonica</i> Miq. 매화노루발	0	0					
<i>Monotropa uniflora</i> L. 수정난풀	0			LC		1	
<i>Monotropastrum humile</i> (D.Don) Hara 나도수정초	0			VU		1	
<i>Pyrola japonica</i> Klenze ex Alef. 노루발	0	0	0				
Ericaceae 진달래과							
<i>Rhododendron mucronulatum</i> Turcz. 진달래	0	0	0				
<i>Rhododendron schlippenbachii</i> Maxim. 철쭉	0	0	0				

Appendix 1. Continued

Scientific-Korean name	I	II	III	A	B	C	D
<i>Rhododendron yedoense</i> for. <i>poukhanense</i> (H.Lev.) Sugim. 산철쭉	0	0	0				
<i>Vaccinium hirtum</i> var. <i>koreanum</i> (Nakai) Kitam. 산앵도나무	0					3	
Primulaceae 앵초과							
<i>Androsace umbellata</i> (Lour.) Merr. 봄맞이	0		0				
<i>Lysimachia clethroides</i> Duby 큰까치수염	0	0	0				
<i>Lysimachia vulgaris</i> var. <i>davurica</i> (Ledeb.) R.Kunth 좁쌀풀			0				
<i>Primula jesoana</i> Miq. 큰앵초	0	0	0			2	
Ebenaceae 감나무과							
<i>Diospyros lotus</i> L. 고욤나무		0					
Styracaceae 매죽나무과							
<i>Styrax japonicus</i> Siebold & Zucc. 매죽나무	0	0	0				
<i>Styrax obassia</i> Siebold & Zucc. 쪽동백나무	0	0	0				
Symplocaceae 노린재나무과							
<i>Symplocos chinensis</i> for. <i>pilosa</i> (Nakai) Ohwi 노린재나무	0	0	0				
Oleaceae 물푸레나무과							
<i>Fraxinus rhynchophylla</i> Hance 물푸레나무	0	0	0				
<i>Fraxinus sieboldiana</i> Blume 쇠물푸레나무	0		0				
<i>Ligustrum obtusifolium</i> Siebold & Zucc. 쥐똥나무	0	0					
<i>Syringa patula</i> (Palib.) Nakai 털개회나무		0	0			1	
Gentianaceae 용담과							
<i>Gentiana scabra</i> Bunge 용담	0						
<i>Gentiana squarrosa</i> Ledeb. 구슬봉이		0					
<i>Gentiana zollingeri</i> Faw. 큰구슬봉이	0						
<i>Swertia pseudochinensis</i> H.Hara 자주쓴풀		0	0				
Asclepiadaceae 박주가리과							
<i>Cynanchum ascyrifolium</i> (Franch. & Sav.) Matsum. 민백미꽃	0						
<i>Cynanchum inamoenum</i> (Maxim.) Loes. 선백미꽃	0			VU		3	
<i>Cynanchum paniculatum</i> (Bunge) Kitag. 산해박	0	0					
<i>Cynanchum wilfordii</i> (Maxim.) Hemsl. 큰조롱	0	0					
<i>Metaplexis japonica</i> (Thunb.) Makino 박주가리	0	0	0				
Rubiaceae 꼭두서니과							
<i>Asperula maximowiczii</i> Kom. 개갈퀴	0						
<i>Galium kamschaticum</i> Steller ex Roem. & Schult. 털둥근갈퀴		0				2	
<i>Galium paradoxum</i> Maxim. 두메갈퀴		0				2	
<i>Galium trifidum</i> L. 가느네잎갈퀴	0		0				
<i>Galium verum</i> var. <i>asiaticum</i> Nakai 솔나물		0	0				
<i>Paederia scandens</i> (Lour.) Merr. 계요등	0	0	0				
<i>Rubia akane</i> Nakai 꼭두서니		0	0				
<i>Rubia chinensis</i> Regel & Maack 큰꼭두서니		0					
<i>Rubia cordifolia</i> var. <i>pratensis</i> Maxim. 갈퀴꼭두서니		0					
Boraginaceae 지치과							
<i>Brachybotrys paridiformis</i> Maxim. ex Oliv. 당개지치		0	0			3	
<i>Trigonotis icumae</i> (Maxim.) Makino 덩굴꽃마리			0	LC		1	
<i>Trigonotis peduncularis</i> (Trevir.) Benth. ex Hemsl. 꽃마리	0		0				
<i>Trigonotis radicans</i> var. <i>sericea</i> (Maxim.) H.Hara 참꽃마리		0	0				
Verbenaceae 마편초과							
<i>Callicarpa dichotoma</i> (Lour.) K.Koch 좁작살나무		0					
<i>Callicarpa japonica</i> Thunb. 작살나무	0	0					
<i>Clerodendrum trichotomum</i> Thunb. ex Murray 누리장나무		0	0				
Labiatae 꿀풀과							
<i>Ajuga multiflora</i> Bunge 조개나물	0	0				1	
<i>Clinopodium chinense</i> var. <i>parviflorum</i> (Kudo) Hara 층층이꽃		0					
<i>Clinopodium chinense</i> var. <i>shibetchense</i> (H.Lev.) Koidz. 산층층이	0						
<i>Clinopodium gracile</i> (Benth.) Kuntze 애기탑꽃	0	0					
<i>Clinopodium gracile</i> var. <i>multicaule</i> (Maxim.) Ohwi 탑꽃		0					
<i>Elsholtzia ciliata</i> (Thunb.) Hyl. 향유	0	0	0				
<i>Elsholtzia splendens</i> Nakai 꽃향유	0	0					
<i>Isodon excisus</i> (Maxim.) Kudo 오리방풀		0	0				
<i>Isodon inflexus</i> (Thunb.) Kudo 산박하	0	0	0				

Appendix 1. Continued

Scientific-Korean name	I	II	III	A	B	C	D
<i>Isodon japonicus</i> (Burm.) Hara 망아풀			0				
<i>Lamium album</i> var. <i>barbatum</i> (Siebold & Zucc.) Franch. & Sav. 광대수염	0	0					
<i>Leonurus macranthus</i> Maxim. 송장풀	0						
<i>Meehanian urticifolia</i> (Miq.) Makino 벌개덩굴	0	0	0				
<i>Mosla dianthera</i> (Buch.-Ham. ex Roxb.) ex Maxim. 쥐깨풀		0					
<i>Mosla japonica</i> (Benth.) Maxim. 산들깨		0		VU			
<i>Mosla punctulata</i> (J.F.Gmelin) Nakai 들깨풀	0	0					
<i>Phlomis umbrosa</i> Turcz. 속단	0						
<i>Prunella vulgaris</i> var. <i>lilacina</i> Nakai 꿀풀	0	0	0				
<i>Salvia chamryonica</i> Nakai 참배암차즈기	0	0		LC	0	3	
<i>Salvia plebeia</i> R.Br. 배암차즈기		0					
<i>Scutellaria fauriei</i> H.Lev. & Vaniot 그늘골무꽃		0	0				
<i>Scutellaria indica</i> L. 골무꽃	0		0				
<i>Scutellaria pekinensis</i> var. <i>transitra</i> (Makino) Hara 산골무꽃		0	0				
<i>Scutellaria pekinensis</i> var. <i>ussuriensis</i> (Regel) Hand.-Mazz. 호골무꽃		0					
Scrophulariaceae 현삼과							
<i>Euphrasia coreana</i> W.Becker 깔금좁쌀풀		0		VU	0		
<i>Melampyrum roseum</i> Maxim. 꽃머느리밥풀	0	0	0				
<i>Melampyrum roseum</i> var. <i>ovalifolium</i> Nakai ex Beauverd 알머느리밥풀	0						
<i>Mimulus nepalensis</i> Benth. 물파리아채비	0						
<i>Pedicularis resupinata</i> L. 송이풀	0	0	0				
<i>Phtheirospermum japonicum</i> (Thunb.) Kanitz 나도송이풀		0					
<i>Scrophularia kakudensis</i> Franch. 큰개현삼		0	0				
<i>Veronica longifolia</i> L. 긴산꼬리풀		0	0				2
<i>Veronica rotunda</i> var. <i>subintegra</i> (Nakai) T.Yamaz. 산꼬리풀			0				
Acanthaceae 쥐꼬리망초과							
<i>Justicia procumbens</i> L. 쥐꼬리망초	0	0					
Phrymaceae 파리풀과							
<i>Phryma leptostachya</i> var. <i>asiatica</i> H.Hara 파리풀		0	0				
Plantaginaceae 질경이과							
<i>Plantago asiatica</i> L. 질경이	0	0	0				
<i>Plantago depressa</i> Willd. 털질경이		0					
Caprifoliaceae 인동과							
<i>Lonicera harai</i> Makino 길마가지나무	0						
<i>Lonicera japonica</i> Thunb. 인동덩굴	0	0	0				
<i>Lonicera praeflorens</i> Batalin 울괴불나무	0	0	0				1
<i>Lonicera subsessilis</i> Rehder 청괴불나무		0	0		0	3	
<i>Sambucus williamsii</i> var. <i>coreana</i> (Nakai) Nakai 딱총나무	0						
<i>Viburnum dilatatum</i> Thunb. ex Murray 가막살나무		0	0				
<i>Viburnum erosum</i> Thunb. 털평나무	0	0	0				
<i>Viburnum opulus</i> var. <i>calvescens</i> (Rehder) Hara 백당나무	0	0	0				
<i>Weigela florida</i> (Bunge) A.DC. 붉은병꽃나무	0	0	0				2
<i>Weigela praecox</i> (Lemoine) L.H.Bailey 소영도리나무		0					1
<i>Weigela subsessilis</i> L.H.Bailey 병꽃나무	0	0	0		0		
Adoxaceae 연복초과							
<i>Adoxa moschatellina</i> L. 연복초	0	0					3
Valerianaceae 마타리과							
<i>Patrinia scabiosaefolia</i> Fisch. ex Trevir. 마타리	0	0	0				
<i>Patrinia villosa</i> (Thunb.) Juss. 뚝갈	0	0	0				
<i>Valeriana fauriei</i> Briq. 쥐오줌풀	0	0					
Dipsacaceae 산토끼꽃과							
<i>Dipsacus japonicus</i> Miq. 산토끼꽃	0			VU			4
Campanulaceae 초롱꽃과							
<i>Adenophora remotiflora</i> (Siebold & Zucc.) Miq. 모시대	0	0					
<i>Adenophora triphylla</i> var. <i>japonica</i> (Regel) H.Hara 잔대			0				
<i>Campanula punctata</i> Lam. 초롱꽃	0		0				1
<i>Codonopsis lanceolata</i> (Siebold & Zucc.) Trautv. 더덕	0	0	0				
Compositae 국화과							
<i>Adenocaulon himalaicum</i> Edgew. 멀가치	0	0					

Appendix 1. Continued

Scientific-Korean name	I	II	III	A	B	C	D
<i>Ainsliaea acerifolia</i> Sch.Bip. 단풍취	0	0	0				
<i>Ambrosia artemisiifolia</i> L. 돼지풀			0				0
<i>Artemisia japonica</i> Thunb. 제비쑥	0		0				
<i>Artemisia keiskeana</i> Miq. 맑은대쑥	0	0	0				
<i>Artemisia princeps</i> Pamp. 쑥	0	0	0				
<i>Artemisia stolonifera</i> (Maxim.) Kom. 넓은잎외잎쑥	0	0	0				
<i>Aster ageratoides</i> Turcz. 까실쑥부쟁이	0	0	0				
<i>Aster incisus</i> Fisch. 가새쑥부쟁이		0					
<i>Aster meendorffii</i> (Regel & Maack) Voss 개쑥부쟁이			0				
<i>Aster scaber</i> Thunb. 참취	0	0	0				
<i>Aster yomena</i> (Kitam.) Honda 쑥부쟁이	0	0					
<i>Atractylodes ovata</i> (Thunb.) DC. 삼주	0	0	0				
<i>Bidens bipinnata</i> L. 도깨비바늘			0				
<i>Bidens tripartita</i> L. 가막사리	0		0				
<i>Breea segeta</i> (Willd.) Kitam. 조뱅이	0						
<i>Carduus crispus</i> L. 지느러미영경귀	0	0					0
<i>Carpesium abrotanoides</i> L. 담배풀		0					
<i>Cirsium chanroenicum</i> (L.) Nakai 정영영경귀	0		0			2	
<i>Cirsium japonicum</i> var. <i>maackii</i> (Maxim.) Matsum. 영경귀		0	0				
<i>Cirsium setidens</i> (Dunn) Nakai 고려영경귀	0	0			0	3	
<i>Conyza canadensis</i> (L.) Cronquist 망초	0	0	0				0
<i>Crepidiastrum chelidoniifolium</i> (Makino) Pak & Kawano 까치고들빼기	0	0	0				
<i>Crepidiastrum denticulatum</i> (Houtt.) Pak & Kawano 이고들빼기	0	0	0				
<i>Crepidiastrum sonchifolium</i> (Bunge) Pak & Kawano 고들빼기	0	0	0				
<i>Dendranthema boreale</i> (Makino) Ling ex Kitam. 산국	0	0	0				
<i>Dendranthema indicum</i> (L.) DesMoul. 감국	0						
<i>Dendranthema zawadskii</i> (Herb.) Tzvelev 산구절초	0	0	0				
<i>Dendranthema zawadskii</i> var. <i>latilobum</i> (Maxim.) Kitam. 구절초	0	0	0				
<i>Erigeron annuus</i> (L.) Pers. 개망초	0	0	0				0
<i>Eupatorium japonicum</i> Thunb. ex Murray 등골나물	0		0				
<i>Eupatorium lindleyanum</i> DC. 골등골나물		0					
<i>Galinsoga parviflora</i> Cav. 별꽃아재비	0	0					0
<i>Gnaphalium affine</i> D.Don 떡쑥		0					
<i>Gnaphalium hypoleucum</i> DC. 금떡쑥	0			DD			
<i>Gnaphalium japonicum</i> Thunb. 풀솜나물	0						
<i>Hieracium umbellatum</i> L. 조밥나물	0						
<i>Ixeridium dentatum</i> (Thunb. ex Mori) Tzvelev 쑤마귀	0	0					
<i>Ixeris polycephala</i> Cass. 별쑤마귀		0	0				
<i>Ixeris strigosa</i> (H.Lev. & Vaniot) J.H.Pak & Kawano 선쑤마귀		0					
<i>Lactuca indica</i> L. 왕고들빼기	0	0	0				
<i>Lactuca raddeana</i> Maxim. 산쑤마귀			0				
<i>Lactuca triangulata</i> Maxim. 두메고들빼기		0					
<i>Leibnitzia anandria</i> (L.) Turcz. 솜나물	0	0	0				
<i>Ligularia fischeri</i> (Ledeb.) Turcz. 곰취	0		0			2	
<i>Rhaponticum uniflorum</i> (L.) DC. 뽕쑥채	0					1	
<i>Saussurea gracilis</i> Maxim. 은분취		0	0				
<i>Saussurea grandifolia</i> Maxim. 서덜취	0	0					
<i>Saussurea pulchella</i> (Fisch.) Fisch. 각시취		0	0				
<i>Serratula coronata</i> var. <i>insularis</i> (Ijjin) Kitam. 산비장이	0						
<i>Solidago virgaurea</i> subsp. <i>asiatica</i> Kitam. ex Hara 미역취	0	0	0				
<i>Sonchus oleraceus</i> L. 방가지뚱	0						0
<i>Syneilesis palmata</i> (Thunb.) Maxim. 우산나물	0	0	0				
<i>Symurus deltooides</i> (Aiton) Nakai 수리취		0					
<i>Taraxacum coreanum</i> Nakai 흰민들레	0	0					
<i>Taraxacum officinale</i> Weber 서양민들레	0	0	0				0
<i>Xanthium strumarium</i> L. 도꼬마리		0	0				0
<i>Youngia japonica</i> (L.) DC. 뿌리뱅이	0	0					
Liliaceae 백합과							
<i>Allium macrostemon</i> Bunge 산달래	0						

Appendix 1. Continued

Scientific-Korean name	I	II	III	A	B	C	D
<i>Allium monanthum</i> Maxim. 달래	0	0					
<i>Allium sacculiferum</i> Maxim. 참산부추		0	0				
<i>Allium thunbergii</i> G.Don 산부추	0	0					
<i>Asparagus schoberioides</i> Kunth 비짜루		0					
<i>Convallaria keiskei</i> Miq. 은방울꽃	0	0	0				
<i>Disporum smilacinum</i> A.Gray 애기나리	0	0	0				
<i>Disporum uniflorum</i> Baker 윤판나물	0						
<i>Erythronium japonicum</i> (Balrer) Decne. 얼레지	0	0	0				1
<i>Gagea lutea</i> (L.) KerGawl. 중의무릇		0	0				1
<i>Hemerocallis fulva</i> (L.) L. 원추리	0	0	0				
<i>Hemerocallis minor</i> Mill. 애기원추리		0	0				
<i>Hosta capitata</i> (Koidz.) Nakai 일월비비추	0	0	0				1
<i>Hosta longipes</i> (Franch. & Sav.) Matsum. 비비추	0						
<i>Lilium amabile</i> Palib. 털중나리	0	0	0				
<i>Lilium distichum</i> Nakai ex Kamib. 말나리		0	0	LC			2
<i>Lilium lancifolium</i> Thunb. 참나리		0	0				
<i>Lilium tsingtauense</i> Gilg 하늘말나리	0	0					
<i>Liriope spicata</i> (Thunb.) Lour. 개맥문동		0					
<i>Lloydia triflora</i> (Ledeb.) Baker 나도개감채	0	0		LC			3
<i>Paris verticillata</i> M.Bieb. 샷갓나물	0	0	0				
<i>Polygonatum inflatum</i> Kom. 통등굴레		0	0				1
<i>Polygonatum involucratum</i> (Franch. & Sav.) Maxim. 용등굴레	0						
<i>Polygonatum lasianthum</i> Maxim. 죽대	0						
<i>Polygonatum odoratum</i> var. <i>pluriflorum</i> (Miq.) Ohwi 등굴레	0	0	0				
<i>Scilla scilloides</i> (Lindl.) Druce 무릇	0	0					
<i>Smilacina japonica</i> A.Gray 풀솜대		0	0				
<i>Smilax china</i> L. 청미래덩굴	0	0	0				
<i>Smilax nipponica</i> Miq. 선밀나물	0	0	0				
<i>Smilax sieboldii</i> Miq. 청가시덩굴	0	0	0				
<i>Tulipa edulis</i> (Miq.) Baker 산자고		0					
<i>Veratrum maackii</i> var. <i>japonicum</i> (Baker) T.Schmizu 여로	0	0	0				
Dioscoreaceae 마과							
<i>Dioscorea batatas</i> Decne. 마	0						
<i>Dioscorea bulbifera</i> L. 둥근마		0					
<i>Dioscorea japonica</i> Thunb. 참마	0						
<i>Dioscorea nipponica</i> Makino 부채마	0	0	0				
<i>Dioscorea quinqueloba</i> Thunb. 단풍마			0				
<i>Dioscorea tokoro</i> Makino 도꼬로마	0	0	0				
Iridaceae 붓꽃과							
<i>Belamcanda chinensis</i> (L.) DC. 범부채		0		VU			
<i>Iris minutiaurea</i> Makino 금붓꽃	0			VU			1
<i>Iris odaesanensis</i> Y.N.Lee 노랑무늬붓꽃	0			VU			5
<i>Iris rossii</i> Baker 각시붓꽃	0	0	0				
Juncaceae 갈대과							
<i>Luzula capitata</i> (Miq.) Miq. 평의밭	0	0	0				
<i>Luzula multiflora</i> Lej. 산평의밭		0					
Commelinaceae 닭의장풀과							
<i>Commelina communis</i> L. 닭의장풀	0	0	0				
Gramineae 벼과							
<i>Agropyron ciliare</i> (Trin.) Franch. 속털개밀		0					
<i>Agropyron tsukushiense</i> var. <i>transiens</i> (Hack.) Ohwi 개밀	0	0	0				
<i>Arthraxon hispidus</i> (Thunb.) Makino 조개풀	0	0	0				
<i>Arundinella hirta</i> (Thunb.) Koidz. 새	0	0	0				
<i>Arundinella hirta</i> var. <i>ciliata</i> Koidz. 털새	0		0				
<i>Bromus japonicus</i> Thunb. ex Murray 참새귀리		0					
<i>Calamagros arundinacea</i> (L.) Roth 실새풀	0	0	0				
<i>Calamagrostis epigeios</i> (L.) Roth 산조풀	0						
<i>Cymbopogon tortilis</i> var. <i>goeringii</i> (Steud.) Hand.-Mazz. 개솔새	0	0	0				
<i>Diarrhena japonica</i> (Franch. & Sav.) Franch. & Sav. 용수염	0	0					

Appendix 1. Continued

Scientific-Korean name	I	II	III	A	B	C	D
<i>Diarrhena mandshurica</i> Maxim. 껌질용수염		0	0			1	
<i>Digitaria ciliaris</i> (Retz.) Koel. 바랭이	0	0	0				
<i>Echinochloa crusgalli</i> (L.) P.Beauv. 돌피		0					
<i>Eriochloa villosa</i> (Thunb.) Kunth 나도개피	0						
<i>Eulalia speciosa</i> (Debeaux) Kuntze 개역새	0						
<i>Festuca ovina</i> L. 김의털	0	0	0				
<i>Hemarthria sibirica</i> (Gand.) Ohwi 쇠치기풀	0						
<i>Melica onoei</i> Franch. & Sav. 쌀새	0	0	0				
<i>Miscanthus sinensis</i> var. <i>purpurascens</i> (Andersson) Rendle 역새	0	0	0				
<i>Muhlenbergia japonica</i> Steud. 쥐꼬리새		0	0				
<i>Oplismenus undulatifolius</i> (Ard.) P.Beauv. 주름조개풀	0	0	0				
<i>Panicum bisulcatum</i> Thunb. 개기장		0					
<i>Pennisetum alopecuroides</i> (L.) Spreng. 수크령	0	0	0				
<i>Poa annua</i> L. 새포아풀	0						
<i>Sasa borealis</i> (Hack.) Makino 조릿대	0	0	0				
<i>Setaria viridis</i> (L.) P.Beauv. 강아지풀	0	0	0				
<i>Spodiopogon cotulifer</i> (Thunb.) Hack. 기름새	0	0					
<i>Spodiopogon sibiricus</i> Trin. 큰기름새	0	0	0				
<i>Sporobolus fertilis</i> (Steud.) Clayton 쥐꼬리새풀		0					
<i>Stipa sibirica</i> (L.) Lam. 나래새	0		0				
<i>Themeda triandra</i> var. <i>japonica</i> (Willd.) Makino 솔새	0	0	0				
Araceae 천남성과							
<i>Arisaema amurense</i> for. <i>serratum</i> (Nakai) Kitag. 천남성	0	0	0				
Cyperaceae 사초과							
<i>Carex biwensis</i> Franch. 솔잎사초		0					
<i>Carex bostrychostigma</i> Maxim. 길뚝사초	0	0					
<i>Carex breviculmis</i> R.Br. 청사초	0	0	0				
<i>Carex ciliatmarginata</i> Nakai 털대사초	0	0	0				
<i>Carex forficula</i> Franch. & Sav. 산뚝사초	0		0				
<i>Carex humilis</i> var. <i>nana</i> (H.Lev. & Vaniot) Ohwi 가는잎그늘사초	0	0	0				
<i>Carex japonica</i> Thunb. 개찌버리사초	0	0	0				
<i>Carex laevissima</i> Nakai 애팽이사초		0					
<i>Carex lanceolata</i> Boott 그늘사초	0	0	0				
<i>Carex leiorhyncha</i> C.A.Mey. 산팽이사초	0	0					
<i>Carex neurocarpa</i> Maxim. 팽이사초	0	0	0				
<i>Carex okamotoi</i> Ohwi 지리대사초	0	0	0			0	
<i>Carex polyschoena</i> H.Lev. & Vaniot 가지청사초		0					
<i>Carex siderosticta</i> Hance 대사초	0	0	0				
Orchidaceae 난초과							
<i>Cephalanthera erecta</i> (Thunb. ex Murray) Blume 은난초			0				
<i>Cephalanthera longibracteata</i> Blume 은대난초	0	0	0				
<i>Oreorchis patens</i> (Lindl.) Lindl. 감자난초		0	0				

I: 1rd Section, II: 2rd Section, III: 3rd Section, A: Rare plants, B: Endemic plants, C: Floristic special plants, D: Naturalized plants