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Distribution of Vascular Plants in the Ulleung Forest Trail Area, Korea

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Abstract: The study conducted on-site investigation of vascular plants living in the Ulleung forest trail area for total 9 times from March 2009 to October 2011. Investigated vascular plants include total 454 taxa; 103 families, 296 genera, 364 species, 72 varieties, 15 forma and 3 subspecies. When dividing into each area of the forest trail, there were 85 families, 211 genera, 246 species, 41 varieties, 2 forma and 2 subspecies, total 291 taxa in the Seokpo-Naesujeon section, 68 families, 150 genera, 169 species, 26 varieties, 2 forma and 2 subspecies, total 199 taxa in the Namyang-Taeharyeong section, and 85 families, 194 genera, 219 species, 36 varieties, 7 forma and 2 subspecies, total 264 taxa in the Witonggumi-Naesujeon section, confirming that there were the most vascular plants in the Seokpo-Naesujeon section. Endangered wild plant designated by the Ministry of Environment was 1 species, *Cotoneaster wilsonii*, and scores of this plant were found around Dodong. Rare plants are total 31 taxa, Korean endemic plants are total 28 taxa, and specific plant species are total 91 taxa. Naturalized plants are total 25 taxa, and 38.64% of the whole naturalized plants in Ulleung-do are spread over these areas. As a result of comparing the Ulleung forest trail area, distribution of vascular plants is the highest in the Seokpo-Naesujeon section while all rare plants, endemic plants, specific plants and naturalized plants are distributed the most in the Witonggumi-Naesujeon section.

Keywords: flora, rare plant, Korean endemic plants, specific plant, naturalized plant

Introduction

As island areas are separated from the continent, they show ecological specificity (Mauchamp, 1997), and biodiversity has a close relation to importation and settlement of species, and the extent of island areas (Primack, 2008). Ulleung-do is a volcanic island with a dome-shaped volcano, is about 73 km^2 in extent, and is the 7th large island in Korea (Kil *et al*., 2006; Ulleung-gun, 2009). Ulleung-do has a maritime climate with high temperature and humidity, warmer than other areas on the same latitude, so it forms a unique climate region where both warm temperate plants and temperate plants grow together (Park *et al*., 2007). Ulleung-do has a very distinctive flora as it belongs to Uleung-do subregion of Korea as for the floristic region (Lee and Lim, 2002).

Collected plants were reported by Gisu Gangbon of the Japanese Government General of Korea in 1912, and then studies on plants in Ulleung-do were conducted by Japanese researchers until 1940s (Kil *et al*., 2006). Since 1950s, Korean researchers have conducted many studies including the taxonomic research on a flora (Yang, 1956; Song *et al*., 2000; Shin and Kim, 2002; Yang, 2010), the vegetation structure analysis (Choi *et al*., 1998; Lee *et al*., 2000; Song *et al*., 2000) and the analysis of ecological characteristics of the natural growth areas (Ahn *et al*., 2005; Lee *et al*., 2006; Ahn and Lee, 2007). Especially for studies on the flora, they are usually arranged targeting parts or the whole areas of Ulleung-do, so there is no precedent targeting a specific area. As Ulleung mainly invigorates the tourism industry with natural tourist attractions, it has great availability as a place for ecological education. Accordingly, it is necessary to conduct in-depth investigation on the natural resources in order to use resources value of the forest trail areas which will be prepared in the future and to connect these resources to education.

Therefore, this study aims to examine the present conditions of vascular plants including rare plants, endemic plants, specific plants and naturalized plants targeting the forest trail areas which is being prepared in Ulleung, and to provide the basic materials for efficient management of natural resources and environmental education through the current conditions of flora in the 1st (Seokpo-Naesujeon), 2nd (Namyang-Taeharyeong) and 3rd (Witonggumi-Naesujeon) sections.

Materials and Methods

This on-site investigation was conducted for total 9 times

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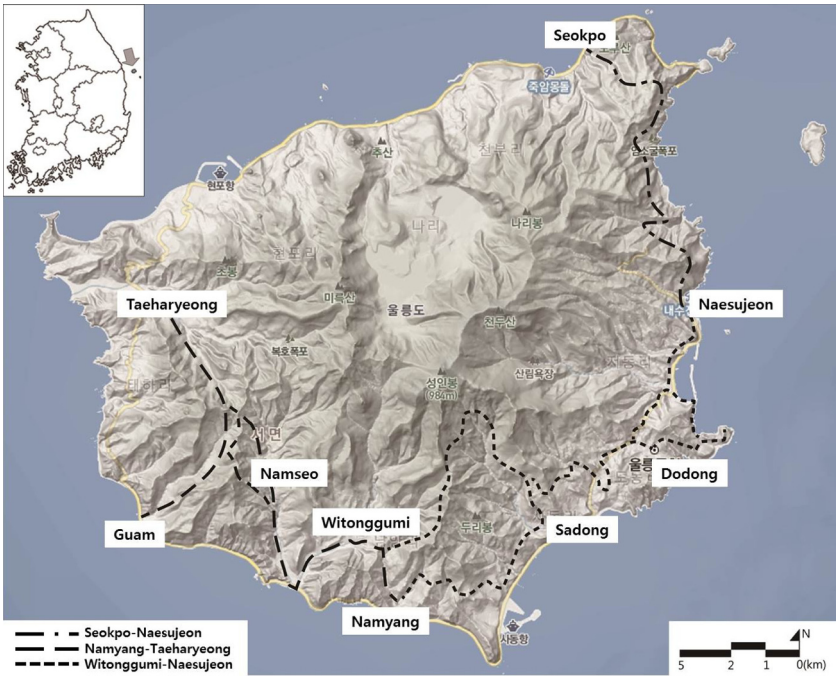

Fig. 1. Investigation target area.

from March 2009 to October 2011; 3 times for each area targeting ridges and main valleys in the Seokpo-Naesujeon section, Namyang-Taeharyeong section and Witonggumi-Naesujeon section which are the target sections for making Ulleung forest trails from March 2009 to October 2011. Ulleung forest trail is Dulle-gil which connects the whole areas of Ulleung-do, and the Taeharyeong-Seokpo section was excluded in this investigation as it is composed of regular roads and paved roads (Fig. 1).

As for the distribution of vascular plants, a plant list was prepared using 1/25,000 topographic maps issued by the National Geographic Information Institute and GPS, and it recorded specific plants. Names and classification of appearing vascular plants were arranged on the site. If it was not possible, they were decided by collecting plants. The list of vascular plants was prepared according to Lee's system (2006a; 2006b) which was made by partly supplementing Engler's system for classifying vascular plants (Melchior, 1964), and scientific names and the name of a country were based on the Korean Plant Names Index (Korea National Arboretum, 2007) of the Korea National Arboretum. The study referred the study results of the Korea National Arboretum (2005) as for Korean endemic plants, and as for rare and endangered plants, it used materials from the Ministry of Environment (2005) and the Korea Forest Service & Korea National Arboretum (2008). Specific plants based on the floristic region were divided into I class - V class according to the 2nd guideline for investigating the national natural environment (Ministry of Environment, 2006), and naturalized plants were classified based on Park (2009). Naturalization rate is a standard for deciding inflow rate of naturalized plants to the target areas, and the figure means total number of naturalized plants/ the number of species of total appearing plants in the investigation areas. Urbanization index (UI) shows the level of urbanization relatively through the distribution of naturalized plants. It is a standard for judging the level of urbanization in that it shows the correlation with the urban population density (Lee *et al*., 2012), and the figure was calculated by dividing total number of naturalized plants in the target areas by total number of naturalized plants in South Korea (286 taxa) (Park, 2009).

Results and Discussion

Distribution of vascular plants

The study found out that vascular plants in the Ulleung forest trail included 103 families, 296 genera, 364 species, 72 varieties, 15 forma and 3 subspecies, total 454 taxa (Table 1). Among them, Pteridophyte includes 11 families, 23 genera, 33 species, 3 varieties and 1 forma, total 37 taxa, Gymnosperm includes 5 families, 9 genera, 11 species and 1 variety, total 12 taxa, Angiosperm (Monocotyledon) includes 9 families, 45 genera, 46 species, 16 varieties and 3 forma, total 65 taxa, and Angiosperm (Dicotyledon) includes 78 families, 219 genera, 274 species, 52 varieties, 11 forma and 3 subspecies, total 340 taxa (Table 1). According to the existing investigation list through literature investigation (Kim *et al*., 2000; Shin and Kim, 2002; Shin *et al*., 2004), it added 48 taxa. Added taxa

Table 1. Vascular plants in the Ulleung Forest Trail

	Family	Genus	Species	Variety	Forma	Sub species	Total
Pteridophyte	11	23	33	3	1	-	37
Gymnosperm	5	9	11	1	-	-	12
Angiosperm (Monocotyledon)	9	45	46	16	3	-	65
Angiosperm (Dicotyledon)	78	219	274	52	11	3	340
Total	103	296	364	72	15	3	454

Table 2. Vascular plants in each section of the Ulleung Forest Trail

Section	Family	Genus	Species	Variety	Forma	Sub species	Total
Seokpo-Naesujeon	85	211	246	41	2	2	291
Namyang-Taeharyeong	68	150	169	26	2	2	199
Witonggumi-Naesujeon	85	194	219	36	7	2	264

include Rosaceae (5 taxa), Leguminosae (4 taxa) and Gramineae (3 taxa), and 3 species of naturalized plants were also investigated.

Total 291 taxa including 85 families, 211 genera, 246 species, 41 varieties, 2 forma and 2 subspecies were found in the Seokpo-Naesujeon section (Table 2). In this section, native plants of Ulleung-do are evenly distributed, and especially, *Hydrangea petiolaris* which is shown some areas of Seonginbong grows in the lower layers.

Total 199 taxa including 68 families, 150 genera, 169 species, 26 varieties, 2 forma and 2 subspecies were found in the Namyang-Taeharyeong section (Table 2). Some trails in this section are designated as a forest genetic resources reserve area, so they are better reserved ecologically than other sections. As it has old roads of Ulleung-do, it is judged to be the best place for nature learning and ecological tourism courses as well as cultural aspects.

Total 264 taxa including 85 families, 194 genera, 219 species, 36 varieties, 7 forma and 2 subspecies were found in the Witonggumi-Naesujeon section (Table 2). Over the whole trails, *Fagus engleriana* which is the endemic species of Ulleung-do is mixed up with *Sorbus commixta, Sorbus amurensis, Tilia insularis, Acer pictum* subsp. *mono* and *Acer takesimense*, and in some trails, colonies of *Tsuga sieboldii, Pinus parviflora* and *Taxus baccata var. latifolia* are distributed, enabling to find Ulleung endemic plants without climbing Seonginbong.

As Ulleung endemic plants are evenly distributed over the whole sections, it would be necessary to make various kinds of ecological visiting courses suitable for characteristics of each section.

Rare and endangered plants

1) Endangered wild plant species designated by the Ministry of Environment

Terrestrial plants among endangered wild life designated by the law on wild life protection and management of the Ministry of Environment include I class 9 species, and II class 68 specie. Endangered wild plants designated by the Ministry of Environment over the whole sections of Ulleung forest trails include 1 species of I class *Cotoneaster wilsonii* which grows in the Witonggumi-Naesujeon section. *Cotoneaster wilsonii* in Ulleung-do is known to grow and develop around Dodong, Tonggumi and Namyang (Shin *et al.*, 2003). The study found scores of *Cotoneaster wilsonii* around Dodong in the Witonggumi-Naesujeon section of the Ulleung forest trail. According to the existing investigation list through literature investigation (Kim *et al*., 2000; Shin and Kim, 2002; Shin *et al*., 2004), *Cotoneaster wilsonii* has been already found in the existing investigation (Appendix 1), and it was shown that the location of habitat was the same. Currently, as total population of *Cotoneaster wilsonii* around Dodong is not quite high, it is judged that it would be necessary to prepare an *Ex-situ* conservation plan for increasing its population as well as to implement an *In-situ* conservation plan for expanding the size of natural growth areas artificially by finding out habitats similar to current habitat environment in the future.

2) Rare plants designated by the Korea Forest Service

According to the list of Korean rare plants (Korea Forest Service & Korea National Arboretum, 2008), it designated total 567 taxa of Korean rare plants based on IUCN criteria by dividing into 6 categories; Extinct in the Wild (EX); Critical Endangered (CR); Endangered (EN); Vulnerable (VU); Least Concerned (LC); and Data Deficient (DD). Based on this, the study found total 31 taxa of rare plants designated by the Korea Forest Service in the Ulleung forest trails (Table 3).

Total 15 taxa were found in the Seokpo-Naesujeon section including 1 taxon of EN species (*Arisaema takesimense*), 8 taxa of VU species (*Adiantum pedatum, Polypodium vulgare, Taxus baccata* var. *latifolia, Phytolacca insularis, Hepatica maxima, Nepeta cataria, Lilium hansonii* and *Trillium tschonoskii*), 5 taxa of LC species (*Tsuga sieboldii, Fagus engleriana, Celtis choseniana, Campanula takesimana* and *Maianthemum dilatatum*) and 1 taxon of DD species (*Lamium takesimense*) (Table 3).

Taxa found in the Namyang-Taeharyeong include 1 taxon of CR specie (*Calanthe discolor* for. *sieboldii*), 5 taxa of EN species (*Neocheiropteris ensata, Lathraea japonica, Cirsium nipponicum, Arisaema takesimense* and *Gymnadenia camtschatica*), 7 taxa of VU species (*Adiantum pedatum, Polypodium vulgare, Taxus baccata* var. *latifolia, Phytolacca insularis, Hepatica maxima, Lilium hansonii* and *Trillium tschonoskii*), 8 taxa of LC species (*Asplenium scolopendrium, Tsuga sieboldii, Thuja orientalis, Fagus engleriana, Celtis choseniana, Tiarella polyphylla, Campanula takesimana* and *Maianthemum dilatatum*) and 2 taxa of DD species (*Rumex longifolius* and *Lamium takesimense*).

Total 24 taxa were found in the Witonggumi-Naesujeon section including 2 taxa of CR species (*Corydalis filistipes* and *Cotoneaster wilsonii*), 3 taxa of EN species (*Cirsium nipponicum, Arisaema takesimense* and *Gymnadenia camtschatica*) 8 taxa of VU species (*Adiantum pedatum, Polypodium vulgare, Taxus baccata* var. *latifolia, Phytolacca insularis, Hepatica maxima, Thymus quinquecostatus* var. *japonica, Lilium hansonii* and *Trillium tschonoskii*), 9 taxa of LC species (*Asplenium scolopendrium, Tsuga sieboldii, Thuja orientalis, Fagus engleriana, Rhododendron brachycarpum, Campanula takesimana, Allium senescens* var. *senescens, Maianthemum dilatatum* and *Goodyera schlechtendaliana*), and 2 taxa of DD species (*Wasabia japopnica* and *Lamium takesimense*) (Table 3). As most of these plants grow close to trails, destruction of natural growth areas due to visitor's collecting or stamping plants is a concern. Therefore, it would be necessary to prepare an appropriate management and reserving plan.

As a result of comparing sections of Ulleung forest trails, there were the most plants in the Witonggumi-Naesujeon section. Among them, *Nepeta cataria* (VU) only appears in the Seokpo-Naesujeon section, *Calanthe discolor* for. *sieboldii* (CR), *Neocheiropteris ensata* and *Lathraea japonica* (EN), *Tiarella polyphylla* (LC) and *Rumex longifolius* (DD) only appear in the Namyang-Taeharyeong section, and *Corydalis filistipes* and *Cotoneaster wilsonii* (CR), *Thymus quinquecostatus* var. *japonica* (VU), *Rhododendron brachycarpum, Allium senescens* var. *senescens* and

Table 3. Rare plants in each section of the Ulleung Forest Trail

Degree	Korean ame	Scientific name	A	B	C
CR	섬현호색	*Corydalis filistipes*			◎
	섬개야광나무	*Cotoneaster wilsonii*			◎
	금새우난초	*Calanthe discolor* for. *sieboldii*		◎	
EN	밤일엽	*Neocheiropteris ensata*		◎	
	개종용	*Lathraea japonica*		◎	
	물엉겅퀴	*Cirsium nipponicum*		◎	◎
	섬남성	*Arisaema takesimense*	◎	◎	◎
	주름제비란	*Gymnadenia camtschatica*		◎	◎
UV	공작고사리	*Adiantum pedatum*	◎	◎	◎
	미역고사리	*Polypodium vulgare*	◎	◎	◎
	회솔나무	*Taxus baccata* var. *latifolia*	◎	◎	◎
	섬자리공	*Phytolacca insularis*	◎	◎	◎
	섬노루귀	*Hepatica maxima*	◎	◎	◎
	개박하	*Nepeta cataria*	◎		
	섬백리향	*Thymus quinquecostatus* var. *japonica*			◎
	섬말나리	*Lilium hansonii*	◎	◎	◎
	큰연영초	*Trillium tschonoskii*	◎	◎	◎
LC	골고사리	*Asplenium scolopendrium*		◎	◎
	솔송나무	*Tsuga sieboldii*	◎	◎	◎
	측백나무	*Thuja orientalis*		◎	◎
	너도밤나무	*Fagus engleriana*	◎	◎	◎
	검팽나무	*Celtis choseniana*	◎	◎	
	헐떡이풀	*Tiarella polyphylla*		◎	
	만병초	*Rhododendron brachycarpum*			◎
	섬초롱꽃	*Campanula takesimana*	◎	◎	◎
	두메부추	*Allium senescens* var. *senescens*			◎
	큰두루미꽃	*Maianthemum dilatatum*	◎	◎	◎
	사철란	*Goodyera schlechtendaliana*			◎
DD	개대황	*Rumex longifolius*		◎	
	고추냉이	*Wasabia japonica*			◎
	섬광대수염	*Lamium takesimense*	◎	◎	◎
Total			15	23	24

*A: Seokpo-Naesujeon, B: Namyang-Taeharyeong, C: Witonggumi-Naesujeon

Goodyera schlechtendaliana (LC), and *Wasabia japonica* (DD) only in the Witonggumi-Naesujeon section.

According to the existing investigation list through literature investigation (Kim *et al*., 2000; Shin and Kim, 2002), *Neocheiropteris ensata* (EN) and *Rumex longifolius* (DD) are taxa which have not been found in the existing investigations (Appendix 1). The natural growth area of *Neocheiropteris ensata* is assumed to be Jeju Island in Korea, so it would be necessary to decide again by collecting specimens in the future. *Rumex longifolius* grows in wetlands, and most of this plant grows and develops at the entrance of trails in the lower land.

Korean endemic plants

Endemic plants mean indigenous plants which grow and develop in a certain limited area. Korean endemic plants are unique plant genetic resources which have been adapted and evolving in the natural environment of the Korean Peninsula and distribute only in the South Korea (Korea National Arboretum, 2005), and they are precious data for explaining the area (Kim *et al*., 2008). Especially, as Ulleung-do is separated from the peninsula geographically and has a unique climate, there are lots of endemic plants only growing in Ulleung-do.

Endemic plants found in the Ulleung forest trails are total 28 taxa, and according to the existing investigation list through literature investigation (Kim *et al*., 2000; Shin and Kim, 2002), *Tilia taquetii, Paulownia coreana* and *Arisaema takesimense* are taxa which have not been found in the existing investigations (Appendix 1).

Total 17 taxa were found in the Seokpo-Naesujeon section including *Fagus engleriana, Phytolacca insularis, Hepatica maxima, Clematis trichotoma, Prunus takesimensis, Rubus takesimensis, Acer takesimense, Tilia insularis, Dystaenia takesimana, Ligustrum foliosum* for. *foliosum, Lamium takesimense, Veronica insularis, Campanula takesimana, Artemisia japonica* var. *hallaisanensis, Allium ochotense, Sasa coreana* and *Arisaema takesimense* (Table 4).

Totak 21 taxa were found in the Namyang-Taeharyeong section including *Athyrium acutipinnulum, Fagus engleriana, Phytolacca insularis, Silene takeshimensis, Hepatica maxima, Clematis trichotoma, Arabis takesimana, Prunus takesimensis, Rubus takesimensis, Acer takesimense, Tilia insularis, Tilia taquetii, Dystaenia takesimana, Ligustrum foliosum* for. *foliosum, Syringu patula* var. *venosa, Lamium takesimense,*

Table 4. Endemic plants in each section of the Ulleung Forest Trail

Korean name	Scientific name	A	B	C
섬고사리	*Athyrium acutipinnulum*		◎	◎
너도밤나무	*Fagus engleriana*	◎	◎	◎
섬자리공	*Phytolacca insularis*	◎	◎	◎
울릉장구채	*Silene takeshimensis*		◎	◎
섬노루귀	*Hepatica maxima*	◎	◎	◎
할미밀망	*Clematis trichotoma*	◎	◎	
섬현호색	*Corydalis filistipes*			◎
섬장대	*Arabis takesimana*		◎	◎
섬벚나무	*Prunus takesimensis*	◎	◎	◎
섬나무딸기	*Rubus takesimensis*	◎	◎	◎
섬단풍나무	*Acer takesimense*	◎	◎	◎
섬피나무	*Tilia insularis*	◎	◎	◎
뽕잎피나무	*Tilia taquetii*		◎	
섬제비꽃	*Viola takesimana*			◎
섬바디	*Dystaenia takesimana*	◎	◎	◎
개나리	*Forsythia koreana*			◎
섬쥐똥나무	*Ligustrum foliosum* for. *foliosum*	◎	◎	◎
섬개회나무	*Syringa patula* var. *venosa*		◎	◎
섬광대수염	*Lamium takesimense*	◎	◎	◎
오동나무	*Paulownia coreana*			◎
섬꼬리풀	*Veronica insularis*	◎	◎	◎
섬초롱꽃	*Campanula takesimana*	◎	◎	◎
섬쑥	*Artemisia japonica* var. *hallaisanensis*	◎		◎
각시서덜취	*Saussurea macrolepis*		◎	
울릉산마늘	*Allium ochotense*	◎	◎	◎
섬포아풀	*Poa takeshimana*			
신이대	*Sasa coreana*	◎		
섬남성	*Arisaema takesimense*	◎	◎	◎
	Total	17	21	24

*A: Seokpo-Naesujeon, B: Namyang-Taeharyeong, C: Witonggumi-Naesujeon

Veronica insularis, Campanula takesimana, Saussurea macrolepis, Allium ochotense and *Arisaema takesimense* (Table 4).

Total 24 taxa were found in the Witonggumi-Naesujeon section including *Athyrium acutipinnulum, Fagus engleriana, Phytolacca insularis, Silene takeshimensis, Hepatica maxima, Corydalis filistipes, Arabis takesimana, Prunus takesimensis, Rubus takesimense, Acer takesimense, Tilia insularis, Viola takesimana, Dystaenia takesimana, Forsythia koreana, Ligustrum foliosum* for. *foliosum, Syringa patula* var. *venosa, Lamium takesimense, Paulownia coreana, Veronica insularis, Campanula takesimana, Artemisia japonica* var. *hallaisanensis, Allium ochotense, Poa takeshimana* and *Arisaema takesimense* (Table 4). As these plants are also distributed along trails, damage by visitor's collecting or stamping them is also a concern.

As a result of comparing the Ulleung forest trail sections, the most endemic plants were found in the Witonggumi-Naesujeon section. Among them, *Sasa coreana* appears only in the Seokpo-Naesujeon section, *Tilia taquetii* and *Saussurea macrolepis* only in the Namyang-Taeharyeong section, and *Corydalis filistipes, Viola takesimana, Paulownia coreana* and *Poa takeshimana* only in the Witonggumi-Naesujeon section.

Specific plants based on the flora region

Specific plants based on the flora region are divided into I class to V class according to the flora region based on the distribution of plants and the importance of species (Ministry of Environment, 2006). Specific plants based on the flora region found in the Ulleung forest trails include 31 taxa from I class, 4 taxa from II class, 22 taxa from III class, 29 taxa from IV class and 5 taxa from V class, total 91 taxa (Table 5). According to the existing investigation list

Table 5. Specific plants based on the flora region in each section of the Ulleung Forest Trail

Degree	Korean name	Scientific name	A	B	C
I	속새	*Equisetum hyemale*	◎		
	실고사리	*Lygodium japonicum*	◎		
	콩짜개덩굴	*Lemmaphyllum microphyllum*	◎		
	바위고사리	*Sphenomeris chinensis*	◎		
	홍지네고사리	*Dryopteris erythrosora*	◎		
	쇠고비	*Cyrtomium fortunei*	◎		◎
	참나도히초미	*Polystichum ovatopaleaceum* var. *coraiense*		◎	◎
	푸조나무	*Aphananthe aspera*	◎		
	개대황	*Rumex longifolius*		◎	
	후박나무	*Machilus thunbergii*	◎	◎	◎
	참식나무	*Neolitsea sericea*	◎	◎	◎
	동백나무	*Camellia japonica*	◎	◎	◎
	사스레피나무	*Eurya japonica*	◎		
	애기괭이눈	*Chrysosplenium flagelliferum*	◎		◎
	산괭이눈	*Chrysosplenium japonicum*		◎	
	야광나무	*Malus baccata*			◎
	노랑물봉선	*Impatiens nolitangere* var. *nolitangere*		◎	
	줄사철나무	*Euonymus fortunei* var. *radicans*	◎	◎	◎
	사철나무	*Euonymus japonicus*	◎	◎	◎
	말오줌때	*Euscaphis japonica*		◎	
	거지덩굴	*Cayratia japonica*	◎	◎	◎
	보리밥나무	*Elaeagnus macrophylla*	◎	◎	◎
	식나무	*Aucuba japonica*		◎	◎
	송악	*Hedera rhombea*	◎	◎	◎
	갯기름나물	*Peucedanum japonicum*	◎		◎
	자금우	*Ardisia japonica*	◎		◎
	갯까치수염	*Lysimachia mauritiana*	◎		◎
	광나무	*Ligustrum japonicum* var. *japonicum*	◎		
	갯메꽃	*Calystegia soldanella*	◎		◎
	해국	*Aster sphathulifolius*	◎		◎
	천문동	*Asparagus cochinchinensis*	◎		
		Subtotal	24	14	18
II	공작고사리	*Adiantum pedatum*	◎	◎	◎
	난티나무	*Ulmus laciniata*	◎	◎	◎
	눈개승마	*Aruncus dioicus* var. *kamtschaticus*	◎	◎	◎
	각시서덜취	*Saussurea macrolepis*		◎	
		Subtotal	3	4	3

Table 5. Continued

Degree	Korean name	Scientific name	A	B	C
III	골고사리	*Asplenium scolopendrium*		◎	◎
	일색고사리	*Arachniodes standishii*	◎	◎	◎
	미역고사리	*Polypodium vulgare*	◎	◎	◎
	향나무	*Juniperus chinensis*			◎
	생달나무	*Cinnamomum japonicum*	◎	◎	
	까마귀쪽나무	*Litsea japonica*	◎		
	등수국	*Hydrangea petiolaris*	◎	◎	◎
	바위수국	*Schizophragma hydrangeoides*	◎	◎	◎
	탱자나무	*Poncirus trifoliata*			◎
	머귀나무	*Zanthoxylum ailanthoides*			◎
	감탕나무	*Ilex integra*			◎
	팔손이	*Fatsia japonica*			◎
	만병초	*Rhododendron brachycarpum*			◎
	산호수	*Ardisia pusilla*		◎	
	왕쥐똥나무	*Ligustrum ovalifolium*		◎	
	선갈퀴	*Asperula odorata*	◎	◎	◎
	호자덩굴	*Mitchella undulata*		◎	
	새비나무	*Callicarpa mollis*	◎	◎	
	털머위	*Farfugium japonicum*	◎		◎
	큰두루미꽃	*Maianthemum dilatatum*	◎	◎	◎
	두메부추	*Allium senescens* var. *senescens*			◎
	무늬천남성	*Arisaema thunbergii*		◎	
		Subtotal	10	13	15
IV	산고사리삼	*Sceptridium multifidium* var. *robustum*			◎
	밤일엽	*Neocheiropteris ensata*		◎	
	솔송나무	*Tsuga sieboldii*	◎	◎	◎
	섬잣나무	*Pinus parviflora*	◎	◎	◎
	측백나무	*Thuja orientalis*		◎	◎
	두메오리나무	*Alnus maximowiczii*	◎	◎	◎
	너도밤나무	*Fagus engleriana*	◎	◎	◎
	왕호장근	*Fallopia sachalinensis*	◎	◎	◎
	섬자리공	*Phytolacca insularis*	◎	◎	◎
	울릉장구채	*Silene takeshimensis*		◎	◎
	섬노루귀	*Hepatica maxima*	◎	◎	◎
	섬현호색	*Corydalis filistipes*			◎
	헐떡이풀	*Tiarella polyphylla*		◎	
	섬벚나무	*Prunus takesimensis*	◎	◎	◎
	당마가목	*Sorbus amurensis*	◎	◎	◎
	큰졸방제비꽃	*Viola kusanoana*	◎	◎	◎
	섬바디	*Dystaenia takesimana*	◎	◎	◎
	섬쥐똥나무	*Ligustrum foliosum* for. *foliosum*	◎	◎	◎
	섬꼬리풀	*Veronica insularis*	◎	◎	◎
	개종용	*Lathraea japonica*		◎	
	말오줌나무	*Sambucus sieboldiana* var. *pendula*	◎	◎	◎
	섬괴불나무	*Lonicera insularis*	◎		◎
	넓은잎쥐오줌풀	*Valeriana dageletiana*	◎	◎	
	섬초롱꽃	*Campanula takesimana*	◎	◎	◎
	섬쑥부쟁이	*Aster glehni*	◎		◎
	물엉겅퀴	*Cirsium nipponicum*		◎	◎
	섬조릿대	*Sasa kurilensis*	◎	◎	◎
	섬포아풀	*Poa takeshimana*			◎
	여우꼬리사초	*Carex blepharicarpa* var. *stenocarpa*	◎	◎	◎
		Subtotal	20	24	25
V	약모밀	*Houttuynia cordata*	◎		◎
	고추냉이	*Wasabia japonica*			◎
	섬개야광나무	*Cotoneaster wilsonii*			◎
	섬말나리	*Lilium hansonii*	◎	◎	◎
	큰연영초	*Trillium tschonoskii*	◎	◎	◎
		Subtotal	3	2	5
		Total	60	57	66

*A: Seokpo-Naesujeon, B: Namyang-Taeharyeong, C: Witonggumi-Naesujeon

through literature investigation (Kim *et al*., 2000; Shin and Kim, 2002), total 6 taxa including *Rumex longifolius* and *Malus baccata* from I class, *Fatsia japonica, Ligustrum ovalifolium* and *Callicarpa mollis* from III class, and *Neocheiropteris ensata* from IV class were additionally found, and it seems to be necessary to decide *Neocheiropteris ensata* again.

Total 60 taxa were found in the Seokpo-Naesujeon section; 23 taxa including *Equisetum hyemale* from I class; 2 taxa including *Adiantum pedatum* from II class; 9 taxa including *Arachniodes standishii* from III class, 19 taxa including *Tsuga sieboldii* from IV class; and 2 taxa including *Houttuynia cordata* from V class (Table 5).

Total 57 taxa were found in the Namyang-Taeharyeong section; 13 taxa including *Polystichum ovatopaleaceum* var. *coraiense* from I class; 3 taxa including *Adiantum pedatum* from II class; 12 taxa including *Asplenium scolopendrium* from III class; 23 taxa including *Neocheiropteris ensata* from IV class; and 1 taxon including *Lilium hansonii* from V class (Table 5).

Total 66 taxa were found in the Witonggumi-Naesujeon section; 17 taxa including *Cyrtomium fortunei* from I class; 2 taxa including *Adiantum pedatum* from II class; 14 taxa including *Asplenium scolopendrium* from III class; 24 taxa including *Sceptridium multifidium* var. *robustum* from IV class; and 4 taxa including *Houttuynia cordata* from V class (Table 5). Classes are divided based on the range of distribution of plants. Most plants belonging to IV class are endemic plants growing in Ulleung-do, and plants belonging to V class show isolation or discontinuous distribution. Accordingly, it requires specific interest focusing on IV class and V class.

As a result of comparing the Ulleung forest trail sections, the most specific plants were found in the Witonggumi-Naesujeon section. Among them, 9 species including *Equisetum hyemale* only appears in the Seokpo-Naesujeon section, 11 species including *Rumex longifolius* only in the Namyang-Taeharyeong section, and 11 species including *Malus baccata* only in the Witonggumi-Naesujeon section.

Naturalized plants

Naturalized plants growing in the Ulleung-do are total 65 taxa; 21 families, 49 genera, 63 species and 2 varieties (Park *at al.*, 2007). Whether naturalized plants are distributed or not is decided by the level of local adaptation and constant succession process (Kil *et al.*, 2006). Recently, the number of naturalized plants increases and these plants are distributed to the whole area due to seeds which flow in by being mixed with soils from lands, or wood and other materials for developing projects in Ulleung-do, and various seeds which are carried into the island for forestation. Especially, invasion of exotic species changes the function of ecosystem and threatens bio-diversity (Mooney *et al.*, 1986). According to the existing investigation list through literature investigation (Kim *et al*., 2000; Shin and Kim, 2002), naturalized plants found in the Ulleung forest trails include total 25 taxa; 10 families, 21 genera, 22 species and 3 varieties including additionally found 3 taxa such as *Medicago lupulina, Veronica persica* and *Bromus tectorum* var. *tectorum* in the Witonggumi-Naesujeon section (Table 6). This accounts for 38.64% of the whole naturalized plants in Ulleung-do. Naturalization rate in the Ulleung forest trail sections is 5.51%, and the urbanization index is 8.74%. When comparing the existing studies which found 54 taxa around Guam-Tonggumi (Kil *et al*., 2006), and 65 taxa around harbors and coastal roads (Park *et al*., 2007), it is judged that inflow of naturalized plants is quite small. As for the number of taxa by each family, Compositae includes 8 taxa, Gramineae 4 taxa and Leguminosae 3 taxa, similar to the statistics on naturalized plants in Korea by each family (Park, 2009). The ratio of Gramineae and Compositae is 48.00%, which is similar to the existing study (Kil *et al*., 2006) suggesting that Gramineae and Compositae account for more than 50 % of the whole amount of naturalized plants in Ulleung-do.

Total 16 taxa naturalized plants were found in the Seokpo-Naesujeon section; 7 families, 15 genera, 15 species and 1 variety including *Fallopia dumetorum, Rumex crispus, Chenopodium album* var. *album, Houttuynia cordata, Medicago polymorpha, Trifolium repens, Ambrosia artemisiifolia, Conyza canadensis, Cosmos bipinnatus, Erigeron annuus, Senecio vulgaris, Sonchus asper, Sonchus oleraceus, Xanthium strumarium, Avena fatua* and *Dactylis glomerata* (Table 6). These plants account for 24.62% of total naturalized plants in Ulleung-do, naturalization rate is 5.50%, and the urbanization index is 5.59%.

Total 7 taxa naturalized plants were found in the Namyang-Taeharyeong section; 5 families, 7 genera and 7 species including *Rumex crispus, Trifolium repens, Oenothera biennis, Veronica arvensis, Ambrosia artemisiifolia, Erigeron annuus* and *Sonchus oleraceus* (Table 6). These plants account for 10.77% of total naturalized plants in Ulleung-do, naturalization rate is 3.52% and the urbanization index is 2.45%.

Total 17 taxa naturalized plants were found in the Witonggumi-Naesujeon section; 10 families, 15 genera, 14 species and 3 varieties including *Rumex acetosella, Rumex crispus, Chenopodium album* var. *album, Houttuynia cordata, Brassica juncea* var. *juncea, Medicago lupulina, Trifolium repens, Oenothera biennis, Symphytum officinale, Veronica arvensis, Veronica persica, Erigeron annuus, Senecio vulgaris, Sonchus asper, Agropyron repens, Bromus tectorum* var. *tectorum and Dactylis glomerata* (Table 6). These plants account for 26.15% of total naturalized plants in Ulleung-do, naturalization rate is 6.44% and the urbanization index is 5.94%.

Among 11 taxa of wild flora disturbing the ecosystem (Ministry of Environment, 2009), *Rumex acetosella* appeared in the Witonggumi-Naesujeon section, and *Ambrosia artemisiifolia* appeared in the Seokpo-Naesujeon section and the Namyang-Taeharyeong section. *Rumex acetosella* is a herbaceous perennial native to Europe, common around a sunny roadside, and causes a great damage to pastureland (Lee *et al.*, 1995). *Ambrosia artemisiifolia* spreads on grasslands and roadsides, causes pollen diseases, and grows in groups around rivers, roads and railroads, preventing other plants from growing and reducing bio-diversity (Kang *et al*., 2010), which requires special management.

As a result of comparing the Ulleung forest trail section, there were the most naturalized plants in the Witonggumi-Naesujeon section. Among them, *Fallopia dumetorum, Medicago polymorpha, Conyza canadensis, Cosmos bipinnatus, Xanthium strumarium* and *Avena fatua* only appear in the Seokpo-Naesujeon section, and *Rumex acetosella, Brassica juncea* var. *juncea, Medicago lupulina, Symphytum officinale, Veronica persica, Agropyron repens* and *Bromus tectorum* var. *tectorum* only in the Witonggumi-Naesujeon section.

Naturalized plants in Ulleung-do are mainly distributed in harbors and coastal roads due to the effect of natural inflow such as winds, tidal current and ocean current, and artificial inflow such as visitors and exchange and barter with other areas (Park *et al.*, 2007). But, this study mainly investigated the inside of forest trails, showing lower inflow ratio of naturalized plants. Though distribution of naturalized plants in Ulleung-do is rather lower than that in other areas (Kil *et al.*, 2006), it is an island area sensitive to attacks of invaded species. Therefore, it is necessary to get interest in inflow and adaptation of naturalized plants in the future and to reserve native plants of Ulleung-do.

Conclusion and Suggestion

Vascular plants growing in the Ulleung forest trail areas are 454 taxa; 103 families, 296 genera, 364 species, 72 varieties, 15 forma and 3 subspecies. According to the existing investigation list through literature investigation (Kim *et al.*, 2000; Shin and Kim, 2002; Shin *et al.*, 2004), 48 taxa were additionally found. Endangered wild plant designated by the Ministry of Environment is 1 species (*Cotoneaster wilsonii*), and scores of this plant were found around Dodong. Rare plants are total 31 taxa, Korean endemic plants are total 29 taxa, and specific plants based on the flora region are total 91 taxa. Naturalized plants are total 25

Table 6. Naturalized plants in each section of the Ulleung Forest Trail

Family name	Korean name	Scientific name	A	B	C
Polygonaceae	닭의덩굴	*Fallopia dumetorum*	◎		
	애기수영	*Rumex acetosella*			◎
	소리쟁이	*Rumex crispus*	◎	◎	◎
Chenopodiaceae	흰명아주	*Chenopodium album* var. *album*	◎		◎
Saururaceae	약모밀	*Houttuynia cordata*	◎		◎
Cruciferae	갓	*Brassica juncea* var. *juncea*			◎
Leguminosae	잔개자리	*Medicago lupulina*			◎
	개자리	*Medicago polymorpha*	◎		
	토끼풀	*Trifolium repens*	◎	◎	◎
Onagraceae	달맞이꽃	*Oenothera biennis*		◎	◎
Boraginaceae	컴프리	*Symphytum officinale*			◎
Scrophulariaceae	선개불알풀	*Veronica arvensis*		◎	◎
	큰개불알풀	*Veronica persica*			◎
Compositae	돼지풀	*Ambrosia artemisiifolia*	◎	◎	
	망초	*Conyza canadensis*	◎		
	코스모스	*Cosmos bipinnatus*	◎		
	개망초	*Erigeron annuus*	◎	◎	◎
	개쑥갓	*Senecio vulgaris*	◎		◎
	큰방가지똥	*Sonchus asper*	◎		◎
	방가지똥	*Sonchus oleraceus*	◎	◎	
	도꼬마리	*Xanthium strumarium*	◎		
Gramineae	구주개밀	*Agropyron repens*			◎
	메귀리	*Avena fatua*	◎		
	털빕새귀리	*Bromus tectorum* var. *tectorum*			◎
	오리새	*Dactylis glomerata*	◎		◎
Total			16	7	17

*A: Seokpo-Naesujeon, B: Namyang-Taeharyeong, C: Witonggumi-Naesujeon

taxa, and 38.64% of total naturalized plants in Ulleung-do are distributed in this area. As a result of comparing the Ulleung forest trail sections, distribution of vascular plants is the highest in the Seokpo-Naesujeon section while rare plants, endemic plants, specific plants and naturalized plants are distributed the most in the Witonggumi-Naesujeon section.

Ulleung-do is very characteristic compared with the Korean Peninsula, and various species live in this island due to geographic and climatic factors as well as various kinds of landscape. Natural ecosystem of Ulleung-do is in danger to lose its original form gradually due to increase in visitors and in developing projects. When considering that the value of Ulleung lies in landscape differentiated from lands, habitat for various kinds of species and a repository of natural resources, it would requires administration and management with which it will be possible to enhance such a value of natural resources. Especially, when considering that the Ulleung forest trails are made by being connected to coastal roads except Seonginbong area, it is judged that additional inflow of naturalized plants may occur.

As a result of this study, future studies required for preserving and managing plants in the Ulleung forest trails are as follows. First, it requires basic materials on the distribution and records of vascular plants in the Ulleung forest trail by constantly collecting pressed plant specimens. Second, various plants grow and live in Ulleung-do despite it is quite a small island, but it is hard to access and recently, naturalized plants flow in the island frequently. Therefore, it is necessary to develop methodology to map habitats of plants. Besides, it would desirable to go along with the collection of pressed plant specimens. Third, plants are distributed by climatic factors based on the geographic effect. People in Ulleung-do generally refer to materials of Dodong Ulleung weather station, so it is necessary to install equipment which can measure temperature, humidity, soil temperature and humidity exactly. As for a plan to supplement this, it would be possible to conduct accurate interpretation about the distribution of plants if it would be based on the meteorological data through recent portable precise meteorological measurement equipment. Fourth, Korea adjoins Japan, the Far East Russia and China. Accordingly, it would be necessary to conduct comparative studies constantly on those countries' local plants in order to attain ecological, morphological and molecular genetic data of specific plants. Finally, as naturalized plants will flow in the island frequently in the future due to the characteristics of the Ulleung forest trails, it is necessary to monitor naturalized plants and to conduct systematic studies on the relation to visitors. If we preserve destroyed habitats, restore and increase specific plant species, prepare a plan for comprehensive environment preservation, manage naturalized plants and provide education and PR programs of plants in Ulleung-do, the Ulleung forest trails will play its role as a natural habitat and a place for environmental education, not just a succession of developing projects.

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Appendix 1. List of vascular plants distributed in the Ulleung Forest Trail Area

Scientific name and Korean name	A	B	C	D	E
Lycopodiaceae 석송과					
Lycopodium clavatum L. 석송	◎				
Lycopodium obscurum L. 만년석송	◎				
Lycopodium serratum Thunb. 뱀톱	◎				
Selaginellaceae 부처손과					
Selaginella sibirica (Milde) Hieron. 실사리	◎				
Selaginella tamariscina (P.Beauv.) Spring 부처손	◎	◎			
Equisetaceae 속새과					
Equisetum arvense L. 쇠뜨기	◎	◎	◎	◎	
Equisetum arvense var. *boreale* (Bong.) Rupr. 북쇠뜨기	◎				
Equisetum hyemale L. 속새	◎	◎			I
Equisetum palustre L. 개쇠뜨기	◎				
Equisetum pratense Ehrh. 물쇠뜨기	◎				
Equisetum ramosissimum Desf. 개속새	◎				
Ophioglossaceae 고사리삼과					
Sceptridium japonicum (Prantl) Lyon 산꽃고사리삼	◎				
Sceptridium multifidium var. *robustum* (Rupr.) Nishida 산고사리삼	◎			◎	IV
Sceptridium ternatum (Thunb.) Lyon 고사리삼	◎			◎	
Osmundaceae 고비과					
Osmunda cinnamomea var. *forkiensis* Copel. 꿩고비	◎				
Osmunda japonica Thunb. 고비	◎	◎	◎	◎	
Schizaeaceae 실고사리과					
Lygodium japonicum (Thunb.) Sw. 실고사리	◎	◎			I
Hymenophyllaceae 처녀이끼과					
Crepidomanes insigne (Bosch) Fu. 괴불이끼	◎				
Crepidomanes minutum (Blume) K.Iwats. 부채괴불이끼	◎				
Dennstaedtiaceae 잔고사리과					
Dennstaedtia hirsuta (Sw.) Mett. ex Miq. 잔고사리	◎	◎			
Dennstaedtia wilfordii (T.Moore) H. Christ 황고사리				◎	
Deparia conilii (Franch. & Sav.) M.Kato 좀진고사리	◎				
Deparia coreana (H.Christ) M.Kato 곱새고사리	◎				
Deparia japonica (Thunb.) M.Kato 진고사리	◎		◎		
Deparia pycnosora (H.Christ) M.Kato 털고사리	◎				
Hypolepis punctata (Thunb.) Mett. ex Kuhn 점고사리	◎				
Lemmaphyllum microphyllum C.Presl 콩짜개덩굴	◎	◎			I
Lepisorus onoei (Franch. & Sav.) Ching 애기일엽초	◎				
Lepisorus thunbergianus (Kaulf.) Ching 일엽초	◎	◎			
Lepisorus ussuriensis (Regel & Maack) Ching 산일엽초	◎				
Davalliaceae 넉줄고사리과					
Davallia mariesii T.Moore ex Baker 넉줄고사리	◎	◎			
Thelypteris decursivepinnata (H.C.Hall) Ching 설설고사리	◎				
Thelypteris laxa (Franch. & Sav.) Ching 드문고사리	◎				
Thelypteris parasitica (L.) Fosberg 털별고사리	◎				
Thelypteris phegopteris (L.) Sloss. 가래고사리	◎				
Thelypteris quelpaertensis (H.Christ) Ching 큰처녀고사리	◎				
Woodsia polystichoides D.C.Eaton 우드풀	◎	◎			
Lindsaeaceae 비고사리과					
Adiantum monochlamys D.C.Eaton var. *monochlamys* 섬공작고사리	◎				
Adiantum pedatum L. 공작고사리	◎	◎	◎	◎	VU,II
Pleurosoriopsis makinoi (Maxim. ex Makino) Fomin 좀고사리	◎				
Sphenomeris chinensis (L.) Maxon 바위고사리	◎	◎			I
Hemionitidaceae 공작고사리과					
Coniogramme intermedia Hieron. 고비고사리	◎				
Coniogramme japonica (Thunb.) Diels 가지고비고사리	◎				
Aspleniaceae 꼬리고사리과					
Asplenium incisum Thunb. 꼬리고사리	◎	◎	◎	◎	
Asplenium scolopendrium L. 골고사리	◎		◎	◎	LC,III
Athyrium acutipinnulum Kodama ex Nakai 섬고사리	◎		◎	◎	E
Athyrium brevifrons Kodama ex Nakai 참새발고사리	◎			◎	

Appendix 1. Continued

Scientific name and Korean name	A	B	C	D	E
Athyrium deltoidofrons Makino 구슬개고사리	◎				
Athyrium distentifolium Tausch ex Opiz 산고사리	◎				
Athyrium niponicum (Mett.) Hance 개고사리	◎	◎		◎	
Athyrium vidalii (Franch. & Sav.) Nakai 산개고사리	◎				
Athyrium yokoscense (Franch. & Sav.) H.Christ 뱀고사리	◎	◎			
Pteridium aquilinum var. *latiusculum* (Desv.) Underw. ex Hell. 고사리	◎	◎	◎	◎	
Pteris multifida Poir. 봉의꼬리	◎				
Dryopteridaceae 면마과					
Arachniodes borealis Seriz. 왁살고사리	◎				
Arachniodes mutica (Franch. & Sav.) Ohwi 털비늘고사리	◎				
Arachniodes standishii (T.Moore) Ohwi 일색고사리	◎	◎	◎	◎	III
Dryopteris bissetiana (Baker) C.Chr. 산족제비고사리			◎	◎	
Dryopteris chinensis (Baker) Koidz. 가는잎족제비고사리	◎				
Dryopteris crassirhizoma Nakai 관중	◎	◎	◎	◎	
Dryopteris erythrosora (D.C.Eaton) Kuntze 홍지네고사리	◎	◎			I
Dryopteris expansa (C.Presl) Fraser-Jenk. & Jermy 퍼진고사리	◎				
Dryopteris hikonensis (H.Ito) Nakaike 큰족제비고사리	◎				
Dryopteris lacera (Thunb.) Kuntze 비늘고사리	◎		◎	◎	
Dryopteris maximowiczii (Baker) Kuntze 진저리고사리	◎				
Dryopteris nipponensis Koidz. 참지네고사리	◎				
Dryopteris sacrosanta Koidz. 애기족제비고사리	◎				
Dryopteris tokyoensis (Matsum. ex Makino) C.Chr. 느리미고사리	◎				
Dryopteris uniformis (Makino) Makino 곰비늘고사리	◎		◎	◎	
Dryopteris varia (L.) Kuntze 족제비고사리	◎	◎			
Neocheiropteris ensata (Thunb.) Ching 밤일엽			◎		EN,IV
Onoclea orientalis (Hook.) Hook. 개면마	◎	◎	◎	◎	
Onoclea sensibilis var. *interrupta* Maxim. 야산고비	◎				
Thelypteridaceae 처녀고사리과					
Stegnogramma pozoi subsp. *mollisima* (Fisch. ex Kunze) K.Iwats. 진퍼리고사리	◎				
Polypodiaceae 고란초과					
Crypsinus hastatus (Thunb.) Copel. 고란초	◎				
Cyrtomium caryotideum var. *coreanum* Nakai 참쇠고비	◎				
Cyrtomium falcatum (L.f.) C.Presl 도깨비쇠고비	◎	◎		◎	
Cyrtomium fortunei J.Sm. 쇠고비	◎	◎		◎	I
Polypodium vulgare L. 미역고사리	◎	◎	◎	◎	VU,III
Polystichum braunii (Spenn.) Fee 좀나도히초미	◎				
Polystichum ovatopaleaceum var. *coraiense* (H.Christ) Sa.Kurata 참나도히초미	◎		◎	◎	I
Polystichum polyblepharum (Roem. ex Kunze) C.Presl var. *polyblepharum* 나도히초미	◎				
Polystichum retrosopaleaceum (Kodama) Tagawa 비늘개관중	◎				
Polystichum tripteron (Kunze) C.Presl for. *tripteron* 십자고사리	◎	◎	◎	◎	
Polystichum tripteron for. *subpinnatum* H.Ito 큰십자고사리	◎				
Pyrrosia hastata (Thunb. ex Houtt.) Ching 세뿔석위	◎				
Pyrrosia linearifolia (Hook.) Ching 우단일엽	◎				
Ginkgoaceae 은행나무과					
Ginkgo biloba L. 은행나무	◎			◎	
Pinaceae 소나무과					
Cedrus deodara (Roxb.) Loudon 개잎갈나무	◎				
Larix kaempferi (Lamb.) Carriere 일본잎갈나무	◎	◎			
Picea jezoensis (Siebold & Zucc.) Carriere 가문비나무	◎				
Pinus densiflora for. *multicaulis* Uyeki 반송	◎				
Pinus densiflora Siebold & Zucc. 소나무	◎		◎	◎	
Pinus parviflora Siebold & Zucc. 섬잣나무	◎	◎	◎	◎	IV
Pinus rigida Mill. 리기다소나무	◎				
Pinus thunbergii Parl. 곰솔	◎	◎	◎	◎	
Tsuga sieboldii Carriere 솔송나무	◎	◎	◎	◎	LC,IV
Taxodiaceae 낙우송과					
Cryptomeria japonica (L.f.) D.Don 삼나무	◎	◎	◎	◎	
Cupressaceae 측백나무과					
Chamaecyparis obtusa (Siebold & Zucc.) Endl. 편백	◎	◎		◎	

Appendix 1. Continued

Scientific name and Korean name	A	B	C	D	E
Chamaecyparis pisifera 'Squarrosa' 화백 '스쿠아로사'	◎				
Juniperus chinensis L. 향나무	◎			◎	III
Juniperus chinensis 'Maney' 향나무 '매니'	◎				
Juniperus chinensis var. *procumbens* (Siebold) Endl. 섬향나무	◎				
Juniperus rigida Siebold & Zucc. 노간주나무	◎			◎	
Juniperus virginiana L. 연필향나무	◎				
Thuja orientalis L. 측백나무	◎		◎	◎	LC,IV
Cephalotaxaceae 개비자나무과					
Cephalotaxus koreana Nakai 개비자나무	◎				
Taxaceae 주목과					
Taxus baccata var. *latifolia* Nakai 회솔나무	◎	◎	◎	◎	VU
Taxus cuspidata Siebold & Zucc. 주목	◎				
Torreya nucifera (L.) Siebold & Zucc. 비자나무	◎				
Juglandaceae 가래나무과					
Juglans regia Dode 호두나무	◎				
Salicaceae 버드나무과					
Populus davidiana Dode 사시나무	◎				
Populus deltoides Marsh. 미루나무	◎				
Populus nigra var. *italica* Koehne 양버들	◎			◎	
Salix caprea L. 호랑버들	◎	◎			
Salix gracilistyla Miq. 갯버들	◎	◎			
Salix hallaisanensis H.Lev. for. *hallaisanensis* 떡버들	◎				
Salix ishidoyana Nakai 섬버들	◎				
Salix koreensis Andersson 버드나무	◎			◎	
Salix koriyanagi Kimura for. *koriyanagi* 키버들	◎				
Salix matsudana for. *tortuosa* Rehder 용버들	◎				
Salix pseudolasiogyne H.Lev. 능수버들	◎				
Salix rorida Laksch. var. *rorida* 분버들	◎				
Betulaceae 자작나무과					
Alnus maximowiczii Callier 두메오리나무	◎	◎	◎	◎	IV
Alnus sibirica Fisch. ex Turcz. 물오리나무	◎	◎		◎	
Carpinus cordata Blume 까치박달	◎	◎			
Carpinus laxiflora (Siebold & Zucc.) Blume var. *laxiflora* 서어나무	◎	◎		◎	
Corylus heterophylla Fisch. ex Trautv. var. *heterophylla* 개암나무	◎	◎			
Corylus sieboldiana var. *mandshurica* (Maxim. & Rupr.) C.K.Schneid. 물개암나무	◎				
Fagaceae 참나무과					
Castanea crenata Siebold & Zucc. 밤나무	◎				
Fagus engleriana Seemen ex Diels 너도밤나무	◎	◎	◎	◎	E,IV
Quercus acutissima Carruth. 상수리나무	◎	◎		◎	
Quercus mongolica Fisch. ex Ledeb. 신갈나무	◎				
Quercus salicina Blume 참가시나무	◎				
Quercus variabilis Blume 굴참나무	◎				
Ulmaceae 느릅나무과					
Aphananthe aspera (Thunb.) Planch. 푸조나무	◎	◎			I
Celtis bungeana Blume 좀풍게나무	◎				
Celtis choseniana Nakai 검팽나무	◎	◎	◎		LC
Celtis jessoensis Koidz. 풍게나무	◎			◎	
Celtis sinensis Pers. 팽나무	◎	◎	◎		
Ulmus davidiana var. *japonica* (Rehder) Nakai 느릅나무	◎	◎			
Ulmus laciniata (Trautv.) Mayr 난티나무	◎	◎	◎	◎	II
Ulmus macrocarpa Hance 왕느릅나무	◎				
Zelkova serrata (Thunb.) Makino 느티나무	◎	◎	◎	◎	
Moraceae 뽕나무과					
Broussonetia kazinoki Siebold 닥나무	◎	◎			
Broussonetia papyrifera (L.) L'Her. ex Vent. 꾸지나무	◎			◎	
Broussonetia papyrifera for. *oppositifolia* Nakai 마주잎꾸지나무	◎				
Ficus carica L. 무화과나무	◎	◎		◎	
Morus alba L. 뽕나무	◎	◎		◎	
Morus bombycis for. *dissecta* Nakai ex Mori 가새뽕나무	◎				

Appendix 1. Continued

Scientific name and Korean name	A	B	C	D	E
Morus bombycis Koidz. var. *bombycis* 산뽕나무	◎	◎	◎		
Morus bombycis var. *maritima* Koidz. 섬뽕나무	◎		◎	◎	
Cannabaceae 삼과					
Cannabis sativa L. 삼	◎				
Humulus japonicus Sieboid & Zucc. 환삼덩굴	◎	◎			
Urticaceae 쐐기풀과					
Boehmeria nivea (L.) Gaudich. 모시풀	◎	◎			
Boehmeria nivea var. *nipononivea* (Koidz.) W.T.Wang 섬모시풀	◎				
Boehmeria pannosa Nakai & Satake 왕모시풀	◎	◎		◎	
Boehmeria platanifolia Franch. & Sav. 개모시풀	◎		◎		
Boehmeria spicata (Thunb.) Thunb. 좀깨잎나무	◎	◎	◎	◎	
Boehmeria tricuspis (Hance) Makino 거북꼬리	◎	◎	◎		
Boehmeria tricuspis var. *unicuspis* Makino 풀거북꼬리	◎				
Pilea japonica (Maxim.) Hand.-Mazz. 산물통이		◎			
Pilea mongolica Wedd. 모시물통이	◎				
Urtica laetevirens Maxim. 애기쐐기풀	◎				
Urtica thunbergiana Siebold & Zucc. 쐐기풀	◎				
Santalaceae 단향과					
Thesium chinense Turcz. 제비꿀	◎				
Loranthaceae 겨우살이과					
Viscum album var. *coloratum* (Kom.) Ohwi 겨우살이	◎				
Polygonaceae 마디풀과					
Fagopyrum esculentum Moench 메밀	◎				
Fallopia dumetorum (L.) Holub 닭의덩굴	◎	◎			N
Fallopia sachalinensis (F.Schmidt) RonseDecr. 왕호장근	◎	◎	◎	◎	IV
Persicaria chinensis (L.) Nakai 덩굴모밀	◎				
Persicaria conspicua (Nakai) Nakai ex Mori 꽃여뀌	◎				
Persicaria dissitiflora (Hemsl.) H.Gross ex Mori 가시여뀌			◎		
Persicaria filiformis (Thunb.) Nakai ex Mori 이삭여뀌	◎	◎	◎	◎	
Persicaria hydropiper (L.) Spach var. *hydropiper* 여뀌	◎	◎			
Persicaria lapathifolia (L.) Gray var. *lapathifolia* 흰여뀌	◎				
Persicaria longiseta (Bruijn) Kitag. 개여뀌	◎	◎	◎	◎	
Persicaria nepalensis (Meisn.) H.Gross 산여뀌	◎				
Persicaria nodosa (Pers.) Opiz 명아자여뀌	◎				
Persicaria posumbu var. *laxiflora* (Meisn.) H.Hara 장대여뀌	◎				
Persicaria thunbergii (Siebold & Zucc.) H.Gross ex Nakai 고마리	◎	◎	◎		
Persicaria vulgaris Webb & Moq. 봄여뀌	◎				
Polygonum aviculare L. 마디풀	◎	◎		◎	
Rumex acetosa L. 수영	◎	◎			
Rumex acetosella L. 애기수영	◎			◎	N
Rumex aquaticus L. 토대황	◎				
Rumex conglomeratus Murray 묵밭소리쟁이	◎	◎			
Rumex crispus L. 소리쟁이	◎	◎	◎	◎	N
Rumex japonicus Houtt. 참소리쟁이	◎				
Rumex longifolius DC. 개대황			◎		DD,I
Phytolaccaceae 자리공과					
Phytolacca esculenta VanHoutte 자리공	◎				
Phytolacca insularis Nakai 섬자리공	◎	◎	◎	◎	VU,E,IV
Portulacaceae 쇠비름과					
Portulaca oleracea L. 쇠비름	◎	◎			
Caryophyllaceae 석죽과					
Agrostemma githago L. 선옹초	◎				
Arenaria serpyllifolia L. 벼룩이자리	◎				
Cerastium holosteoides var. *hallaisanense* (Nakai) Mizush. 점나도나물	◎	◎	◎		
Cucubalus baccifer var. *japonicus* Miq. 덩굴별꽃	◎				
Dianthus chinensis L. var. *chinensis* 패랭이꽃	◎				
Dianthus littorosus Makino ex Nakai 섬패랭이꽃	◎				
Dianthus longicalyx Miq. 술패랭이꽃	◎	◎		◎	
Pseudostellaria heterophylla (Miq.) Pax ex Pax & Hoffm. 개별꽃			◎		

Appendix 1. Continued

Scientific name and Korean name	A	B	C	D	E
Sagina maxima A.Gray 큰개미자리	◎				
Sagina maxima for. *crassicaulis* (S.Watson) Mizush. 수개미자리	◎				
Silene aprica var. *oldhamiana* (Miq.) C.Y.Wu 갯장구채	◎				
Silene armeria L. 끈끈이대나물	◎				
Silene firma Siebold & Zucc. 장구채	◎				
Silene takeshimensis Uyeki & Sakata 울릉장구채	◎		◎	◎	E,IV
Spergularia marina (L.) Griseb. 갯개미자리	◎				
Stellaria alsine var. *undulata* (Thunb.) Ohwi 벼룩나물	◎			◎	
Stellaria aquatica (L.) Scop. 쇠별꽃	◎	◎		◎	
Stellaria media (L.) Vill. 별꽃	◎	◎		◎	
Vaccaria vulgaris Host 말뱅이나물	◎				
Chenopodiaceae 명아주과					
Atriplex gmelinii C.A.Mey. 가는갯는쟁이	◎				
Atriplex subcordata Kitag. 갯는쟁이	◎				
Chenopodium album L. var. *album* 흰명아주	◎	◎		◎	N
Chenopodium album var. *centrorubrum* Makino 명아주	◎	◎			
Chenopodium bryoniaefolium Bunge 청명아주	◎				
Chenopodium ficifolium Smith 좀명아주	◎				
Chenopodium glaucum L. 취명아주	◎				
Kochia scoparia (L.) Schrad. var. *scoparia* 댑싸리	◎				
Salicornia europaea L. 퉁퉁마디	◎				
Suaeda glauca (Bunge) Bunge 나문재	◎				
Amaranthaceae 비름과					
Achyranthes japonica (Miq.) Nakai 쇠무릎	◎	◎			
Amaranthus lividus L. 개비름	◎				
Amaranthus mangostanus L. 비름	◎	◎			
Amaranthus retroflexus L. 털비름	◎				
Cactaceae 선인장과					
Opuntia ficus-indica Mill. 선인장	◎				
Magnoliaceae 목련과					
Magnolia sieboldii K.Koch 함박꽃나무	◎				
Schisandraceae 오미자과					
Schisandra chinensis (Turcz.) Baill. 오미자			◎	◎	
Lauraceae 녹나무과					
Cinnamomum japonicum Siebold ex Nees 생달나무	◎	◎	◎		III
Lindera obtusiloba Blume var. *obtusiloba* 생강나무	◎	◎			
Litsea japonica (Thunb.) Juss. 까마귀쪽나무	◎	◎			III
Machilus thunbergii Siebold & Zucc. 후박나무	◎	◎	◎	◎	I
Neolitsea aciculata (Blume) Koidz. 새덕이	◎				
Neolitsea sericea (Blume) Koidz. 참식나무	◎	◎	◎	◎	I
Ranunculaceae 미나리아재비과					
Anemone reflexa Steph. & Willd. 회리바람꽃	◎				
Cimicifuga dahurica (Turcz. ex Fisch. & C.A.Mey.) Maxim. 눈빛승마	◎				
Cimicifuga foetida L. 황새승마	◎				
Clematis apiifolia DC. 사위질빵	◎	◎	◎	◎	
Clematis brevicaudata DC. 좀사위질빵	◎				
Clematis terniflora DC. 참으아리	◎	◎			
Clematis trichotoma Nakai 할미밀망	◎	◎	◎		E
Hepatica maxima Nakai 섬노루귀	◎	◎	◎	◎	VU,IV
Pulsatilla koreana (Yabe ex Nakai) Nakai ex Mori 할미꽃	◎				
Ranunculus chinensis Bunge 젓가락나물	◎				
Ranunculus japonicus Thunb. 미나리아재비	◎				
Ranunculus quelpaertensis (H.Lev.) Nakai 왜젓가락나물	◎				
Ranunculus sceleratus L. 개구리자리	◎				
Thalictrum aquilegifolium var. *sibiricum* Regel & Tiling 꿩의다리	◎	◎	◎	◎	
Thalictrum filamentosum var. *tenerum* (Huth) Ohwi 산꿩의다리	◎	◎	◎		
Thalictrum kemense Fr. 큰꿩의다리	◎				
Thalictrum kemense var. *hypoleucum* (Siebold & Zucc.) Kitag. 좀꿩의다리	◎				
Thalictrum rochebrunianum var. *grandisepalum* (H.Lev.) Nakai 금꿩의다리	◎				

Appendix 1. Continued

Scientific name and Korean name	A	B	C	D	E
Paeoniaceae 작약과					
Paeonia lactiflora Pall. 작약				◎	
Paeonia suffruticosa Andr. 모란	◎			◎	
Berberidaceae 매자나무과					
Berberis amurensis var. *latifolia* Nakai 왕매발톱나무	◎			◎	
Berberis amurensis var. *quelpaertensis* Nakai 섬매발톱나무	◎				
Lardizabalaceae 으름덩굴과					
Akebia quinata (Thunb.) Decne. 으름덩굴	◎	◎		◎	
Stauntonia hexaphylla (Thunb.) Decne. 멀꿀	◎				
Menispermaceae 방기과					
Cocculus trilobus (Thunb.) DC. 댕댕이덩굴	◎	◎		◎	
Menispermum dauricum DC. 새모래덩굴	◎				
Saururaceae 삼백초과					
Houttuynia cordata Thunb. 약모밀	◎	◎		◎	V,N
Saururus chinensis (Lour.) Baill. 삼백초	◎				M-II
Aristolochiaceae 쥐방울덩굴과					
Asarum sieboldii Miq. 족도리풀			◎		
Actinidiaceae 다래나무과					
Actinidia arguta (Siebold & Zucc.) Planch. ex Miq. var. *arguta* 다래	◎	◎			
Actinidia kolomikta (Maxim. & Rupr.) Maxim. 쥐다래	◎				
Actinidia polygama (Siebold & Zucc.) Planch. ex Maxim. 개다래	◎	◎			
Actinidia rufa (Siebold & Zucc.) Planch. ex Miq. 섬다래	◎				
Theaceae 차나무과					
Camellia japonica L. 동백나무	◎	◎	◎	◎	I
Camellia sinensis L. 차나무	◎				
Eurya japonica Thunb. 사스레피나무	◎	◎			I
Guttiferae 물레나물과					
Hypericum erectum Thunb. 고추나물	◎		◎	◎	
Hypericum japonicum Thunb. 애기고추나물	◎				
Triadenum japonicum (Blume) Makino 물고추나물	◎				
Papaveraceae 양귀비과					
Chelidonium majus var. *asiaticum* (Hara) Ohwi 애기똥풀	◎	◎	◎	◎	
Fumariaceae 현호색과					
Corydalis filistipes Nakai 섬현호색	◎			◎	CR,E,IV
Corydalis heterocarpa Siebold & Zucc. 염주괴불주머니	◎	◎			
Corydalis ochotensis Turcz. 눈괴불주머니	◎	◎		◎	
Corydalis pallida (Thunb.) Pers.괴불주머니	◎				
Corydalis platycarpa (Maxim.) Makino 갯괴불주머니	◎			◎	
Corydalis speciosa Maxim. 산괴불주머니	◎	◎	◎		
Cruciferae 십자화과					
Arabis hirsuta (L.) Scop. 털장대				◎	
Arabis stelleri DC. 갯장대	◎			◎	
Arabis takesimana Nakai 섬장대	◎		◎	◎	E
Brassica juncea (L.) Czern. var. *juncea* 갓	◎			◎	N
Brassica napus L. 유채	◎				
Brassica oleracea var. *capitata* L. 양배추	◎				
Brassica rapa var. *glabra* Regel 배추	◎				
Capsella bursapastoris (L.) L.W. *Medicus* 냉이	◎	◎		◎	
Cardamine fallax L. 좁쌀냉이	◎				
Cardamine flexuosa With. 황새냉이	◎	◎		◎	
Cardamine impatiens L. 싸리냉이	◎				
Cardamine impatiens var. *obutusifolia* (Knaf) O.E.Schulz 섬싸리냉이	◎				
Cardamine leucantha (Tausch) O.E.Schulz var. *leucantha* 미나리냉이	◎				
Cardamine scutata Thunb. 큰황새냉이	◎				
Draba nemorosa L. for. *nemorosa* 꽃다지	◎	◎		◎	
Lepidium apetalum Willd. 다닥냉이	◎				
Nasturtium officinale R.Br. 물냉이	◎				
Raphanus sativus L. 무	◎				
Raphanus sativus var. *hortensis* for. *raphanistroides* Makino 갯무	◎				

Appendix 1. Continued

Scientific name and Korean name	A	B	C	D	E
Rorippa indica (L.) Hiern 개갓냉이	◎				
Rorippa palustris (Leyss.) Besser 속속이풀	◎				
Wasabia japonica (Miq.) Matsum. 고추냉이	◎			◎	DD,V
Platanaceae 버즘나무과					
Platanus orientalis L. 버즘나무	◎				
Crassulaceae 돌나물과					
Orostachys malacophylla (Pall.) Fisch. 둥근바위솔	◎				
Sedum middendorffianum Maxim. 애기기린초	◎				
Sedum oryzifolium Makino 땅채송화	◎		◎	◎	
Sedum sarmentosum Bunge 돌나물	◎	◎	◎	◎	
Sedum takesimense Nakai 섬기린초	◎	◎	◎	◎	
Saxifragaceae 범의귀과					
Astilbe koreana (Kom.) Nakai 숙은노루오줌	◎				
Astilbe rubra Hook.f. & Thomson var. *rubra* 노루오줌	◎				
Chrysosplenium flagelliferum F.Schmidt 애기괭이눈	◎	◎		◎	I
Chrysosplenium grayanum Maxim. 괭이눈	◎	◎			
Chrysosplenium japonicum (Maxim.) Makino 산괭이눈	◎		◎		I
Deutzia glabrata Kom. 물참대	◎				
Hydrangea macrophylla (Thunb.) Ser. 수국	◎				
Hydrangea petiolaris Siebold & Zucc. 등수국	◎	◎	◎	◎	III
Hydrangea serrata for. *acuminata* (Siebold & Zucc.) Wilson 산수국	◎	◎			
Parnassia palustris L. 물매화	◎				
Philadelphus schrenckii var. *jackii* Koehne 털고광나무	◎				
Philadelphus schrenkii Rupr. var. *schrenkii* 고광나무	◎				
Philadelphus tenuifolius Rupr. & Maxim. 얇은잎고광나무	◎				
Ribes maximowiczianum Kom. 명자순	◎				
Saxifraga fortunei var. *incisolobata* (Engl. & Irmsch.) Nakai 바위떡풀	◎	◎			
Saxifraga fortunei var. *pilosissima* Nakai 털바위떡풀	◎				
Schizophragma hydrangeoides Siebold & Zucc. 바위수국	◎	◎	◎	◎	III
Tiarella polyphylla D.Don 헐떡이풀	◎		◎		LC,IV
Eucommiaceae 두충과					
Eucommia ulmoides Oliv. 두충	◎				
Pittosporaceae 돈나무과					
Pittosporum tobira (Thunb.) W.T.Aiton 돈나무	◎				
Rosaceae 장미과					
Agrimonia coreana Nakai 산짚신나물	◎		◎		
Agrimonia pilosa Ledeb. 짚신나물	◎	◎	◎		
Aruncus dioicus var. *kamtschaticus* (Maxim.) H.Hara 눈개승마	◎	◎	◎	◎	II
Chaenomeles sinensis (Thouin) Koehne 모과나무	◎			◎	
Chaenomeles speciosa (Sweet) Nakai 산당화				◎	
Cotoneaster wilsonii Nakai 섬개야광나무	◎			◎	M-I,CR,V
Duchesnea indica (Andr.) Focke 뱀딸기	◎	◎	◎	◎	
Eriobotrya japonica (Thunb.) Lindl. 비파나무	◎				
Filipendula glaberrima (Nakai) Nakai 터리풀				◎	
Fragaria ananassa Duch. 딸기	◎			◎	
Fragaria nipponica Makino 흰땃딸기	◎				
Geum japonicum Thunb. 뱀무	◎		◎	◎	
Kerria japonica (L.) DC. for. *japonica* 황매화	◎				
Kerria japonica for. *pleniflora* (Witte) Rehder 죽단화	◎				
Malus baccata Borkh. 야광나무				◎	I
Malus baccata var. *mandshurica* (Maxim.) C.K.Schneid. 털야광나무	◎				
Malus pumila Mill. 사과나무	◎				
Physocarpus insularis (Nakai) Nakai 섬국수나무	◎				
Potentilla chinensis Ser. var. *chinensis* 딱지꽃	◎				
Potentilla dickinsii var. *glabrata* Nakai 섬양지꽃	◎				
Potentilla freyniana Bornm. 세잎양지꽃	◎			◎	
Pourthiaea villosa (Thunb.) Decne. var. *villosa* 윤노리나무	◎		◎		
Pourthiaea villosa var. *zollingeri* (Decne.) C.K.Schneid. 털윤노리나무	◎				
Prunus armeniaca var. *ansu* Maxim. 살구나무	◎			◎	

Appendix 1. Continued

Scientific name and Korean name	A	B	C	D	E
Prunus glandulosa for. *albiplena* Koehne 옥매	◎				
Prunus mume Siebold & Zucc. for. *mume* 매실나무	◎			◎	
Prunus persica (L.) Batsch for. *persica* 복사나무	◎			◎	
Prunus salicina Lindl. var. *salicina* 자두나무	◎				
Prunus sargentii Rehder 산벚나무	◎	◎	◎		
Prunus sesrulata for. *fugenzo* 겹벚꽃나무	◎				
Prunus takesimensis Nakai 섬벚나무	◎	◎	◎	◎	E,IV
Pyrus pyrifolia (Burm.f.) Nakai 돌배나무				◎	
Pyrus pyrifolia var. *culta* (Makino) Nakai 배나무	◎			◎	
Pyrus ussuriensis Maxim. var. *ussuriensis* 산돌배	◎				
Pyrus ussuriensis var. *macrostipes* (Nakai) T.B.Lee 참배	◎				
Rosa maximowicziana Regel var. *maximowicziana* 용가시나무	◎				
Rosa multiflora Thunb. var. *multiflora* 찔레꽃	◎			◎	
Rosa multiflora var. *platyphylla* Thory 덩굴장미	◎				
Rosa rugosa Thunb. var. *rugosa* 해당화	◎				
Rosa spp. 장미(R. spp.)	◎				
Rosa wichuraiana Crep. ex Franch. & Sav. 돌가시나무	◎	◎			
Rubus idaeus var. *microphyllus* Turcz. 멍덕딸기			◎		
Rubus longisepalus Nakai var. *longisepalus* 맥도딸기	◎				
Rubus oldhamii Miq. 줄딸기	◎	◎			
Rubus parvifolius L. for. *parvifolius* 멍석딸기	◎	◎			
Rubus phoenicolasius Maxim. for. *phoenicolasius* 곰딸기	◎	◎	◎	◎	
Rubus takesimensis Nakai 섬나무딸기	◎	◎	◎	◎	E
Sanguisorba officinalis L. 오이풀	◎	◎			
Sorbus amurensis Koehne 당마가목	◎	◎	◎	◎	IV
Sorbus commixta for. *rufo-hirtella* Nakai 왕털마가목	◎				
Sorbus commixta Hedl. 마가목	◎	◎	◎	◎	
Spiraea blumei G.Don 산조팝나무	◎				
Spiraea fritschiana Schneid 참조팝나무	◎				
Spiraea microgyna Nakai 좀조팝나무	◎				
Stephanandra incisa (Thunb.) Zabel var. *incisa* 국수나무	◎	◎			
Leguminosae 콩과					
Aeschynomene indica L. 자귀풀	◎	◎			
Albizia julibrissin Durazz. 자귀나무	◎	◎			
Amorpha fruticosa L. 족제비싸리	◎	◎			
Amphicarpaea bracteata subsp. *edgeworthii* (Benth.) H.Ohashi 새콩	◎	◎			
Astragalus membranaceus Bunge var. *membranaceus* 황기	◎				
Caragana sinica (Buc'hoz) Rehder 골담초	◎				
Cercis chinensis Bunge 박태기나무	◎				
Chamaecrista nomame (Siebold) H.Ohashi 차풀	◎	◎			
Desmodium caudatum (Thunb.) DC. 된장풀	◎				
Desmodium oldhami Oliv. 큰도둑놈의갈고리	◎				
Desmodium podocarpum var. *mandshuricum* Maxim. 애기도둑놈의갈고리	◎		◎		
Desmodium podocarpum var. *oxyphyllum* (DC.) H.Ohashi 도둑놈의갈고리	◎				
Glycine max (L.) Merr. 콩	◎				
Glycine soja Siebold & Zucc. 돌콩			◎		
Kummerowia stipulacea (Maxim.) Makino 둥근매듭풀	◎				
Kummerowia striata (Thunb. ex Murray) Schindl. 매듭풀	◎	◎			
Lathyrus davidii Hance 활량나물	◎				
Lathyrus japonicus Willd 갯완두	◎		◎		
Lespedeza bicolor Turcz. 싸리		◎			
Lespedeza cuneata G.Don 비수리	◎	◎			
Lespedeza cyrtobotrya Miq. 참싸리	◎	◎			
Lespedeza maximowiczii C.K.Schneid. 조록싸리	◎	◎			
Lespedeza tomentosa (Thunb.) Siebold ex Maxim. 개싸리	◎				
Lespedeza virgata (Thunb.) DC. 좀싸리	◎				
Medicago lupulina L. 잔개자리				◎	N
Medicago polymorpha L. 개자리	◎	◎			N
Phaseolus vulgaris var. *humilis* Alef. 강낭콩	◎				

Appendix 1. Continued

Scientific name and Korean name	A	B	C	D	E
Pisum sativum L. 완두	◎			◎	
Pisum sativum var. *arvense* (L.) Trautv. 붉은완두	◎			◎	
Pueraria lobata (Willd.) Ohwi 칡	◎	◎	◎	◎	
Robinia pseudoacacia L. 아까시나무	◎	◎	◎	◎	
Trifolium repens L. 토끼풀	◎	◎	◎	◎	N
Vicia amoena Fisch. ex DC. 갈퀴나물			◎		
Vicia amurensis Oett. 벌완두	◎				
Vicia angustifolia var. *minor* (Bertol.) Ohwi 가는갈퀴	◎				
Vicia angustifolia var. *segetilis* (Thuill.) K.Koch. 살갈퀴	◎	◎		◎	
Vicia chosenensis Ohwi 노랑갈퀴	◎				
Vicia cracca L. 등갈퀴나물	◎				
Vicia hirsuta (L.) Gray 새완두	◎			◎	
Vicia tetrasperma (L.) Schreb. 얼치기완두	◎				
Vicia unijuga var. *ouensanensis* H.Lev. 큰나비나물	◎				
Wisteria floribunda (Willd.) DC. for. *floribunda* 등	◎				
Oxalidaceae 괭이밥과					
Oxalis corniculata L. 괭이밥	◎	◎		◎	
Oxalis stricta L. 선괭이밥	◎	◎		◎	
Geraniaceae 쥐손이풀과					
Geranium knuthii Nakai 큰세잎쥐손이	◎				
Geranium koreanum Kom. 등근이질풀	◎				
Geranium krameri Franch. & Sav. 선이질풀	◎				
Geranium sibiricum L. 쥐손이풀	◎	◎	◎		
Geranium thunbergii Siebold & Zucc. 이질풀	◎	◎		◎	
Zygophyllaceae 남가새과					
Tribulus terrestris L. 남가새	◎				
Daphniphyllaceae 굴거리나무과					
Daphniphyllum macropodum Miq. 굴거리나무	◎		◎	◎	
Daphniphyllum teijsmanni Zoll. ex Kurz 좀굴거리나무	◎			◎	
Euphorbiaceae 대극과					
Acalypha australis L. 깨풀	◎				
Euphorbia helioscopia L. 등대풀	◎			◎	
Euphorbia pekinensis Rupr. 대극	◎				
Phyllanthus ussuriensis Rupr. & Maxim. 여우주머니	◎				
Ricinus communis L. 피마자			◎		
Securinega suffruticosa (Pall.) Rehder 광대싸리	◎				
Rutaceae 운향과					
Evodia daniellii Hemsl. 쉬나무	◎				
Phellodendron amurense Rupr. 황벽나무	◎		◎		
Phellodendron amurense var. *sachalinense* F.Schmidt 화태황벽나무	◎				
Poncirus trifoliata Raf. 탱자나무	◎			◎	III
Zanthoxylum ailanthoides Siebold & Zucc. 머귀나무	◎			◎	III
Zanthoxylum piperitum (L.) DC. 초피나무	◎	◎		◎	
Zanthoxylum schinifolium Siebold & Zucc. 산초나무	◎	◎			
Simaroubaceae 소태나무과					
Picrasma quassioides (D.Don) Benn. 소태나무	◎				
Meliaceae 멀구슬나무과					
Cedrela sinensis Juss. 참죽나무	◎				
Polygalaceae 원지과					
Polygala japonica Houtt. 애기풀	◎				
Anacardiaceae 옻나무과					
Rhus javanica L. 붉나무	◎	◎			
Rhus tricocarpa Miq. 개옻나무	◎	◎			
Rhus verniciflua Stokes 옻나무	◎				
Acer mono var. *savatieri* (Pax) Nakai 왕고로쇠나무	◎				
Acer palmatum Thunb. ex Murray 단풍나무	◎				
Acer pictum subsp. *mono* (Maxim.) Ohashi 고로쇠나무	◎	◎	◎	◎	
Acer pictum Thunb. ex Murray var. *pictum* 털고로쇠나무	◎				
Acer pseudosieboldianum (Pax) Kom. 당단풍나무	◎	◎		◎	

Appendix 1. Continued

Scientific name and Korean name	A	B	C	D	E
Acer takesimense Nakai 섬단풍나무	◎	◎	◎	◎	E
Acer triflorum Kom. 복자기	◎				
Balsaminaceae 봉선화과					
Impatiens balsamina L. 봉선화	◎				
Impatiens nolitangere L. var. *nolitangere* 노랑물봉선	◎		◎		I
Impatiens textori var. *textori* 물봉선	◎	◎			
Aquifoliaceae 감탕나무과					
Ilex integra Thunb. 감탕나무	◎			◎	III
Ilex rotunda Thunb. 먼나무	◎				
Celastraceae 노박덩굴과					
Celastrus flagellaris Rupr. 푼지나무	◎				
Celastrus orbiculatus Thunb. 노박덩굴	◎	◎		◎	
Euonymus alatus (Thunb.) Siebold 화살나무	◎	◎			
Euonymus alatus for. *ciliatodentatus* (Franch. & Sav.) Hiyama 회잎나무	◎		◎	◎	
Euonymus alatus for. *pilosus* (Loes. & Rehd.) Ohwi 털화살나무	◎				
Euonymus fortunei var. *radicans* (Miq.) Rehder 줄사철나무	◎	◎	◎	◎	I
Euonymus japonicus Thunb. 사철나무	◎	◎	◎	◎	I
Euonymus oxyphyllus Miq. 참회나무	◎				
Euonymus pauciflorus Maxim. 회목나무	◎				
Tripterygium regelii Sprague & Takeda 미역줄나무	◎				
Staphyleaceae 고추나무과					
Euscaphis japonica (Thunb.) Kanitz 말오줌때	◎		◎		I
Staphylea bumalda DC. 고추나무			◎		
Buxaceae 회양목과					
Buxus koreana Nakai ex Chung & al. 회양목	◎				
Rhamnaceae 갈매나무과					
Hovenia dulcis Thunb. ex Murray 헛개나무	◎	◎			
Rhamnus yoshinoi Makino 짝자래나무	◎				
Zizyphus jujuba Mill. var. *jujuba* 묏대추나무	◎				
Vitaceae 포도과					
Ampelopsis brevipedunculata (Maxim.) Trautv. 개머루	◎	◎			
Ampelopsis brevipedunculata for. *ciliata* (Nakai) T.B.Lee 털개머루	◎				
Cayratia japonica (Thunb.) Gagnep. 거지덩굴	◎	◎	◎	◎	I
Parthenocissus tricuspidata (Siebold & Zucc.) Planch. 담쟁이덩굴	◎	◎		◎	
Vitis amurensis Rupr. 왕머루	◎		◎	◎	
Vitis coignetiae for. *glabrescens* (Nakai) H.Hara 섬머루	◎				
Vitis coignetiae Pulliat ex Planch. 머루	◎	◎			
Vitis ficifolia for. *glabrata* (Nakai) W.T.Lee 청까마귀머루	◎				
Vitis ficifolia var. *sinuata* (Regel) H.Hara 까마귀머루	◎				
Vitis vinifera L. 포도	◎				
Tiliaceae 피나무과					
Tilia amurensis Rupr. 피나무	◎				
Tilia insularis Nakai 섬피나무	◎	◎	◎	◎	E
Tilia taquetii C.K.Schneid. 뽕잎피나무			◎		E
Malvaceae 아욱과					
Abutilon theophrasti Medicus 어저귀	◎				
Althaea rosea Cav. 접시꽃	◎				
Hibiscus manihot L. 닥풀	◎				
Hibiscus syriacus L. 무궁화	◎			◎	
Malva sylvestris var. *mauritiana* Boiss 당아욱	◎				
Malva verticillata L. 아욱				◎	
Sterculiaceae 벽오동과					
Corchoropsis intermedia Nakai 암까치깨	◎				
Corchoropsis tomentosa (Thunb.) Makino 수까치깨		◎			
Firmiana simplex (L.) W.F.Wight 벽오동	◎				
Elaeagnaceae 보리수나무과					
Elaeagnus glabra Thunb. 보리장나무	◎				
Elaeagnus macrophylla Thunb. 보리밥나무	◎	◎	◎	◎	I
Elaeagnus umbellata Thunb. 보리수나무	◎				

Appendix 1. Continued

Scientific name and Korean name	A	B	C	D	E
Violaceae 제비꽃과					
Viola acuminata Ledeb. 졸방제비꽃	◎	◎			
Viola albida for. *takahashii* (Makino) W.T.Lee 단풍제비꽃	◎	◎			
Viola albida Palib. 태백제비꽃	◎				
Viola albida var. *chaerophylloides* (Regel) F.Maek. ex Hara 남산제비꽃	◎	◎			
Viola collina Besser 둥근털제비꽃	◎				
Viola grypoceras A.Gray 낚시제비꽃	◎			◎	
Viola hondoensis W.Becker & H. Boissieu 아욱제비꽃	◎			◎	
Viola kusanoana Makino 큰졸방제비꽃	◎	◎	◎	◎	IV
Viola mandshurica W.Becker 제비꽃	◎	◎	◎		
Viola patrinii DC. ex Ging. 흰제비꽃	◎			◎	
Viola selkirkii Pursh ex (Goldie) for. *selkirkii* 뫼제비꽃	◎				
Viola takesimana Nakai 섬제비꽃	◎			◎	E
Viola tokubuchiana var. *takedana* (Makino) F.Maek. 민둥뫼제비꽃	◎				
Viola variegata Fisch. ex Link var. *variegata* 알록제비꽃	◎				
Viola verecunda A.Gray var. *verecunda* 콩제비꽃	◎	◎	◎	◎	
Tamaricaceae 위성류과					
Tamarix chinensis Lour. 위성류	◎				
Elatinaceae 물별과					
Elatine triandra var. *pedicellata* Krylov 물별	◎				
Cucurbitaceae 박과					
Citrullus vulgaris Schrad. 수박	◎				
Cucurbita moschata Duchesne 호박	◎				
Gynostemma pentaphyllum (Thunb.) Makino 돌외	◎				
Lagenaria leucantha Rusby 박	◎				
Lythraceae 부처꽃과					
Lythrum anceps (Koehne) Makino 부처꽃	◎				
Rotala indica (Willd.) Koehne 마디꽃	◎				
Onagraceae 바늘꽃과					
Circaea alpina L. 쥐털이슬	◎				
Circaea cordata Royle 쇠털이슬	◎				
Circaea mollis Slebold & Zucc. 털이슬	◎		◎		
Circaea quadrisulcata (Maxim.) Franch. & Sav. 말털이슬	◎				
Epilobium cephalostigma Hausskn. 돌바늘꽃	◎				
Epilobium hirsutum L. 큰바늘꽃	◎				M-II
Epilobium pyrricholophum Franch. & Sav. 바늘꽃	◎				
Ludwigia prostrata Roxb. 여뀌바늘	◎				
Oenothera biennis L. 달맞이꽃	◎		◎	◎	N
Alangiaceae 박쥐나무과					
Alangium platanifolium var. *trilobum* (Miq.) Ohwi 박쥐나무	◎		◎		
Cornaceae 층층나무과					
Aucuba japonica Thunb. 식나무	◎		◎	◎	I
Cornus controversa Hemsl. ex Prain 층층나무	◎	◎	◎	◎	
Cornus macrophylla Wall. 곰의말채나무	◎	◎	◎	◎	
Cornus walteri F.T.Wangerin 말채나무	◎	◎			
Araliaceae 두릅나무과					
Aralia cordata var. *continentalis* (Kitag.) Y.C.Chu 독활	◎	◎	◎	◎	
Aralia elata (Miq.) Seem. 두릅나무	◎			◎	
Fatsia japonica (Thunb.) Decne. & Planch. 팔손이				◎	III
Hedera rhombea (Miq.) Bean 송악	◎	◎	◎	◎	I
Kalopanax septemlobus (Thunb. ex Murray) Koidz. 음나무	◎		◎	◎	
Oplopanax elatus (Nakai) Nakai 땃두릅나무	◎				
Umbelliferae 산형과					
Angelica decursiva (Miq.) Franch. & Sav. 바디나물	◎		◎		
Anthriscus sylvestris (L.) Hoffm. 전호	◎	◎	◎	◎	
Bupleurum falcatum L. 시호	◎				
Bupleurum latissimum Nakai 섬시호	◎				M-II
Cnidium japonicum Miq. 갯사상자	◎				
Cnidium officinale Makino 천궁	◎				

Appendix 1. Continued

Scientific name and Korean name	A	B	C	D	E
Cryptotaenia japonica Hassk. 파드득나물	◎	◎	◎	◎	
Daucus carota subsp. *sativa* (Hoffm.) Arcang. 당근	◎				
Daucus littoralis Sibth. 갯당근	◎				
Dystaenia takesimana (Nakai) Kitag. 섬바디	◎	◎	◎	◎	E,IV
Hydrocotyle maritima Honda 선피막이	◎	◎			
Oenanthe javanica (Blume) DC. 미나리	◎		◎	◎	
Oenanthe javanica var. *japonica* (Maxim.) Honda 개미나리	◎				
Osmorhiza aristata (Thunb.) Makino & Yabe 긴사상자	◎	◎	◎		
Ostericum grosseserratum (Maxim.) Kitag. 신감채				◎	
Ostericum sieboldii (Miq.) Nakai 묏미나리	◎	◎			
Peucedanum japonicum Thunb. 갯기름나물	◎	◎		◎	I
Pimpinella brachycarpa (Kom.) Nakai 참나물	◎		◎		
Sanicula chinensis Bunge 참반디	◎				
Torilis japonica (Houtt.) DC. 사상자	◎	◎		◎	
Pyrolaceae 노루발과					
Pyrola japonica Klenze ex Alef. 노루발	◎	◎	◎	◎	
Pyrola minor L. 주걱노루발	◎				
Pyrola renifolia Maxim. 콩팥노루발	◎				
Ericaceae 진달래과					
Rhododendron brachycarpum D.Don ex G.Don 만병초	◎			◎	LC,III
Rhododendron brachycarpum var. *roseum* Koidz. 홍만병초	◎				
Rhododendron mucronulatum Turcz. var. *mucronulatum* 진달래		◎			
Rhododendron schlippenbachii Maxim. 철쭉	◎				
Rhododendron yedoense for. *poukhanense* (H.Lev.) Sugim. 산철쭉	◎				
Myrsinaceae 자금우과					
Ardisia japonica (Thunb.) Blume 자금우	◎	◎		◎	I
Ardisia pusilla A.DC. 산호수	◎		◎		III
Primulaceae 앵초과					
Lysimachia mauritiana Lam. 갯까치수염	◎	◎		◎	I
Primula modesta var. *fauriae* (Franch.) Takeda 설앵초	◎				
Ebenaceae 감나무과					
Diospyros kaki Thunb. 감나무	◎			◎	
Diospyros lotus L. 고욤나무	◎				
Styracaceae 때죽나무과					
Styrax obassia Siebold & Zucc. 쪽동백나무	◎	◎	◎	◎	
Symplocaceae 노린재나무과					
Symplocos chinensis for. *pilosa* (Nakai) Ohwi 노린재나무	◎	◎			
Oleaceae 물푸레나무과					
Forsythia koreana (Rehder) Nakai 개나리	◎			◎	E
Fraxinus rhynchophylla Hance 물푸레나무			◎		
Ligustrum foliosum for. *ovale* Nakai 둥근잎섬쥐똥나무	◎				
Ligustrum foliosum Nakai for. *foliosum* 섬쥐똥나무	◎	◎	◎	◎	E,IV
Ligustrum japonicum Thunb. var. *japonicum* 광나무	◎	◎			I
Ligustrum obtusifolium Siebold & Zucc. 쥐똥나무	◎	◎	◎	◎	
Ligustrum ovalifolium Hassk. 왕쥐똥나무			◎		III
Syringa patula var. *venosa* (Nakai) K.Kim 섬개회나무	◎		◎	◎	E
Syringa patula var. *venosa* for. *lactea* K.Kim 흰섬개회나무	◎				
Syringa reticulata (Blume) H.Hara var. *reticulata* 들정향나무	◎				
Gentianaceae 용담과					
Gentiana squarrosa Ledeb. var. *squarrosa* 구슬붕이	◎				
Gentiana zollingeri Faw. for. *zollingeri* 큰구슬붕이	◎				
Tripterospermum japonicum (Siebold & Zucc.) Maxim. 덩굴용담	◎				
Apocynaceae 협죽도과					
Trachelospermum asiaticum (Siebold & Zucc.) Nakai var. *asiaticum* 마삭줄	◎	◎			
Asclepiadaceae 박주가리과					
Cynanchum atratum Bunge 백미꽃	◎				
Cynanchum wilfordii (Maxim.) Hemsl. 큰조롱	◎				
Metaplexis japonica (Thunb.) Makino 박주가리	◎	◎			

Appendix 1. Continued

Scientific name and Korean name	A	B	C	D	E
Rubiaceae 꼭두선이과					
Asperula odorata L. 선갈퀴	◎	◎	◎	◎	III
Damnacanthus indicus C.F.Gaertn. 호자나무	◎				
Galium kikumugura Ohwi 국화갈퀴	◎				
Galium linearifolium Turcz. 실갈퀴			◎		
Galium pogonanthum Franch. & Sav. 산갈퀴	◎				
Galium spurium var. *echinospermon* (Wallr.) Hayek 갈퀴덩굴	◎	◎		◎	
Galium trifloriforme Kom. 개선갈퀴	◎	◎			
Galium verum var. *asiaticum* Nakai 솔나물	◎				
Gardenia jasminoides var. *radicans* (Thunb.) Makino 꽃치자	◎				
Mitchella undulata Siebold & Zucc. 호자덩굴	◎		◎		III
Paederia scandens (Lour.) Merr. var. *scandens* 계요등	◎	◎			
Paederia scandens var. *angustifolia* (Nakai) T.B.Lee 좁은잎계요등	◎	◎			
Rubia akane Nakai 꼭두서니	◎	◎			
Rubia cordifolia var. *pratensis* Maxim. 갈퀴꼭두서니	◎				
Serissa japonica (Thunb.) Thunb. 백정화	◎				
Convolvulaceae 메꽃과					
Calystegia hederacea Wall. 애기메꽃				◎	
Calystegia sepium var. *japonicum* (Choisy) Makino 메꽃	◎				
Calystegia soldanella (L.) Roem. & Schultb. 갯메꽃	◎	◎		◎	I
Cuscuta japonica Choisy 새삼	◎				
Ipomoea batatas (L.) Lam. 고구마	◎				
Pharbitis nil (L.) Choisy 나팔꽃	◎				
Boraginaceae 지치과					
Argusia sibirica (L.) Dandy 모래지치	◎				
Lithospermum arvense L. 개지치	◎				
Symphytum officinale L. 컴프리	◎			◎	N
Trigonotis peduncularis (Trevir.) Benth. ex Hemsl. 꽃마리	◎			◎	
Trigonotis radicans var. *sericea* (Maxim.) H.Hara 참꽃마리			◎		
Verbenaceae 마편초과					
Callicarpa dichotoma (Lour.) K.Koch 좀작살나무	◎				
Callicarpa japonica Thunb. 작살나무	◎	◎	◎	◎	
Callicarpa japonica var. *luxurians* Rehder 왕작살나무	◎		◎	◎	
Callicarpa japonica var. *taquetii (*L.f.) Nakai 송금나무	◎				
Callicarpa mollis Siebold & Zucc. 새비나무		◎	◎		III
Clerodendrum trichotomum Thunb. ex Murray 누리장나무	◎		◎		
Vitex rotundifolia L.f. 순비기나무	◎				
Labiatae 꿀풀과					
Agastache rugosa (Fisch. & Mey.) Kuntze 배초향	◎	◎			
Ajuga decumbens Thunb. 금창초	◎			◎	
Amethystea caerulea L. 개차즈기	◎				
Clinopodium chinense var. *glabrescens* (Nakai) Ohwi 푸른산층층이	◎				
Clinopodium chinense var. *parviflorum* (Kudo) Hara 층층이꽃	◎	◎		◎	
Clinopodium chinense var. *shibetchense* (H.Lev.) Koidz. 산층층이	◎				
Clinopodium gracile var. *multicaule* (Maxim.) Ohwi 탑꽃	◎				
Clinopodium sachalinense (F.Schmidt) Koidz. 두메탑풀	◎				
Elsholtzia ciliata (Thunb.) Hyl. 향유	◎				
Isodon excisus (Maxim.) Kudo 오리방풀		◎	◎		
Isodon inflexus (Thunb.) Kudo 산박하	◎				
Isodon japonicus (Burm.) Hara 방아풀	◎	◎			
Lamium album var. *barbatum* (Siebold & Zucc.) Franch. & Sav. 광대수염	◎	◎			
Lamium amplexicaule L. 광대나물	◎		◎	◎	
Lamium takesimense Nakai 섬광대수염	◎	◎	◎	◎	E
Leonurus japonicus Houtt. 익모초	◎	◎		◎	
Lycopus lucidus Turcz. 쉽싸리	◎				
Mentha piperascens (Malinv.) Holmes 박하	◎				
Mosla punctulata (J.F.Gmelin) Nakai 들깨풀	◎	◎			
Nepeta cataria L. 개박하	◎	◎			VU
Perilla frutescens var. *acuta* Kudo 소엽	◎				

Appendix 1. Continued

Scientific name and Korean name	A	B	C	D	E
Scutellaria baicalensis Georgi 황금	◎				
Scutellaria strigillosa Hemsl. 참골무꽃	◎				
Teucrium japonicum Houtt. 개곽향	◎				
Teucrium viscidum var. *miquelianum* (Maxim.) Hara 덩굴곽향	◎				
Thymus quinquecostatus Celak. 백리향	◎				
Thymus quinquecostatus var. *japonica* Hara 섬백리향	◎			◎	VU
Solanaceae 가지과					
Lycium chinense Mill. 구기자나무	◎			◎	
Physalis alkekengi var. *francheti* (Mast.) Hort 꽈리	◎				
Physalis angulata L. 땅꽈리	◎				
Solanum japonense Nakai 좁은잎배풍등	◎				
Solanum lyratum Thunb. ex Murray 배풍등	◎	◎		◎	
Solanum melongena L. 가지	◎				
Solanum nigrum L. var. *nigrum* 까마중	◎				
Solanum tuberosum L. 감자	◎			◎	
Scrophulariaceae 현삼과					
Lathraea japonica Miq. 개종용	◎		◎		EN,IV
Lindernia micrantha D.Don 논뚝외풀	◎				
Lindernia procumbens (Krock.) Borbas 밭뚝외풀	◎				
Mazus pumilus (Burm.f.) Steenis 주름잎	◎				
Mimulus nepalensis Benth. 물꽈리아재비	◎				
Paulownia coreana Uyeki 오동나무				◎	E
Paulownia tomentosa (Thunb.) Steud. 참오동나무	◎				
Pedicularis grandiflora Fisch. 큰송이풀	◎				
Phtheirospermum japonicum (Thunb.) Kanitz 나도송이풀	◎				
Scrophularia grayana Maxim. ex Kom. 개현삼	◎				
Scrophularia koraiensis Nakai 토현삼	◎				
Scrophularia takesimensis Nakai 섬현삼	◎				M-II
Veronica arvensis L. 선개불알풀	◎		◎	◎	N
Veronica didyma var. *lilacina* (H.Hara) T.Yamaz. 개불알풀			◎		
Veronica insularis Nakai 섬꼬리풀	◎	◎	◎	◎	E,IV
Veronica persica Poir. 큰개불알풀				◎	N
Orobanchaceae 열당과					
Orobanche coerulescens Stephan 초종용	◎				
Phacellanthus tubiflorus Siebold & Zucc. 가지더부살이	◎				
Phrymaceae 파리풀과					
Phryma leptostachya var. *asiatica* H.Hara 파리풀	◎	◎		◎	
Plantaginaceae 질경이과					
Plantago asiatica L. 질경이	◎	◎	◎	◎	
Plantago depressa Willd. 털질경이	◎				
Plantago major var. *japonica* (Franch. & Sav.) Miyabe 왕질경이	◎				
Plantago sibirica Poir. 긴잎질경이	◎				
Caprifoliaceae 인동과					
Abelia coreana var. *insularis* (Nakai) W.T.Lee & W.K.Paik 섬댕강나무	◎				
Lonicera insularis Nakai 섬괴불나무	◎	◎		◎	IV
Lonicera japonica Thunb. 인동덩굴	◎			◎	
Lonicera subsessilis Rehder 청괴불나무	◎				
Sambucus sieboldiana var. *miquelii* (Nakai) Hara 지렁쿠나무	◎				
Sambucus sieboldiana var. *pendula* (Nakai) T.B.Lee 말오줌나무	◎	◎	◎	◎	IV
Sambucus williamsii var. *coreana* (Nakai) Nakai 딱총나무	◎				
Viburnum carlesii Hemsl. 분꽃나무	◎			◎	
Viburnum dilatatum Thunb. ex Murray 가막살나무	◎		◎	◎	
Viburnum furcatum Blume 분단나무	◎				
Viburnum wrightii Miq. 산가막살나무	◎			◎	
Viburnum wrightii var. *stipllatum* Nakai 덧잎가막살나무	◎				
Valerianaceae 마타리과					
Valeriana dageletiana Nakai ex F.Maek. 넓은잎쥐오줌풀	◎	◎	◎		IV
Valeriana dageletiana var. *integra* (Nakai) Nakai ex F.Maek. 긴잎쥐오줌풀	◎				
Valeriana fauriei Briq. 쥐오줌풀	◎	◎	◎	◎	

Appendix 1. Continued

Scientific name and Korean name	A	B	C	D	E
Campanulaceae 초롱꽃과					
Adenophora remotiflora (Siebold & Zucc.) Miq. 모시대	◎				
Campanula takesimana Nakai 섬초롱꽃	◎	◎	◎	◎	LC,E,IV
Codonopsis lanceolata (Siebold & Zucc.) Trautv. 더덕	◎		◎	◎	
Platycodon grandiflorum (Jacq.) A.DC. 도라지	◎				
Compositae 국화과					
Adenocaulon himalaicum Edgew. 멸가치	◎	◎	◎		
Ambrosia artemisiifolia L. 돼지풀	◎	◎	◎		
Arctium lappa L. 우엉	◎				
Artemisia annua L. 개똥쑥	◎				
Artemisia apiacea Hance ex Walp. 개사철쑥	◎				
Artemisia capillaris Thunb. 사철쑥	◎	◎			
Artemisia dubia Wall. 참쑥	◎				
Artemisia japonica subsp. *littoricola* Kitam. 갯제비쑥	◎				
Artemisia japonica Thunb. 제비쑥	◎	◎		◎	
Artemisia japonica var. *hallaisanensis* (Nakai) Kitam. 섬쑥	◎	◎		◎	
Artemisia montana (Nakai) Pamp. 산쑥	◎	◎			
Artemisia princeps Pamp. 쑥	◎	◎	◎	◎	
Artemisia scoparia Waldst. & Kit. 비쑥	◎				
Artemisia stolonifera (Maxim.) Kom. for. *stolonifera* 넓은잎외잎쑥	◎				
Artemisia sylvatica Maxim. 그늘쑥	◎				
Aster ageratoides Turcz. var. *ageratoides* 까실쑥부쟁이	◎				
Aster glehni F.Schmidt 섬쑥부쟁이	◎	◎		◎	IV
Aster hispidus Thunb. 갯쑥부쟁이	◎				
Aster meyendorfii (Regel & Maack) Voss 개쑥부쟁이	◎				
Aster scaber Thunb. 참취	◎	◎	◎		
Aster sphathulifolius Maxim. 해국	◎	◎		◎	I
Aster tataricus L.f. 개미취	◎				
Bidens bipinnata L. 도깨비바늘	◎				
Bidens biternata (Lour.) Merr. & Sherff ex Sherff 털도깨비바늘	◎				
Bidens tripartita L. 가막사리	◎				
Breea segeta (Willd.) Kitam. for. *segeta* 조뱅이	◎	◎			
Carduus crispus L. 지느러미엉겅퀴	◎				
Carpesium abrotanoides L. 담배풀	◎		◎	◎	
Carpesium cernuum L. 좀담배풀	◎				
Carpesium divaricatum Siebold & Zucc. 긴담배풀	◎				
Carpesium rosulatum Miq. 애기담배풀	◎				
Carpesium triste Maxim. 두메담배풀	◎				
Centipeda minima (L.) A.Br. & Asch. 중대가리풀	◎				
Chrysanthemum coronarium L. 쑥갓	◎				
Cirsium japonicum for. *nakaianum* (H.Lev. & Vaniot) W.T.Lee 좁은잎엉겅퀴	◎				
Cirsium nipponicum (Maxim.) Makino 물엉겅퀴	◎		◎	◎	IV
Cirsium pendulum Fisch. ex DC. 큰엉겅퀴	◎				
Conyza bonariensis (L.) Cronquist 실망초	◎				
Conyza canadensis (L.) Cronquist 망초	◎	◎			N
Cosmos bipinnatus Cav. 코스모스	◎	◎			N
Crepidiastrum chelidoniifolium (Makino) Pak & Kawano 까치고들빼기	◎				
Crepidiastrum denticulatum (Houtt.) Pak & Kawano 이고들빼기	◎	◎			
Crepidiastrum lanceolatum (Houtt.) Nakai 갯고들빼기	◎				
Crepidiastrum sonchifolium (Bunge) Pak & Kawano 고들빼기	◎	◎			
Dendranthema zawadskii var. *latilobum* (Maxim.) Kitam. 구절초	◎	◎		◎	
Dendranthema zawadskii var. *lucidum* (Nakai) J.H.Park 울릉국화	◎				
Eclipta prostrata (L.) L. 한련초	◎				
Erigeron annuus (L.) Pers. 개망초	◎	◎	◎	◎	N
Eupatorium japonicum Thunb. ex Murray 등골나물	◎	◎			
Farfugium japonicum (L.) Kitam. 털머위	◎	◎		◎	III
Gnaphalium affine D.Don 떡쑥	◎	◎			
Gnaphalium japonicum Thunb. 풀솜나물	◎				
Helianthus tuberosus L. 뚱딴지	◎				

Appendix 1. Continued

Scientific name and Korean name	A	B	C	D	E
Hemistepa lyrata Bunge 지칭개	◎	◎			
Hololeion maximowiczii Kitam. 께묵	◎	◎			
Inula britannica var. *japonica* (Thunb.) Franch. & Sav. 금불초	◎				
Inula britannica var. *linariifolia* (Turcz.) Regel 가는금불초	◎				
Ixeris debilis (Thunb.) A.Gray 벋음씀바귀	◎				
Ixeris polycephala Cass. 벌씀바귀	◎				
Ixeris stolonifera A.Gray 좀씀바귀	◎				
Ixeris strigosa (H.Lev. & Vaniot) J.H.Pak & Kawano 선씀바귀	◎				
Lactuca indica L. 왕고들빼기	◎	◎		◎	
Lactuca raddeana Maxim. 산씀바귀	◎				
Lactuca sativa L. 상추	◎				
Lactuca triangulata Maxim. 두메고들빼기	◎				
Leibnitzia anandria (L.) Turcz. 솜나물				◎	
Parasenecio auriculata var. *matsumurana* Nakai 박쥐나물	◎				
Petasites japonicus (Siebold & Zucc.) Maxim. 머위	◎		◎	◎	
Picris hieracioides var. *koreana* Kitam. 쇠서나물	◎				
Rhaponticum uniflorum (L.) DC. 뻐꾹채	◎				
Rudbeckia laciniata L. 삼잎국화	◎				
Saussurea grandifolia Maxim. 서덜취	◎	◎		◎	
Saussurea macrolepis (Nakai) Kitam. 각시서덜취	◎		◎		E,II
Saussurea tanakae Franch. & Sav. ex Maxim. 당분취	◎				
Senecio vulgaris L. 개쑥갓	◎	◎		◎	N
Sigesbeckia glabrescens Makino 진득찰	◎				
Sigesbeckia pubescens Makino 털진득찰	◎				
Solidago virgaurea subsp. *asiatica* Kitam. ex Hara var. *asiatica* 미역취	◎				
Solidago virgaurea subsp. *gigantea* (Nakai) Kitam. 울릉미역취	◎	◎	◎	◎	
Sonchus asper (L.) Hill 큰방가지똥	◎	◎		◎	N
Sonchus brachyotus DC. 사데풀	◎				
Sonchus oleraceus L. 방가지똥	◎	◎	◎		N
Syneilesis palmata (Thunb.) Maxim. 우산나물	◎	◎			
Synurus deltoides (Aiton) Nakai 수리취	◎		◎	◎	
Synurus excelsus (Makino) Kitam. 큰수리취	◎				
Taraxacum officinale Weber 서양민들레	◎				
Taraxacum platycarpum Dahlst. 민들레	◎	◎		◎	
Xanthium strumarium L. 도꼬마리	◎	◎			N
Youngia japonica (L.) DC. 뽀리뱅이	◎	◎	◎	◎	
Alismataceae 택사과					
Alisma canaliculatum A.Br. & Bouche 택사	◎				
Alisma orientale (Sam.) Juz. 질경이택사	◎				
Liliaceae 백합과					
Allium cepa L. 양파	◎				
Allium fistulosum L. 파	◎				
Allium macrostemon Bunge 산달래	◎		◎		
Allium microdictyon Prokh. 산마늘	◎				
Allium monanthum Maxim. 달래	◎			◎	
Allium ochotense Prokh. 울릉산마늘	◎	◎	◎	◎	E
Allium sacculiferum Maxim. 참산부추	◎				
Allium scorodorpasum var. *viviparum* Regel 마늘	◎				
Allium senescens L. var. *senescens* 두메부추	◎			◎	LC,III
Allium thunbergii G.Don 산부추	◎				
Allium tuberosum Rottler ex Spreng. 부추	◎				
Asparagus cochinchinensis (Lour.) Merr.천문동	◎	◎			I
Asparagus officinalis L. 아스파라거스	◎				
Disporum sessile D.Don var. *sessile* 윤판나물아재비	◎	◎	◎	◎	
Disporum smilacinum A.Gray 애기나리	◎	◎			
Disporum viridescens (Maxim.) Nakai 큰애기나리	◎				
Hemerocallis fulva (L.) L. 원추리	◎	◎		◎	
Hemerocallis fulva for. *kwanso* (Regel) Kitam. 왕원추리	◎				
Hemerocallis thunbergii Baker 노랑원추리	◎				

Appendix 1. Continued

Scientific name and Korean name	A	B	C	D	E
Lilium hansonii Leichtlin ex Baker 섬말나리	◎	◎	◎	◎	VU,V
Lilium lancifolium Thunb. 참나리	◎	◎	◎	◎	
Lilium leichtlinii var. *maximowiczii* (Regel) Baker 중나리	◎				
Liriope platyphylla F.T.Wang & T.Tang 맥문동	◎		◎	◎	
Maianthemum dilatatum (Wood) A.Nelson & J.F.Macbr. 큰두루미꽃	◎	◎	◎	◎	LC,III
Ophiopogon japonicus (L.f.) KerGawl. 소엽맥문동	◎		◎		
Polygonatum falcatum A.Gray 진황정	◎				
Polygonatum odoratum var. *pluriflorum* (Miq.) Ohwi 둥굴레			◎		
Polygonatum robustum (Korsh.) Nakai 왕둥굴레	◎				
Smilax nipponica Miq. 선밀나물	◎	◎	◎	◎	
Smilax riparia var. *ussuriensis* (Regel) Hara & T.Koyama 밀나물	◎	◎	◎		
Smilax sieboldii Miq. for. *sieboldii* 청가시덩굴	◎	◎			
Streptopus amplexifolius var. *papillatus* Ohwi 죽대아재비	◎				
Trillium kamtschaticum Pall. ex Pursh 연영초	◎				
Trillium tschonoskii Maxim. 큰연영초	◎	◎	◎	◎	VU,V
Agavaceae 용설란과					
Yucca gloriosa L. 유카				◎	
Dioscoreaceae 마과					
Dioscorea batatus Decne. 마		◎			
Pontederiaceae 물옥잠과					
Monochoria vaginalis var. *plantaginea* (Roxb.) Solms 물달개비	◎				
Iridaceae 붓꽃과					
Iris rossii Baker var. *rossii* 각시붓꽃	◎				
Iris sanguinea Donn ex Horn 붓꽃	◎				
Juncaceae 골풀과					
Juncus effusus var. *decipiens* Buchenau 골풀	◎	◎			
Commelinaceae 닭의장풀과					
Commelina communis L. 닭의장풀	◎	◎		◎	
Gramineae 벼과					
Agropyron ciliare (Trin.) Franch. 속털개밀	◎				
Agropyron repens (L.) P.Beauv. 구주개밀	◎			◎	N
Agropyron tsukushiense var. *transiens* (Hack.) Ohwi 개밀	◎				
Alopecurus aequalis Sobol. 뚝새풀	◎	◎			
Andropogon brevifolius Sw. 쇠풀	◎				
Arthraxon hispidus (Thunb.) Makino 조개풀	◎		◎	◎	
Arundinella hirta (Thunb.) Koidz. 새	◎	◎			
Avena fatua L. 메귀리	◎	◎			N
Bromus japonicus Thunb. ex Murray 참새귀리	◎				
Bromus pauciflorus (Thunb.) Hack. 꼬리새	◎				
Bromus tectorum L. var. *tectorum* 털빕새귀리				◎	N
Calamagrostis arundinacea (L.) Roth 실새풀	◎	◎			
Calamagrostis epigeios (L.) Roth 산조풀	◎				
Cleistogenes hackelii (Honda) Honda 대새풀	◎				
Dactylis glomerata L. 오리새	◎	◎		◎	N
Digitaria ciliaris (Retz.) Koel. 바랭이	◎				
Digitaria violascens Link 민바랭이	◎				
Echinochloa crusgalli (L.) P.Beauv. var. *crusgalli* 돌피	◎	◎			
Echinochloa crusgalli var. *oryzicola* (Vasinger) Ohwi 물피	◎				
Eleusine indica (L.) Gaertn. 왕바랭이	◎				
Elymus dahuricus Turcz. ex Griseb. 갯보리	◎				
Elymus mollis Trin. 갯그령	◎				
Eragrostis ferruginea (Thunb.) P.Beauv. 그령	◎				
Eragrostis multicaulis Steud. 비노리	◎				
Festuca ovina L. var. *ovina* 김의털	◎	◎			
Festuca ovina var. *duriuscula* (L.) W.D.J.Koch 서울김의털	◎				
Festuca parvigluma Steud. 김의털아재비	◎				
Festuca rubra L. 왕김의털	◎				
Festuca subulata var. *japonica* Hack. 왕김의털아재비	◎				
Glyceria acutiflora Torr. 육절보리풀	◎				

Appendix 1. Continued

Scientific name and Korean name	A	B	C	D	E
Hordeum vulgare var. *hexastichon* (L.) Asch. 보리	◎			◎	
Imperata cylindrica var. *koenigii* (Retz.) Pilg. 띠	◎	◎			
Koeleria cristata (L.) Pers. 도랭이피	◎				
Leersia japonica Makino 나도겨풀	◎				
Lolium perenne L. 호밀풀	◎				
Melica onoei Franch. & Sav. 쌀새	◎				
Microstegium vimineum (Trin.) A.Camus var. *vimineum* 나도바랭이새	◎				
Miscanthus sacchariflorus (Maxim.) Benth. 물억새	◎				
Miscanthus sinensis Andersson var. *sinensis* 참억새	◎				
Miscanthus sinensis var. *purpurascens* (Andersson) Rendle 억새	◎	◎	◎	◎	
Muhlenbergia japonica Steud. 쥐꼬리새	◎				
Oplismenus undulatifolius (Ard.) P.Beauv. var. *undulatifolius* 주름조개풀	◎	◎	◎		
Oplismenus undulatifolius var. *japonicus* (Steud.) Koidz. 민주름조개풀	◎				
Oryza sativa L. var. *sativa* 벼	◎				
Panicum bisulcatum Thunb. 개기장	◎				
Paspalum thunbergii Kunth ex Steud. 참새피	◎				
Pennisetum alopecuroides (L.) Spreng. var. *alopecuroides* 수크령	◎				
Phragmites communis Trin. 갈대	◎	◎			
Phragmites karka (Retz.) Trin. ex Steud. 큰달뿌리풀	◎				
Phyllostachys nigra var. *henonis* (Bean) Stapf ex Rendle 솜대	◎				
Poa acroleuca Steud. 실포아풀	◎				
Poa annua L. 새포아풀	◎				
Poa sphondylodes Trin. 포아풀			◎		
Poa takeshimana Honda 섬포아풀	◎			◎	E,IV
Polypogon fugax Nees ex Steud. 쇠돌피	◎				
Pseudosasa japonica (Siebold & Zucc. ex Steud.) Makino 이대	◎		◎		
Sasa borealis (Hack.) Makino 조릿대		◎	◎	◎	
Sasa borealis var. *gracilis* (Nakai) T.B.Lee 섬대	◎				
Sasa coreana Nakai 신이대	◎	◎			E
Sasa kurilensis (Rupr.) Makino & Shibata 섬조릿대	◎	◎	◎	◎	IV
Setaria x *pycnocoma* (Steud.) Henrard ex Nakai 수강아지풀	◎				
Setaria glauca (L.) P.Beauv. 금강아지풀	◎				
Setaria viridis (L.) P.Beauv. var. *viridis* 강아지풀	◎	◎			
Setaria viridis var. *pachystachys* (Franch. & Sav.) Makino & Nemoto 갯강아지풀	◎				
Spodiopogon sibiricus Trin. 큰기름새	◎				
Trisetum bifidum (Thunb.) Ohwi 잠자리피	◎				
Zea mays L. 옥수수	◎				
Zoysia japonica Steud. 잔디	◎	◎		◎	
Araceae 천남성과					
Arisaema amurense for. *serratum* (Nakai) Kitag. 천남성	◎	◎			
Arisaema amurense Maxim. 둥근잎천남성			◎		
Arisaema negishii Makino 섬천남성	◎				
Arisaema peninsulae Nakai 점박이천남성	◎				
Arisaema takesimense Nakai 섬남성		◎	◎	◎	E
Arisaema thunbergii Blume 무늬천남성	◎		◎		III
Pinellia ternata (Thunb.) Breitenb. 반하	◎	◎			
Lemnaceae 개구리밥과					
Lemna perpusilla Torr. 좀개구리밥	◎				
Cyperaceae 사초과					
Carex blepharicarpa var. *stenocarpa* Ohwi 여우꼬리사초	◎	◎	◎	◎	IV
Carex boottiana Hook. & Arn. 밀사초	◎		◎	◎	
Carex breviculmis R.Br. 청사초	◎			◎	
Carex breviculmis var. *fibrillosa* Kuk. 갯청사초	◎				
Carex humilis var. *nana* (H.Lev. & Vaniot) Ohwi 가는잎그늘사초	◎	◎		◎	
Carex japonica Thunb. 개찌버리사초	◎		◎		
Carex lanceolata Boott 그늘사초	◎	◎		◎	
Carex matsumurae Franch. 왕밀사초	◎				
Carex mollicula Boott 애기흰사초	◎				
Carex planiculmis Kom. 그늘흰사초	◎				

Appendix 1. Continued

Scientific name and Korean name	A	B	C	D	E
Carex pumila Thunb. 좀보리사초	◎				
Carex shimidzensis Franch. 산꼬리사초	◎				
Cyperus amuricus Maxim. 방동사니	◎	◎			
Cyperus difformis L. 알방동사니	◎				
Cyperus exaltatus var. *iwasakii* T.Koyama 왕골	◎				
Cyperus iria L. 참방동사니	◎				
Cyperus microiria Steud. 금방동사니	◎				
Cyperus nipponicus Franch. & Sav. 푸른방동사니	◎				
Cyperus orthostachyus Franch. & Sav. 쇠방동사니	◎				
Fimbristylis dichotoma (L.) Vahl for. *dichotoma* 하늘지기	◎				
Zingiberaceae 생강과					
Zingiber officinale Roscoe 생강	◎				
Orchidaceae 난초과					
Amitostigma gracilis (Blume) Schltr. 병아리난초	◎				
Calanthe discolor for. *sieboldii* (Decne.) Ohwi 금새우난초	◎		◎		CR
Cephalanthera erecta (Thunb. ex Murray) Blume 은난초	◎		◎		
Cephalanthera falcata (Thunb. ex A.Murray) Blume 금난초	◎				
Cephalanthera longibracteata Blume 은대난초	◎		◎		
Cymbidium goeringii (Rchb.f.) Rchb.f. 보춘화	◎	◎		◎	
Dendrobium moniliforme (L.) Sw. 석곡	◎				M-II
Gastrodia elata Blume 천마	◎				
Goodyera maximowicziana Makino 섬사철란	◎				
Goodyera schlechtendaliana Rchb.f. 사철란	◎			◎	
Gymnadenia camtschatica (Cham.) Miyabe & Kudo 주름제비란	◎		◎	◎	EN
Habenaria linearifolia Maxim. for. *linearifolia* 잠자리난초	◎				
Liparis makinoana Schlech. 나리난초	◎				
Oreorchis patens (Lindl.) Lindl. 감자난초	◎				
Platanthera freynii Kraenzl. 제비난초	◎		◎		
Platanthera mandarinorum var. *brachycentron* (Franch. & Sav.) Koidz. ex Ohwi 산제비란			◎		
Platanthera ophrydioides F.Schmidt 구름제비란	◎				
Spiranthes sinensis (Pers.) Ames 타래난초	◎				

*__A__: Literature review __B__: Seokpo-Naesujeon, __C__: Namyang-Taeharyeong, __D__: Witonggumi-Sadong, __E__: Note: __M-I, M-II__ (Endangered plants by the Ministry of Environment I, II), __CR__ (Critical Endangered plants), __EN__ (Endangered plants), __VU__ (Vulnerable plants), __LC__ (Least Concerned plants), __DD__ (Data Deficient plants), __E__ (Endemic plants), __I~V__ (Specially designated plants by the Ministry of Environment), __N__ (Induced and naturalized plants)