

Vascular plants from Kunashiri Island, the southernmost island of the Kuril Islands, island arc between Hokkaido and Kamchatka peninsula

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Abstract: Vascular plants of the Kunashiri Island, the southernmost island of the Kuril Islands, were inventoried during an expedition to Kunashiri, 19–25 July 2013. This study was conducted as a part of the Sika Deer (*Cervus nippon yezoensis*) management program in Shiretoko World Natural Heritage Site, to assess vegetation damage under strong browsing pressure by the deer. A checklist of the vascular plants was made from each study locality. As Kunashiri Island is very close to Shiretoko Heritage Site, with similar climatic and geographical conditions, this plant list will provide a preliminary comparison of the floral composition between Kunashiri and Shiretoko or Hokkaido. Our research revealed that vegetation is well preserved on Kunashiri, and this floral list will serve as a reference of the original floral composition of Shiretoko World Natural Heritage Site prior to damage by deer.

Keywords: Sika Deer (*Cervus nippon yezoensis*), flora, Kunashiri, Kuril Islands

INTRODUCTION

Kunashiri is the southernmost island of the Kuril Islands and holds a close floristic relationship with neighboring mainland Hokkaido. The island is considered to have been connected with Hokkaido and Shikotan until after the last glacial period (Melekestsev *et al.* 1974). The geological environment of Kunashiri resembles that of Shiretoko Peninsula of eastern Hokkaido in its mountainous topology with volcanic activities. The flora of Kunashiri Island has been reported several times (*e.g.*, Miyabe 1890; Matsumura 1943; Tatewaki 1957; Alekseeva 1977, 1983; Voroshilov 1982; Barkalov 1980, 2009; see Takahashi 1997 for details); these reports were integrated in a recent publication by Barkalov (2009). However, in these studies, the flora and vegetation of the island are often treated as a part of the Kuril Islands or the Sakhalin region of mainland Asia (Russia). In order to better understand the flora and vegetation of the Kunashiri, comparisons of floristic composition with Shiretoko or Hokkaido are also necessary,

and as species concepts employed by Russian taxonomists sometimes differ from that of Japanese taxonomists, such comparisons are helpful to remedy this situation. To do this, thorough comparisons in both areas of the floral composition in each major vegetation types are needed.

This assembled check list is the result of a vegetation study undertaken as a part of the Sika Deer management program in Shiretoko World Natural Heritage Site. Sika Deer are native to most areas of Japan, from Hokkaido to Yakushima Island of Kyushu, with their numbers having notably increased from 1970 onwards in Shiretoko. On the other hand, Sika Deer are absent from Kunashiri, or at least have not been recorded here until now (Hokkaido Regional Forest Office, Kushiro Branch 2012). The specific objective of the study was to assess the recovery of damaged vegetation under strong browsing pressure by the deer. As a result, a vegetation classification of each locality accompanies our check list. Descriptions of the floristic composition of vegetation was reported, for example, by Tatewaki and Hirano (1936) for *Picea glehnii* forest of Furukamappu (Yuzhno-Kurilsk), and such descriptions are useful for comparison to the floral composition on Kunashiri and Hokkaido. Our check list will also provide a reference on the original flora and vegetation of Shiretoko World Natural Heritage Site before damage by the deer.

MATERIALS AND METHODS

The studied localities are indicated in Figures 1 and 2 and Table 1. All the sites are located in the south part of the island. Their ecological characteristics are as follows:

- 1) Andreevka is located at the Pacific coast, and the plant communities of this locality, including coastal grassland, meadow and coniferous forest, are mostly secondary succession;
- 2) Mount Tomari is characterized by a wider variety of plant communities than other localities, ranging from coastal grassland along the Okhotsk Sea to mountain hardwood and/or coniferous forests around the pass of the Mount Tomari caldera, with volcanic solfataras vegetation (vegetation affected by sulfurous gases of

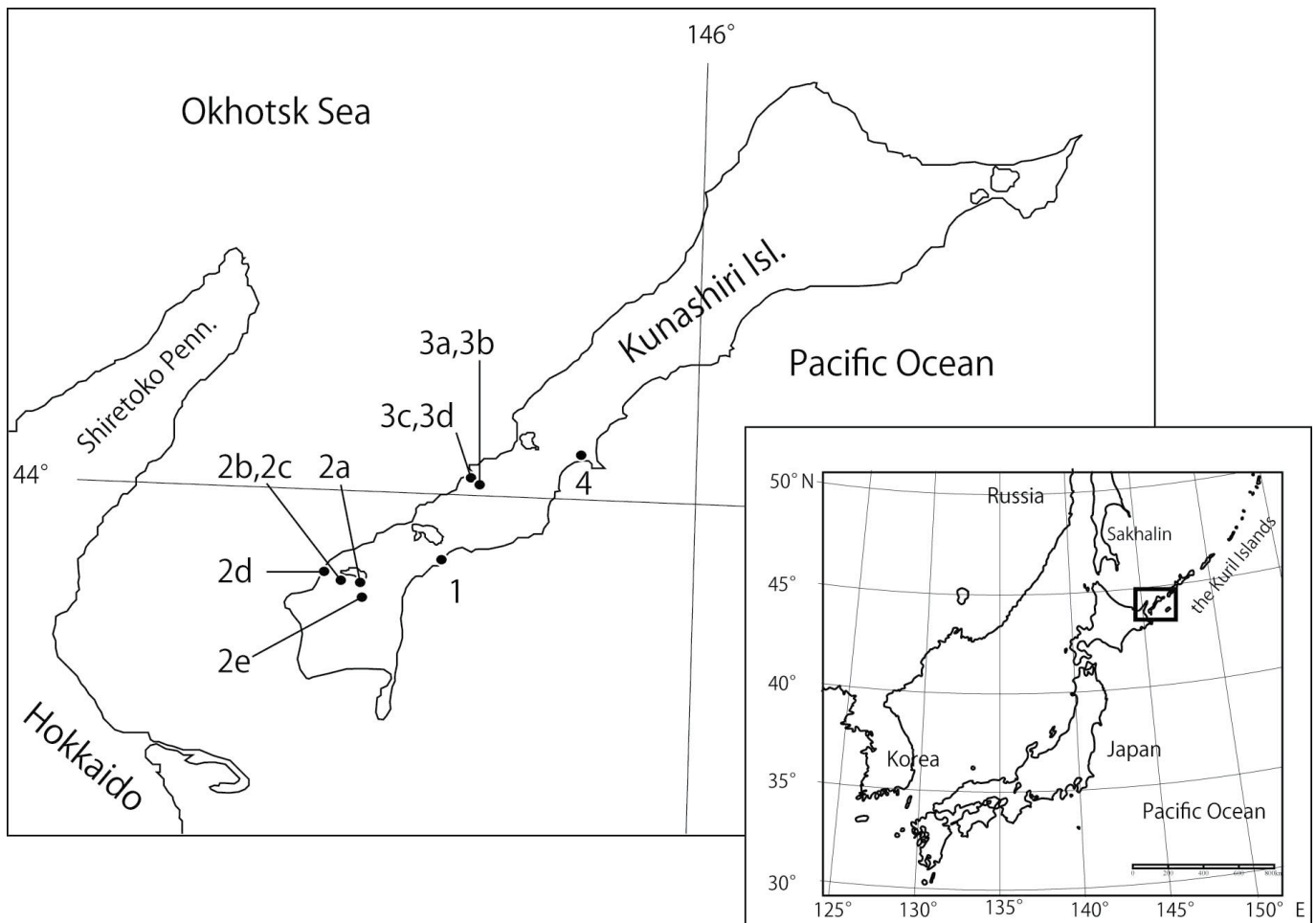


Figure 1. Map of Kunashiri Island with studied localities. The labelled sites correspond to Tables 1 and 2 and Figure 2.

Table 1. Localities, studied during expedition.

No.	Locality	Date	Latitude	Longitude	alt. (m)
1	Andreevka S. part of Kunashiri Island, Pacific Ocean coast, on sea terrace between rivers Andreevka and Belkina.				
1a	Coniferous (<i>Abies–Picea</i>) forest at higher part of sea terrace.	2013/7/19–20	43°53'28"N	145°37'12"E	20
1b	Meadow on the lower part of sea terrace.	2013/7/19	43°53'24"N	145°37'26"E	15
1c	On the Pacific Ocean coast of Andreevka.	2013/7/19	43°53'15"N	145°37'33"E	~10
1d	Along the river of river Andreevka, near the mouth.	2013/7/19	43°53'16"N	145°37'27"E	~10
2	Caldera of Mount Tomari (volcano Golovnina) S. part of Kunashiri Island, from south foot of Caldera to Okhotsk Sea coast.				
2a	Bog at the S. lake side of Lake Ponto (L. Kipyascheye) in Caldera of Mount Tomari.	2013/7/20	43°51'47"N	145°29'60"E	140
2b	Coniferous (<i>Abies–Picea</i>) forest around "Reserve house" of Ozernoye.	2013/7/21	43°52'24"N	145°28'58"E	130
2c	Meadows around "Reserve house" and at lakeside of L. Ichibishinai (L. Goryascheye).	2013/7/21	43°52'23"N	145°28'56"E	140
2d	Okhotsk Sea coast at the mouth of the river Ichibishinai (r. Ozernaya).	2013/7/21	43°53'7"N	145°27'43"E	~10
2e	At mountain pass of the S. edge of Caldera of Mount Tomari.	2013/7/22	43°50'53"N	145°31'37"E	320
2f	Around the center of volcanic activity in Caldera of Mount Tomari.	2013/7/20	43°51'39"N	145°30'17"E	150
3	Stolbovskyy Ecological Trail S. part of Kunashiri Island, a trail from main road leading to the S. coast (Shimato-kaigan) of the cape Zaimoku-iwa (cape Stolbchatyy) of Okhotsk Sea coast.				
3a	Coniferous (<i>Abies–Picea</i>) forest near the entrance of the trail, mixed forest (with <i>Acer pictum</i> , <i>Quercus crispula</i> , <i>Ulmus davidiana</i> , <i>U. laciniata</i>) near Okhotsk Sea coast.	2013/7/24	44°00'24"N	145°41'8"E	50
3b	Hot spring at riverside, near Okhotsk Sea coast.	2013/7/24	44°00'25"N	145°41'2"E	35
3c	Wet meadow near Okhotsk Sea coast.	2013/7/24	44°00'35"N	145°40'43"E	~10
3d	Coastal meadow at Shimato-kaigan, S of the cape Zaimoku-iwa (cape Stolbchatyy), Okhotsk Sea side.	2013/7/24	44°00'42"N	145°40'36"E	~10
4	S part of Furukamappu Bog, W of Yuzhno-Kurilsk S (coastal) part of Furukamappu bog, W of Yuzhno-Kurilsk, occurring among <i>Picea glehnii</i> forest.				
4a	Bog with a little pond.	2013/7/25	44°02'14"N	145°49'12"E	~10
4b	<i>Picea glehnii</i> forest.	2013/7/25	44°02'15"N	145°49'20"E	~10

volcanic area) also developed in and around the caldera;
 3) The common plant communities of Stolbovskyy Ecological Trail are mountain hardwood and/or coniferous forests. In addition to these, coastal grassland is distributed along the Okhotsk Sea and solfataras are also observed in the middle part of the trail;

4) Furukamappu Bog is located in northwest part of Yuzhno-Kurilsk and consists of well preserved bogs dominated by *Sphagnum* spp. *Picea glehnii* forest, one of the most common forests on perhumid (ever-wet) sites in south Kuril and Hokkaido, is also developed in the bog.



Figure 2. Pictures, showing the habitat of every locality. The number and alphabet correspondent to those in Figure 1. **1a:** Andreevka, forest. **1b:** Andreevka, meadow. **1c:** Andreevka, coast. **1d:** Andreevka, river mouth. **2a:** Mount Tomari, lakeside bog. **2b:** Mount Tomari, forest. **2d:** Mount Tomari region, coast near the mouth of Ozernaya River. **2e:** Mount Tomari, at mountain pass. **3a-1:** Stolbovskyy, coniferous forest. **3a-2:** Stolbovskyy, mixed hardwood forest. **3b:** Stolbovskyy, hot spring. **3c:** Stolbovskyy, wet meadow. **3d:** Stolbovskyy, coast. **4a:** Furukamappu, bog. **4b:** Furukamappu, forest.

These localities were surveyed by four authors (all except V. Yu. Barkalov). The study was mainly performed at designated vegetation study sites, but was also conducted along the trail between these sites. On average, time for floral study was one to two hours in each locality. Red data plants were not collected, as far as we could determine. Species names followed Yonekura and Kajita (2003). All collected specimens were identified by the authors, mainly by V. Yu. Barkalov, according to the APGIII system (Yonekura and Murata 2013). Voucher specimens were deposited in Institute of Biology and Soil science, Far Eastern Branch of Russian Academy of Sciences, Vladivostok (VLA), Russia. The second locality, Mount Tomari, is in a protected region and permission was obtained for the purpose of this study from State Natural Reserve “Kurilskiy”. Information on microhabitats, red data plants and other data are indicated in Table 2. Referenced red data books are those of Sakhalin State (2005); Hokkaido Prefecture (2001); Japan (2012) and Russian Federation (2008).

RESULTS

A list of the inventoried plants is shown in Table 2. We identified 384 plant species, including 22 ferns, 5 gymnosperms and 357 angiosperms (Table 2). *Picea-Abies* forests in Kunashiri (1a, 2b, 3a) are very similar to those of Shiretoko or Hokkaido, except for the presence of *Sasa*, which widely covers the forest floor. The composition of coniferous forests was similar to those in Hokkaido, containing plants such as *Cornus canadensis* L., *Maianthemum dilatatum* (A. W. Wood) A. Nelson & J. F. Macbr., *Circaea alpina* L. subsp. *alpina* and others. Along Stolbovskyy Ecological Trail (3a) near the Okhotsk Sea side, we found hardwoods (broadleaved trees) such as *Acer* (*A. pictum* Thunb., *A. ukurunduense* Trautv. & C. A. Mey.), *Quercus crispula* Blume, *Ulmus davidiana* Planch. var. *japonica* (Rehder) Nakai and *U. laciniata* (Trautv.) Mayr. among coniferous trees. *Magnolia obovata* Thunb. and *Quercus dentata* Thunb., red data plants in Russia and Sakhalin district, were also found along Stolbovskyy ecological trail and at Okhotsk Sea coast respectively.

In the caldera of Mount Tomari (2), we found sparse trees of *Picea glehnii* (F.Schmidt) Mast. and *Abies sachalinensis* (F.Schmidt) Mast. Vegetation at the central site of volcanic activity was affected by sulfurous gases, and was surrounded by a thicket of *Pinus pumila* (Pall.) Regel and *Ledum palustre* L. subsp. *diversipilosum* (Nakai) H. Hara var. *nipponicum* Nakai, and plants such as *Empetrum nigrum* L. var. *japonicum* K. Koch, *Fallopia sachalinensis* (F.Schmidt) Ronse Decr. and *Spiraea betulifolia* Pall. var. *betulifolia* were observed. Some unique populations found in the bog at the edge of atrio-lake included those of *Juncus articulatus* L., *J. filiformis* L., *J. haenkei* E. Mey., *Holcus lanatus* L., *Rumex gmelinii* Turcz. ex Ledeb., and *Platanthera tipuloides* (L. fil.) Lindl., amongst others.

In Furukamappu Bog (4a) we found rare plants such as *Pogonia japonica* Rchb. f. and *Eleorchis japonica* (A. Gray) F. Maek., and also many species of *Carex*, which are Red Data list plants in Japan (2012).

DISCUSSION

We observed *Sasa senanensis* (Franch. & Sav.) Rehder and *Sasa nipponica* (Makino) Makino & Shibata largely covering the coniferous forest floor. Along with *Sasa*, forest floors were

sometimes covered with *Dryopteris expansa* (C.Presl) Fraser-Jenk. & Jermy, as also seen in some *Abies-Picea* forest of Shiretoko (e.g., Cape Shiretoko, Teppanbetsu; Samejima *et al.* 1981). Recently, *Sasa* has been reduced in the forests of Shiretoko because of browsing damage by Sika Deer. Along the trail where *Sasa* or *Dryopteris* are rather rare, we noticed plants such as *Adoxa moschatellina* L. (whose level of extinction risk classification has increased due to browsing damage by Sika Deer in Kyoto (Kyoto Prefecture 2013)), *Orthilia secunda* (L.) House, *Carex sachalinensis* F. Schmidt and others. It will be necessary to investigate how these plants grow in the forests of Shiretoko under the browsing pressure of Sika Deer.

The southern Kuril Islands of Kunashiri and Etorofu constitute a distribution limit of some warm to temperate plant elements, which tend to occur along the Okhotsk Sea coast due to warmer climatic conditions than the Pacific coast (Barkalov 2009). Some of these plants are classified as red data plants for Russia and the Sakhalin region. We found *Magnolia obovata* Thunb. and *Quercus dentata* Thunb. in good condition, and *Aralia cordata* and *Hydrangea petiolaris* Siebold & Zucc. were observed several to many times. However, we did not observe *Cercidiphyllum japonicum* Siebold & Zucc. and *Tilia maximowicziana* Shirasawa, which are considered very rare in Kunashiri (Barkalov 2009), although *Cercidiphyllum japonicum* and *Tilia maximowicziana* are common in Shiretoko (Samejima *et al.* 1981). As far as was observed in this study, hardwoods (broadleaved trees) of warm-temperate elements were mainly dispersed among coniferous forests, and their distribution seems to be more limited in Kunashiri than in Shiretoko.

The central site of volcanic activity in the caldera of Mount Tomari was surrounded by thickets of *Pinus pumila* and *Ledum palustre*, with *Empetrum nigrum* L. var. *japonicum* K. Koch and *Spiraea betulifolia* Pall. var. *betulifolia*. Sato (1981) reports the *Miscanthus* community from a new volcano site of Mount Io-zan, Shiretoko, and also observed the occurrence of *Pinus pumila* with *Empetrum nigrum*, despite of the low altitude of the region. Furukamappu Bog is a species-rich sphagnum bog. Though the bog differs from bogs in Shiretoko, occurring among mountains, these sphagnum bogs are widely seen in Hokkaido, and it will be interesting to compare species composition between these bogs.

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Table 2. List of the plants found. Abbreviations (*): B.: Vyacheslav Yu. Barkalov, F.: Tomoko Fukuda, I.: Yukio Ishikawa, Y.: Hiroki Yamagishi; (**): RD(H): Red data book of Hokkaido (2001); RD(J): 4-th revision of Red data list of Japan (2012); RD(R): Red data book of Russian Federation. Plants (2008); RD (S): Red data book of Sakhalin state (2005).

Family/species names	Japanese name	Locality	Coll. *	Identified by*	Specimen No. for "Kunashiri-2013"	Remarks**
Lycopodiaceae						
<i>Huperzia serrata</i> (Thunb.) Trevis.	トウゲシバ	1a	Y	Y	-	
		1b	Y	Y	25	
<i>Lycopodium complanatum</i> L.	アスヒカズラ	2e'	F	I	59	
Equisetaceae						
<i>Equisetum arvense</i> L.	スギナ	2c	Y	B	64	
		3c	Y	Y	-	
<i>Equisetum hyemale</i> L.	トクサ	1a	Y	Y	-	
<i>Equisetum palustre</i> L.	イヌスギナ	4a	Y	Y	-	
Osmundaceae						
<i>Osmunda cinnamomea</i> L. subsp. <i>asiatica</i> (Fernald) Fraser-Jenk.	ヤマドリゼンマイ	1a	I	I	-	
		2b, 4a, 4b	Y	Y	-	
		3d	F	Y	121	
<i>Osmunda japonica</i> Thunb.	ゼンマイ	3a	Y	Y	-	
Dennstaedtiaceae						
<i>Pteridium aquilinum</i> (L.) Kuhn subsp. <i>japonicum</i> (Nakai) Á. & D.Löve	ワラビ	1b	Y	Y	-	
		2b	Y	Y	-	
Pteridaceae						
<i>Coniogramme intermedia</i> Hieron.	イワガネゼンマイ	3a	Y	Y	-	RD(S); riverside
Thelypteridaceae						
<i>Thelypteris nipponica</i> (Franch. & Sav.) Ching	ニッコウシダ	4a	Y	Y	-	
<i>Thelypteris palustris</i> (Salisb.) Schott	ヒメシダ	1a	Y	Y	3	
		4a	F	Y	148	
<i>Thelypteris phegopteris</i> (L.) Sloss. ex Rydb.	ミヤマワラビ	1b, 2b, 2e, 3a	Y	Y	-	
		2e'	F	Y	89	

Continued

Table 2. Continued.

Family/species names	Japanese names	Localities	Coll. *	Identified by*	Specimen No. for "Kunashiri-2013"	Remarks**
Onocleaceae						
<i>Matteuccia struthiopteris</i> (L.) Tod.	クサソテツ	1a	Y	Y	-	
		3a	I	I	-	
<i>Onoclea sensibilis</i> L. var. <i>interrupta</i> Maxim.	コウヤワラビ	1b	Y	Y	-	
Athyriaceae						
<i>Athyrium brevifrons</i> Nakai ex Tagawa	エゾメシダ	1b	I	I	-	
<i>Athyrium yokoscense</i> (Franch. & Sav.) H.Christ	ヘビノネゴザ	2b	Y	Y	-	
<i>Deparia pterorachis</i> (H.Christ) M.Kato	オオメシダ	3d	I	I	-	
<i>Deparia pycnosora</i> (H.Christ) M.Kato	ミヤマシケシダ	1a	I	I	-	
		3a	Y	Y	-	along stream
Dryopteridaceae						
<i>Dryopteris crassirhizoma</i> Nakai	オシダ	1a	Y	Y	-	
		2b	Y	Y	-	
		3a	Y	Y	-	
<i>Dryopteris expansa</i> (C.Presl) Fraser-Jenk. & Jermy	シラネワラビ	1b	Y, I	Y, I	-	
		3a	Y	Y	-	
<i>Polystichum braunii</i> (Spenn.) Fée	ホソイノテ	3a	Y	Y	-	along stream
Polypodiaceae						
<i>Lepisorus ussuriensis</i> (Regel & Maack) Ching	ウスリーノキシノブ	1a	Y	B	31	
		1a	Y	Y	-	on the branch of <i>Taxus cuspidata</i>
Pinaceae						
<i>Abies sachalinensis</i> (F.Schmidt) Mast.	トドマツ	1a, 2b, 3a	Y	Y	-	
		2f	I	I	-	
<i>Picea glehnii</i> (F.Schmidt) Mast.	アカエゾマツ	3a	Y	Y	-	RD(R), RD(S)
		3d	F	Y	130	
		2f	I	I	-	
<i>Picea jezoensis</i> (Siebold & Zucc.) Carrière	エゾマツ	1a, 2b, 3a	Y	Y	-	
		2f	I	I	-	
<i>Pinus pumila</i> (Pall.) Regel	ハイマツ	2b, 2e, 3c	Y	Y	-	
		2a, 2f	I	I	-	
Taxaceae						
<i>Taxus cuspidata</i> Siebold & Zucc.	イチイ	1a, 3a	Y	Y	-	RD(R), RD(S)
Nymphaeaceae						
<i>Nuphar pumila</i> (Timm) DC. var. <i>pumila</i>	ネムロコウホネ	4a	F	Y	149	RD(S), RD(J), RD(H)
Schisandraceae						
<i>Schisandra chinensis</i> (Turcz.) Baill.	チョウセンゴミシ	2d	Y	Y	-	
Aristolochiaceae						
<i>Asarum heterotropoides</i> F.Schmidt	オクエゾサイシン	1a	Y	Y	-	
		2e	Y	B	70	
Magnoliaceae						
<i>Magnolia obovata</i> Thunb.	ホオノキ	1a, 2b, 3a	Y	Y	-	RD(R), RD(S)
Araceae						
<i>Arisaema peninsulae</i> Nakai	コウライテンナンシ ヨウ	3a	Y	Y	-	
<i>Lysichiton camtschatcense</i> (L.) Schott	ミズバシヨウ	2c, 4a	Y	Y	-	
		3a, 3c	I	I	-	
Melanthiaceae						
<i>Paris verticillata</i> M. Bieb.	クルマバツクバネソウ	3a	I	I	-	
<i>Trillium camtschatcense</i> Ker Gawl.	オオバナノエンレイ ソウ	1a, 1b, 3a	Y	Y	-	
<i>Veratrum grandiflorum</i> (Maxim. ex Miq.) O.Loes.	バイケイソウ	1a, 1b, 3a, 3c, 4a	Y	Y	-	<i>Veratrum album</i> L. subsp. <i>oxysepalum</i> (Turcz.) Hultén
Liliaceae						
<i>Cardiocrinum cordatum</i> (Thunb.) Makino var. <i>glehnii</i> (F.Schmidt) H.Hara	オオウバユリ	3c	Y	Y	-	RD(R)
<i>Clintonia udensis</i> Trautv. & C.A.Mey.	ツバメオモト	1a, 3a	Y	Y	-	
<i>Lilium maculatum</i> Thunb. subsp. <i>dauricum</i> (Ker Gawl.) H.Hara	エゾスカシユリ	3d	Y	Y	-	
<i>Lilium medeoloides</i> A.Gray	クルマユリ	2b, 3a	Y	Y	-	

Continued

Table 2. Continued.

Family/species names	Japanese names	Localities	Coll. *	Identified by*	Specimen No. for "Kunashiri-2013"	Remarks**
Orchidaceae						
<i>Dactylorhiza aristata</i> (Fisch. ex Lindl.) Soó	ハクサンチドリ	4a	Y	Y	-	
<i>Eleorchis japonica</i> (A.Gray) F.Maek.	サワラン	4a	Y	Y	-	RD(R), RD(S), RD(H)
<i>Epipactis papillosa</i> Franch. & Sav.	エゾスズラン	1a, 2b, 3a	Y	Y	-	
<i>Listera nipponica</i> Makino	ミヤマフタバラン	3a	I	I	-	RD(H)
<i>Myrmechis japonica</i> (Rchb.f.) Rolfe	アリドオシラン	3a	Y	Y	-	RD(R), RD(H)
<i>Platanthera chorisiana</i> (Cham.) Rchb.f.	タカネトンボ (ミヤケラン)	1b, 4a	Y	Y	-	RD(S)
<i>Platanthera mandarinorum</i> Rchb.f. subsp. <i>mandarinorum</i> var. <i>oreades</i> (Franch. & Sav.) Koidz.	ヤマサギソウ	2a	Y	Y	-	
<i>Platanthera mandarinorum</i> Rchb.f. subsp. <i>ophrydioides</i> (F.Schmidt) K.Inoue	キンチドリ	4a	Y	Y	-	
<i>Platanthera metabifolia</i> F.Maek.	エゾチドリ	3d	Y	Y	-	
<i>Platanthera sachalinensis</i> F. Schmidt	オオヤマサギソウ	3d	F	B	111	
<i>Platanthera tipuloides</i> (L. fil.) Lindl.	ホソバナキンチドリ	2a	F	B	38	
		4a	F	B	141	
<i>Pogonia japonica</i> Rchb.f.	トクソウ	4a	Y	Y	-	RD(R), RD(S), RD(J), RD(H)
Iridaceae						
<i>Iris ensata</i> Thunb. var. <i>spontanea</i> (Makino) Nakai ex Makino & Nemoto	ノハナショウブ	4a	Y	Y	-	RD(R), RD(S) (for I. ensata)
<i>Iris laevigata</i> Fisch.	カキツバタ	4a	Y	Y	-	RD(J)
<i>Iris setosa</i> Pall. ex Link	ヒオウギアヤメ	1b	Y	Y	10	
		2c, 4a	Y	Y	-	
Xanthorrhoeaceae						
<i>Hemerocallis dumortieri</i> C.Morren var. <i>esculenta</i> (Koidz.) Kitam. ex M.Matsuoka & M.Hotta	ゼンテイカ	1b, 2e, 4a	I, Y	I, Y	-	
<i>Hemerocallis lilioasphodelus</i> L. var. <i>yezoensis</i> (H. Hara) M. Hotta	エゾキスゲ	2d	Y	Y	-	
Amaryllidaceae						
<i>Allium victorialis</i> L. subsp. <i>platyphyllum</i> Hultén	ギョウジャニンニク	1a, 2b	Y	Y	-	
Asparagaceae						
<i>Convallaria majalis</i> L. var. <i>manshurica</i> Kom.	スズラン	3d	Y	Y	-	
<i>Hosta sieboldii</i> (Paxton) J.W.Ingram var. <i>rectifolia</i> (Nakai) H.Hara	タチギボウシ	4a	Y	Y	-	
		4a	F	F	132	
<i>Maianthemum dilatatum</i> (A.W.Wood) A.Nelson & J.F.Macbr.	マイヅルソウ	1a, 1b, 2b, 2d, 2e, 3d, 4a, 4b	Y	Y	-	
<i>Polygonatum humile</i> Fisch. ex Maxim.	ヒメイズイ	3d	Y	Y	-	
<i>Polygonatum odoratum</i> (Mill.) Druce var. <i>maximowiczii</i> (F.Schmidt) Koidz.	オオアマドコロ	1a, 1b, 2b, 3a	Y	Y	-	
		2d	I	I	-	
Juncaceae						
<i>Juncus articulatus</i> L.	カラフトハナビゼキショウ	2a	F	B	35	
<i>Juncus decipiens</i> (Buchenau) Nakai	イグサ	2a	F	B	30, 43	
		4a	F	B	154	
<i>Juncus ensifolius</i> Wikstr.	ミクリゼキショウ	2a	Y	Y	-	
<i>Juncus filiformis</i> L.	エゾホソイ	2a	F	B	39	
<i>Juncus haenkei</i> E. Mey.	ハマイ	2a	F	B	40	
<i>Juncus prominens</i> (Buchenau) Miyabe & Kudo	セキショウイ	4a	F	B	151	RD(J)
<i>Juncus tenuis</i> Willd.	クサイ	3c	F	Y	-	
<i>Luzula capitata</i> (Miq.) Miq. ex Kom.	スズメノヤリ	2c	Y	F	65	
		2d	Y	Y	-	
		3d	F	F	122	
Cyperaceae						
<i>Carex canescens</i> L.	ハクサンスゲ	2c	I	F	73	
<i>Carex caryophylla</i> Latour. var. <i>microtricha</i> (Franch.) Kuk.	チャシバ	3d	F, I	I	90	
		1b	F	B	6	
		4a	F	B	158	
<i>Carex diandra</i> Schrank	クリイロスゲ	4a	F	F	135	RD(J), RD(H)
<i>Carex falcata</i> Turcz.	サヤスゲ	4a	F	B	161	RD(J)
<i>Carex foliosissima</i> F. Schmidt	オクノカンスゲ	1b	F	B	17	
<i>Carex kobomugi</i> Ohwi	コウボウムギ	3d	Y	Y	-	

Continued

Table 2. Continued.

Family/species names	Japanese names	Localities	Coll. *	Identified by*	Specimen No. for "Kunashiri-2013"	Remarks**
<i>Carex lasiocarpa</i> Ehrh. subsp. <i>occultans</i> (Franch.) Hulten	ムジナスゲ	4a	F	B	134	
		4a	F	B	136	
		4a	F	B	138	
<i>Carex limosa</i> L.	ヤチスゲ	4a	F	B	139	
<i>Carex lyngbyei</i> Hornem.	ヤラメスゲ	2a	F	F	41	
		2c	F	F	42	
<i>Carex maximowiczii</i> Miq.	ゴウソ	4a	F	B	160	
<i>Carex michauxiana</i> Boeck. subsp. <i>asiatica</i> Hultén	ミタケスゲ	4a	F	F	147	
<i>Carex middendorffii</i> F. Schmidt	トマリスゲ	4a	F	F	140a	
<i>Carex mollicula</i> Boott	ヒメシラスゲ	3a	F	F	103	
		3a, 2b	Y, I	Y, I	-	along ecological road at riverside
<i>Carex nemurensis</i> Franch.	ホソバオゼヌマスゲ	4a	Y	Y	-	RD(J)
<i>Carex omiana</i> Franch. & Sav. var. <i>omiana</i>	ヤチカワズスゲ	4a	F	F	152	
<i>Carex pauciflora</i> Lightf.	タカネハリスゲ	4a	F	F	145	RD(J)
<i>Carex pseudololiacea</i> F. Schmidt	ヒロハイッポンスゲ	4a	F	B	153	RD(J)
		4a	F	B	156	
		4b	Y	Y	-	
<i>Carex rhynchophysa</i> C.A. Mey.	オオカサスゲ	2c	F	B	57	
<i>Carex sachalinensis</i> F. Schmidt	サハリナイトスゲ	1a	I	B	2	
		3a	F	B	101	
		3a	I	I	-	
<i>Carex sachalinensis</i> F. Schmidt var. <i>iwakiana</i> Ohwi	ゴンゲンスゲ	3a	I	I	-	
<i>Carex thunbergii</i> Steud.	アゼスゲ	4a	F	B	140b	
<i>Carex traiziscana</i> F. Schmidt	ヒロハオゼヌマスゲ	4a	F	F	155	RD(J)
<i>Carex tsuishikarensis</i> Koidz. & Ohwi	ホロムイクグ	4a	F	B	146	RD(J), RD(H)
<i>Eriophorum gracile</i> K.Koch	サギスゲ	4a	F	F	133	
<i>Eriophorum vaginatum</i> L. subsp. <i>fauriei</i> (E.G.Camus) A. & D.Löve	ワタスゲ	4a	F	F	137	
<i>Fimbristylis subbispicata</i> Nees & Meyen	ヤマイ	3b	F	B	96	
<i>Rhynchospora alba</i> (L.) Vahl	ミカツキグサ	4a	F	F	142	
<i>Schoenoplectus hotarui</i> (Ohwi) Holub	ホタルイ	2a	Y	Y	-	
<i>Scirpus wichurae</i> Boeck.	アブラガヤ	2c	F	F	55	
Poaceae						
<i>Agrostis capillaris</i> L. (A. <i>tenuis</i> Sibth.)	イトコヌカグサ	1b	F	B	7	
		2c	Y	B	63	
<i>Agrostis flaccida</i> Hack.	ミヤマヌカボ	2e, 2f	I	I	-	
<i>Agrostis gigantea</i> Roth	コヌカグサ	2c	Y	B	60	
		3b	F	B	95	
<i>Anthoxanthum odoratum</i> L.	ハルガヤ	1b, 3c	I	I	-	
<i>Avenella flexuosa</i> (L.) Drej. (<i>Deschampsia flexuosa</i> (L.) Nees)	コメススキ	2a	F, I	B	32	
		2f	I	I	-	
<i>Beckmannia syzigachne</i> (Steud.) Fernald	カズノコグサ	1d	Y	Y	-	
<i>Brachypodium kurilense</i> (Probat.) Probat.	ヤマカモジグサ	2c	F	B	44	
<i>Brylkinia caudata</i> (Munro ex A.Gray) F.Schmidt	ホガエリガヤ	1a	Y	Y	-	
		3a	F	Y	104	
<i>Calamagrostis epigeios</i> (L.) Roth	ヤマアワ	2d	I	I	-	
<i>Calamagrostis hakonensis</i> Franch. & Sav.	ヒメノガリヤス	3a	I	I	-	
<i>Calamagrostis purpurea</i> (Trin.) Trin.	イワノガリヤス	2c	F	B	34	
		2d	I	B	45	
		2e	I	I	-	
<i>Calamagrostis sachalinensis</i> F.Schmidt	タカネノガリヤス	2e	I	I	-	
<i>Dactylis glomerata</i> L.	カモガヤ	1b	Y	Y	-	
		3d	F	F	110	
<i>Festuca rubra</i> L.	オオウシノケグサ	1b	F	B	4	
		2e	I	I	-	
<i>Holcus lanatus</i> L.	シラゲガヤ	2a	F	B	29	
		2a	F	B	33	
<i>Leymus mollis</i> (Trin. ex Spreng.) Pilg.	テンキグサ	1c, 2d, 3d	Y	Y	-	
<i>Miscanthus sinensis</i> Andersson	ススキ	2d, 3d	I	I	-	
<i>Phalaris arundinacea</i> L.	クサヨシ	2c, 3c	Y	Y	-	bogs/riverside
<i>Phleum pratense</i> L.	オオアワガエリ	1b, 3c	Y	Y	-	

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Table 2. Continued.

Family/species names	Japanese names	Localities	Coll. *	Identified by*	Specimen No. for "Kunashiri-2013"	Remarks**
<i>Phragmites australis</i> (Cav.) Trin. ex Steud.	ヨシ	1b, 1d, 2c, 3c	Y	Y	-	bogs/riverside
<i>Poa annua</i> L.	スズメノカタビラ	3b	F	B	94	
<i>Sasa kurilensis</i> (Rupr.) Makino & Shibata	チシマザサ	1a, 2d, 2e	I	I	-	
<i>Sasa nipponica</i> (Makino) Makino & Shibata	ミヤコザサ	1a	F	I	8	
<i>Sasa senanensis</i> (Franch. & Sav.) Rehder	クマイザサ	1a, 1b, 2b, 2e, 3a	Y, I	Y, I	-	
Ranunculaceae						
<i>Aconitum maximum</i> Pall. ex. DC.	トリカブト属	1a, 3a	Y	Y	-	
<i>Actaea erythrocarpa</i> Fisch.	アカミノルイヨウシ ヨウマ	1a, 3a	Y	Y	-	
<i>Anemone debilis</i> Fisch. ex Turcz.	ヒメイチゲ	1a 2e, 4a	I Y	I Y	- -	
<i>Aquilegia flabellata</i> Siebold & Zucc. var. <i>pumila</i> (Huth) Kudô	ミヤマオダマキ	2d	Y	Y	-	
<i>Cimicifuga simplex</i> (DC.) Wormsk. ex Turcz.	サラシナシヨウマ	1a, 3a	Y	Y	-	
<i>Coptis trifolia</i> (L.) Salisb.	ミツバオウレン	2e 4a	Y F	Y F	68 144	
<i>Ranunculus grandis</i> Honda var. <i>austrukurilensis</i> (Tatew.) H.Hara	シコタンキンポウゲ	1b 3a 3d	Y Y F	Y Y B	1 - 126	RD(J)
<i>Ranunculus silerifolius</i> H.Lév. var. <i>glaber</i> (H.Boissieu) Tamura	キツネノボタン	2b, 3a	Y	Y	-	riverside
<i>Thalictrum</i> sp.	カラマツソウ属	1b, 3a	Y	Y	-	
<i>Thalictrum baicalense</i> Turcz. ex Ledeb.	ハルカラマツ	1b	Y	Y	-	
<i>Thalictrum minus</i> L. var. <i>hypoleucum</i> (Siebold & Zucc.) Miq.	アキカラマツ	2d	Y	Y	-	
<i>Thalictrum sachalinense</i> Lecoc.	エゾカラマツ	1a, 1b, 2b, 4a 3d	Y F	Y Y	- 107	
Grossulariaceae						
<i>Ribes latifolium</i> Jancz.	エゾスグリ	1a	Y	Y	49	
<i>Ribes rubrum</i> L.	フサスグリ	2c	Y	Y	-	Cult. ?
Saxifragaceae						
<i>Astilbe odontophylla</i> Miq.	トリアシシヨウマ	4a	Y	Y	-	
<i>Chrysosplenium kamtschaticum</i> Fisch. ex Ser.	チシマネコノメソウ	1b, d, 2b, 3a	Y	Y	-	2b, 3a: along streams
<i>Saxifraga fusca</i> Maxim. var. <i>kurilensis</i> Ohwi	チシマクロクモソウ	1d 1a, 3a	F Y	F Y	26-28 82-85 -	3a: along streams
Crassulaceae						
<i>Phedimus kamtschaticus</i> (Fisch.) 't Hart	エゾノキリンソウ	1c, 2d	Y	Y	-	
Vitaceae						
<i>Vitis coignetiae</i> Pulliat ex Planch.	ヤマブドウ	2b, 3a	Y	Y	-	
Fabaceae						
<i>Lathyrus japonicus</i> Willd.	ハマエンドウ	1c, 2d, 3d 3d	Y F	Y F	- 109	
<i>Lathyrus palustris</i> L. var. <i>pilosus</i> (Cham.) Ledeb.	エゾノレンソウ	4a 3c	F Y	Y Y	143 -	bogs/riverside
<i>Thermopsis lupinoides</i> (L.) Link	センダイハギ	1b, 2d, 2c, 3d	Y	Y	-	
<i>Trifolium pratense</i> L.	ムラサキツメクサ	2c, 3c	Y	Y	-	
<i>Trifolium repens</i> L.	シロツメクサ	1b, 2c, 2d, 3c	Y	Y	-	
<i>Vicia cracca</i> L.	クサフジ	2d, 3c	Y	Y	-	
<i>Vicia japonica</i> A.Gray	ヒロハクサフジ	2d	I	I	-	
<i>Vicia unijuga</i> A.Braun	ナンテンハギ	1b 3d	I F	I Y	- 105	
Rosaceae						
<i>Agrimonia pilosa</i> Ledeb.	キンミズヒキ	3a	I	I	-	
<i>Aruncus dioicus</i> (Walter) Fernald var. <i>kamtschaticus</i> (Maxim.) H.Hara	ヤマブキシヨウマ	1b, 1c, 2d, 2e, 3c, 3d	Y, I	Y, I	-	
<i>Cerasus maximowiczii</i> (Rupr.) Kom.	ミヤマザクラ	2b 2e'	Y F	Y Y	- 88	
<i>Cerasus nipponica</i> (Matsum.) Ohle ex H.Ohba var. <i>nipponica</i>	タカネザクラ	2e	F	B	77, 81	

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Table 2. Continued.

Family/species names	Japanese names	Localities	Coll. *	Identified by*	Specimen No. for "Kunashiri-2013"	Remarks**
<i>Comarum palustre</i> L.	クロバナロウゲ	4a	Y	Y	-	
<i>Filipendula camtschatica</i> (Pall.) Maxim.	オニシモツケ	1a, 1b, 1c, 2d, 3a, 3c, 4a	Y	Y	-	
<i>Geum aleppicum</i> Jacq.	オオダイコンソウ	1b	F	Y	21	
		2c, 3c	Y	Y	-	
<i>Geum macrophyllum</i> Willd. var. <i>sachalinense</i> (Koidz.) H.Hara	カラフトダイコンソウ	1b	F	Y	12, 23	
		1b, 2c, 3a, 3c	Y	Y	-	
<i>Padus ssiroi</i> (F.Schmidt) C.K.Schneid.	シウリザクラ	3a	I	I	-	RD(S)
<i>Potentilla fragarioides</i> L. var. <i>major</i> Maxim	キジムシロ	1b	Y	Y	-	
<i>Potentilla fragiformis</i> Willd. ex D.F.K.Schltl. subsp. <i>megalantha</i> (Takeda) Hultén	チシマキンバイ	2d	Y	Y	-	
<i>Potentilla stolonifera</i> Lehm. ex Ledeb.	ツルキジムシロ	3d	F	F	112, 131	
<i>Rosa</i> sp.		2b, 2c	Y	Y	-	
<i>Rosa rugosa</i> Thunb.	ハマナス	1b, 3d	Y	Y	-	
		2c	Y	Y	66	
<i>Rubus idaeus</i> L. subsp. <i>melanolasius</i> Focke	エゾイチゴ	1a, 1b	I	I	-	
		1b	Y, F	B, Y	9, 25	
<i>Rubus phoenicolasius</i> Maxim.	エビガライチゴ	1b	F	Y	15	
		2e, 3c	Y	Y	-	
<i>Rubus triphyllus</i> Thunb.		3d	F	B	117	
<i>Sanguisorba tenuifolia</i> Fisch. ex Link	ナガボノシロワレモ コウ	2c, 2d, 2e, 3c, 4a	Y	Y	-	
		1b	I	I	-	
		3d	F	F	123	
<i>Sieversia pentapetala</i> (L.) Greene	チングルマ	4a	F	F	159	
<i>Sorbus commixta</i> Hedl	ナナカマド	1a, 2b, 3a, 4a	Y	Y	-	
<i>Sorbus sambucifolia</i> (Cham. & Schltl.) M.Roem.	タカネナナカマド	3d	Y	Y	-	
		2e	I	I	-	
<i>Spiraea betulifolia</i> Pall. var. <i>betulifolia</i>	マルバシモツケ	2a	I	F	72	
		2e, 2f	Y	Y	-	
Ulmaceae						
<i>Ulmus davidiana</i> Planch. var. <i>japonica</i> (Rehder) Nakai	ハルニレ	1a, 3a	Y	Y	-	
<i>Ulmus laciniata</i> (Trautv.) Mayr	オヒヨウ	3a, 2b	Y	Y	-	
Urticaceae						
<i>Laportea bulbifera</i> (Siebold & Zucc.) Wedd.	ムカゴイラクサ	3a	I	I	-	
<i>Laportea</i> sp.	イラクサ属	3a	Y	Y	-	
<i>Pilea pumila</i> (L.) A.Gray	アオミズ	3b	Y	Y	-	hot spring
<i>Urtica platyphylla</i> Wedd.	エゾイラクサ	1a, 2d, 3a	Y, I	Y, I	-	
Fagaceae						
<i>Quercus crispula</i> Blume	ミズナラ	1a, 2b, 3a	Y, I	Y, I	-	
<i>Quercus dentata</i> Thunb.	カシワ	2d	I	I	-	RD(R), RD(S)
Myricaceae						
<i>Myrica gale</i> L. var. <i>tomentosa</i> C.DC.	ヤチヤナギ	4a	Y	Y	-	RD(R) (for M. gale)
Betulaceae						
<i>Alnus hirsuta</i> (Spach) Turcz. ex Rupr. var. <i>hirsuta</i>	ケヤマハンノキ	2b, 3a, 4a	Y	Y	-	
<i>Alnus hirsuta</i> (Spach) Turcz. ex Rupr. var. <i>sibirica</i> (Spach) C.K.Schneid.	ヤマハンノキ	1a	Y	Y	-	
<i>Alnus japonica</i> (Thunb.) Steud.	ハンノキ	4a	Y	Y	-	
<i>Alnus viridis</i> (Chaix) Lam. & DC. subsp. <i>maximowiczii</i> (Callier) D.Löve	ミヤマハンノキ	2a, 2b, 2d, 2e, 2f	Y, I	Y, I	-	
<i>Betula ermanii</i> Cham.	ダケカンバ	1a, 2b, 3a	Y, I	Y, I	-	
		2f	I	I	-	
<i>Betula platyphylla</i> Sukaczew var. <i>japonica</i> (Miq.) H.Hara	シラカンバ	1a, 2b, 3a	Y	Y	-	
Cucurbitaceae						
<i>Schizopepon bryoniifolius</i> Maxim.	ミヤマニガウリ	3a	Y	Y	-	
Celastraceae						
<i>Celastrus orbiculatus</i> Thunb. var. <i>orbiculatus</i>	ツルウメモドキ	1b	F	I	18	
		2b, 2d, 3d	Y, I	Y, I	-	
		3d	F	F	115	

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Table 2. Continued.

Family/species names	Japanese names	Localities	Coll. *	Identified by*	Specimen No. for "Kunashiri-2013"	Remarks**
<i>Euonymus macropterus</i> Rupr.	ヒロハノツリバナ	1b	Y	B	25	
		1a, 2b, 3a	Y	Y	-	
<i>Euonymus planipes</i> (Koehne) Koehne	オオツリバナ	2b	Y	Y	-	
<i>Parnassia palustris</i> L. var. <i>palustris</i>	ウメバチソウ	4a	Y	Y	162	
Oxalidaceae						
<i>Oxalis acetosella</i> L.	コミヤマカタバミ	1a, 3a, 4b	Y	Y	-	
Salicaceae						
<i>Salix caprea</i> L.	バッコヤナギ	2b, 3a	Y	Y	-	
<i>Salix udensis</i> Trautv. & C.A.Mey.	オノエヤナギ	2b, c	Y	Y	-	
Violaceae						
<i>Viola grypoceras</i> A.Gray var. <i>grypoceras</i>	タチツボスミレ	1a	Y	Y	-	
<i>Viola hultenii</i> W.Becker	チシマウスバスミレ	4a	Y	Y	-	RD(J)
<i>Viola langsдорfi</i> Fisch. ex DC. subsp. <i>sachalinensis</i> W.Becker	オオバタチツボスミレ	1b	Y	Y	19	RD(J)
		4a	Y	Y	-	
<i>Viola mandshurica</i> W.Becker	スミレ	1b	Y	Y	-	
<i>Viola selkirkii</i> Pursh ex Goldie	ミヤマスミレ	1a	Y	Y	48	
		2b, 3a, 4b	Y, I	Y, I	-	
<i>Viola verecunda</i> A.Gray	ツボスミレ	1a, 2b, 3a	Y, I	Y, I	-	
		1b	Y	Y	22	
		2c	F	Y	56	
Hypericaceae						
<i>Hypericum erectum</i> Thunb.	オトギリソウ	1b	Y	B	20	
		2e	F	Y	79	
		2c, 3a	Y	Y	-	
Geraniaceae						
<i>Geranium erianthum</i> DC.	チシマフウロ	1b, 2d, 2e	Y	Y	-	
<i>Geranium thunbergii</i> Siebold ex Lindl. & Paxton	ゲンノショウコ	1b, 2c	Y	Y	-	
<i>Geranium yesoense</i> Franch. & Sav. var. <i>yesoense</i>	エゾフウロ	1a, 2d, 4a	Y	Y	-	
		1b	Y	Y	11	
		3d	F	Y	106	
Lythraceae						
<i>Lythrum salicaria</i> L.	エゾミノハギ	3c	Y	Y	-	riverside
Onagraceae						
<i>Chamerion angustifolium</i> (L.) Holub	ヤナギラン	2e	Y	Y	-	
<i>Circaea alpina</i> L. subsp. <i>alpina</i>	ミヤマタニタデ	1a	I	I	-	
<i>Circaea x sterilis</i> Boufford	ヤマタニタデ	3a	Y	Y	-	riverside
<i>Epilobium amurense</i> Hausskn.	ケゴンアカバナ	1b, d	Y	Y	-	
<i>Epilobium amurense</i> Hausskn. subsp. <i>cephalostigma</i> (Hausskn.) C.J.Chen, Hoch & P.H.Raven	イワアカバナ	2d	Y	Y	-	syn. <i>Epilobium cephalostigma</i> Hausskn.
		1b	F	B	13	
Anacardiaceae						
<i>Toxicodendron radicans</i> (L.) Kuntze subsp. <i>orientale</i> (Greene) Gillis	ツタウルシ	1a, 2b, 3a, 4b	Y, I	Y, I	-	
<i>Toxicodendron trichocarpum</i> (Miq.) Kuntze	ヤマウルシ	2b	Y	Y	-	
Sapindaceae						
<i>Acer pictum</i> Thunb.	イタヤカエデ	2b, 2d, 3a	Y, I	Y, I	-	
<i>Acer ukurunduense</i> Trautv. & C.A.Mey.	オガラバナ	2b, 3a, 4b	Y	Y	-	
Rutaceae						
<i>Phellodendron amurense</i> Rupr.	キハダ	2b, 3a	I, Y	I, Y	-	RD(S)
<i>Skimmia japonica</i> Thunb. var. <i>intermedia</i> Komatsu f. <i>repens</i> (Nakai) Ohwi	ツルミヤマシキミ	2b	F	F	58	
		3a, 4b	Y, F	Y, F	-	
Brassicaceae						
<i>Arabis stelleri</i> DC. var. <i>japonica</i> (A.Gray) F. Schmidt	ハマハタザオ	3d	F	F	127	
<i>Barbarea orthoceras</i> Ledeb.	ヤマガラシ	3d	Y	Y	-	
<i>Cakile edentula</i> (Bigelow) Hook.	オニハマダイコン	3d	Y	Y	-	
<i>Cardamine leucantha</i> (Tausch) O.E.Schulz	コンロンソウ	2b	Y	Y	-	
		3a	F	Y	97	riverside
<i>Cardamine scutata</i> Thunb.	タネツケバナ	2d, 3c	Y	Y	-	riverside
<i>Draba borealis</i> DC.	エゾイヌナズナ	2d	Y	Y	-	
<i>Nasturtium officinale</i> R.Br.	オランダガラシ	3c	Y	Y	-	riverside

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Table 2. Continued.

Family/species names	Japanese names	Localities	Coll. *	Identified by*	Specimen No. for "Kunashiri-2013"	Remarks**
Polygonaceae						
<i>Fallopia sachalinensis</i> (F.Schmidt) Ronse Decr.	オオイタドリ	1b, 1c, 1d, 2d, 2c, 3c, 3d	Y	Y	-	
<i>Persicaria lapathifolia</i> (L.) Delarbre var. <i>incana</i> (Roth) H.Hara	サナエタデ	1b	Y	Y	-	
<i>Persicaria posumbu</i> (Buch.-Ham. ex D.Don) H.Gross	ハナタデ	1b, 3d	Y	Y	-	
		3c	F	Y	92	
<i>Persicaria thunbergii</i> (Siebold & Zucc.) H.Gross	ミゾソバ	1a, 1b, 2b, 3c	Y	Y	-	2b, 3c: along streams
<i>Polygonum aviculare</i> L. subsp. <i>aviculare</i>	ミチヤナギ	1b	Y	Y	-	
<i>Rumex acetosella</i> L. subsp. <i>pyrenaicus</i> (Pourret ex Lapeyr.) Akeroyd	ヒメスイバ	3d	Y	Y	-	
<i>Rumex alpestris</i> Jacq. subsp. <i>lapponicus</i> (Hiitonen) Jalas	タカネスイバ	1b	F, I	Y	16	
		2d, 3d	Y, I	Y, I	-	
<i>Rumex gmelinii</i> Turcz. ex Ledeb.	カラフトノダイオウ	2a	F	B	37	RD(J)
<i>Rumex obtusifolius</i> L.	エゾノギシギシ	1b	Y	Y	-	
<i>Rumex</i> sp.	スイバ属	3d	Y	Y	-	
Droseraceae						
<i>Drosera rotundifolia</i> L.	モウセンゴケ	2a, 2e, 4a	Y	Y	-	
Caryophyllaceae						
<i>Arenaria lateriflora</i> L.	オオヤマフスマ	1b	F	Y	14	
		3a, d	Y	Y	-	
<i>Cerastium fischerianum</i> Ser.	オオバナノミミナグサ	1c, 3d	Y, I	Y, I	-	
<i>Cerastium fontanum</i> Baumg. subsp. <i>vulgare</i> (Hartm.) Greuter & Burdet	オオミミナグサ	3c	Y	Y	-	
<i>Dianthus superbus</i> L. var. <i>longicalycinus</i> (Maxim.) F.N.Williams	カワラナデシコ	2d	Y	Y	-	
<i>Honckenya peplodes</i> (L.) Ehrh. var. <i>major</i> Hook.	ハマハコベ	1c, 3d	Y	Y	-	
<i>Sagina japonica</i> (Sw.) Ohwi	ツメクサ	3d	Y	Y	-	
<i>Stellaria bungeana</i> Fenzl var. <i>stuebendorffii</i> (Regel) Y.C.Chu	オオハコベ	1b	Y	Y	-	
<i>Stellaria fenzlii</i> Regel	シラオイハコベ	1a	F, Y	B	47, 50	
<i>Stellaria graminea</i> L.	カラフトホソバハコベ	4'	F	B	86	
<i>Stellaria radicans</i> L.	エゾオオヤマハコベ	1b	Y	Y	-	
		3c	Y	B	91	
Amaranthaceae						
<i>Chenopodium album</i> L.	シロザ	1b	Y	Y	-	
<i>Salsola komarovii</i> Iljin	オカヒジキ	1c, 3d	Y	Y	-	
Cornaceae						
<i>Cornus canadensis</i> L.	ゴゼンタチバナ	2b, 2e, 3a, 4a, 4b	Y	Y	-	
<i>Cornus controversa</i> Hemsl. ex Prain	ミズキ	2b	Y	Y	-	
Hydrangeaceae						
<i>Hydrangea paniculata</i> Siebold	ノリウツギ	1a, 1b, 2a, 2b, 2e, 3a, 3c, 3d, 4a	Y	Y	-	
<i>Hydrangea petiolaris</i> Siebold & Zucc.	ツルアジサイ	1a, 2b	Y	Y	-	RD(R), RD(S)
		2e'	F	Y	87	
<i>Schizophragma hydrangeoides</i> Siebold & Zucc.	イワガラミ	1a, 2b, 3a	Y	Y	-	RD(R), RD(S)
Balsaminaceae						
<i>Impatiens noli-tangere</i> L.	キツリフネ	1a, 2b, 3a	Y	Y	-	3a: along streams
Polemoniaceae						
<i>Polemonium schizanthum</i> Klok. (<i>P. laxiflorum</i> (Regel) Kitam., p.p.)	ハナシノブ属	2c	Y	B	63	
		4a	Y	Y	163	
Primulaceae						
<i>Lysimachia vulgaris</i> L. var. <i>davurica</i> (Ledeb.) R.Knuth	クサレダマ	4a	Y	Y	-	
<i>Trientalis europaea</i> L.	ツマトリソウ	4a	Y	Y	-	
Actinidiaceae						
<i>Actinidia arguta</i> (Siebold & Zucc.) Planch. ex Miq. f. <i>platyphylla</i> (A.Gray ex Miq.) H.Ohba	コクワ	1a, 2b, 3a	Y	Y	-	RD(S)
<i>Actinidia kolomikta</i> (Maxim. & Rupr.) Maxim.	ミヤママタタビ	2b, 3a	Y	Y	-	
		2e'	F	F	75	

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Table 2. Continued.

Family/species names	Japanese names	Localities	Coll. *	Identified by*	Specimen No. for "Kunashiri-2013"	Remarks**
Ericaceae						
<i>Empetrum nigrum</i> L. var. <i>japonicum</i> K. Koch	ガンコウラン	2e, 3d, 4a	Y	Y	-	
		2f	I	I	-	
<i>Eubotryoides grayana</i> (Maxim.) H.Hara var. <i>grayana</i>	ハナヒリノキ	2b	Y	Y	-	
		2e	Y	B	69	
<i>Ledum palustre</i> L. subsp. <i>diversipilosum</i> (Nakai) H.Hara var. <i>nipponicum</i> Nakai	イソツツジ	2e, 2f, 3d, 4a	Y	Y	-	
<i>Menziesia pentandra</i> Maxim.	コヨウラクツツジ	2b	F	B	54	
<i>Monotropastrum humile</i> (D.Don) H.Hara	ギンリョウソウ	1a, 3a	Y	Y	-	
<i>Orthilia secunda</i> (L.) House	コイチャクソウ	3a	F	F	98	
<i>Pyrola japonica</i> Klentze ex Alefeld	イチヤクソウ	3a	Y	Y	-	
<i>Pyrola renifolia</i> Maxim.	ジンヨウイチヤクソウ	3a	Y	Y	-	
<i>Rhododendron tschonoskii</i> Maxim.	コメツツジ	2e	F	Y	36	RD(R), RD(S)
<i>Vaccinium oxycoccos</i> L.	ツルコケモモ	4a	Y	Y	-	
<i>Vaccinium praestans</i> Lamb.	イワツツジ	2d, 2e, 4b	Y	Y	-	
<i>Vaccinium smallii</i> A.Gray var. <i>smallii</i>	オオバスノキ	3d, 4b	Y	Y	-	
<i>Vaccinium vitis-idaea</i> L.	コケモモ	2e	Y	Y	-	
Rubiaceae						
<i>Galium kamtschaticum</i> Steller ex Roem. & Schult. var. <i>kamtschaticum</i>	エゾノヨツバムグラ	1a	Y	Y	5	
<i>Galium odoratum</i> (L.) Scop.	クルマバスウ	1a	Y	Y	-	
<i>Galium pseudoasprellum</i> Makino	オオバノヤエムグラ	1b	Y	Y	-	
<i>Galium trifidum</i> L.	ホソバノヨツバムグラ	4a	F	Y	150	
<i>Galium trifloriforme</i> Kom.	オククルマムグラ	1a	Y	Y	-	
<i>Galium triflorum</i> Michx.	ヤツガタケムグラ	1a	F	B	46	RD(J)
<i>Galium verum</i> L. subsp. <i>asiaticum</i> (Nakai) T.Yamaz.	キバナノカワラマツバ	1b, c, 2d	Y	Y	-	
		3d	F	F	119	
<i>Rubia jesoensis</i> (Miq.) Miyabe & T.Miyake	アカネムグラ	3d	F	Y	129	
Genitianeae						
<i>Gentiana triflora</i> Pall. var. <i>japonica</i> (Kusn.) H.Hara	エゾリンドウ	2c	Y	Y	-	
<i>Swertia tetrapetala</i> Pall. subsp. <i>tetrapetala</i> var. <i>tetrapetala</i>	チシマセンプリ	2d	Y	Y	-	
		2e	I	F	76	
Apocynaceae						
<i>Metaplexis japonica</i> (Thunb.) Makino	ガガイモ	3d	Y	Y	-	
Boraginaceae						
<i>Mertensia maritima</i> (L.) Gray subsp. <i>asiatica</i> Takeda	ハマベンケイソウ	1c, 3d	Y	Y	-	
<i>Myosotis arvensis</i> (L.) Hill	ノハラムラサキ	1b	Y	Y	-	
Convolvulaceae						
<i>Calystegia soldanella</i> (L.) R.Br.	ハマヒルガオ	3d	Y	Y	-	
Oleaceae						
<i>Fraxinus lanuginosa</i> Koidz. f. <i>serrata</i> (Nakai) Murata	アオダモ	3a	Y	Y	-	
Plantaginaceae						
<i>Linaria japonica</i> Miq.	ウンラン	3d	Y	Y	-	
<i>Plantago asiatica</i> L.	オオバコ	1b, 2c, 3c	Y	Y	-	
<i>Plantago camtschatica</i> Cham. ex Link	エゾオオバコ	1c, 2d	Y	Y	-	
		3d	F	F	125	
<i>Veronica americana</i> (Raf.) Schwein. ex Benth.	エゾノカワヂシャ	1d, 3c	Y	Y	-	3c: along streams
		2c	Y	F	74	
<i>Veronica schmidtiana</i> Regel subsp. <i>schmidtiana</i>	キクバクワガタ	1c	Y	Y	-	
Scrophulariaceae						
<i>Scrophularia alata</i> A.Gray	エゾヒナノウスツボ	2d, 3d	Y	Y	-	
Lamiaceae						
<i>Clinopodium chinense</i> (Benth.) Kuntze subsp. <i>grandiflorum</i> (Maxim.) H.Hara	クルマバナ	3d	Y	Y	-	
<i>Glechoma hederacea</i> L. subsp. <i>grandis</i> (A.Gray) H.Hara	カキドオシ	1d	Y	Y	-	
<i>Lamium album</i> L. var. <i>barbatum</i> (Siebold & Zucc.) Franch. & Sav.	オドリコソウ	1b, 2d, 3a	Y, I	Y, I	-	
<i>Lycopus lucidus</i> Turcz. ex Benth.	シロネ	2c, 4a	Y	Y	-	
<i>Lycopus uniflorus</i> Michx.	エゾシロネ	2c	Y	B	67	
<i>Prunella vulgaris</i> L. subsp. <i>asiatica</i> (Nakai) H.Hara	ウツボグサ	2e, 3a, 4a	Y	Y	-	

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Table 2. Continued.

Family/species names	Japanese names	Localities	Coll. *	Identified by*	Specimen No. for "Kunashiri-2013"	Remarks**
<i>Scutellaria shikokiana</i> Makino	ミヤマナミキ	3a	Y	B	99	
<i>Scutellaria strigillosa</i> Hemsl.	ナミキソウ	3d	Y	Y	-	
<i>Stachys aspera</i> Michx. var. <i>hispidula</i> (Regel) Vorosch.	イヌゴマ	4a	Y	Y	-	
Orobanchaceae						
<i>Euphrasia maximowiczii</i> Wettst. var. <i>yezoensis</i> (H.Hara) H.Hara ex T.Yamaz.	エゾコゴメグサ	1b	Y	Y	-	
<i>Pedicularis resupinata</i> L. subsp. <i>oppositifolia</i> (Miq.) T.Yamaz.	シオガマガク	2d	I	Y	53	
<i>Rhinanthus angustifolius</i> C.C.Gmel. subsp. <i>grandiflorus</i> (Wallr.) D.A.Webb	オクエソガラガラ	1b	Y	Y	-	
Aquifoliaceae						
<i>Ilex crenata</i> Thunb. var. <i>radicans</i> (Nakai) Murai	ハイイヌツゲ	4a	Y	Y	-	RD(S)(<i>I. crenata</i> Thunb.)
<i>Ilex rugosa</i> F.Schmidt	ツルツゲ	3a, 4b	Y	Y	-	
Campanulaceae						
<i>Adenophora triphylla</i> (Thunb.) A.DC. var. <i>japonica</i> (Regel) H.Hara	ツリガネニンジン	2d, 3d	Y	Y	-	
<i>Lobelia sessilifolia</i> Lamb.	サワギキョウ	4a	Y	Y	-	
<i>Peracarpa carnosa</i> (Wall.) Hook.f. & Thomson	タニギキョウ	3a	Y	Y	-	
		3a	Y	B	100	
Menyanthaceae						
<i>Menyanthes trifoliata</i> L.	ミツガシワ	4a	Y	Y	-	
Asteraceae						
<i>Achillea alpina</i> L. subsp. <i>japonica</i> (Heimerl) Kitam.	キタノコギリソウ	2d	Y	Y	-	RD(J)
<i>Achillea millefolium</i> L.	セイヨウノコギリソウ	2c	Y	Y	-	
<i>Achillea ptarmica</i> L. subsp. <i>macrocephala</i> (Rupr.) Heimerl	エゾノコギリソウ	1c, 2d, 3d	Y	Y	-	
<i>Anaphalis margaritacea</i> (L.) Benth. & Hook.f. subsp. <i>margaritacea</i>	ヤマハハコ	1b, 2c, 2d, 2e	Y, I	Y, I	-	
<i>Arctium lappa</i> L.	ゴボウ	1b	Y	Y	-	
<i>Artemisia indica</i> Willd. var. <i>maximowiczii</i> (Nakai) H.Hara	ヨモギ	1b, 2b, 2d	Y	Y	-	
<i>Artemisia japonica</i> Thunb.	オトコヨモギ	3b	F	Y	93	
		3c	Y	Y	-	along streams
<i>Artemisia japonica</i> Thunb. subsp. <i>littorcola</i> (Kitam.) Kitam.	ハマオトコヨモギ	2d	I	I	-	
<i>Artemisia koidzumii</i> Nakai	ヒロハウラジロヨモギ	2d	I	I	-	
<i>Artemisia montana</i> (Nakai) Pamp.	オオヨモギ	1b, 2d	I	I	-	
		3a, 3c, 3d	Y	Y	-	
<i>Artemisia stelleriana</i> Besser	シロヨモギ	3d	F	F	124	
<i>Cirsium kamschaticum</i> Ledeb. ex DC.	チシマアザミ	1b, 2b, 2c, 2d, 3c	F	F	-	
		2e	F	F	80	
<i>Cirsium pectinellum</i> A.Gray	エゾノサワアザミ	3d	F	F	116	
		4a	Y	Y	-	
<i>Erigeron annuus</i> (L.) Pers.	ヒメジョオン	1b, 2c, 3c	Y	Y	-	
<i>Erigeron strigosus</i> Muhl. ex Willd.	ヘラバヒメジョオン	4a	F	Y	157	
<i>Eupatorium glehnii</i> F. Schmidt ex Trautv.	ヨツバヒヨドリ	1b	F	B	24	
		3a, 2c	Y	Y	-	
<i>Hieracium umbellatum</i> L.	ヤナギタンポポ	2c	Y	B	62	
<i>Ixeridium dentatum</i> (Thunb.) Tzvelev subsp. <i>nipponicum</i> (Nakai) J.H.Pak & Kawano var. <i>albiflorum</i> (Makino) Tzvelev	シロバナニガナ	2c, 2e	Y	Y	-	
<i>Ixeris repens</i> (L.) A.Gray	ハマニガナ	3d	Y	Y	-	
<i>Leontodon autumnalis</i> L.	アキノタンポポモドキ	2c	Y	F	63	
		3c, d	Y	Y	-	
<i>Leucanthemum vulgare</i> Lam.	フランスギク	2c, 3c	Y, I	Y, I	-	
<i>Ligularia hodgsonii</i> Hook.f.	トウゲブキ	3d	F	F	114	
		2e, 4a	Y	Y	-	
<i>Matricaria matricarioides</i> (Less.) Ced.Porter ex Britton	コシカギク	1b	Y	Y	-	
<i>Parasenecio hastatus</i> (L.) H.Koyama subsp. <i>orientalis</i> (Kitam.) H.Koyama	ヨブスマソウ	1a, 2b, 2c, 3a	Y	Y	-	
<i>Parasenecio kamschaticus</i> (Maxim.) Kadota	ミミコウモリ	1a, 2b, 2e, 3a	Y	Y	-	
<i>Petasites japonicus</i> (Siebold & Zucc.) Maxim. subsp. <i>giganteus</i> (G.Nicholson) Kitam.	アキタブキ	1d, 2b, 2c, 2d, 3a, 3c	Y, I	Y, I	-	
<i>Picris hieracioides</i> L. subsp. <i>japonica</i> (Thunb.) Krylov	コウゾリナ	3d	F	F	128	
		3d	I	I	-	

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Table 2. Continued.

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<i>Picris hieracioides</i> L. subsp. <i>kamtschatica</i> (Ledeb.) Hultén	カンチコウヅリナ	1b, 3d	Y	Y	-	
<i>Saussurea fauriei</i> Franch.	フォーリーアザミ	2d	Y	Y	-	RD(J)
<i>Saussurea riederi</i> Herder subsp. <i>yezoensis</i> (Maxim.) Kitam.	ナガバキアザミ	2d	I	I	-	
<i>Senecio cannabifolius</i> Less.	ハンゴンソウ	1a, 1b, 3a, 4a	Y	Y	-	
<i>Senecio nemorensis</i> L.	キオン	1b, 2d	I	I	-	
		3d	F	Y	108	
<i>Senecio pseudoarnica</i> Less.	エゾオグルマ	2d	Y	Y	-	
<i>Solidago virgaurea</i> L. subsp. <i>asiatica</i> (Nakai ex H.Hara) Kitam. ex H.Hara	アキノキリンソウ	1a, 2b, 2e, 3a, 3c, 3d	Y	Y	-	
<i>Sonchus brachyotus</i> DC.	ハチジョウナ	3d	Y	Y	-	
<i>Taraxacum officinale</i> Weber ex F.H.Wigg.	セイヨウタンポポ	1b, c, d, 3a, 3c	Y	Y	-	
<i>Taraxacum shikotanense</i> Kitam.	シコタンタンポポ	2d	Y	Y	-	
Adoxaceae						
<i>Adoxa moschatellina</i> L.	レンブクソウ	3a	Y	Y	102	
<i>Sambucus racemosa</i> L. subsp. <i>kamtschatica</i> (E.L.Wolf) Hultén	エゾニワトコ	2b, 3a	Y,I	Y,I	-	
<i>Viburnum furcatum</i> Blume ex Maxim.	オオカメノキ	2b	Y	Y	-	
<i>Viburnum wrightii</i> Miq.	ミヤマガマズミ	2b	Y	Y	-	RD(R)
Caprifoliaceae						
<i>Lonicera caerulea</i> L. var. <i>emphylocalyx</i> (Maxim.) Nakai	クロミノウグイスカ グラ	3d	F	Y	120	
<i>Lonicera glehnii</i> F. Schmidt	エゾヒヨウタンボク	1a	Y	B	51	RD(J)
Araliaceae						
<i>Aralia cordata</i> Thunb.	ウド	3a, 2b	Y	Y	-	RD(R), RD(S)
<i>Aralia elata</i> (Miq.) Seem.	タラノキ	1a, 2b, 3a	Y,I	Y,I	-	RD(S)
<i>Kalopanax septemlobus</i> (Thunb.) Koidz.	ハリギリ	1a, 2b, 3a	Y	Y	-	RD(R), RD(S)
Apiaceae						
<i>Angelica genuflexa</i> Nutt.	オオバセンキュウ	1d, 2d	Y,I	Y,I	-	
<i>Angelica sachalinensis</i> Maxim. var. <i>sachalinensis</i>	エゾノヨロイグサ	2d	I	Y,I	-	
<i>Angelica ursina</i> (Rupr.) Maxim.	エゾニユウ	2d	Y	Y	-	
<i>Anthriscus sylvestris</i> (L.) Hoffm. subsp. <i>sylvestris</i>	シャク	1b	Y	Y	-	
<i>Bupleurum longiradiatum</i> Turcz.	ホタルサイコ	2d	I	F	52	
<i>Cicuta virosa</i> L.	ドクゼリ	1d, 4a	Y	Y	-	
<i>Coelopleurum gmelinii</i> (DC.) Ledeb.	エゾノシシウド	1b, 2d, 3d	Y	Y	-	
<i>Conioselinum chinense</i> (L.) Britton, Sterns & Poggenb.	カラフトニンジン	2d	I	I	-	
		3d	Y	Y	-	
<i>Cryptotaenia canadensis</i> (L.) DC. subsp. <i>japonica</i> (Hassk.) Hand.-Mazz.	ミツバ	3a	Y	Y	-	
<i>Glehnia littoralis</i> F.Schmidt ex Miq.	ハマボウフウ	3d	Y	Y	-	
<i>Heracleum lanatum</i> Michx. var. <i>lanatum</i>	オオハナウド	1b, 1c, 1d	Y	Y	-	
		3d	F	F	113	
		2d	I	I	-	
<i>Ligusticum scoticum</i> L. subsp. <i>hultenii</i> (Fernald) Hultén	マルバトウキ	1b, 1c, 2d	Y	Y	-	Ligusticum scoticum L. subsp. hultenii (Fernald) Hultén
		3d	F	F	118	
<i>Peucedanum terebinthaceum</i> (Fisch. ex Trevir.) Fisch. ex Turcz.	カワラボウフウ	2d	Y	Y	-	
<i>Pleurospermum uralense</i> Hoffm.	オオカサモチ	1a, 1d, 2d, 3a	Y,I	Y,I	-	
<i>Sanicula chinensis</i> Bunge	ウマノミツバ	1b	Y	Y	-	
<i>Tilingia ajanensis</i> Regel	シラネニンジン	2e	F	Y	78	
<i>Torilis japonica</i> (Houtt.) DC.	ヤブジラミ	3a	Y	Y	-	