



# Flora of the protected nature territory of the Botanical Garden-Institute FEB RAS (Vladivostok, Russia)

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## ABSTRACT

A revision of vascular plants growing within the protected forest territory of the Botanical Garden-Institute FEB RAS, an area of 155.4 ha, was carried out. The new check-list numbers a total of 604 species from 347 genera and 96 families. Of them, 85 species, collected mainly in anthropogenic habitats, along roads, trails, and in forest-free areas, have been recorded for the first time from the study area. The native flora includes 535 species; the number of alien species is 32; the species planted in the forest area, 16; the species escaped from culture and introduced in the forest communities, 21. The structure of the flora in the forest part of the Botanical Garden-Institute has changed mainly due to the alien species, both unintentionally introduced and escaped from cultures.

**Keywords:** vascular plants, flora, biodiversity, botanical garden, aboriginal species, alien species, rare species

## РЕЗЮМЕ

**Марчук Е.А., Нестерова С.В., Колдаева М.Н., Калинкина В.А., Храпко О.В., Царенко Н.А., Юрченко С.В. Флора особо охраняемой природной территории Ботанического сада-института ДВО РАН (г. Владивосток, Россия).** На охраняемой лесной территории Ботанического сада-института площадью 155,4 га проведена ревизия сосудистых растений. Новый перечень содержит 604 вида из 347 родов и 96 семейств. Впервые для исследуемой территории отмечены 85 видов, в основном собранных в антропогенных местообитаниях, вдоль дорог и троп, на осветленных участках. Аборигенная флора включает 535 видов, число заносных видов – 32, посаженных на лесной территории – 16, ушедших из культуры и внедрившихся в лесные сообщества – 21. Изменения в структуре флоры лесной части Ботанического сада-института произошли в основном за счет чужеродных видов, как случайно заносных, так и ушедших из культуры.

**Ключевые слова:** сосудистые растения, флора, биоразнообразие, ботанический сад, аборигенные виды, чужеродные виды, редкие виды

The Botanical Garden-Institute of the Far Eastern Branch of the Russian Academy of Sciences (BGI) is one of the protected areas of the Federal level. It is located in the city of Vladivostok 19 km north of the downtown. The BGI was founded in 1949 in the area of a well-preserved Manchurian fir – broad-leaved mixed forest. The location of the BGI was chosen by two eminent scientists, Boris P. Kolesnikov and Nikolay E. Kabanov. The territory of the BGI includes two parts: protected forest (155.4 ha) and the live plant collections (14.3 ha). In this paper, we consider the natural flora only of the protected forest part within the boundaries of the BGI.

The territory of the BGI (Fig. 1) is located on the northwestern and southern slopes of the Central Range, which runs along the Muravyov-Amurskiy Peninsula. The steepness of the slopes ranges from 5 to 40.5°. The highest point of the territory is 170 m above sea level, the lowest is 20 m. The hydrographic network is not well expressed. A single stream, 1 km long, with a narrow channel and steep high banks flows down the northern slope.

The climate is monsoon, warm, excessively humid, with cold and dry winters. According to Köppen & Geiger, this climate is classified as Dwb (Peel et al. 2007). The mean tem-

perature is 6.4°C, the annual precipitation is 848 mm. The mean monthly air temperature in January is -16.2°C, in July +19.3°C. The degrees-days at the base temperature +10°C reach 2200–2400°C. The average wind speed is 6.0 m/s. The growing season lasts about 140–150 days. The average snow depth in the winter months is 3 cm, the maximum is 50 cm. The most frequent adverse weather events in this area are tropical cyclones (typhoons) in summer, strong winds, snowstorms, and icing in late fall and winter.

The main rocks that form the Central Range of the Muravyov-Amurskiy Peninsula are gray granites, porphyries and diorites. The depth of bedrock surface varies from 0.1 to 2.5 m. Soils are predominantly natural, not affected by human activities, but slightly changed in the upper part of the soil profile only in some areas. The soils are represented by two types: brown forest soils (86.5 ha or 50.9 % of the BGI's territory) and brown forest gley soils (83.5 ha, 49.1 %).

The vegetation of the BGI comprises the well-preserved Manchurian fir – Korean pine – broad-leaved forests and their successional stages (55 % of total cover) (Table 1), and secondary forest communities, of which 30 % are represented by Mongolian oak forests. The rest of the forests are mixed deciduous forests that include *Fraxinus manshurica*, *Betula*

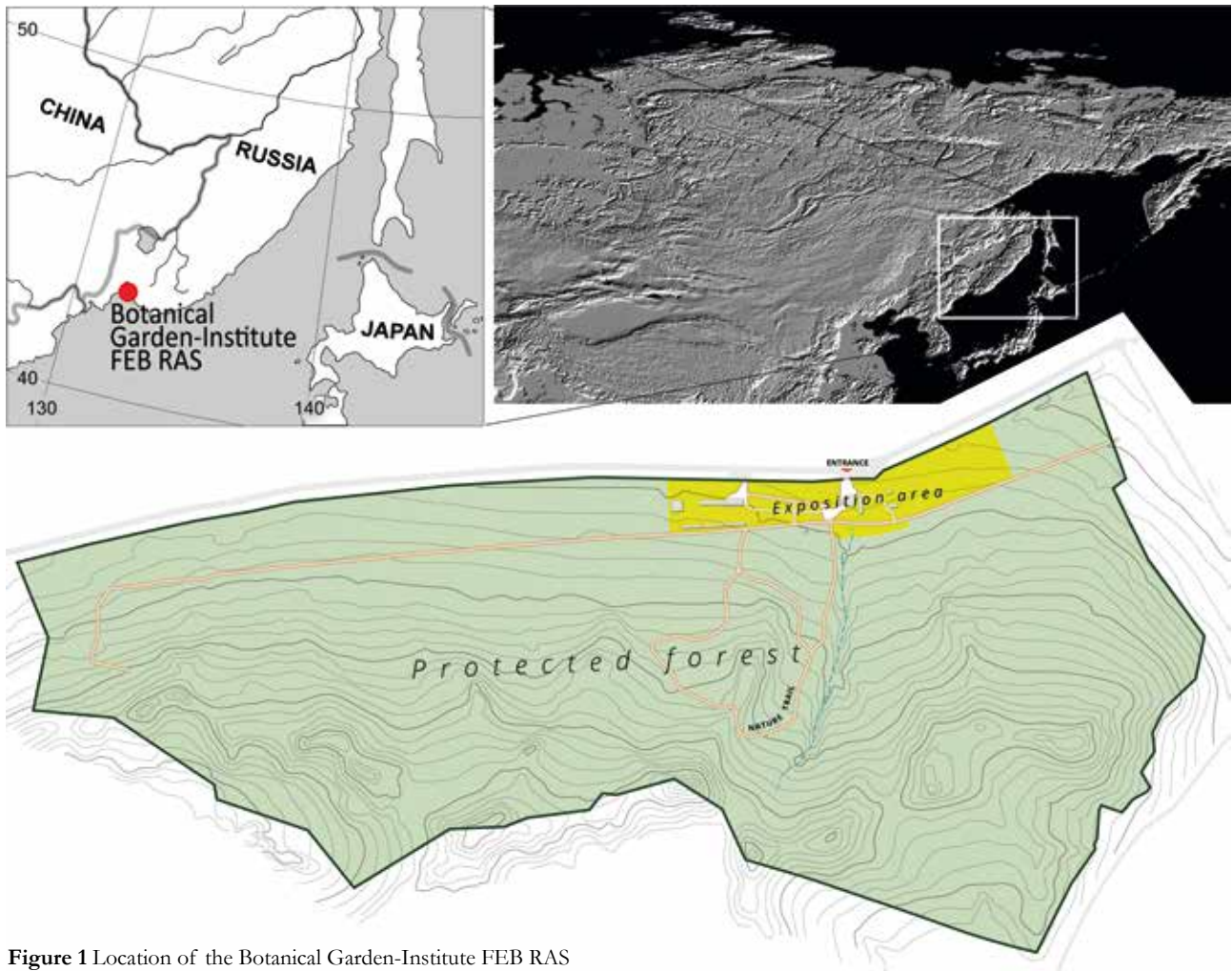


Figure 1 Location of the Botanical Garden-Institute FEB RAS

*platyphylla*, *Populus maximowiczii*, *P. tremula*, *Alnus hirsuta* and *Salix* spp. All forest communities have been transformed by various anthropogenic and climatic impacts. The most significant recent devastations were caused by Typhoon Maysak

that brought strong winds in September 2020 and by a severe ice storm in November 2020 (Dziziyurova et al. 2021, Dziziyurova et al. 2022).

Table 1. Main habitats on the territory of the Botanical Garden-Institute FEB RAS

Habitat type	Part of the total area, %	Vegetation structure and habitat	Main species	Number of species on 20 by 20 m plot
<b>Forest types</b>				
1. Manchurian fir – Korean pine – broad-leaved forests – <i>Abieti holophyllae-Quercetum mongolicae</i> Kim ex Krestov et al. 2006 (Krestov et al. 2006)	55	Primary multilayered forests occupy the middle and lower parts of medium and gently steeping northern slopes. Soils are deep, loamy, with no rough material	<i>Abies holophylla</i> , <i>Pinus koraiensis</i> , <i>Tilia amurensis</i> , <i>T. mansburica</i> , <i>Acer mono</i> , <i>Kalopanax septemlobus</i> , <i>Phellodendron amurense</i> , <i>Juglans manshurica</i>	80–90
2. Oak-birch forests – <i>Lespedeza bicoloris-Quercetum mongolicae</i> Kim ex Krestov et al. 2006 (Krestov et al. 2006)	30	Secondary (post-fire) forests occupy the upper steep parts of the northern and the southern slopes. Soils are shallow, brown, with thin humic horizon	<i>Quercus mongolica</i> , <i>Betula davurica</i> , <i>Tilia amurensis</i> , <i>T. mansburica</i> , <i>Fraxinus rhynchophylla</i>	70–80
3. Deciduous mixed forests (ash, birch, aspen, alder, willow)	8	Secondary forests predominate in wetter habitats, occupy the lower parts of gentle slopes and foothills. Soils are gleyed brown-podzolic and alluvial, with thick humic horizon	<i>Fraxinus manshurica</i> , <i>Populus maximowiczii</i> , <i>P. tremula</i> , <i>Ulmus japonica</i> , <i>Betula platyphylla</i> , <i>Alnus hirsuta</i> , <i>Salix</i> spp.	40–50
<b>Non-forest types</b>				
4. Rock outcrops	1	Occupy small areas near the ridge	<i>Woodsia ilvensis</i> , <i>W. polystichoides</i> , <i>Camptosorus sibiricus</i> , <i>Selaginella helvetica</i>	5–20
5. Stream bed, rocky-gravelly banks of a stream	1	Small stream on the northern slope, with drying channel	<i>Saxifraga manchuriensis</i> , <i>Chrysoplenium villosum</i>	40–60
6. Anthropogenic places (paths, roads, glades, cuttings)	5	Trails, roads along the northern and eastern boundaries of the forest area, artificial glades	<i>Adenocaulon adhaerescens</i> , <i>Agrimonia striata</i>	10–30

Besides forests, the territory of the BGI has rock outcrops on the axis of the Central Range. They occupy the near-top part of the slopes and face mainly north and, to a lesser extent, east, northeast, northwest and west.

The BGI includes also anthropogenically modified habitats, such as roads and educational trails. In the western part of the BGI, there are areas with artificial clearings for an arboretum and experimental planting.

Solovyov (1935) first described the vegetation of the Muravyov-Amurskiy Peninsula before the organization of the BGI. Later, Kurentsova (1970) surveyed in detail the BGI vegetation and identified 13 associations of the mixed Manchurian fir–broad-leaved forests and 8 associations of the oak forests. She was the first to draw up a summary of the flora of the forest area of the BGI, which included 396 species of higher vascular plants from 243 genera and 76 families. However, the species list was not published.

The study of the flora and vegetation of the Botanical Garden was continued by Nedoluzhko (1984, 1999), who indicated 447 species of the higher vascular plants for the flora of the forest area of the BGI. The most recent catalog of vascular plant species, both natural and cultivated, was published by Nedoluzhko et al. (2001). Subsequently, information on the composition of the flora of rock habitats was supplemented by Koldaeva (2009), where she indicated 129 species, but the check-list was not compiled. Some species new to the flora of the BGI were added by Nesterova (2021, 2022).

## CHECK-LIST

The current check-list of vascular plants is based on the herbarium collections made by the authors within the territory of the Botanical Garden-Institute FEB RAS, mainly in 2014–2022, the specimens from the Herbarium of the BGI (VBGI) and literary sources considering the flora of the study area (Kurentsova 1970, Nedoluzhko 1984, 1999, Nedoluzhko et al. 2001, Koldaeva 2009, Nesterova 2021, 2022).

The annotated list of species includes three divisions: Lycopodiophyta, Polypodiophyta and Spermatophyta. We follow the phylogenetic concept by PPG I (The Pteridophyte Phylogeny Group 2016) for the families of the Lycopodiophyta and Polypodiophyta, and APG IV (The Angiosperm Phylogeny Group 2016) with clarifications according to Stevens (2022, APweb) for the families of Magnoliopsida. An exception is the group of Dicotyledonae, which is given in accordance with Takhtajan (1987), in contrast to the modern APG IV (2016) system that includes the groups Magnoliids (primitive dicots), Eudicots (true dicots) and several unranked orders. Families within the highest taxa, genera within families, and species within genera are arranged alphabetically by their scientific names. The monotypic concept of the species was adopted. The accepted species names are mainly given in accordance with “Plants of the World Online” (POWO 2022. <http://www.plantsoftheworldonline.org/>), but in some cases we also took into account the recent floras and taxonomic treatments of some groups of plants (Kharkevich 1986–1996, Kozhevnikov & Probatova 2006, Kozhevnikov et al. 2019, Tzvelev & Probatova 2019, etc.). The species authors are given in accordance with “The International Plant Name Index” (IPNI 2022. <http://www.ipni.org/>).

The nomenclature paragraph for each species contains the accepted scientific name, synonyms and references to the main literary sources, in which the species was mentioned for the territory of the BGI. Full bibliographic information is given in the sources cited. As the most complete data on the flora were published by a limited number of authors, we encoded the literary sources as follows: Nedoluzhko 1984 – 1, Nedoluzhko 1999 – 2, Nedoluzhko et al. 2001 – 3, Koldaeva 2009 – 4, Nesterova 2021 – 5, Nesterova 2022 – 6, Kurentsova 1970 – 7. The code is followed by a colon mark and by the page number in the source. All the codes of the literary sources are enclosed in square brackets. The references are followed by the numbers of habitats (see Table 1) where these species occur. Characteristics of species’ rarity is abbreviated as follow: Un – unique; Rr – rare; Sp – sparse; Fr – frequent; Com – common. Aboriginal species are not specially designated; alien species are abbreviated as Al; species planted in the forest part of the BGI as Pl; and species escaped from a culture as Es.

One asterisk (\*) indicates species listed in the Red Data Book of Primorye Territory (Kozhevnikov 2008), two asterisks (\*\*) indicate species in the Red Data Book of the Russian Federation (Trutnev et al. 2008). The taxa new to the BGI, indicated by the plus sign (+). Most of them are confirmed by specimens available at the VBGI. The species known from literature, which are doubtful and not supported by specimens, are indicated by “?” and accompanied by some comments.

At the end of the annotation, the accession numbers of confirmed herbarium specimens are given. All specimens are deposited in the herbarium collection of the BGI (VBGI), with most of them digitized and placed in the electronic catalog (e-Herbarium 2015–2022, Kislov et al. 2017).

## LYCOPODIOPHYTA

### LYCOPODIOPSIDA

#### Selaginellaceae Willk.

*Selaginella helvetica* (L.) Spring: [1:74; 2:12; 3:234]. – 4 – Rr. – VBGI143915.

*Selaginella rupestris* (L.) Spring: [1:74; 2:12; 3:234]. At present, the growth of *S. rupestris* within the BGI is extremely doubtful; during a special examination of rocky outcrops, the species was not found. Nevertheless, it reliably grows outside the BGI at a distance of about 800 m, on the “Wind Rose” Rock near the Sedanka Reservoir. The specimen VBGI33681 was identified incorrectly.

## POLYPODIOPHYTA

### POLYPODIOPSIDA

#### EQUISETIDAE

#### Equisetaceae Michx. ex DC.

*Equisetum arvense* L.: [1:74; 2:12; 3:102]. – 5 – Sp. – VBGI32340, VBGI143478, VBGI144011.

*Equisetum hyemale* L.: [1:74; 2:12; 3:102]. – 1, 5 – Sp. – VBGI143478, VBGI109240, VBGI109254.

*Equisetum pratense* L.: [1:74; 2:12; 3:102]. – 3, 6 – Fr. – VBGI143388, VBGI109199, VBGI143976.

*Equisetum sylvaticum* L.: [1:74; 2:12; 3:102]. – 1 – Fr.

#### OPHIOGLOSSIDAE

#### Ophioglossaceae Martinov

*Botrychium robustum* (Rupr.) Underw.: [1:74; 2:11; 3:72]. – 1, 3, 6 – Rr.

## POLYPODIIDAE

## Aspleniaceae Newman

*Asplenium tenuicaule* Hayata: [2:11; 3:47; 4:77]. – *Asplenium anagrammoides* auct. non Christ: [1:74]. – 4 – Rr. – VBG1143933.

*Camptosorus sibiricus* Rupr.: [1:74; 3:50; 4:47]. – 4 – Rr. – VBG1142885, VBG1143914.

## Athyriaceae Alston

*Athyrium monomachii* (Kom.) Kom.: [3:65; 5:1]. – 1, 3 – Sp. – VBG1120714, VBG1120689, VBG1120691, VBG1120694, VBG1120714.

*Athyrium sinense* Rupr.: [2:12; 3:65; 4:76]. – *A. rubripes* Kom.: [1:74]. – 1, 3, 4, 6 – Com. – VBG1120687.

*Athyrium yokoscense* (Franch. & Sav.) Christ: [3:65; 4:76; 5:2]. – 1, 3, 6 – Sp. – VBG1120699, VBG1120701, VBG1120703, VBG122542, VBG122596, VBG1120699, VBG1143925.

*Cornopteris crenuloserrulata* (Makino) Nakai: [2:12; 3:65]. – *Athyrium crenulato-serrulatum* Makino: [1:74]. – 1, 3 – Sp.

*Diplazium sibiricum* (Turcz. ex Kunze) Sa. Kurata: [2:12]. – *Athyrium crenatum* (Sommerf.) Rupr.: [1:74]. – 1 – Rr.

*Lunathyrium pycnosorum* Koidz.: [2:12; 3:65]. – *Athyrium pycnosorum* Christ: [1:74]. – 1, 3 – Fr. – VBG130130, VBG130165, VBG1143038.

\*\**Lunathyrium henryi* (Baker) Sa. Kurata: [3:65]. – 1, 3 – Rr.

*Pseudocystopteris spinulosa* (Maxim.) Ching: [2:12; 3:60]. – *Athyrium spinulosum* (Maxim.) Milde: [1:74]. – 1 – Sp. – VBG162041, VBG1143037, VBG131164, VBG130824, VBG130823, VBG1109466, VBG1109460, VBG1144041.

## Cystopteridaceae Shmakov

*Cystopteris fragilis* (L.) Bernh.: [5:2; 6:23]. – 4 – Rr. – VBG1109034, VBG1109033, VBG1109034, VBG1143934.

*Gymnocarpium dryopteris* Newman: [1:74; 2:12]. – 1 – Rr. – VBG130535.

*Gymnocarpium jessoense* (Koidz.) Koidz.: [3:65]. – 1, 4 – Rr. – VBG162027.

## Dennstaedtiaceae Lotsy

? *Dennstaedtia hirsuta* Mett. ex Miq. – *Microlepia hirsuta* (J. Sm.) C. Presl: [7:141]. Later this species was not found (Nedoluzhko 1984, 1999, Koldaeva 2009).

*Pteridium latiusculum* (Desv.) Hieron. ex Fries – *P. aquilinum* (L.) Kuhn: [1:74; 2:11; 3:122]. – 2 – Rr. – VBG1143917.

## Dryopteridaceae Herter

*Dryopteris crassirhizoma* Nakai: [1:74; 2:12; 3:100; 4:76]. – 1, 3 – Com.

*Dryopteris expansa* (C. Presl) Fraser-Jenk. & Jermy: [2:12; 3:100; 5:2]. – 1 – Sp. – VBG130808, VBG1120705, VBG1120707, VBG1120712, VBG126960, VBG162024.

*Dryopteris fragrans* (L.) Schott: [3:101]. – 4 – Rr.

*Dryopteris goeringiana* (Kunze) Koidz.: [2:12; 3:101; 4:76]. – *D. wladimirovskensis* B. Fedtsch.: [1:74]. – 1, 2, 3 – Sp. – VBG1143041, VBG1109001, VBG1143919, VBG1143939, VBG1144049.

*Dryopteris sichotensis* Kom.: [3:101]. – 1 – Rr.

*Leptorumobra amurensis* (Christ) Tzvelev: [2:12; 3:101]. – *Dryopteris amurensis* Christ: [1:74]. – 1 – Sp.

*Polystichum braunii* (Spenn.) Fée: [3:101; 5:2]. – 1 – Rr. – VBG1120684, VBG1120672, VBG1120877.

*Polystichum craspedosorum* (Maxim.) Diels: [3:101]. – 4 – Rr. – VBG1143916.

*Polystichum tripterum* (Kunze) C. Presl. – *P. subtripterum* Tzvelev: [1:74; 2:12; 3:101]. – 1 – Fr. – VBG1143938.

## Hymenophyllaceae Mart.

\**Gonocormus minutus* (Blume) Bosch: [1:74; 2:11; 3:122; 4:77]. – 4 – Un. – VBG120899, VBG1143923.

## Onocleaceae Pic. Serm.

*Matteuccia struthiopteris* (L.) Tod.: [1:74; 2:12; 3:173]. – 1, 3, 5 – Com. – VBG162037.

*Onoclea sensibilis* L.: [1:74; 2:12; 3:173]. – 1 – Fr. – VBG118775, VBG118778.

## Osmundaceae Martinov

*Osmundastrum asiaticum* (Fernald) Tagawa: [1:74; 2:11; 3:175]. – 1, 3 – Fr. – VBG1144029.

## Polypodiaceae J. Presl &amp; C. Presl.

*Lepisorus ussuriensis* Ching: [4:77]. – *Polypodium ussuriense* Regel: [1:74]. – *Pleopeltis ussuriensis* Regel & Maack: [2:11; 3:193]. – 4 – Rr. – VBG132277, VBG1143921.

*Pleurosoriopsis makinoi* (Maxim. ex Makino) Fomin: [1:74; 2:12; 3:206]. – 4 – Un.

*Polypodium sibiricum* Sipliv.: [3:193; 4:77]. – *P. virginianum* L.: [1:74]. – 4 – Rr. – VBG1143922.

## Pteridaceae E. D. M. Kirchn.

*Adiantum pedatum* L.: [1:74; 2:11; 3:27; 4:76]. – 1, 4 – Fr. – VBG1142884.

## Thelypteridaceae Cing &amp; Pic. Serm.

*Phegopteris connectilis* (Michx.) Watt: [1:74; 2:12; 3:237; 4:76]. – 1, 4 – Fr. – VBG130709.

*Thelypteris thelypteroides* (Michx.) Holub: [2:12; 3:237]. – *Thelypteris palustris* Schott: [1:74]. – 5 – Rr. – VBG1142886.

## Woodsiaceae Herter

*Protowoodsia manchuriensis* (Hook.) Ching: [2:12; 3:243; 4:77]. – *Woodsia manchuriensis* Hook.: [1:74]. – 4 – Fr. – VBG1143929.

*Woodsia ilvensis* (L.) R. Br.: [1:74; 2:12; 3:243; 4:76]. – 4 – Rr. – VBG1143936.

*Woodsia polystichoides* D.C. Eaton: [1:74; 2:12; 3:243; 4:75; 76]. – 4 – Fr. – VBG1143926.

*Woodsia subintermedia* Tzvelev: [3:243]. – 4 – Un.

*Woodsia subcordata* Turcz.: [4:76; 5:2]. – 4 – Un. – VBG1143931.

## SPERMATOPHYTA

## PINOPSIDA

## Pinaceae Lindl.

*Abies holophylla* Maxim.: [1:74; 2:12; 3:183]. – 1 – Com. – VBG146757, VBG146536, VBG146534, VBG146533, VBG146528, VBG146526, VBG123242, VBG146599, VBG1109613.

+ *Picea ajanensis* Fisch. ex Carrière: [3:183] (cited as a tame species). – 1 – Un. – Pl. – VBG1142877.

*Pinus koraiensis* Siebold & Zucc.: [1:74; 2:12; 3:184]. – 1, 2 – Fr. – VBG166029, VBG165729, VBG143475, VBG143474, VBG143469, VBG142562, VBG142555, VBG122425, VBG1109179, VBG1109174.

+ *Pinus strobus* L.: [3:185] (cited as a tame species). – 1 – Un. – Pl. – VBG1143974.

## Taxaceae Gray

+ *Taxus cuspidata* Siebold & Zucc.: [3:184] (cited as a tame species). – 1 – Un. – Pl. – VBG1142878.

## MAGNOLIOPSIDA (ANGIOSPERMAE)

## DICOTYLEDONAE s. l.

## Actinidiaceae Engl. &amp; Gilg

*Actinidia arguta* (Siebold & Zucc.) Planch. ex Miq.: [1:76; 2:13; 3:27]. – 1, 4, 6 – Sp. – VBG1109217.

- Actinidia kolomikta* Maxim.: [1:76; 2:13; 3:27]. – 1, 2, 4, 5 – Com. – VBG1109149, VBG1109175, VBG1109171, VBG1109181.
- Actinidia polygama* (Siebold & Zucc.) Planch ex Maxim.: [1:76; 2:13; 3:27]. – 1, 6 – Rr. – VBG1143139, VBG1143138, VBG1143722, VBG1143736, VBG1143735, VBG1143721.
- Adoxaceae** E. Mey.  
(incl. Sambucaceae Link, Viburnaceae Raf.)
- Adoxa moschatellina* L.: [1:78; 2:16; 3:28]. – 1, 2, 3 – Sp. – VBG1143811.
- Sambucus sibirica* Nakai: [2:15; 3:228]. – *S. racemosa* L.: [1:78]. – 1, 2, 6 – Fr. – VBG1143179, VBG1143730.
- Viburnum sargentii* Koehne: [1:78; 2:15; 3:240]. – 1, 2, 3 – Sp. – VBG1109169.
- Amaranthaceae** Juss. (incl. Chenopodiaceae Vent.)
- Chenopodium album* L.: [3:89]. – 6 – Fr. – Al. – VBG1102890; VBG1102889, VBG1144171.
- Apiaceae** Lindl. (Umbelliferae Juss.)
- Aegopodium alpestre* Ledeb.: [1:78; 2:15]. – 1, 2 – Rr.
- Aegopodium podagraria* L.: [6:23]. – 6 – Sp. – Al. – VBG1127500.
- Angelica cincta* H. Boissieu.: [1:78; 2:15; 3:37]. – 1, 2, 3, 6 – Sp. – VBG1142726, VBG1143372, VBG1143654.
- Angelica czernaevia* (Fisch. & C.A. Mey.) Kitag.: [1:78; 2:15; 3:37]. – 2, 3 – Rr.
- Angelica dahurica* (Hoffm.) Benth. & Hook.f. ex Franch. & Sav.: [1:78; 2:15; 3:37]. – 1, 2, 6 – Sp. – VBG1143369.
- + *Angelica decursiva* Franch. & Sav. – 2, 3, 6 – Rr. – VBG1144179.
- Anthriscus sylvestris* (L.) Hoffm.: [2:15; 3:37]. – *A. aemula* (Woronow) Schischk.: [1:78]. – 2, 4, 6 – Sp.
- Bupleurum longiradiatum* Turcz.: [1:78; 2:15; 3:38]. – 1, 2 – Rr. – VBG1141869, VBG1141869.
- Cryptotaenia japonica* Hassk.: [6:23]. – 1 – Sp. – VBG1127501, VBG1142192, VBG1142191.
- Heracleum dissectum* Ledeb.: [2:15; 3:38]. – *H. moellendorffii* Hance: [1:78]. – 1, 2, 6 – Fr. – VBG1143371.
- Kitagawia terebinthacea* (Fisch. ex Trevir.) Pimenov: [2:15; 3:38; 4:76]. – *Peucedanum deltoideum* Makino & Yabe: [1:78]. – 2, 4 – Sp. – VBG1504165, VBG143302, VBG1143956, VBG1143800.
- Oenanthe javanica* DC.: [1:78; 2:15; 3:38]. – 1, 3, 6 – Fr. – VBG1143518, VBG1143512, VBG1143212.
- Osmorhiza aristata* (Thunb.) Rydb.: [1:78; 2:15; 3:38]. – 1, 2 – Fr. – VBG1141661, VBG1141660, VBG1109510.
- Ostericum maximowiczii* (F. Schmidt) Kitag. – *Angelica maximowiczii* (F. Schmidt) Benth. ex Maxim.: [1:78; 2:15; 3:37]. – 2, 3 – Fr.
- + *Ostericum sieboldii* (Miq.) Nakai – 1, 2, 3 – Rr. – VBG1197422.
- Pastinaca sylvestris* Mill.: [6:23]. – 6 – Fr. – Al. – VBG1127499.
- Pleurospermum uralense* Hoffm.: [2:15; 3:38]. – *P. kamtschaticum* Hoffm.: [1:78]. – 1, 2 – Fr. – VBG1143366, VBG1143364.
- Sanicula chinensis* Bunge: [1:78; 2:15; 3:38]. – 1, 2, 6 – Fr. – VBG1141495, VBG1197283, VBG1141305, VBG1141304, VBG1141303, VBG1141302, VBG1141292, VBG1109190, VBG1143184, VBG1143514, VBG1143502.
- Sanicula rubriflora* F. Schmidt ex Maxim.: [1:78; 2:15; 3:38]. – 1, 2 – Fr. – VBG1141503, VBG1141499, VBG1141498, VBG1141497, VBG1141493, VBG1141363, VBG1141362.
- Spuriopimpinella calycina* (Maxim.) Kitag. [6:23]. – 1 – Rr. – VBG1109246, VBG1109247.
- Torilis japonica* (Houtt.) DC.: [1:78; 2:15; 3:38]. – 1, 6 – Com. – Al. – VBG143500, VBG1143354, VBG1144174.
- Apocynaceae** Juss. (incl. Asclepiadaceae Lindl.)
- Vincetoxicum ascyrifolium* Franch. & Sav. – *V. acuminatum* C. Morren & Decne.: [2:17; 3:46]. – *Cynanchum acuminatifolium* Hemsl.: [1:78]. – 1, 2 – Fr. – VBG1108991, VBG1143353.
- Araliaceae** Juss.
- Aralia elata* (Miq.) Seem.: [1:78; 2:15; 3:42]. – 1, 2, 5, 6 – Fr. – VBG1141229, VBG1141237, VBG1141238, VBG1109208, VBG1143367.
- Eleutherococcus senticosus* (Rupr. & Maxim.) Maxim.: [1:78; 2:15; 3:42]. – 1, 2, 4, 6 – Com. – VBG155724, VBG1140896, VBG1140897, VBG1140895.
- Eleutherococcus sessiliflorus* (Rupr. & Maxim.) S.Y. Hu: [3:42]. – *Acanthopanax sessiliflorus* (Rupr. & Maxim.) Seem.: [1:78; 2:15]. – 1, 2, 4, 6 – Rr. – VBG11143737, VBG1144064.
- \*\**Kalopanax septemlobus* Koidz.: [1:78; 2:15; 3:43]. – 1, 2, 6 – Com. – VBG1141094, VBG1141093, VBG1141091, VBG1141089, VBG1141092, VBG1144013, VBG11438983.
- Aristolochiaceae** Juss.
- + *Aristolochia manshuriensis* Kom.: [3:45] (cited as a tame species) – 1 – Un. – Pl. – VBG1142854, VBG1144020.
- Asarum sieboldii* Miq.: [1:74; 2:12; 3:45; 4:76]. – 1, 2 – Fr. – VBG120787, VBG120788, VBG1101830, VBG1100933, VBG1100923, VBG1100910, VBG1100900, VBG1109238, VBG1108993.
- Asteraceae** Bercht. & J. Presl (Compositae Giseke)
- Achillea millefolium* L.: [1:79; 2:16; 3:47]. – 6 – Sp. – Es.
- Adenocaulon adhaerescens* Maxim.: [1:79; 2:16; 3:48]. – *A. himalaicum* auct.: [4:75]. – 1, 2, 3, 6 – Com.
- Ajania pallasiana* (Fisch. ex Besser) Poljakov: [4:76]. – 4 – Rr.
- + *Ambrosia artemisiifolia* L. – 6 – Sp. – Al. – VBG1143526.
- Arctium lappa* L.: [1:79; 2:16; 3:48]. – 6 – Fr. – Al. – VBG1144323.
- Artemisia desertorum* Spreng.: [2:16; 3:48]. – 2, 3, 6 – Fr.
- Artemisia gmelinii* Weber ex Stechm.: [1:79; 2:16; 3:48]. – 4 – Fr. – VBG1109153, VBG1109027.
- Artemisia keiskeana* Miq.: [1:79; 2:16; 3:48; 4:76]. – 2, 4 – Com. – VBG1143957.
- Artemisia manshurica* (Kom.) Kom.: [1:79]. – 2, 3, 6 – Fr.
- Artemisia rubripes* Nakai.: [1:79; 2:16; 3:48]. – 6 – Com. – VBG1143519, VBG1144167.
- Artemisia stolonifera* (Maxim.) Kom.: [1:79; 2:16; 3:48]. – 1, 2, 3 – Com. – VBG1143521, VBG1143298, VBG1143272.
- Aster ageratoides* Turcz.: [1:79; 2:16; 3:48]. – 2, 3, 6 – Fr. – VBG1143856.
- Aster tataricus* L. f.: [1:79; 2:16; 3:49]. – 2, 3, 6 – Fr. – VBG1109261, VBG1144047, VBG1144042.
- Atractylodes ovata* (Thunb.) DC.: [1:79; 2:16; 3:49]. – 2 – Sp. – VBG1109257.
- Bidens frondosa* L.: [1:79; 2:16; 3:49]. – 3, 6 – Sp. – Al. – VBG1143275.
- Bidens tripartita* L.: [1:79; 2:16; 3:49]. – 6 – Sp.
- Carpesium macrocephalum* Franch. & Sav.: [2:16; 3:49]. – 3, 6 – Sp. – VBG1143522, VBG1143305.
- Carpesium triste* Maxim.: [1:79; 2:16; 3:49]. – 2, 3, 6 – Fr. – VBG118669, VBG118670, VBG118671, VBG118672, VBG1109504.
- Cirsium pendulum* Fisch. ex DC.: [1:79; 2:16; 3:52]. – 2, 3, 6 – Fr.
- Cirsium schantarense* Trautv. & C.A. Mey.: [1:79; 2:16; 3:52]. – 2, 3, 6 – Fr. – VBG1143279.
- Cirsium setosum* (Willd.) Besser ex M. Bieb.: [2:16; 3:52]. – *Breca setosa* (Willd.) Sojak: [1:79]. – 6 – Sp.
- Conyza canadensis* (L.) Cronquist: [2:16; 3:52]. – *Erigeron canadensis* L.: [1:79]. – 6 – Fr. – Al.



- Doellingeria scabra* (Thunb.) Nees: [1:79; 2:16; 3:59]. – 2, 3 – Com. – VBG118662, VBG118663, VBG118664, VBG118665, VBG118666, VBG118667, VBG1109258, VBG1143294.
- Erigeron strigosus* Muhl. ex Willd.: [1:79]. – *Phalacrolooma strigosum* (Muhl. ex Willd.) Tzvelev: [2:16; 3:62]. – 6 – Com.
- + *Galinsoga quadriradiata* Ruiz & Pav. – 6 – Com. – Al. – Field observation.
- Gnaphalium uliginosum* L.: [1:79; 2:16; 3:60]. – 6 – Sp.
- + *Helianthus tuberosus* L. – 6 – Sp. – Es. – VBG1142848.
- Hieracium umbellatum* L.: [1:80; 2:17; 3:61]. – 2, 3, 6 – Sp. – VBG1143520.
- Inula salicina* L.: [1:79; 2:16; 3:61]. – 2, 3, 6 – Sp.
- + *Inula japonica* Thunb. – 3, 6 – Sp. – VBG1144178.
- Ixeridium gramineum* (Fisch.) Tzvelev – *Lactuca versicolor* (Fisch. ex Link) Sch. Bip.: [1: 80]. – 6 – Sp.
- Kalimeris incisa* (Fisch.) DC.: [2:16; 3:61]. – 2, 3, 6 – Sp. – VBG1143525, VBG1143282.
- Lactuca indica* L. – *Pterocypsella indica* (L.) C. Shih.: [2:16; 3:61] – *Lactuca squarrosa* (L.) Miq.: [1:80]. – 6 – Sp. – VBG1143523.
- Lactuca raddeana* Maxim.: [1:80; 2:16; 3:61]. – *Pterocypsella raddeana* (Maxim.) C. Shih. – 2, 3, 6 – Sp.
- + *Lactuca sibirica* Benth. ex Maxim. – 6 – Sp. – VBG1143292.
- Lactuca triangulata* Maxim. – *Pterocypsella triangulata* (Maxim.) C. Shih.: [6:23]. – 2, 3, 6 – Sp. – VBG1127512, VBG1143529.
- Leibnitzia anandria* (L.) Turcz.: [1:79; 2:16; 3:61; 4:76]. – 2, 4 – Fr. – VBG1144051, VBG1143524.
- Leontodon autumnalis* L.: [2:17; 3:61]. – 6 – Sp. – Al.
- Matricaria discoidea* DC. – *M. matricarioides* auct.: [1:79]. – *Lepidotheca suaveolens* (Pursh) Nutt.: [2:16]. – *Lepidolopsis suaveolens* (Pursh) Nutt.: [3:62]. – 6 – Sp. – Al.
- Nabalus tatarinowii* (Maxim.) Nakai – *Prenanthes tatarinowii* Maxim.: [1:80; 2:17; 3:62]. – 1, 2, 3, 6 – Fr. – VBG1109505.
- Paraixeris denticulata* (Houtt.) Nakai: [2:17; 3:62; 4:76]. – *Lactuca denticulata* (Houtt.) Maxim.: [1:80]. – 2, 3, 4, 6 – Fr.
- Parasenecio hastatus* (L.) H. Koyama – *Cacalia hastata* L.: [1:79; 2:16; 3:49]. – 1, 2, 3 – Com.
- Parasenecio praetermissus* (Pojark.) Y.L. Chen – *Cacalia praetermissa* (Pojark.) Maxim.: [1:79; 2:16; 3:49]. – 1, 2, 3 – Com. – VBG1109279, VBG1109503, VBG1109506, VBG1144022.
- Picris koreana* (Kitam.) Vorosch.: [1:79; 2:16; 3:62]. – 2, 3, 6 – Fr.
- + *Picris davurica* Fisch. – 3, 6 – Fr. – VBG1143528.
- Saussurea grandifolia* Maxim.: [1:80; 2:17; 3:63]. – 1, 2, 3 – Sp.
- Saussurea subtriangulata* Kom.: [1:80; 2:17; 3:63]. – 1, 2, 3 – Fr.
- Senecio nemorensis* L.: [1:79; 2:16; 3:63]. – 2, 3 – Sp.
- + *Serratula manshurica* Kitag. – 2, 6 – Sp. – VBG1143859.
- Sigesbeckia pubescens* Makino: [1:79; 2:16; 3:63]. – 6 – Sp.
- Solidago decurrens* Lour.: [1:79]. – *Solidago pacifica* Juz.: [2:16]. – 1, 2, 3 – Fr. – VBG1143285, VBG1143270.
- Solidago canadensis* L.: [3:63]. – 6 – Fr. – Al. – VBG1143304.
- Sonchus arvensis* L.: [1:80; 2:17; 3:64]. – 6 – Fr.
- Symphotrichum novi-belgii* (L.) G.L.Nesom – *Aster novi-belgii* L.: [1:79; 2:16; 3:49]. – 2, 3, 6 – Fr. – Al. – VBG1143527.
- Synurus deltoides* (Aiton) Nakai: [1:79; 2:16; 3:64]. – 1, 2, 3 – Sp. – VBG118651, VBG118652, VBG118655, VBG118657, VBG118658, VBG118660, VBG118661, VBG122125.
- Taraxacum brassicifolium* Kitag.: [6:23]. – 6 – Sp. – VBG1109036.
- Taraxacum mongolicum* Hand.-Mazz.: [1:79; 2:16; 3:64]. – 6 – Com.
- Taraxacum ussuriense* Kom.: [6:23]. – 6 – Sp. – VBG1109050, VBG1109052.
- Tripleurospermum inodorum* (L.) Sch. Bip. – *T. perforatum* (Mérat) M. Laínz [2:16; 3:64]. – *Matricaria perforata* Merat: [1:79]. – 6 – Sp. – Al.
- Tussilago farfara* L.: [3:65] (cited as a tame species). – 6 – Sp. – Al. – VBG1144012.
- Balsaminaceae** A. Rich.
- Impatiens furcillata* Hemsl. ex F.B. Forbes & Hemsl.: [2: 15; 1:78; 3:66]. – 3 – Fr. – VBG1137611, VBG1143480, VBG1143481.
- Impatiens glandulifera* Royle: [1:77; 2:15; 3:66]. – 6 – Rr. – Al. – VBG1137649, VBG1137638, VBG1137605, VBG154874, VBG154873, VBG1137640, VBG1137611, VBG1144010.
- Impatiens noli-tangere* L.: [1:78; 2:15; 3:66]. – 3, 5 – Fr. – VBG1143134.
- + *Impatiens parviflora* DC. – 1, 3 – Rr. – Al. – VBG1143135, VBG1143136.
- Berberidaceae** Juss.
- Berberis amurensis* Rupr.: [1:75; 2:12; 3:68]. – 1, 2, 3 – Sp. – VBG1109162, VBG113690, VBG113693, VBG113692, VBG1143213, VBG1109162, VBG1144071.
- + *Berberis thunbergii* DC.: [3:68] (cited as a tame species). – 1, 3 – Un. – Es. – VBG1143903.
- Caulophyllum robustum* Maxim.: [1:75; 2:12; 3:69]. – 1, 2 – Fr. – VBG1108934, VBG1113615, VBG1113591, VBG1143357.
- Plagiorhegma dubia* Maxim.: [2:12; 3:69; 4:76]. – *Jeffersonia dubia* (Maxim.) Benth. & Hook. f. ex Baker & Moore: [1:75]. – 1, 2, 4 – Fr. – VBG1112711, VBG1112706, 112703, VBG1112645, VBG1112670, VBG176686, VBG176701, VBG12949, VBG1109237.
- Betulaceae** Gray
- Alnus hirsuta* (Spach) Turcz. ex Rupr.: [1:75; 2:13; 3:69]. – 3, 5, 6 – Com. – VBG194776.
- Alnus japonica* (Thunb.) Steud.: [2:13; 3:69]. – 3, 5, 6 – Sp.
- Betula costata* Trautv.: [1:75; 2:13; 3:69]. – 1 – Fr.
- Betula davurica* Pall.: [1:75; 2:13; 3:69]. – 2, 3 – Com. – VBG197234, VBG197235, VBG197238, VBG1109226, VBG1110254, VBG1143483.
- Betula platyphylla* Sukaczew.: [2:13; 3:70]. – *Betula mandshurica* (Regel) Nakai: [1:75; 3:70]. – 1, 2, 3, 6 – Com. – VBG193798, VBG193799, VBG193801, VBG193802, VBG193803, VBG193804, VBG193805, VBG193806, VBG193807, VBG193808, VBG193809, VBG193810, VBG193811, VBG194944, VBG1109163, VBG1109227, VBG1109228, VBG1143485.
- Carpinus cordata* Blume: [1:75; 2:13; 3:70; 4:76]. – 1, 2 – Com. – VBG194221, VBG194222, VBG194223, VBG194224, VBG194225, VBG194226, VBG194227, VBG194229, VBG194231, VBG194232, VBG1109610.
- Corylus heterophylla* Fisch. ex Trautv.: [1:75; 2:13; 3:70]. – 2, 3 – Fr. – VBG194290, VBG194291, VBG194293, VBG194295, VBG1143718, VBG1143719, VBG1143739, VBG1144076.
- Corylus mandshurica* Maxim.: [1:75; 2:13; 3:70]. – 1, 2, 3 – Com. – VBG154384, VBG194151, VBG194152, VBG194153, VBG194154, VBG194332, VBG1109172, VBG1109178, VBG1109183.
- Boraginaceae** Juss.
- Brachybotrys paridiformis* Maxim. ex Oliv.: [3:71] (cited as a tame species). – 1 – Rr. – Pl.
- ? *Lappula anisacantha* (Turcz. ex Bunge) Gürke: [1:78]. Cited as *Lappula redonskii* Gürke [2:16; 3:72]. The presence of this steppe species within the BGI is doubtful.
- + *Symphytum officinale* L.: [3:72] (cited as a tame species). – 6 – Rr. – Es. – VBG1143913.
- Trigonotis radicans* Steven: [2:16; 3:74]. – *T. coreana* Nakai: [1:72]. – 1, 3 – Fr. – VBG1109537, VBG1109535, VBG1109530, VBG1144024.

**Brassicaceae** Burnett (Cruciferae Juss.)

*Barbarea orthoceras* Ledeb.: [1:76; 2:13; 3:73]. – 6 – Sp. – VBG1116759, VBG1108948.

*Capsella bursa-pastoris* (L.) Medic.: [1:76; 2:13; 3:73]. – 6 – Sp. – VBG1117415.

*Cardamine leucantha* (Tausch) O.E. Schulz: [1:76; 2:13; 3:73]. – 1, 2, 3 – Com. – VBG118406, VBG118407, VBG118408, VBG1109272, VBG1117059, VBG1117061, VBG1117065, VBG1117094, VBG1117095, VBG1117096, VBG1117100, VBG1117101, VBG1117102, VBG1117103, VBG1117104, VBG1117142, VBG1117143, VBG1117144.

*Cardamine trifida* (Poir.) B.M.G. Jones: [2:13; 3:73]. – *Dentaria trifida* Poir.: [1:76]. – 2 – Rr.

*Catolobus pendulus* (L.) Al-Shehbaz – *Arabis pendula* L.: [1:76; 2:13; 3:73]. – 3, 6 – Sp. – VBG1143137, VBG1143829.

*Dontostemon dentatus* (Bunge) Ledeb.: [1:76; 2:13; 3:73]. – 4 – Sp.

*Draba nemorosa* L.: [1:76; 2:13; 3:73]. – 6 – Sp. – VBG1117574, VBG1117608.

+ *Erysimum cheiranthoides* L. – 6 – Sp. – VBG1117918, VBG1117937.

*Hesperis matronalis* L.: [6:23]. – 6 – Sp. – Al. – VBG1109277, VBG1118313.

+ *Lepidium ruderales* L. – 6 – Rr. – Al. – VBG1116420.

+ *Rorippa globosa* Thell. – 6 – Rr. – VBG1116722.

+ *Rorippa palustris* Besser – 6 – Sp. – VBG1116766, VBG1116765.

+ *Thlaspi arvense* L. – 6 – Fr. – VBG1116390, VBG1109021.

**Campanulaceae** Juss.

+ *Adenophora curvidens* Nakai – 1, 2, 4 – Sp. – VBG1143188, VBG1143853, VBG1143857, VBG1127513.

*Adenophora divaricata* Franch. & Sav.: [6:23]. – 2, 4 – Sp. – VBG1127497.

*Adenophora pereskiiifolia* (Fisch. ex Schult.) G. Don: [1:79; 2:16; 3:81]. – 2, 4 – Sp.

*Adenophora triphylla* (Thunb.) A. DC.: [2:16; 3:81]. – *A. tetraphylla* (Thunb.) Fisch.: [1:79]. – 2, 4 – Sp.

+ *Asyneuma japonicum* (Miq.) Briq. – 1 – Sp. – VBG1143186, VBG1143185.

*Campanula cephalotes* Nakai: [1:79; 2:16; 3:81]. – 2, 3 – Sp.

*Campanula punctata* Lam.: [1:79; 2:16; 3:82]. – 1, 2 – Sp. – VBG1109192, VBG1143110.

+ *Campanula rapunculoides* L. – 6 – Rr. – Al. – VBG1143187.

*Codonopsis lanceolata* (Siebold & Zucc.) Benth. & Hook. f. ex Trautv.: [1:79; 2:16; 3:82]. – 1, 2 – Sp. – VBG1109191, VBG1144006.

**Cannabaceae** Martinov

*Humulopsis scandens* (Lour.) Grudz.: [1:75; 2:13; 3:82]. – 3, 6 – Fr.

**Caprifoliaceae** Juss. (incl. Valerianaceae Batsch)

+ *Lonicera caprifolium* L.: [3:83] (cited as a tame species). – 6 – Un. – Es. – VBG1143817, VBG1143821.

*Lonicera chrysantha* Turcz. ex Ledeb.: [1:78; 2:15; 3:83]. – 1 – Sp. – VBG1143044, VBG1143740.

*Lonicera maackii* (Rupr.) Maxim.: [1:78; 2:15; 3:83]. – 3, 5 – Sp. – VBG1109223.

*Lonicera maximowiczii* (Rupr.) Regel: [1:78; 2:15; 3:84]. – 1 – Rr.

*Lonicera praeflorens* Batalin: [1:78; 2:15; 3:84]. – 1, 2, 4 – Sp. – VBG1109059, VBG1109065, VBG1109167.

*Lonicera ruprechtiana* Regel: [1:78; 2:15; 3:84]. – 1, 2, 4 – Rr. – VBG1143741, VBG1143716.

*Valeriana fauriei* Briq.: [1:78; 2:15; 3:240]. – 1, 4 – Sp. – VBG1143069, VBG1109509.

+ *Weigela* × *hybrida* Carrière – 6 – Un. – Es. – VBG1143269.

**Caryophyllaceae** Juss.

*Cerastium holosteoides* Fries: [1:75; 2:13; 3:85]. – 6 – Sp. – Al.

*Cerastium pauciflorum* Steven ex Ser.: [1:75; 2:13; 3:85]. – 2 – Sp. – VBG1109015, VBG1143854.

+ *Cucubalus japonicus* (Miq.) Vorosch. – 6 – Rr. – Field observation.

*Dianthus amurensis* Jacques: [1:75; 2:13]. – 2, 4 – Rr.

*Fimbripetalum radians* (L.) Ikonn.: [2:13; 3:86]. – *Stellaria radians* L.: [1:75]. – 6 – Sp.

*Lychnis fulgens* Fisch.: [1:75; 2:13; 3:86]. – 1, 2 – Sp. – VBG1107163.

*Moebria lateriflora* (L.) Fenzl: [1:75; 2:13; 3:86]. – 1, 2, 4 – Fr. – VBG1109281, VBG1109280, VBG1108987, VBG1144030.

+ *Pseudostellaria japonica* (Korsh.) Pax – 1, 3 – Sp. – VBG1143116, VBG1109849.

*Pseudostellaria sylvatica* (Maxim.) Pax: [1:75; 2:13; 3:86]. – 1, 3 – Fr. – VBG1109273, VBG1109274.

+ *Silene firma* Siebold & Zucc. – *Neoussuria firma* (Siebold & Zucc.) Tzvelev – *Melandrium firmum* (Siebold & Zucc.) Rohrb. – 2, 6 – Rr. – VBG1143912. It is possible that this species was previously listed [1:75; 2:13; 3:87] under the name *Silene koreana*, which does not occur on the territory of the BGI.

*Silene foliosa* Maxim.: [1:75; 2:13; 3:87]. – 4 – Rr.

*Silene repens* Patr.: [1:75; 2:13; 3:87]. – 6 – Sp.

*Stellaria bungeana* Fenzl: [1:75; 2:13]. – 1, 3, 4 – Fr.

*Stellaria media* (L.) Vill.: [3:87] – 4, 6 – Rr. – Al. – VBG1143911.

**Celastraceae** R. Br.

*Celastrus flagellaris* Rupr.: [1:78; 2:15; 3:87]. – 1, 2 – Rr. – VBG1136272, VBG1136270, VBG1109221, VBG1136250, VBG1136237.

+ *Celastrus orbiculata* Thunb.: [3:87] (cited as a tame species). – 6 – Fr. – Es. – VBG1143215, VBG1142850.

*Euonymus maximowicziana* Prokh.: [1:78; 2:15; 3:88]. – 1, 2, 6 – Sp. – VBG1135859, VBG1135825, VBG1135813, VBG1135774, VBG1135773, VBG1135771, VBG1135769.

*Euonymus pauciflora* Maxim.: [1:78; 2:15; 3:88; 4:76]. – 1, 2, 4, 6 – Fr. – VBG1109448, VBG1109168, VBG1135904, VBG1135908, VBG1135909, VBG1144069.

*Euonymus sacrosancta* Koidz.: [1:78; 2:15; 3:88]. – 1, 2, 6 – Fr. – VBG113611, VBG1109212.

**Cercidiphyllaceae** Engl.

+ *Cercidiphyllum japonicum* Siebold & Zucc.: [3:88] (cited as a tame species). – 1 – Un. – Es. – VBG1143815, 143906.

**Chloranthaceae** R. Br. ex Sims

*Chloranthus quadrifolius* (A. Gray) H. Ohba & S. Akiyama – *C. japonicus* auct. non Siebold: [1:74; 2:12; 3:89] – 1, 2 – Com. – VBG1109496, VBG114413, VBG1189360, VBG114425, VBG1189283, VBG1171147, VBG1143964.

**Convolvulaceae** Juss. (incl. Cuscutaceae Dumort.)

*Calystegia inflata* G. Don: [1:78; 2:16; 3:91]. – 6 – Rr. – Al.

*Convolvulus arvensis* L.: [1:78; 2:16; 3:92]. – 6 – Rr.

*Cuscuta japonica* Choisy: [1:78; 2:16; 3:98]. – 6 – Rr.

**Cornaceae** Bercht. & J.Presl

+ *Cornus alba* L. – 3, 6 – Sp. – VBG1143905.

**Crassulaceae** J. St.-Hil.

*Aizopsis aizoon* (L.) Grulich – *Sedum aizoon* L.: [1:77; 2:14; 3:94]. – 1, 2, 4 – Sp. – VBG1109233.

*Hylotelephium palleescens* (Frey) H. Ohba: [3:95]. – *Sedum palleescens* Freyn: [1:77; 2:14]. – 1, 2, 3 – Sp.

+ *Hylotelephium viviparum* (Maxim.) H. Ohba – 2, 4 – Rr. – VBG1143846.

*Orostachys malacophylla* (Pall.) Fisch.: [1:77; 2:14; 3:94]. – 2, 4 – Rr.

#### Cucurbitaceae Juss.

+ *Thladiantha dubia* Bunge: [3:95] (cited as a tame species). – 6 – Sp. – Es. – VBG1143216, 143217.

#### Ericaceae Juss.

(incl. Monotropaceae Nutt., Pyrolaceae Dumort.)

*Chimaphila japonica* Miq.: [1:76; 2:14; 3:196]. – 1 – Sp.

*Monotropastrum humile* (D. Don) Hara – *Monotropa uniflora* auct. non L.: [1:76; 2:14; 3:196]. – 1 – Rr. – VBG1109513.

*Pyrola japonica* Klenze ex Alef.: [1:76; 2:14; 3:196]. – 1 – Fr. – VBG1109512, VBG1109201.

*Pyrola renifolia* Maxim.: [1:76; 2:14; 3:196]. – 1 – Fr. – VBG1109200.

*Pyrola subaphylla* Maxim.: [1:76; 2:14]. – 1 – Fr.

*Rhododendron mucronulatum* Turcz.: [1:76; 2:13; 4:76; 3:105]. – 2 – Sp. – VBG1109056.

#### Euphorbiaceae Juss.

*Euphorbia esula* L. – *Euphorbia discolor* Ledeb.: [1:76]. – 2 – Rr. – VBG1143861.

*Euphorbia komaroviana* Prokh.: [1:76; 2:14; 3:106]. – 2 – Sp. – VBG1143107.

*Euphorbia lucorum* Rupr.: [2:13; 3:106]. – 1, 2 – Sp. – VBG1108947, VBG1108950, VBG1143865, VBG1143962, VBG1143961.

*Euphorbia taquetii* H. Lévl. & Vaniot: [6: 23]. – 1, 3 – Sp. – VBG1109568, VBG1109569, VBG1109262.

#### Fabaceae Lindl. (Leguminosae Juss.)

*Amphicarpaea japonica* B. Fedtsch.: [1:77; 2:14; 3:107]. – 1, 3, 6 – Sp. – VBG1109603, VBG1109497, VBG1143959.

*Glycine soja* Siebold & Zucc.: [1:77; 2:14; 4:75; 3:108]. – 6 – Rr. – VBG1133689.

*Kummerowia striata* (Thunb.) Schindl.: [1:77; 2:14; 3:108]. – 6 – Rr.

*Lathyrus davidii* Hance: [1:77; 2:14; 3: 208]. – 2, 3 – Sp.

*Lathyrus humilis* (Ser.) Spreng.: [1:77; 2:14; 3:209]. – 2, 3 – Rr. – VBG1109016, VBG1132940, VBG1113133.

*Lathyrus komarovii* Ohwi: [1:77; 2:14; 3:109]. – 2, 3 – Sp. – VBG1109502, VBG1133122, VBG1133118, VBG1133083, VBG1133074, VBG1143383.

*Lathyrus pilosus* Cham.: [1:77; 2:14; 3:109]. – 5 – Un. – VBG1133323.

*Lathyrus quinquenervius* (Miq.) Litv.: [1:77; 2:14]. – 2 – Fr.

*Lespedeza bicolor* Turcz.: [1:77; 2:14; 3:209]. – 2, 3 – Sp. – VBG1109180, VBG1131803, VBG1109184, VBG1131806, VBG1131758, VBG1131754, VBG1131749, VBG1131743, VBG1143953.

*Maackia amurensis* Rupr.: [1:77; 2:14; 3:109]. – 3 – Sp. – VBG1109620, VBG1129242, VBG1129243, VBG1143954.

+ *Melilotus suaveolens* Ledeb. – 6 – Rr. – VBG1143380.

*Podocarpium mandshuricum* (Maxim.) Czerep. – *Desmodium mandshuricum* (Maxim.) Nakai: [1:77; 2:14; 3:109]. – 1, 2, 3 – Fr. – VBG1109499, VBG1109500, VBG1131502, VBG1131503, VBG1131504, VBG1131505, VBG1131506, VBG1131507, VBG1144032.

*Robinia pseudoacacia* L.: [1:77; 2:14; 3:110]. – 1, 3 – Rr. – Es. – VBG1130361, VBG1130364, VBG1130366, VBG1130367, VBG1130372, VBG1143381, VBG1143382, VBG1143862.

+ *Trifolium arvense* L. – 6 – Rr. – Al. – Field observation.

+ *Trifolium campestre* Schreb. – 6 – Rr. – Al. – Field observation.

+ *Trifolium hybridum* L. – 6 – Rr. – Al. – VBG1130191.

*Trifolium lupinaster* L.: [1:77; 2:14; 3:109]. – 2, 3 – Sp. – VBG1130144, VBG1130143.

*Trifolium pratense* L.: [1:77; 2:14; 3:110]. – 6 – Sp. – Al. – VBG1130208, VBG1130207, VBG1130206.

*Trifolium repens* L.: [1:77; 2:14; 3:110]. – 1, 6 – Sp. – Al. – VBG1129735, VBG1129736, VBG1129737, VBG1109268, VBG1129739, VBG1129718, VBG1144007.

*Vicia amoena* Fisch.: [1:77; 2:14; 3:110]. – 3 – Sp. – VBG1131925, VBG1131926, VBG1131963, VBG1131965, VBG1134466.

*Vicia amurensis* Oett.: [6:23]. – 2, 3, 6 – Sp. – VBG1109253, VBG1128764, VBG1132154, VBG1143386, VBG1144044, VBG1144155.

*Vicia cracca* L.: [1:77; 2:14; 3:110]. – 6 – Sp. – VBG1132324, VBG1132325, VBG1132326, VBG1132327, VBG1132332, VBG1132333, VBG1132334, VBG1132336, VBG1132337, VBG1132338.

*Vicia ramuliflora* (Maxim.) Ohwi: [6:24]. – 1, 2, 3 – Sp. – VBG1108951, VBG1109598, VBG1127494, VBG1132593, VBG1132594, VBG1132595, VBG1132596, VBG1132603, VBG1143385, VBG1144156, VBG1144157, VBG1144158.

*Vicia unijuga* A. Br.: [1:77; 2:14; 3:110]. – 1, 2, 3 – Fr. – VBG1109538, VBG1132794, VBG1132797, VBG1132798, VBG1132832, VBG1132833, VBG1132834, VBG1143384, VBG1143387, VBG1143955.

*Vicia venosa* (Willd. ex Link) Maxim.: [1:77; 2:14; 3:110]. – 1, 2, 3 – Sp. – VBG1132696.

+ *Wisteria sinensis* (Sims) Sweet: [3:110] (cited as a tame species). – 3 – Un. – Pl. – VBG1144159.

#### Fagaceae Dumort.

+ *Quercus dentata* Thunb.: [3:111] (cited as a tame species). – 3 – Un. – Pl. – VBG1142875.

*Quercus mongolica* Fisch. ex Ledeb.: [1:75; 2:13; 3:11] – 1, 2, 3. – Com. – VBG198120, VBG198126, VBG198127, VBG198128, VBG198130, VBG198131, VBG198132, VBG198133, VBG198134, VBG198135, VBG198139, VBG198141, VBG198142, VBG1109222.

+ *Quercus rubra* L.: [3:111] (cited as a tame species). – 3 – Un. – Pl. – VBG1142874.

#### Gentianaceae Juss.

*Gentiana scabra* Bunge: [2:15; 3:112]. – 4 – Sp.

*Gentiana triflora* Pall.: [1:78]. – 3, 6 – Sp.

*Gentiana zollingeri* Fawc.: [1:78; 2:15; 3:113]. – 1, 3 – Sp.

+ *Halenia corniculata* (L.) Cornaz: – 6 – Rr. – Field observation.

*Pterygocalyx volubilis* Maxim. – *Crawfordia volubilis* (Maxim.) Makino: [1:78]. Cited as *C. japonica* Siebold & Zucc. [2:15; 3:112]. – 1 – Rr.

#### Geraniaceae Juss.

*Geranium krameri* Franch. & Sav. – *G. sieboldii* Maxim.: [6:24]. – 2, 3, 6 – Sp. – VBG1134306, VBG1127504, VBG113064.

*Geranium platyanthum* Duthir – *G. eriostemon* Fisch.: [1:77; 2:15; 3:113]. – 1, 2, 3, 6 – Com. – VBG113066, VBG113067, VBG113068, VBG113069, VBG1120794, VBG1120796, VBG1120797, VBG1152015, VBG1133802, VBG1133803, VBG1133829, VBG1133830, VBG1133832, VBG1133834, VBG1133837, VBG1133838, VBG1133856.

*Geranium sibiricum* L.: [3:113; 4:75]. – 4, 6 – Fr.

*Geranium soboliferum* Kom.: [1:77; 2:15; 3:113]. – 2, 3 – Rr. – VBG1134492.

*Geranium wilfordii* Maxim.: [1:77; 2:15; 3:113]. – 1, 2, 3 – Sp. – VBG1109232, VBG1109231.

*Geranium wlassovianum* Fisch. ex Link: [6:24]. – 2, 3 – Sp. – VBG1134215, VBG1134205, VBG1109157, VBG1109156.

#### Grossulariaceae DC.

*Ribes mandshuricum* (Maxim.) Kom.: [1:77; 2:14; 3:117]. – 1, 3, 5 – Fr. – VBG1109062, VBG1109186.

*Ribes maximoviczianum* Kom.: [1:77; 2:14; 3:117]. – 1, 3 – Fr. – VBG1109067, VBG1109161, VBG1109215.



**Hydrangeaceae** Dumort.

*Deutzia amurensis* (Regel) Airy Shaw: [1:77; 2:14; 3:121]. – 1, 3, 4 – Sp. – VBG1143045, VBG1143744, VBG1143715.

*Philadelphus tenuifolius* Rupr.: [1:77; 2:14; 3:122]. – 1, 3, 4 – Fr. – VBG1109205, VBG1109615, VBG1120185, VBG1120184.

**Hypericaceae** Juss.

*Hypericum gebleri* Ledeb.: [1:75; 2:13; 3:89]. – 3, 4, 6 – Fr.

**Juglandaceae** Perleb

*Juglans mandshurica* Maxim.: [1:75; 2:13; 3:142]. – 1, 3 – Fr. – VBG1143743.

**Lamiaceae** Martinov

*Agastache rugosa* (Fisch. & C.A. Mey.) Kuntze.: [3:143]. – 5 – Rr. – VBG1143852.

*Clinopodium chinense* (Benth.) Kuntze.: [1:79; 2:16; 3:143]. – 3, 6 – Rr. – VBG1143864.

*Elsbolitzia ciliata* (Thunb.) Hyl.: [1:79; 2:16; 3:144]. – 3, 6 – Rr.

*Glechoma hederacea* L.: [1:79; 2:16; 3:144]. – 3, 6 – Rr. – Es.

*Lamium barbatum* Siebold & Zucc.: [1:79; 2:16; 3:144]. – 3, 6 – Sp.

*Leonurus japonicus* Houtt.: [1:79; 2:16; 3:144]. – 3, 6 – Sp.

*Leonurus macranthus* Maxim.: [1:79; 2:16; 3:144]. – 3 – Rr.

*Lycopus lucidus* Turcz. ex Benth.: [1:79; 2:16; 3:144]. – 3 – Rr.

*Lycopus maackianus* (Maxim. ex Herder) Makino: [1:79; 2:16; 3:144]. – 3 – Sp.

+ *Lycopus uniflorus* Michx. – 3 – Rr. – VBG1144018.

*Meehania urticifolia* (Miq.) Makino: [2:16; 3:145] (cited as a tame species). – 2, 3 – Sp. – Pl.

*Mentha daburica* Fisch. ex Benth.: [1:79; 2:16; 3:145]. – 3, 5 – Rr.

+ *Mosla dianthera* (Buch.-Ham. ex Roxb.) Maxim.: – 3, 6 – Rr. – VBG1144008.

*Prunella vulgaris* L.: [1:79; 2:16; 3:145]. – 3, 5, 6 – Sp.

*Rabdosia excisa* (Maxim.) H. Hara: [1:79; 2:16; 3:146] – 2, 3 – Fr. – VBG1143181.

*Scutellaria dependens* Maxim.: [1:79; 2:16; 3:146]. – 5 – Sp. – VBG1143390.

*Scutellaria pекinensis* Maxim. – *S. dentata* H. Lév.: [3:146]. – *S. ussuriensis* (Regel) Kudó: [1:79; 2:16; 3:146]. – 2, 3 – Fr. – VBG1109256, VBG1143389, VBG1143848. On the territory of the BGI two varieties of this species are recorded: *S. pекinensis* var. *pekinensis* and *S. pекinensis* var. *ussuriensis* (Regel) Hand.-Mazz.

**Lythraceae** J. St.-Hil.

*Lythrum salicaria* L.: [1:77; 2:14; 3:162]. – 3 – Rr.

**Magnoliaceae** Juss.

+ *Magnolia kobus* DC.: [3:162] (cited as a tame species). – 1 – Sp. – Pl. – VBG1144165.

+ *Magnolia sieboldii* K. Koch: [3:163] (cited as a tame species); Bogachev & al. 2022. – 1, 3, 6 – Fr. – Es. – VBG1143904, VBG1144016.

**Malvaceae** Juss. (incl. Tiliaceae Juss.)

*Tilia amurensis* Rupr.: [1:76; 2:14; 3:237]. – 1, 2, 3 – Com. – VBG1109150, VBG1137911, VBG1137936, VBG1137937, VBG1137938, VBG1138051, VBG1138052.

*Tilia mandshurica* Rupr. & Maxim.: [1:76; 2:14; 3:237]. – 1, 2, 3 – Com. – VBG1138095, VBG1143723, VBG1143733.

*Tilia taquetii* C.K. Schneid.: [1:76; 2:14; 3:237]. – 1, 2, 3 – Sp. – VBG1109164.

**Menispermaceae** Juss.

*Menispermum dauricum* DC.: [1:74; 2:12; 3:166]. – 3 – Rr. – VBG1114058, VBG1114057.

**Moraceae** Gaudich.

+ *Morus alba* L.: [3:167] (cited as a tame species). – 3, 6 – Sp. – Es. – VBG1143902.

**Oleaceae** Hoffmanns. & Link

+ *Forsythia ovata* Nakai: [3:169] (cited as a tame species). – 6 – Rr. – Pl. – VBG1142872, VBG1144023.

*Fraxinus mandshurica* Rupr.: [1:78; 2:15; 3:169]. – 1, 3 – Com. – VBG1109151.

*Fraxinus rhynchophylla* Hance: [1:78; 2:15; 3:169]. – 1, 3 – Com. – VBG1109607.

*Ligustrina amurensis* Rupr.: [1:78; 2:15; 3:169]. – 1, 3 – Fr. – VBG1109218, VBG1109214.

**Onagraceae** Juss.

*Circaea alpina* L.: [1:77; 2:14; 3:172]. – 1, 3, 5 – Fr. – VBG1108997, VBG1109259, VBG1140478, VBG1140485, VBG1140506.

*Circaea caulescens* (Kom.) Nakai: [4:75]. – 4 – Sp.

*Circaea cordata* Royle: [3:172]. – 1, 3 – Rr. – VBG1140619, VBG1140628, VBG1140629, VBG1143855.

*Circaea lutetiana* L.: [2:14; 3:172]. – *Circaea quadrisulcata* (Maxim.) Franch. & Sav.: [1:77]. – 1, 3, 5 – Fr. – VBG1109194, VBG1109195, VBG1109196, VBG1140657, VBG1140667, VBG1143183, VBG1143115.

*Epilobium palustre* L. [1:77; 2:14; 3:172]. – 5, 6 – Sp.

*Oenothera biennis* L. – *O. muricata* L.: [1:77]. – 6 – Sp. – Al.

*Oenothera villosa* Thunb. – *O. strigosa* (Rydb.) Mack. & Bush: [2:14]. – 6 – Sp. – Al.

**Orobanchaceae** Vent. (incl. Scrophulariaceae Juss., p. p.)

*Melampyrum roseum* Maxim.: [1:79; 2:16; 3:233]. – 3, 6 – Rr. – VBG118675, VBG118677.

*Pedicularis resupinata* L.: [1:79; 2:16; 3:233]. – 1, 3, 5 – Sp. – VBG1109275, VBG1109276.

*Phacellanthus tubiflorus* Siebold. & Zucc.: [1:79; 2:16; 3:175]. – 2, 3 – Rr.

*Phtheirospermum chinense* Bunge: [1:79; 2:16; 3:233]. – 3, 5 – Rr.

**Oxalidaceae** R. Br.

*Oxalis acetosella* L.: [1:77; 2:15; 3:176]. – 1, 2, 3, 5 – Fr. – VBG1134529, VBG1134531, VBG1134528, VBG123403, VBG121555, VBG154555, VBG12940, VBG1109187.

\**Oxalis obtriangulata* Maxim.: [1:77; 2:15; 3:176]. – 1, 2, 5 – Fr. – VBG1134564, VBG1109250, VBG154608, VBG123402, VBG1134594.

**Paeoniaceae** Raf.

\*\**Paeonia obovata* Maxim.: [1:74; 2:13; 3:182]. – 1, 2 – Rr. – VBG1109189, VBG1144036.

\*\**Paeonia oreogeton* S. Moore – *Paeonia vernalis* Mandl.: [1:74; 2:13; 3:182]. – 1, 2 – Rr. – VBG1143479, VBG1143370.

**Papaveraceae** Juss. (incl. Fumariaceae DC.)

*Chelidonium asiaticum* (Hara) Krahluc.: [2:12; 3:182]. – *Ch. majus* L.: [1:75]. – 4, 6 – Sp.

*Corydalis ambigua* Cham. & Schltdl.: [1:75; 2:12; 3:112]. – 1 – Fr. – VBG1109234.

*Corydalis buschii* Nakai: [1:75; 2:12; 3:112]. – 3 – Rr.

*Corydalis fumariifolia* Maxim.: [1:75; 2:12; 3:112]. – 3 – Rr.

*Corydalis ochotensis* Turcz.: [3:112]. – 3, 4, 5, 6 – Fr.

*Corydalis remota* Fisch. ex Maxim.: [1:75; 2:12; 3:112]. – 2 – Sp. – VBG1115656, VBG1115657.

*Corydalis repens* Mandl & Muhlendorf: [1:75; 2:12; 3:112]. – 1, 3 – Sp. – VBG1109244, VBG1109245, VBG1116221, VBG1116213.

*Corydalis speciosa* Maxim. – *Corydalis pallida* auct. non Pers.: [1:75; 2:12; 3:112]. – 3, 6 – Rr. – VBG1116193, VBG1116149, VBG1116151, VBG1116127, VBG1116137.

- Hylomecon vernalis* Maxim.: [1:75; 2:12; 3:182]. – 1, 3 – Com. – VBG1109243, VBG121229, VBG121230, VBG12778.
- Phrymaceae** Schauer (incl. Scrophulariaceae Juss., p. min. p.)
- Mimulus tenellus* Bunge: [1:78; 2:16; 3:233]. – 3, 6 – Sp.
- Phryma asiatica* (H. Hara) O. Deg. & I. Deg.: [2:16; 3:183]. – *Phryma leptostachya* L.: [1:79]. – 1, 2, 3, 6 – Com. – VBG1109249, VBG152153.
- Plantaginaceae** Juss. (incl. Scrophulariaceae Juss., p. p.)
- + *Linaria vulgaris* Mill. – 6 – Rr. – Field observation.
- Plantago asiatica* L.: [1:79]. Cited as *P. cornuti* Gouan [2:16; 3:186]. – 6 – Sp. – VBG1109269, VBG144163, VBG144164.
- Plantago major* L.: [4:75]. – 4, 6 – Sp.
- Veronica daurica* Steven: [4:77]. – 4 – Sp.
- Veronicastrum sibiricum* (L.) Pennell: [2:16; 3:233]. – *Veronica sibirica* L.: [1:78]. – 3, 6 – Sp. – VBG1109576.
- Polemoniaceae** Juss.
- Polemonium chinense* Brand: [2:16; 3:191]. – *P. racemosum* (Regel) Kitam.: [1:78]. – 1, 2, 3 – Sp. – VBG1109558.
- Polemonium laxiflorum* Kitam.: [6:24]. – 1, 2, 3 – Rr. – VBG1109229.
- Polygonaceae** Juss.
- Acetosa pratensis* Mill.: [2:17; 3:192]. – *Rumex acetosa* L.: [3:193]. – 3, 6 – Sp.
- Bistorta pacifica* (Petrov ex Kom.) Kom.: [2:13; 3:192]. – *Polygonum pacificum* Petrov ex Kom.: [1:75]. – 1, 2, 3 – Sp. – VBG1102311.
- Cephalophilon nepalense* (Meisn.) Tzvelev: [2:13; 3:192]. – *Polygonum nepalense* Meisn.: [1:75]. – 6 – Sp. – VBG1102831.
- + *Chylocalyx perfoliatus* (L.) Hassk. ex Miq. – *Polygonum perfoliatum* L. – 6 – Sp. – VBG1101368, VBG1101366.
- + *Fallopia convolvulus* (L.) Á. Löve – 6 – Sp. – VBG1101396.
- + *Fallopia dentato-alata* (F. Schmidt) Holub – 6 – Sp. – VBG1101396.
- + *Fallopia dumetorum* (L.) Holub – 6 – Sp. – VBG1143863.
- + *Persicaria hydropiper* (L.) Spach – *Polygonum hydropiper* L. – 5, 6 – Sp. – VBG1103806.
- Persicaria longiseta* (De Bruyn) Kitag.: [2:13; 3:192]. – *Polygonum posumbu* Kom.: [1:75]. – 3, 5, 6 – Fr. – VBG1101677, VBG1101344, VBG1143104.
- + *Persicaria maculosa* S.F. Gray – *Polygonum persicaria* L. – 6 – Rr. – VBG1101622, VBG1101623.
- + *Persicaria orientalis* (L.) Spach – *Polygonum orientale* L. – 6 – Sp. – VBG1101635, VBG1101631.
- Polygonum aviculare* L.: [3:192; 4:75]. – 4, 6 – Sp. – VBG179963.
- Polygonum liaotungense* Kitag.: [1:75; 2:13; 3:192]. – 6 – Sp.
- + *Reynoutria japonica* Houtt. – *R. sachalinensis* auct. non (F. Schmidt) Nakai: [3:193] (cited as a tame species). – 6 – Sp. – Es. – VBG1143908, VBG1144009.
- Rumex crispus* L.: [1:75; 2:13; 3:193]. – 6 – Sp.
- Rumex longifolius* DC.: [6:24]. – 6 – Sp. – VBG1127493.
- Rumex maritimus* L.: [6:24]. – 6 – Rr. – VBG1127492.
- Rumex patientia* L.: [1:75; 2:13; 3:193]. – 6 – Sp.
- Truellum japonicum* Houtt.: [2:13; 3:193]. – *Polygonum senticosum* (Meisn.) Franch. & Sav.: [1:75]. – 3, 5, 6 – Sp.
- Truellum sieboldii* (Meisn.) Soják: [2:13; 3:193]. – *Polygonum sieboldii* Meisn.: [1:75]. – 3, 5, 6 – Sp.
- Truellum thunbergii* (Siebold & Zucc.) Soják: [2:13; 3:193]. – *Polygonum thunbergii* Siebold & Zucc.: [1:75]. – 3, 5, 6 – Fr. – VBG1101082, VBG1101083, VBG1101084, VBG1143101.
- Primulaceae** Borkh.
- Androsace filiformis* Retz.: [1:76; 2:14; 3:194]. – 3, 5, 6 – Fr.
- Lysimachia clethroides* Duby: [1:76; 2:14; 3:194]. – 2, 3 – Rr.
- Lysimachia davurica* Ledeb.: [1:76; 2:14; 3:194]. – 2, 3 – Sp. – VBG1143170, VBG1143167.
- ? *Primula fistulosa* Turkev.: [1:76; 2:14; 3:194]. The occurrence of this meadow species within the BGI is extremely doubtful and has not been confirmed by herbarium specimens. In the vicinity of the BGI, *P. patens* E.A. Busch is found in forest communities. It is likely that this species was misidentified as *P. fistulosa* growing within the BGI.
- Ranunculaceae** Juss.
- Aconitum alboviolaceum* Kom.: [1:74; 2:12]. – 1, 2 – Sp. – VBG1144264.
- Aconitum sczukinii* Turcz.: [2:12]. – *A. arcuatum* Maxim.: [1:74]. – 1, 2, 3 – Sp.
- + *Aconitum stoloniferum* Vorosch. – 1, 3 – Sp. – VBG142511.
- Aconitum axilliflorum* Vorosch.: [1:74; 2:12]. – 1, 2, 3 – Rr.
- + *Aconitum volubile* Koelle – 1, 2 – Sp. – VBG1143860, VBG1143960.
- Actaea asiatica* Hara: [2:12; 3:196]. – *A. acuminata* Wall. ex Royle: [1:74]. – 1, 2, 3 – Fr. – VBG134944, VBG134941, VBG134919, VBG134881, VBG134874, VBG134872, VBG1109507, VBG1143368, VBG1144034.
- Adonis amurensis* Regel & Radde: [1:75; 2:12; 3:196]. – 1, 2, 3 – Com. – VBG1109523, VBG112624, VBG112608.
- Anemonoides amurensis* (Korsh.) Holub: [2:12; 3:197]. – *Anemone amurensis* (Korsh.) Kom.: [1:74]. – 1, 2, 3 – Com. – VBG1109525, VBG1109266, VBG1109303, VBG1109302, VBG1109298.
- Anemonoides extremiorientalis* (Starod.) Starod.: [3:197]. – *Anemonoides umbrosa* (C.A. Mey.) Holub: [2:12]. – *Anemone umbrosa* C.A. Mey.: [1:74]. – 1, 2 – Sp. – VBG1108983, VBG1109696, VBG1109687, VBG1109645.
- ? *Anemonoides raddeana* (Regel) Holub – *Anemone raddeana* Regel. The presence of this species in the flora is doubtful [1:75]. The species was not found subsequently (Nedoluzhko 1999, Nedoluzhko et al. 2001).
- Anemonoides udensis* (Trautv. et C.A. Mey.) Holub: [2:12; 3:197]. – *Anemone udensis* Trautv. & C.A. Mey.: [1:74]. – 1, 2, 3 – Fr. – VBG1109529, VBG110017, VBG110016, VBG1109853, VBG1109852.
- Aquilegia oxysepala* Trautv. & C.A. Mey.: [1:74; 2:12; 3:197]. – 1, 2 – Rr. – VBG138229.
- Arsenjevia glabrata* (Maxim.) Starod.: [2:12; 3:197]. – *Anemone glabrata* (Maxim.) Juz.: [1:74]. – 1 – Rr. – VBG1143205, VBG1143203.
- Caltha silvestris* Vorosch.: [1:74; 2:12; 3:198]. – 1, 2, 3, 5 – Com. – VBG1109511, VBG1109235, VBG134454, VBG134412, VBG134411.
- Cimicifuga dahurica* Huth: [1:74; 2:12; 3:198]. – 1, 2, 6 – Sp. – VBG143656.
- Cimicifuga simplex* Wormsk. ex DC.: [1:74; 2:12; 3:198]. – 1, 2, 3 – Rr. – VBG1129032.
- Clematis brevicaudata* DC.: [3:198]. – 1, 6 – Rr. – VBG1110913, VBG1142881, VBG1142880.
- Clematis fusca* Turcz.: [1:75; 2:12; 3:198]. – 1, 2, 6 – Sp. – VBG1143352, VBG1143351, VBG1143208.
- Eranthis stellata* Maxim. – *Shibateranthis stellata* (Maxim.) Nakai: [1:74; 2:12; 3:202]. – 1, 2, 3 – Fr. – VBG1109236.
- Ranunculus chinensis* Bunge: [1:75; 2:12; 3:202]. – 1, 2, 5, 6 – Sp. – VBG1111496.
- Ranunculus franchetii* H. Boissieu: [3:202]. – *Ranunculus ussuriensis* Kom.: [1:75; 2:12]. – 1, 2, 3 – Com. – VBG1111556, VBG1111538.
- Ranunculus japonicus* Thunb.: [1:75; 2:12; 3:202]. – 1, 2, 3 – Fr.
- Ranunculus repens* L.: [1:75; 2:12; 3:202]. – 1, 2, 3, 6 – Fr. – VBG1112286, VBG1112277, VBG1112275, VBG1112204, VBG1109084, VBG1109055.

- Thalictrum contortum* L.: [1:75; 2:12; 3:202]. – 1, 2, – Rr. – VBG112970.
- Thalictrum filamentosum* Maxim.: [1:75; 2:12; 3:202]. – 1, 2, 3 – Fr. – VBG1108979, VBG1113060, VBG1113059, VBG1113037, VBG1194297.
- Trollius chinensis* Bunge: [1:75]. – *Trollius macropetalus* (Regel) Fr. Schmidt ex W.T. Wang: [2:12; 3:202]. – 1, 2, 3 – Fr.
- Rhamnaceae** Juss.
- Rhamnus davurica* Pall.: [1:78; 2:15; 3:203]. – 1, 2 – Rr. – VBG1143211, VBG1109611, VBG1144021.
- Rosaceae** Juss.
- Agrimonia coreana* Nakai: [2:14; 3:203]. – *A. velutina* Juz.: [1:76]. – 1, 2, 3 – Rr. – VBG1109154, VBG1109155.
- Agrimonia viscidula* Bunge: [2:14; 3:203]. – *A. japonica* (Miq.) Koidz.: [1: 77]. – 3, 6 – Sp. – VBG1109166, VBG1109155, VBG1109069.
- Aruncus dioicus* (Walter) Fernald: [3:204]. – *A. asiaticus* Pojark.: [1:76; 2:14]. – 1, 2, 3, 4 – Fr. – VBG1123148, VBG1123145, VBG1109248, VBG1143128, VBG1109193.
- Crataegus maximowiczii* C.K. Schneid.: [1:76; 2:14; 3:206]. – 1, 3 – Rr.
- Crataegus pinnatifida* Bunge: [1:76; 2:14; 3:206]. – 2, 3 – Rr. – VBG1109069, VBG1143725, VBG1143900.
- Filipendula glaberrima* Nakai: [2:14; 3:207]. – *F. koreana* (Nakai) Nakai: [1:76]. – 1, 3, 5 – Rr. – VBG1127193, VBG1127169.
- Filipendula palmata* (Pall.) Maxim.: [1:76; 2:14; 3:207]. – 1, 3, 5 – Fr. – VBG1143118, VBG1127114, VBG1127117.
- Fragaria orientalis* Losinsk.: [1:76; 2:14; 3:207]. – 2, 3, 4, 6 – Sp. – VBG1108999.
- Geum aleppicum* Jacq.: [1:76; 2:14; 3:206]. – 1, 2, 3, 6 – Sp. – VBG1126819, VBG1126818, VBG1126821, VBG1143218.
- Malus mandshurica* (Maxim.) Kom. ex Juz.: [1:76; 2:14; 3:207]. – 1, 2, 3 – Fr. – VBG1123516, VBG1123492, VBG1123453, VBG1143731.
- Micromeles alnifolia* (Siebold & Zucc.) Koehne: [1:76; 2:14; 3:208]. – 1, 2, 3 – Sp. – VBG1109210, VBG1109209, VBG1123916, VBG1143221, VBG1123769.
- Padus avium* Mill.: [2:14; 3:208]. – *P. asiatica* Kom.: [1:77]. – 1, 3 – Sp. – VBG1109612, VBG1128836.
- + *Physocarpus opulifolius* (L.) Maxim.: [3:209] (cited as a tame species). – 6 – Rr. – Es. – Field observation.
- Potentilla centigrana* Maxim.: [1:76; 2:14; 3:209]. – 1, 3, 5, 6 – Sp. – VBG1109271, VBG1109270, VBG1125325, VBG1125306.
- Potentilla cryptotaeniae* Maxim.: [1:76; 2:14; 3:209]. – 1, 2, 3, 6 – Sp. – VBG1143225.
- Potentilla fragarioides* L.: [1:76; 2:14; 3:209]. – 2, 3, 4 – Rr. – VBG112948, VBG1109264, VBG1126003.
- Prunus maximowiczii* Rupr. – *Padus maximowiczii* (Rupr.) Sokolov: [2:14]. – *Cerasus maximowiczii* (Rupr.) Kom.: [1:77; 3:204]. – 1, 3 – Sp. – VBG1143729, VBG1109083, VBG1143729.
- Prunus sargentii* Rehder – *Cerasus sargentii* (Rehder) Pojark.: [2:14; 3:205]. – *C. sachalinensis* (F. Schmidt) Kom.: [1:77]. – 1, 3 – Rr. – VBG1143130, VBG1143129, VBG1143746.
- Pyrus ussuriensis* Maxim.: [1:76; 2:14; 3:210]. – 1, 2, 3 – Rr. – VBG1109073.
- Rosa acicularis* Lindl.: [1:77; 2:14; 3:210]. – 1, 3 – Rr. – VBG1127938.
- Rosa davurica* Pall.: [1:77; 2:14; 3:210]. – 2, 3 – Rr. – VBG1131257, VBG1128156. Note: Hybrid *Rosa rugosa* Thunb. × *R. davurica* Pall. was found within the BGI. – 6 – Un. – VBG1143910.
- Rosa maximowicziana* Regel: [1:77; 2:14; 3:210]. – 2, 6 – Rr. – Pl. – VBG1128498, VBG1128495, VBG1128350.
- Rubus crataegifolius* Bunge: [1:76; 2:14; 3:223]. – 1, 2, 3, 6 – Sp. – VBG1143222, VBG1143219, VBG1109182, VBG1109173, VBG1143899.
- + *Rubus occidentalis* L. – 6 – Rr. – Es. – VBG1142876, VBG1143224.
- Rubus sachalinensis* H. Lév. – *R. idaeus* L.: [1:76; 2:14]. – 2, 6 – Rr. – VBG1109219, VBG1131221.
- Sanguisorba officinalis* L.: [1:77; 2:14; 3:223]. – 2, 3 – Rr.
- Sorbaria sorbifolia* (L.) A. Braun: [1:76; 2:14; 3:243]. – 2, 3, 4, 6 – Sp. – VBG1109207, VBG1143220, VBG1143890.
- + *Sorbus commixta* Hedl.: [3:224] (cited as a tame species). – 1 – Un. – Es. – VBG1143907.
- Spiraea salicifolia* L.: [1:76; 2:14; 3:225]. – 3 – Rr.
- Spiraea ussuriensis* Pojark.: [1:76; 2:14; 3:225]. – 1, 3, 4 – Fr. – VBG1109063, VBG1109176, VBG1109177, VBG1143223.
- + *Spiraea* × *vanhouttei* (Briot) Zabel.: [3:225] (cited as a tame species). – 2 – Un. – Pl. – VBG1144056, VBG1144054.
- Waldsteinia maximowicziana* (Teppner) Prob. – *W. ternata* auct. non (Stephan) Fritsch. [1:76; 2:14; 3:225]. – 1, 3, 4 – Sp. – VBG1126737, VBG1126735.
- Rubiaceae** Juss.
- Galium boreale* L.: [1:78; 2:15; 3:225; 4:75]. – 3, 5 – Rr.
- Galium davuricum* Turcz. ex Ledeb.: [1:78; 2:15; 3:225]. – 1, 2 – Sp. – VBG1109278, VBG1143097, VBG1143531, VBG1143532.
- Galium maximowiczii* (Kom.) Pobed. – *Asperula maximowiczii* Kom.: [1:78]. – 1, 2, 3 – Sp. – VBG1109267, VBG1143958.
- Galium pseudoasprellum* Makino: [6:24]. – 1, 2, 3, 5 – Sp. – VBG1109560, VBG1143533, VBG1143533, VBG1144160, VBG1144161, VBG1144162.
- Galium triflorum* Michx.: [1:78; 2:15; 3:225]. – 2, 3 – Rr.
- Galium verum* L. s. l.: [1:78; 2:15; 3:225]. – 2, 3 – Rr.
- Rubia chinensis* Regel & Maack: [1:78; 2:15; 3:226]. – 1, 2, 3 – Sp. – VBG1108943, VBG1109559, VBG1109560, VBG1144037.
- Rubia cordifolia* L.: [2:15; 3:226]. Cited as *Rubia sylvatica* (Maxim.) Nakai [1:78]. – 2, 3 – Sp. – VBG1109237, VBG1143094, VBG1143530.
- Rutaceae** Juss.
- Dictamnus dasycarpus* Turcz.: [1:77; 2:15; 3:226]. – 2 – Rr. – VBG1144048.
- Phellodendron amurense* Rupr.: [1:77; 2:15; 3:226]. – 1 – Fr. – VBG1177639, VBG1109165, VBG1143067, VBG1109225.
- Salicaceae** Mirb.
- Populus koreana* Rehder: [2:13; 3:227]. – 1, 3, 5 – Fr.
- Populus maximowiczii* A. Henry: [1:76; 3:227]. – 1, 3, 5 – Fr. – VBG1189129, VBG1144015.
- Populus tremula* L.: [2:13; 3:227]. – *Populus davidiana* Dode: [1:76; 3:227]. – 1, 2, 3, 5, 6 – Fr. – VBG1109216, VBG1144019.
- Salix caprea* L.: [1:76; 3:227]. – *S. caprea* subsp. *hultenii* (B. Floder.) Kom.: [2:13]. – 1, 3, 5, 6 – Fr. – VBG1187417, VBG1187419, VBG1187420, VBG1187421, VBG1187422, VBG1187425, VBG1187426, VBG1187430, VBG1187465, VBG1187471, VBG1187576, VBG1187578, VBG1187850, VBG1109147, VBG1144062.
- Salix gracilistyla* Miq.: [2:13; 3:228]. – 3, 5, 6 – Fr. – VBG1187026, VBG1187028, VBG1187041, VBG1187043, VBG1187044, VBG1187045, VBG1187256, VBG1187258, VBG1187263, VBG1187269, VBG1187331, VBG1187354, VBG1187356, VBG1187852, VBG1187873, VBG1109146, VBG1109148, VBG1143177, VBG1144017.
- Salix integra* Thunb.: [1:76; 2:13; 3:228]. – 3, 5, 6 – Sp. – VBG1189507, VBG1189527, VBG1189528.
- Salix miyabeana* Seemen: [6:24]. – 3, 6 – Un. – VBG1127496.
- Salix nipponica* Franch. & Sav.: [2:13; 3:228]. – 1, 3, 5, 6 – Fr. – VBG1187297, VBG1193403, VBG1193416, VBG1193421, VBG1193422, VBG1193423, VBG1193426, VBG1193427, VBG1193464, VBG1193465.

*Salix pierotii* Miq.: [2:13; 3:228]. – 3, 5, 6 – Fr. – VBG190555, VBG190556, VBG190561, VBG190562, VBG190594, VBG190805.

*Salix rorida* Laksch.: [1:76; 6:24]. – 3, 5, 6 – Fr. – VBG193060, VBG193061, VBG193074, VBG193118, VBG193119, VBG193123, VBG193124, VBG193129, VBG193130.

*Salix schwerinii* E.L. Wolf: [1:76; 2:13; 3:228]. – 3, 5, 6 – Fr. – VBG189983, VBG190006, VBG190007, VBG190009, VBG190012, VBG190013, VBG190014, VBG190015, VBG190016, VBG190017, VBG190060, VBG190061, VBG190065, VBG190086, VBG195828, VBG1109086, VBG1109145.

*Salix taraikensis* Kimura: [2:13; 3:228]. – 3, 5, 6 – Fr. – VBG192664, VBG192730, VBG192732, VBG192733, VBG192734, VBG192736, VBG192737, VBG192738, VBG192745, VBG192747, VBG192749, VBG192750, VBG192751.

*Salix udensis* Trautv. & C.A. Mey.: [3:228; 6:24]. – 3, 5, 6 – Fr. – VBG194444, VBG194448, VBG194449, VBG194588, VBG194593, VBG194599, VBG194600, VBG194612, VBG194616, VBG194618, VBG194620, VBG194621, VBG194622, VBG194624, VBG194627, VBG194632, VBG194721, VBG1109085.

Note: Two hybrids were indicated for the territory of the BGI: *Salix schwerinii* E.L. Wolf × *S. caprea* L. = *S.* × *vorobievii* Korkina [2:13, 3:228]; *Salix gracilistyla* Miq. × *S. schwerinii* E.L. Wolf = *S.* × *gracilistyliformis* Korkina [2: 13].

**Santalaceae** R. Br. (incl. Viscaceae Miers)

*Viscum coloratum* (Kom.) Nakai: [1:78; 2:15; 3:241]. – 3 – Sp.

**Sapindaceae** Juss. (incl. Aceraceae Juss.)

*Acer barbinerve* Maxim.: [1:77; 2:15; 3:26; 4:76]. – 1, 2, 3, 4 – Fr. – VBG1136608, VBG1136506, VBG1136348, VBG1136347, VBG1106310, VBG1106297, VBG122989, VBG1109185, VBG1109060, VBG1144014, VBG1143898.

*Acer ginnala* Maxim.: [1:77; 2:15; 3:26]. – 1, 3, 6 – Sp. – VBG1143204, VBG1143114.

+ *Acer komarovii* Pojark.: [3:26] (cited as a tame species). – 2 – Un. – Pl. – VBG1144075, VBG1144074.

*Acer mandshuricum* Maxim.: [1:77; 2:15; 3:26]. – 1, 2 – Rr. – VBG1136604, VBG1136594, VBG1136590, VBG1136574.

*Acer mono* Maxim.: [1:77; 2:15; 3:26; 4:76]. – 1, 2, 3, 4 – Com. – VBG1136935, VBG1136918, VBG1136915, VBG1109159, VBG1136800, VBG1136765.

+ *Acer negundo* L. – 6 – Fr. – Al. – VBG1143207, VBG1136903, VBG1136895, VBG1109224.

+ *Acer platanoides* L.: [3:26] (cited as a tame species). – 2 – Un. – Pl. – VBG1144067, VBG1144066.

*Acer pseudosieboldianum* Kom.: [1:77; 2:15; 3:27; 4:76]. – 1, 2, 3, 4 – Com. – VBG1137112, VBG1137116, VBG1109158, VBG1137262, VBG1137260, VBG1137258, VBG1137256, VBG1137251, VBG1137250, VBG1137248, VBG1137246.

+ *Acer semenovii* Regel & Herder: [3:27] (cited as a tame species). – 2 – Un. – Pl. – VBG1136978, VBG1144072.

*Acer tegmentosum* Maxim.: [1:77; 2:15; 3:27; 4:76]. – 1, 2, 3, 4 – Fr. – VBG1109609, VBG1137053, VBG1137051, VBG1137048, VBG1137046, VBG1137028, VBG1136996, VBG1136995, VBG1136992, VBG122985.

+ *Aesculus glabra* Willd.: [3:120] (cited as a tame species). – 2 – Un. – Es. – VBG1144059, VBG1144061.

**Saxifragaceae** Juss.

*Astilbe chinensis* (Maxim.) Franch. & Sav.: [1:77; 2:14; 3:229]. – 1, 3 – Sp. – VBG121552.

+ *Chrysosplenium fallax* Koldaeva. Cited as *C. villosum* Franch. [1:77; 2:14; 3:231]. – 1, 3, 5 – Rr. – Field observation. A new species described from the Muravyov-Amurskiy Peninsula from the vicinity of the BGI (Koldaeva 2021).

+ *Chrysosplenium flagelliferum* F. Schmidt. Cited as *C. alternifolium* L. [1:77; 2:14; 3:231]. – 3, 5 – Rr. – Field

observation. *C. flagelliferum* was mistaken for *C. alternifolium*, which does not grow either within the BGI nor in its vicinity on the Muravyov-Amurskiy Peninsula.

*Chrysosplenium villosum* Franch. Cited as *C. pilosum* Maxim. [1:77; 2:14; 3:231]. – 1, 3, 5 – Fr. – VBG155454, VBG1119844, VBG1119845, VBG1144305. *C. villosum* is the most common species of spleenwort within the BGI. Previously, herbarium specimens of this species collected on the Muravyov-Amurskiy Peninsula, including the BGI, were mistaken for *C. pilosum*.

*Mitella nuda* L.: [1:77; 2:14; 3:231]. – 1 – Rr. – VBG1109494, VBG1109263.

*Saxifraga manshuriensis* (Engl.) Kom.: [1:77; 2:14; 3:232]. – 1, 4, 5 – Sp. – VBG1109260, VBG155488, VBG118643.

**Schisandraceae** Blume

*Schisandra chinensis* (Turcz.) Baill.: [1:74; 2:12; 3:232; 4:76]. – 1, 2, 3, 4 – Fr. – VBG1114290, VBG1114288, VBG1114289, VBG1109614.

**Ulmaceae** Mirb.

*Ulmus japonica* (Rehder) Sarg.: [1:75; 2:13; 3:238]. – 1 – Fr. – VBG1109203, VBG1109617.

*Ulmus laciniata* Mayr.: [1:75; 2:13; 3:238]. – 1 – Com. – VBG1109170, VBG1109204.

**Urticaceae** Juss.

? *Achudemia japonica* Maxim.: [6:24]. Specimens No. VBG1127502, VBG1127503 were identified incorrectly. The distribution of this species in the BGI is doubtful.

*Pilea mongolica* Wedd.: [1:75; 2:13; 3:239]. – 1, 5, 6 – Fr. – VBG1109202, VBG1143858.

*Urtica angustifolia* Fisch. ex Hornem.: [1:75; 2:13; 3:239]. – 3, 5, 6 – Fr.

*Urtica laetevirens* Maxim.: [1:75; 2:13; 3:239]. – 3 – Sp.

**Violaceae** Batsch

*Viola acuminata* Ledeb.: [1:76; 2:13; 3:240]. – 1, 2, 3 – Com. – VBG1108983, VBG1109241, VBG1109561, VBG1109563, VBG1138552, VBG1138595, VBG1138601, VBG1138602, VBG1138611, VBG1138613, VBG1138631, VBG1138635, VBG1143172, VBG1143174.

*Viola austroussuriensis* (W. Becker) Kom.: [6:24]. – 1, 3 – Rr. – VBG1127495.

*Viola brachysepala* Maxim.: [6:24]. – 1, 3 – Sp. – VBG1109035, VBG1138776, VBG1138790, VBG1138800, VBG1138801, VBG1138802, VBG1138803, VBG1138804, VBG1138806, VBG1138809, VBG1143830.

*Viola collina* Besser: [1:76; 2:13; 3:241]. – 1, 2, 3 – Com. – VBG1109567, VBG1138672, VBG1138678, VBG1139086, VBG1139182, VBG1139186, VBG1139257, VBG1139260, VBG1143109.

*Viola pacifica* Juz.: [4:76]. – 4 – Rr. – VBG1143851.

*Viola patrinii* Ging.: [1:76; 2:13; 3:241]. – 2 – Rr.

*Viola sacchalinensis* H. Boissieu: [1:76; 2:13; 3:241]. – 1, 3 – Sp. – VBG1139712, VBG1139716, VBG1139725.

*Viola selkirkii* Pursh ex Goldie: [1:76; 2:13; 3:241]. – 1, 3 – Com. – VBG120350, VBG120351, VBG120359, VBG120360, VBG120363, VBG120364, VBG120365, VBG1109242, VBG1109255, VBG1109265, VBG1109562, VBG1109564, VBG1139676, VBG1139681, VBG1139684, VBG1139685, VBG1139688, VBG1139691, VBG1139697, VBG1139700, VBG1140087, VBG1140089, VBG1140090, VBG1140093, VBG1140098, VBG1140099.

*Viola variegata* Fisch. ex Link: [1:76; 2:13; 3:241; 4:76]. – 4 – Rr. – VBG1109020, VBG1139794, VBG1143937.

*Viola verecunda* A. Gray: [1:76; 2:13; 3:241]. – 1, 3, 5, 6 – Sp. – VBG1108944, VBG1108989, VBG1109565, VBG1109566, VBG1139889, VBG1139891, VBG1139892, VBG1139894.

*Viola xanthopetala* Nakai – *V. orientalis* auct. non (Maxim.) W. Becker: [1:76; 2:13; 3:241]. – 2, 4 – Sp. – VBG1109018, VBG1109019, VBG1140040, VBG1143850.

## Vitaceae Juss.

+ *Parthenocissus quinquefolia* (L.) Planch.: [3:242] (cited as a tame species). – 9 – Fr. – Es. – VBG1143214, VBG1197438, VBG1143909.

*Vitis amurensis* Rupr.: [1:78; 2:15; 3:242; 4:76]. – 1, 2, 3, 4 – Fr. – VBG1143113, VBG1137552, VBG1137550, VBG1137543, VBG1137541, VBG1137538, VBG1109206.

## MONOCOTYLEDONAE

## Alismataceae Vent.

*Alisma orientale* (Sam.) Juz.: [1:80; 2:17; 3:30]. – 5, 6 – Rr.

## Amaryllidaceae J. St-Hil. (incl. Alliaceae J. Agardh)

*Allium monanthum* Maxim.: [1:80; 2:17; 3:31]. – 1, 2 – Fr. – VBG1109239, VBG175671, VBG175670.

## Araceae Juss. (incl. Lemnaceae Gray)

*Arisaema amurense* Maxim.: [1:81; 2:18; 3: 40]. – 1, 2 – Sp. – VBG175219, VBG175203, VBG175198, VBG175165, VBG18691, VBG109572, VBG109252, VBG109014.

*Arisaema komarovii* Tzvelev: [6:23]. – 1, 2 – Rr. – VBG1109570.

\**Arisaema peninsulae* Nakai – *Arisaema japonicum* auct. non Blume: [1:81; 2:18]. – 1, 2 – Sp. – VBG1 1089777, VBG1143350, VBG1108977.

*Arisaema robustum* Nakai: [6:23]. – 1, 2 – Rr. – VBG1109571.

*Lemna minor* L.: [1:81; 2:18; 3:147]. – 3, 6 – Sp. – VBG1143112, VBG1143111.

## Asparagaceae Juss. (incl. Convallariaceae Horan.)

*Asparagus schoberioides* Kunth: [1:80; 2:17; 3:46]. – 2 – Sp. – VBG1108996, VBG1144052, VBG1144039.

*Convallaria keiskei* Miq.: [1:80; 2:17; 3:90]. – 1, 2 – Sp. – VBG1109574, VBG1501027, VBG123275, VBG181913, VBG123275.

+ *Hosta rectifolia* Nakai: [3:29] (cited as a tame species). – 3, 6 – Un. – Es. – VBG1143655.

*Maianthemum bifolium* (L.) F.W. Schmidt: [1:80; 2:17; 3:91]. – 1, 2 – Sp. – VBG1143190, VBG1143189, VBG178350, VBG178366, VBG178367, VBG178371, VBG178439, VBG121559.

*Maianthemum dilatatum* (Alph. Wood) A. Nelson & J.F. Macbr.: [1:80; 2:17; 3:91]. – 1, 3 – Com. – VBG1143194, VBG1143195, VBG1143105, VBG123406, VBG118640, VBG178635, VBG178641, VBG178643.

*Maianthemum intermedium* Vorosch.: [1:80; 2:17; 3:91]. – 1, 3 – Rr. – VBG1109573, VBG1143106, VBG178725, VBG178724, VBG178726, VBG178730, VBG178733.

*Polygonatum acuminatifolium* Kom.: [3:81; 6:23]. – 1, 2 – Sp. – VBG1108946.

+ *Polygonatum humile* Fisch. ex Maxim.: – 2, 4 – Rr. – VBG181793.

*Polygonatum involucreatum* (Franch. & Sav.) Maxim.: [1:80; 2:17; 3:91]. – 1, 2 – Sp. – VBG1108942, VBG1109197, VBG1108945, VBG1143191, VBG1143192, VBG1143193, VBG1143196, VBG181629, VBG181603, VBG181359, VBG181631.

*Polygonatum odoratum* (Mill.) Druce: [1:80; 2:17; 3:91]. – 2 – Sp. – VBG1108941, VBG181756.

*Smilacina birta* Maxim.: [1:80; 2:17; 3:91]. – 1, 3 – Fr. – VBG1109251, VBG121556, VBG178160, VBG178123, VBG178124, VBG178143, VBG178156, VBG178158, VBG178183, VBG178185, VBG178186, VBG178187, VBG178188, VBG178166, VBG178167, VBG178172, VBG178173, VBG178176, VBG178178, VBG121556.

## Asphodelaceae Juss. (incl. Hemerocallidaceae R. Br.)

*Hemerocallis middendorffii* Trautv. & C.A. Mey.: [1:80; 2:17; 3:120; 4:76]. – 2, 3 – Rr. – VBG1108936.

+ *Hemerocallis fulva* L.: [3:117] (cited as a tame species). – 3 – Un. – Es. – VBG1142879.

## Colchicaceae DC.

*Disporum viridescens* (Maxim.) Nakai: [1:80; 2:17; 3:90]. – 2 – Sp. – VBG1143866.

## Commelinaceae Mirb.

+ *Commelina communis* L. – 6. – Rr. – Field observation.

## Cyperaceae Juss.

*Carex accrescens* Ohwi – *C. pallida* C.A. Mey., nom. illeg.: [1:80; 2:17; 3:99]. – 1, 3, 6. – Fr. – VBG1109659, VBG1109658.

*Carex appendiculata* (Trautv. & C.A. Mey.) Kük.: [6:23]. – 3, 5 – Sp. – VBG1110253, VBG1127509.

*Carex arnelii* Christ: [1:80; 2:17; 3:98]. – 1, 3, 5, 6 – Fr.

+ *Carex atherodes* Spreng. – 2 – Sp. – VBG167888.

*Carex bohémica* Schreb.: [6:23]. – 6 – Sp. – VBG168017, VBG1127508.

*Carex bostrychostigma* Maxim.: [1:80; 2:17; 3:98]. – 1, 2, 3, 6 – Fr. – VBG168105, VBG1109657, VBG1109668.

*Carex capituliformis* Meinsh. ex Maxim.: [1:80; 2:17; 3:98]. – 3, 5, 6 – Fr. – VBG1109653.

*Carex dispalata* Boott: [1:80; 2:17; 3:98]. – 1, 3, 5 – Fr. – VBG1109663, VBG1109647, VBG1109642, VBG1144177.

+ *Carex drymophila* Turcz. ex Steud. – 3, 5, 6. – Sp. – VBG1144176.

*Carex jaluensis* Kom.: [6:23]. – 1, 3 – Sp. – VBG1109660.

*Carex lanceolata* Boott: [6:23]. – 1, 2, 3 – Fr. – VBG1109654, VBG1109667, VBG1109665, VBG1109664.

*Carex lithophila* Turcz.: [1:80; 2:17; 3:98]. – 6 – Fr.

*Carex longirostrata* C.A. Mey.: [1:80; 2:17; 3:98]. – 1, 2, 3 – Fr. – VBG172545, VBG172543.

*Carex nanella* Ohwi: [1:80; 2:17; 3:99]. – 2 – Fr.

? *Carex pediformis* C.A. Mey.: [1:80; 2:17; 3:99]. This species is not confined to Primorye Territory (Kozhevnikov 1988, 2006) and its occurrence in the BGI is doubtful.

*Carex pilosa* Scop. – *C. campylorhina* V.I. Krecz.: [1:80; 2:17; 3:98]. – 1, 3 – Fr. – VBG168558, VBG1109671, VBG1109795, VBG1109797, VBG1109809, VBG1143210.

*Carex pseudosabynensis* (T.V. Egorova) A.E. Kozhev.: [6:23]. – 1, 2, 3 – Fr. – VBG1109790, VBG1109791, VBG1109793, VBG1109799, VBG1109800, VBG1109802, VBG1109806.

*Carex quadriflora* (Kük.) Ohwi: [1:80; 2:17; 3:99]. – 1 – Fr.

+ *Carex reventa* V.I. Krecz. – 1, 2, 3 – Fr. – VBG1142882.

*Carex siderosticta* Hance: [1:80; 2:17; 3:99; 4:76]. – 1, 2, 3, 4 – Com. – VBG12751, VBG120857, VBG1 20858, VBG168425, VBG168427, VBG168452, VBG168453, VBG168499, VBG1109662.

*Carex stipata* Muhl. ex Willd.: [6:23]. – 6 – Sp. – VBG173452, VBG1127506, VBG1127507.

*Carex uda* Maxim.: [3:99]. – 5, 6 – Sp. – VBG174004.

*Carex ussuriensis* Kom.: [1:80; 2:17; 3:99]. – 1, 2, 3 – Fr. – VBG1109661, VBG1143209.

*Cyperus orthostachyus* Franch. & Sav.: [1:80; 2:17; 3:99]. – 5, 6 – Fr. – VBG166398, VBG166393.

*Eleocharis kamtschatica* (C.A. Mey.) Kom.: [1:80; 2:17; 3:99]. – 5, 6 – Fr.

*Eleocharis palustris* (L.) Roem. & Schult.: [2:17; 3:99]. – *Eleocharis intersita* Zinserl. p.p. incl. typo: [1:80]. – 5, 6 – Sp. – VBG167690, VBG167691.

*Eleocharis ussuriensis* Zinserl.: [6:23]. – 6 – Fr. – VBG1127510, VBG1127505.

*Scirpus orientalis* Ohwi: [1:80; 2:17; 3:99]. – 6 – Fr. – VBG153122.

## Dioscoreaceae R. Br.

*Dioscorea nipponica* Makino: [1:80; 2:17; 3:100]. – 1, 2, 6 – Rr. – VBG1109616, VBG179484, VBG179483, VBG179464, VBG179463.

## Iridaceae Juss.

*Iris uniflora* Pall. ex Link: [1:80; 2:17; 3:141]. – 2, 4 – Rr. – VBG1143843, VBG184132.

## Juncaceae Juss.

*Juncus bufonius* L.: [1:80; 2:17; 3:143]. – 6 – Fr. – VBG178998, VBG178938, VBG1143091.

*Juncus decipiens* (Buchenau) Nakai: [1:80; 2:17; 3:143]. – 6 – Fr. – VBG1143085, VBG1143087.

*Juncus haenkei* E. Mey.: [1:80; 2:17; 3:143]. – 6 – Fr.

*Juncus papillosus* Franch. & Sav.: [1:80; 2:17; 3:143]. – 6 – Sp.

*Juncus virens* Buchenau: [6:24]. – 6 – Sp. – VBG1127511.

*Luzula pallescens* Sw.: [1:80; 3:143]. – *L. pallidula* Kirschner: [2:17]. – 1, 3 – Sp.

*Luzula rufescens* Fisch. ex E. Mey.: [1:80; 2:17; 3:143]. – 1, 3 – Fr. – VBG176590, VBG176589.

## Liliaceae Juss.

\*\**Fritillaria ussuriensis* Maxim.: [1:80; 2:17; 3:149]. – 1, 3 – Sp. – Field observation.

*Gagea hiensis* Pascher: [1:80; 2:17; 3:149]. – 2, 3 – Rr. – VBG179925.

*Gagea nakaiana* Kitag.: [1:80; 2:17; 3:149]. – 1, 3 – Fr. – VBG179964.

*Lilium distichum* Nakai ex Kamib.: [1:80; 2:17; 3:150]. – 1, 3 – Sp. – VBG1143108, VBG1109579, VBG176617, VBG176647.

*Lloydia triflora* (Ledeb.) Baker: [1:80; 2:17; 3:154]. – 1, 2, 3 – Sp. – VBG1109584, VBG177133, VBG177147, VBG177132, VBG177089, VBG177056.

## Melanthiaceae Borkh. (incl. Trilliaceae Lindl.)

*Paris verticillata* M. Beib. – *P. hexaphylla* Cham.: [1:80]. – *P. manshurica* Kom.: [2:17; 3:238]. – 1, 2, 3 – Sp. – VBG1109188, VBG178957, VBG179067, VBG179071, VBG179072, VBG179073, VBG178969, VBG178988.

*Veratrum daburicum* (Turcz.) O. Loes.: [1:80; 2:17; 3:165]. – 1, 2, 3 – Sp.

## Orchidaceae Juss.

? *Cypripedium calceolus* L. This species was mentioned by Kurentsova in her manuscript but later it was not found in the BGI [1:70].

*Epipactis papillosa* Franch. & Sav.: [6:24]. – 1 – Rr. – VBG1109198, VBG1127498.

\*\**Liparis japonica* (Miq.) Maxim.: [1:80; 2:17; 3:174]. – 1, 3, 5 – Sp. – VBG180815, VBG180837, VBG1109076.

*Neottia asiatica* Ohwi: [1:80; 2:17; 3:175]. – 1 – Rr.

*Neottia papilligera* Schltr.: [1:80; 2:17; 3:175]. – 1 – Rr. – VBG1109540.

? *Neottianthe cucullata* (L.) Schltr. – *Gymnadenia cucullata* (L.) Rich. Nedoluzhko (1984:80) indicated this species for the BGI as doubtful.

*Oreorchis patens* (Lindl.) Lindl.: [1:80; 2:17; 3:175]. – 1, 2 – Rr. – VBG1113410, VBG1122075.

*Platanthera densa* Freyn – *P. extremiorientalis* Nevski: [1:80; 2:17; 3:175]. – 1, 2, 3 – Rr. – VBG181174.

## Poaceae Barnhart

*Achnatherum pekinense* (Hance) Ohwi – *Achnatherum extremiorientale* (Hara) Keng ex Tzvelev: [1:81; 2:18; 3:187]. – 1, 2, 3 – Rr. – VBG1144050.

*Agrostis clavata* Trin.: [1:81; 2:17; 3:187] – 5, 6 – Sp. – VBG1144166.

+ *Agrostis gigantea* Roth – 6 – Fr. – VBG156193, VBG156194, VBG156294, VBG1143201.

+ *Agrostis scabra* Willd. – 5, 6 – Sp. – VBG156302, VBG156306, VBG156308, VBG156309.

*Agrostis stolonifera* L.: [1:81; 2:17; 3:187]. – 5, 6 – Sp. – VBG156237, VBG156238.

*Alopecurus aequalis* Sobol.: [2:17; 3:187]. – *Alopecurus amurensis* Kom.: [1:81]. – 5, 6 – Fr. – VBG151682, VBG152253, VBG152254.

+ *Alopecurus pratensis* L. – 6 – Rr. – VBG151403, VBG151473.

*Arthraxon langsdorffii* (Trin.) Hochst. ex Rosch.: [1:81; 2:18; 3:187]. – 5, 6 – Sp.

*Beckmannia syzigachne* (Steud.) Fernald: [1:81; 2:17; 3:187]. – 5, 6 – Sp.

*Calamagrostis angustifolia* Kom.: [1:81; 2:17; 3:187]. – 1, 2, 3, 5, 6 – Sp.

*Calamagrostis brachytricha* Steud.: [1:81; 2:17; 3:188]. – 2, 4, 5 – Sp. – VBG1143835, VBG1144045.

*Calamagrostis langsdorffii* (Link) Trin.: [1:81; 2:17; 3:188]. – 1, 2, 3, 6 – Fr.

*Dactylis glomerata* L.: [1:81; 2:17; 3:188]. – 6 – Sp. – Al. – VBG158084, VBG1109627, VBG1143198.

*Echinochloa crusgalli* (L.) P. Beauv.: [1:81; 2:18; 3:188]. – 6 – Fr. – VBG155893.

*Elymus pendulinus* (Nevski) Tzvelev: [3:188]. – 6 – Fr. – VBG156327.

*Elymus sibiricus* L.: [1:81; 2:17; 3:188]. – 6 – Sp. – VBG163170.

*Elytrigia repens* (L.) Nevski: [1:81; 2:17; 3:188]. – 6 – Fr. – VBG155646.

*Eriochloa villosa* (Thunb.) Kunth: [1:81; 2:18; 3:188]. – 6 – Rr.

*Festuca extremiorientalis* Ohwi: [1:81; 2:17; 3:188]. – 1, 2, 3, 6 – Sp. – VBG164490, VBG1144173.

*Festuca pratensis* Huds. – *Schedonorus pratensis* (Huds.) P. Beauv.: [6:24]. – 6 – Sp. – VBG165213, VBG165003, VBG165211, VBG165209.

*Festuca rubra* L.: [1:81; 2:17; 3:188]. – 6 – Fr. – VBG165538, VBG165548, VBG165551, VBG165584.

+ *Glyceria triflora* (Korsh.) Kom. – 3, 5, 6 – Rr. – VBG160082.

*Hierochloë glabra* Trin.: [2:17; 3:188]. Cited as *Hierochloë odorata* (L.) P. Beauv [1: 81]. – 9 – Fr. – VBG154044.

*Melica nutans* L.: [1:81; 2:17; 3:189]. – 1, 3 – Sp. – VBG157538, VBG1109624.

*Melica turczaninowiana* Ohwi: [1:81; 2:17; 3:189]. – 4, 5 – Rr. – VBG157582, VBG1143825.

*Microstegium nodosum* (Kom.) Tzvelev: [1:81; 2:18; 3:189]. – 6 – Sp. – VBG1143490.

*Milium effusum* L.: [1:81; 2:17; 3:189]. – 1, 2, 3 – Sp. – VBG1109623, VBG1144172.

+ *Muhlenbergia japonica* Steud. – 6 – Sp. – VBG1144170.

*Neomolinia fauriei* (Hack.) Honda: [1:81; 2:17; 3:189]. – 1, 3 – Sp. – VBG1143199.

*Neomolinia mandshurica* (Maxim.) Honda: [1:81]. Cited as *Neomolinia japonica* (Franch. & Sav.) Prob. [2:17; 3:189]. – 1, 3 – Sp. – VBG157903, VBG157907, VBG157909, VBG157911, VBG1109636, VBG1143202, VBG1143491, VBG1144175.

*Ochlopoa annua* (L.) H. Scholz – *Poa annua* L.: [1:81; 2:17; 3:189]. – 6 – Sp.

*Panicum bisulcatum* Thunb.: [1:81; 2:18; 3:189]. – 6 – Sp.

+ *Phleum pratense* L. – 6 – Fr. – VBG151639, VBG151636, VBG1143197, VBG1144168.

*Poa nemoralis* L.: [1:81; 2:17; 3:189]. – 1, 2, 3 – Sp. We have not recorded this species from the BGI. It is probably that Nedoluzhko mistakenly considered *P. skortzovii* as *P. nemoralis*. But we do not rule out the presence of this species in the BGI.

*Poa palustris* L. [1:81; 2:17; 3:189]. – 3, 5, 6 – Com. – VBG161420, VBG161424, VBG164181, VBG164186, VBG164188, VBG164189, VBG164190, VBG1143200.

*Poa pratensis* L.: [1:81; 2:17; 3:189]. – 6 – Sp. – VBG161552, VBG1109629.

*Poa sichotensis* Prob.: [1:81; 2:17; 3:189]. – 2 – Sp. – VBG1143833.



- + *Poa skvortzovii* Prob. – 2 – Sp. – VBG1143952.  
 + *Schizachne callosa* (Turcz. ex Griseb.) Ohwi – 1 – Sp. – VBG1109625.  
*Setaria viridis* (L.) P. Beauv.: [1:81; 2:18; 3:190]. – 6 – Sp.  
*Spodiopogon sibiricus* Trin.: [1:81; 2:18; 3:190]. – 2 – Sp. – VBG120743, VBG120741, VBG1143951, VBG1144169.  
*Trisetum sibiricum* Rupr.: [1:81; 2:17; 3:190]. – 1, 2, 3 – Sp.

The check-list of the vascular plants growing within the protected territory of the BGI numbers a total of 604 species from 347 genera and 96 families. The native flora includes 535 species; the number of alien species is 32; the planted species, 16; and the species escaped from culture, 21. The total number of species recorded for the first time from this territory is 85, of which most (46) are native, 9 are alien, 12 are planted and 18 are escaped from culture. Eight doubtful species, not supported by specimens, are also included in the list. Of the plant species found within the BGI, 6 are listed on the Red Data Book of the Russian Federation (Trutnev et al. 2008) and 9 on the Red Data Book of Primorye Territory (Kozhevnikov 2008).

New aboriginal species are found mainly in the anthropogenic habitats, near the roads and trails. The flora structure in the BGI has changed due to the species that escaped from the culture after having being brought from other regions for cultivation in the BGI, such as *Hosta rectifolia*, *Rubus occidentalis*, *Sorbus commixta*, etc. In addition, some species planted in the 20th century have been recorded from the western part of the BGI. Many of them are currently flowering, fruiting and self-seeding, for example, the Asian species *Picea ajanensis*, *Taxus cuspidata*, the North American *Quercus rubra*, *Pinus strobus*, etc. It is very important to register the appearance of such species in the composition of the flora of the forest territory of the BGI to monitor their behavior and prevent active invasion in natural forests.

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The authors declare that they have no conflict of interest.

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