

# **Analysis of Tree Taxa Found in Site of Forest Restoration Projects in Korea**

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## Abstract

The monitoring data conducted on 72 forest restoration sites in Korea that have implemented the projects from 2008 to 2020 has been analyzed to identify the trees that are mainly found in those sites. First, taxa with overlapping appearances by site were excluded and a list including growth types was developed. The frequency of appearances by taxon was identified by classifying 27 sites according to the forest landscape and ecosystem management area in order to prevent regional bias of the sites and the main tree species were identified through laws and references. The research has identified 225 taxa trees throughout the entire research sites. In terms of growth type, in the following order, deciduous 187 taxa (83.1%), evergreen 34 taxa (15.1%) and semievergreen 4 taxa (1.8%). Arboreal was 121 taxa (53.8%), shrub 77 taxa (34.2%) and vine 27 taxa (12.7%) in the said order. The frequency of appearance in the 27 sites is in descending order: Lespedeza bicolor Turcz., Rubus crataegifolius Bunge, Pinus densiflora Siebold & Zucc. etc. The main tree species were 59 taxa (26.2%) of native plants for forest restoration designated by the Korea Forest Service, 49 taxa (21.8%) of trees recommended for reforestation, and 12 taxa (5.3%) of temperate evergreen broadleaf trees. The study result would contribute to identifying the problems of the tree taxa appearing in the restoration sites and to select trees for the future restoration projects.

# Scope and main objectives

- The 72 forest restoration project sites by the Korea Forest Service has been monitored during the period of 2008 to 2020 and the tree taxa that appeared as a result of the monitoring was used as the basic data for the analysis.
- The taxa with overlapping occurrences by site were eliminated and growth types were summarized based on this above-said data by referring to Kim  $\bullet$ and Kim (2018).
- The target sites have been classified into 27 regions according to the forest landscape and ecosystem management area of NIFoS (2009) to identify  $\bullet$ the appearance frequency by taxon, in order to prevent regional bias.
- As major tree species, native plants for forest restoration, recommended tree species for reforestation (KFS, 2021) and temperate evergreen  $\bullet$ broadleaf trees (Uyeki, 1941) according to the <sup>1</sup> Notice on the Supply of Native Plants and Natural Materials for Forest Restoration (KFS, 2020) have been confirmed.
- Through this, it was verified to identify the characteristics of tree taxa appearing in the forest restoration project site.  $\bullet$

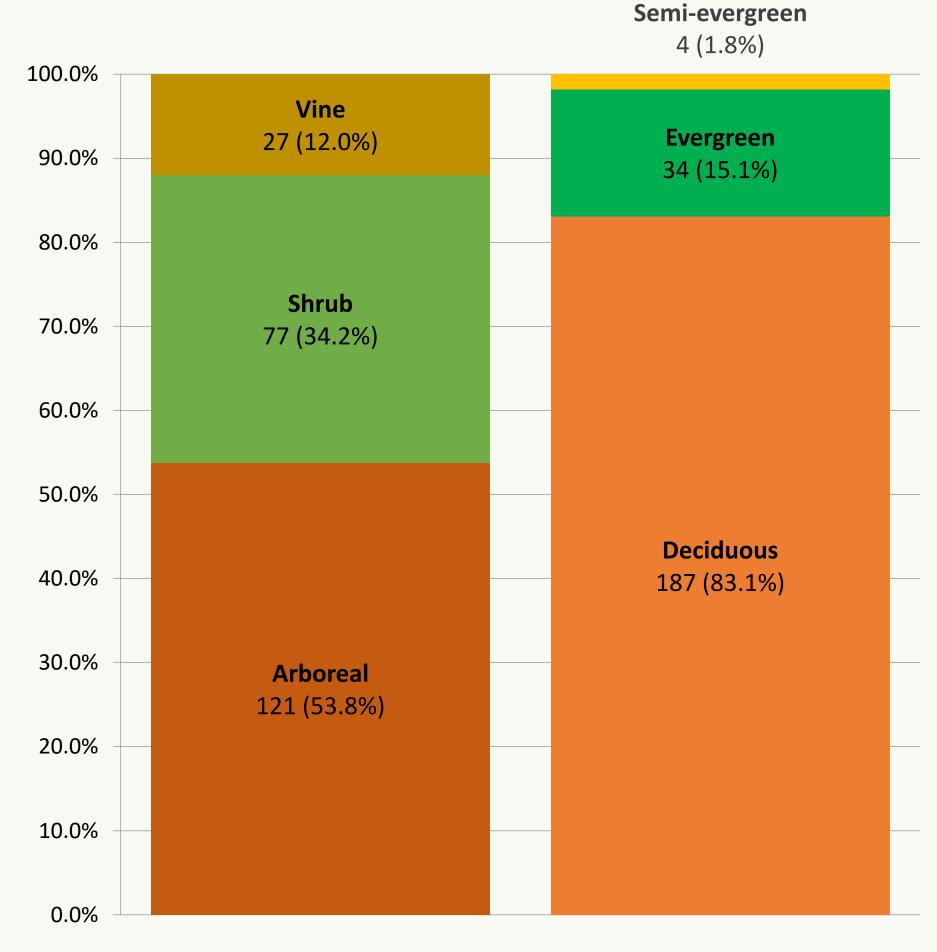
Results
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- 225 taxa trees has identified ullet
- In terms of growth type (Fig. 1)  $\bullet$ Arboreal : 121 taxa (53.8%) **Shrub** : 77 taxa (34.2%) **Vine** 27 : taxa (12.7%) **Deciduous** : 187 taxa (83.1%) **Evergreen** : 34 taxa (15.1%) **Semi-evergreen** : 4 taxa (1.8%)

### **Table 1.** The main tree species in forest restoration site

No.	Scientific name	Note*	Freq.**	No.	Scientific name	Note	Freq.		
1	Lespedeza bicolor Turcz.	NR	16	51	Chionanthus retusus Lindl. & Paxton	RR	3		
2	Rubus crataegifolius Bunge	-	16	52	<i>Cornus kousa</i> Burger ex Hance	NR/RR	3		
3	Pinus densiflora Siebold & Zucc.	NR/RR	15	53	<i>Euonymus alatus</i> (Thunb.) Siebold	RR	3		
4	<i>Alnus incana</i> subsp. <i>hirsuta</i> (Turcz. ex Spach) Á.Löve & D.Löve	-	14	54	<i>Kalopanax septemlobus</i> (Thunb.) Koidz.	NR/RR	3		

- In terms of major tree types (Table 1)
  - **Native plants for forest restoration** : 59 taxa (26.2%) such as Quercus serrata Murray, Salix pierotii Miq., Rhododendron mucronulatum Turcz.
  - **Recommended tree species for reforestation** : 49 taxa (21.8%) such as Robinia pseudoacacia L., Fraxinus rhynchophylla Hance, Acer palmatum Thunb.
  - **Temperate evergreen broadleaf trees** : 12 taxa (5.3%) such as Camellia japonica L., Euonymus japonicus Thunb., Elaeagnus macrophylla Thunb.



6     Outrois monogridar Fisch, esitedeb.     NR/RR     14     56     Quercus anybriding Blame     RR     3       8     Praining Anythothophilly Blame     RR     13     S.     Channa May Chaphilly Blame     RR     3       10     Parchanockas Mangukard (Skold & Zucc.) Planch.     -     13     60     Visurum ensum Flumb.     NR     3       11     Quercas acadisation Carnuth.     NR     13     61.     Zaloxo searoto (Flumb.) Makino     NR     3       12     Subgenoral Maig.     NR     13     62.     Zaloxo searoto (Flumb.) Makino     NR/RR     12       13     Solg percent Anison     NR     13     63.     Bethomonocitics (Turb.) Makino     NR/RR     12       14     Solg percent Anison     NR     14     65.     Channe segretaria Marm.) Makino     NR/RR     12       15     Medges asbessife (Nalod J. H. Balay     NR     12     65.     Channe segretaria Marm.) Makino     NR     12       15     Abobin spectrobotzy MA     NR     12     G.     Caroxa sechodota Scan Scan Scan Scan Scan S	5	Lespedeza maximowiczii C.K.Schneid.	NR	14	55	Magnolia sieboldii K.Koch	NR	3
8     Produces private interface interface     NV/RR     13     58     Sordbac communic interface     R     3       10     Auverain lobato (WildL) Ohwi     -     13     60     Water interface     NR     3       11     Auverain lobato (WildL) Ohwi     NR     13     61     Zelovar serrata (Thunh) Nakim     NR/RR     3       12     Alvas chimas Kill.     NR     13     62     Alvas chimas file (Sold & Zucc)     NR/RR     2       13     Septemand and arisos (Thunh) Zabel     NR     13     62     Camuel approaches (Sold & Zucc). Endl.     NR     2       14     Septemand arisos (Thunh) Zabel     NR     13     63     Camuel approaches (Sold & Zucc). Endl.     NR     2       14     Septemand arisos (Thunh) Zabel     NR     13     63     Camuel approaches (Sold & Zucc). Endl.     RR     2       12     Septemand arisos (Thunh) Zabel     NR     13     63     Camuel approaches (Sold & Zucc). Endl.     RR     2       13     Radian grave and assord (Thunh) Zabel     NR     14     63     Cam	6	<i>Quercus mongolica</i> Fisch. ex Ledeb.	NR/RR	14	56	<i>Quercus aliena</i> Blume	RR	3
9     Parthenocissus triacipidenta (Sicchold & Zucc.) Nakai     E     3     59     Trachelos german sotus (Sicchold & Zucc.) Nakai     E     3       10     Deurosa ocutassimo Carruch.     NR/RR     13     61     Zubernon deurosam Thurab.     NR/RR     3       12     Brits chinernis Mill.     NR     13     62     Zubernon drain (Nucl. NNR/RR     2       13     Subsycherin Mile,     NR     13     64     Carrellio japonica (Luc Maxim.) Maxim.     NR/RR     2       14     Septence rychobery Mole,     NR     13     64     Carrellio japonica (Luc Maxim.) MR/RR     2       15     Vergende actrischika (Maxim.) Luc Maxim.     NR/R     12     66     Coursus Sender actrischika (Maxim.) Luc Maxim.     NR/R     12     67     Obsigna Subial Juber.     RR     2       16     Acceptendochicabiolinum (Incut.     NR     12     68     Europrus/ aponicus Thurb.     NR/R     12     2     Acceptendochicabiolinum (Incut.     RR     12     2     Carrellio Subial Juber.     RR     2       13     Abobina pseuchocaccio L     RR	7	<i>Aralia elata</i> (Miq.) Seem.	RR	13	57	<i>Quercus myrsinifolia</i> Blume	RR/E	3
10     Neuroin Obstatu (Mill, Obmi     NR     13     60     Warram erosum Thunb.     NR     8       11     Querras acautisma Carruth.     NR     13     61     Zeloro serrata (Thunb.) Makina     NR     8       13     Saka perctif Miq.     NR     13     62     Ables in perchafted (Thuts.) Makina     NR     12       13     Saka perctif Miq.     NR     13     65     Ables in perchafted (Thuts.)     NR/RR     2       15     Legendera orbitachis (Ihunb.) Zabel     NR     13     65     Common Sparling Sciebold & Zucc.)     NR/RR     2       16     Legendera orbitachis (Ihunb.)     NR     12     64     Common Sparling Sciebold & Zucc.     RR     2       17     Legendera orbitachis (Ihunb.)     NR     10     70     Macarkin anumersking Rupp.     RR     2       18     Rabina pscuabcachic L.     NR     10     72     Leuras anumersking Rupp.     RR     2       14     Protus servinabilis Rume     NR/RR     10     72     Leuras anumersking Rupp.     RR     10	8	Fraxinus rhynchophylla Hance	NR/RR	13	58	Sorbus commixta Hedl.	RR	3
11     Operand accuration     NN/RR     13     61     2 betwee servert of much by Makino     NN/RR     2       12     Rhus chinensis Mill.     NR     13     62     Abtes reportagis (Timuth) Makino     NN/RR     2       14     Stakt percenti Miq.     NR     13     63     Better coastrati Trautur.     NN/RR     2       14     Stakt percenti Mich.     NR     13     65     Concescaptaris bottus (Stebold & Zucc.) Endl.     RR     2       15     Vergiens assessific Makai) I. Habiey     NR     12     64     Canellia japonica J.     RR     2       16     Concurs and ficturins Stebold & Zucc.     RR     2     67     Dioprys Kaik Li. I.     RR     2       17     Ouccurs and trantur.     NR/R     10     67     Maccina Stranturins Concurs Trantur.     RR     2       18     Robind pseudoand mucca Makina     NR     10     70     Maccina Stranturins Concurs Trantur.     RR     2       10     Acces proton muccanaturaturin Trutur.     NR     17     Maccanamuccina Stranturins Concurs Trantur.	9	Parthenocissus tricuspidata (Siebold & Zucc.) Planch.	-	13	59	<i>Trachelospermum asiaticum</i> (Siebold & Zucc.) Nakai	E	3
12Bits chinemis Mill.NR1364Abits rephreligin future. Maxim, Maxim, Maxim, NR/RR213Softr pierotif Miq.NR1363Betula costara Trautu.NR/RR215Weigelas subsessits (Nata) L.H. BaileyNR1364Cornelia (poncias L.NR/RR/E216Lespectara synthetic (Nata) L.H. BaileyNR1365Corne costara Trautu.NR217Ouercus serrata MurrayNR1267Disaypros kalu L.RR218Rohin pseudocaria L.RR1169Ginkgo bioba L.RR219Rohon pseudocaria L.RR1169Ginkgo bioba L.RR220Accer pseudosiebalitarum (Pas) Kom.NN/RR1070Marckia amurasis Rup:RR221Accer pseudosiebalitarum (Pas) Kom.NN/RR1072Quercus solicina BlumeRR222Accer pseudosiebalitarum (Pas) Kom.NR1072Quercus solicina BlumeNR/RR123Accar paindaru Thunb.NR974Adots arbandaru BlumeNR/RR124Indera abusibab BlumeNR875Adias spanica (Thunb) StaddRR125Rhadadendorn psedeense f, pudhonese (HLév) Sugim ex ThamazNR974Adies karana E HWilsonNR/RR125Accer paindaru Thunb.RR/R17Carana acmid Hwilson HausNR126	10	<i>Pueraria lobata</i> (Willd.) Ohwi	-	13	60	<i>Viburnum erosum</i> Thunb.	NR	3
NR/RR     NR     NR     NR     NR     R2     Staphanandra inclas (Thunb.)Zabel     NR/RR     NR     R3     G3     G4     Camabla (apanica).     NR/RR     Z2       16     Weigeis subsessifis (Naka) LH. Baley     NR     13     G5     Charmes corports oblucus (Siebold & Zucc.) End.     RR     2       17     Quercus secondo Murra     NR     12     G5     Charmes organis ablues (Siebold & Zucc.) End.     RR     2       18     Robinia pseudooccio.     RR     11     G9     Gindgo biolo L     RR     2       19     Rhododendran mucronulatum Turcz.     NR     11     G9     Gindgo biolo L     RR     2       2     Quercus secondoxitos     NR     10     71     Macdo amurenso Bupts.     RR     2       2     Quercus secondoxitos     NR/RR     10     72     Quercus secondoxitos     NR/RR     2       2     Quercus secondoxitos     NR/RR     10     72     Quercus secondoxitos     NR/RR     1       3     Quercus secondoxitos Buptos     NR/RR </td <td>11</td> <td><i>Quercus acutissima</i> Carruth.</td> <td>NR/RR</td> <td>13</td> <td>61</td> <td><i>Zelkova serrata</i> (Thunb.) Makino</td> <td>NR/RR</td> <td>3</td>	11	<i>Quercus acutissima</i> Carruth.	NR/RR	13	61	<i>Zelkova serrata</i> (Thunb.) Makino	NR/RR	3
14 Stephanandra insis (Thunb.) Zabel NR 13 64 Cornelia (porcia L. NRR 2   15 Weigela subsessiis (Nakai) LHBailey NR 13 65 Chromeosynais obtusa (Siebold & Zucc.) Endl. RR 2   16 Lespecka cyrtobobrya (Makai) NR 12 65 Chorne osynais obtusa (Siebold & Zucc.) Endl. RR 2   17 Ouercus seriata Murray NR/R 12 65 Chorne osynais (Applications) RR 2   18 Robbing secondaccia L RR 12 65 Ginago bioloba L RR 2   19 Rhododendrom mucronulatum Turcz. NR 11 69 Ginkgo bioloba L RR 2   20 Acera pseudosciabil Ellume NR/R 10 72 Quercus sonicina Blume NR/RVE 2   21 Prans semultificar Thunb. NR 91 73 Alexa sonicina Blume NR/RVE 2   22 Indera obtasiloba Blume NR NR 97 7 Assa sonicina Blume NR/RVE 2   23 Rosa multificar Thunb. NR RR 87 7 Corrus controls & Rue point RR 1   24 Lindrice most setsis blobal A Luce. NR <	12	Rhus chinensis Mill.	NR	13	62	<i>Abies nephrolepis</i> (Trautv. ex Maxim.) Maxim.	NR/RR	2
15 Weigeler subsessific (Nakai) L+ Haaley NR 13 65 Charmace-yarde sobuso (Skebold & Zucc.) Endl. RR 2   16 Lespectara cyrtabotrya Miq. NR 12 65 Carnus officinolis Siebold & Zucc. RR 2   17 Quercus servata Murray NR 12 65 Cornus officinolis Siebold & Zucc. RR 2   18 Rohodochardon mucronulutum Turcz. NR 10 70 Maocia amurensis Rup: RR 2   20 Arear passudosieboldkarum (Pax) Kom. NR 10 72 Aucras strabuters NR 2   21 Prunus seruktati.spontaneo (E-HWison) Chin SChang RR 10 72 Quercus subicos Blume NR 2   22 Quercus subicos Blume NR NR 10 73 Quercus subicos Blume NR 1   23 Rosa multifora Thunb. NR 9 74 Tozue subicos Blume NR 1   24 Lindera obtaiolos Blume NR 8 75 Ables koreana E-HWison NR 1   25 Abloodocharon yeolonsef, poukhanense (HLEAV) Sugm. ex Tixanza. NR 7 7 Ables koreana E-HWison NR 1   26 Storano Sobis Siebold & Zucc. <td>13</td> <td><i>Salix pierotii</i> Miq.</td> <td>NR</td> <td>13</td> <td>63</td> <td><i>Betula costata</i> Trautv.</td> <td>NR/RR</td> <td>2</td>	13	<i>Salix pierotii</i> Miq.	NR	13	63	<i>Betula costata</i> Trautv.	NR/RR	2
16   Lespedera cyrdtobryo Miq.   NR   12   66   Corrus Seriota Siebold & Zucc.   RR   2     17   Ouercus seriota Murray   NR/R   12   66   Corrus Seriota Siebold & Zucc.   RR   2     18   Robin josedudacacia L   RR   12   66   Ginkgo Biola L   RR   2     19   Rhododendron mucronuldtum Turcz.   NR   11   69   Ginkgo Biola L   RR   2     20   Acer pseudoaccia L, spontonea (E.H.Wilson) Chin S.Chang   RR   10   71   Pinus strobus L   RR   2     21   Prunus serrulata L, spontonea (E.H.Wilson) Chin S.Chang   RR   10   72   Quercus validati Siebold & Zucc.   RR   2     23   Rosa multiflyora Thunb.   NR   9   74   Traus cargindati Siebold & Zucc.   RR   1     24   Lindera obtusilota Blume   NR/RR   8   76   Alexis foronica (Thunb. Steud.   RR   1     25   Rhododendron trichoarps (Hubb) Steud.   RR   1   1   Storacobadiata Siebold & Zucc.   NR   1   1   1   1   1   1   1 <td>14</td> <td><i>Stephanandra incisa</i> (Thunb.) Zabel</td> <td>NR</td> <td>13</td> <td>64</td> <td>Camellia japonica L.</td> <td>NR/RR/E</td> <td>2</td>	14	<i>Stephanandra incisa</i> (Thunb.) Zabel	NR	13	64	Camellia japonica L.	NR/RR/E	2
11   Quercus serrata Murray   NR/RR   12   67   Diaspros kaki Li   FR   2     18   Robadine pseudoacaciu   RR   12   68   Euronymus Spanitas Thumb.   NR/E   2     19   Robadiaentor mucronulatum Turcz.   NR   11   69   Ginkgo bilaba L   RR   2     20   Acer pseudosieboldianum (Paki Kom.   NR/R   10   71   Maackia onumernis Rupr.   RR   2     21   Prunus serrulato f. spontaneo (EH.Wilson) Chin S.Chang   RR   10   72   Quercus galauca Tinuh.   NR/RR/E   2     2   Quercus vinibilis Blume   NR   10   73   Quercus daluato Bilaba & Zucc.   RR   2     2   Robadaendran yedense (Paukhonense (H.Lév) Sugim. ex TYamaz.   NR   9   74   Alrus ziponitas Tinuh.   RR   1     2   Betula pendula Roth   RR   8   76   Alrus ziponita (Thunho.   NR   1     2   Bortug centure Hensi.   RR   8   76   Castanopsis sieboldi & Zucc.   NR   1     2   Robud centure Hensi.   RR   RR   78	15	Weigela subsessilis (Nakai) L.H.Bailey	NR	13	65	Chamaecyparis obtusa (Siebold & Zucc.) Endl.	RR	2
13   Robinia pseudoacacial   RR   12   63   Econymus japonicus Thunb.   NR/E   2     19   Mhadadentran mucranulatum Turcz.   NR   11   69   Ginba L   RR   2     21   Purus serulata f, spontanea (E-HWilson) Chin S Chang   RR   10   71   Purus strubus L   RR   2     22   Quercus variabilis Blume   NR   10   72   Quercus safiano Blume   NR/RR/E   2     24   Indera obtusiloba Blume   NR   10   73   Quercus safiano Blume   NR/RR/E   2     25   Rhozdaendron vedoense f, pouthanesse (H.Lév) Sugim, ex Thamaz   NR   9   74   Taxus calipidata Siebold & Zucc.   RR   10     26   Carrus carritoritor Berula   RR   8   75   Ahus japonica (Thunb.) Steud.   RR   11     27   Betula pendula Roth   RR   8   75   Carrus carritorio Hance   NR   11     28   Carrus carritorio (Miq.) (Kuntze   NR   78   Carrus carritorio Hance   NR   11     29   Urarito kaemaferi (Lamb.) Carriter   RR   7   82	16	<i>Lespedeza cyrtobotrya</i> Miq.	NR	12	66	Cornus officinalis Siebold & Zucc.	RR	2
19   Rhodadendran mucranulatum Turcz.   NR   11   69   Ginkgo biloba L   RR   2     20   Acer pseudosieboldinum (Fax) Kom.   NR/RR   10   70   Mackia amuernsis Rupr.   RR   2     21   Prunus scrubta fis, pontnance (EH.Wilson) Chin S.Chang   RR   10   72   Quercas variabilis Bume   NR/RR   2     23   Rosa multifilora Thunb.   NR   10   73   Quercas solicina Blume   NR/RR   2     24   Indera obtusilaba Blume   NR   9   75   Abise standa Siebold & Zucc.   RR   10     25   Acer polmatum Thunb.   RR   8   76   Adhus japonica (Thunb.) Steud.   NR   1     26   Acer polmatum Thunb.   RR   8   78   Costanasorito (Thunb). Steud.   NR   1     27   Betude pandula Both   RR   8   78   Costanasorito (Thunb.) Steud.   NR   1     28   Stora obasis Sebold & Zucc.   NR   8   78   Costanasorito (Thunb. et.Lf) D.Don   RR   1     29   Stora obasis Sebold & Zucc.   NR   78   Eleoroph	17	<i>Quercus serrata</i> Murray	NR/RR	12	67	Diospyros kaki L.f.	RR	2
20     Acer pseudosieboldianum (Pax) Kom.     NR/RR     10     70     Maackia amurensis Rupr.     RR     2       21     Pinuus serulato is spontance ([H.Wilson) Chin S.Chang     RR     10     71     Pinues strobus L.     NR/RK/E     2       23     Quercus variabilis Blume     NR     10     73     Quercus salicina Blume     NR/RK/E     2       24     Indera obtusilob Blume     NR     NR     9     74     Toxas caspidats Slebold & Zucc.     RR     2       25     Rhododendro vedoenset, poukhanense (H.Lév) Sugim. ex TYamaz.     NR     9     74     Toxas caspidats Slebold & Zucc.     RR     10       26     Acer polanatum Thunb.     RR     8     75     Alios koreana Ch.UMIson) Hatus.     NR     11       27     Stara obasis Slebold & Zucc.     NR     8     79     Ginamornum camphora (L.) I.Presi     RR /E     1       28     I tark karengfer (Larb.), Carrière     RR     7     82     Euonymus fortuneir janoniar (Thunb. ex Lf.) Don     RR     1       39     Quercus dentata Thunb.     NR/R     7	18	Robinia pseudoacacia L.	RR	12	68	<i>Euonymus japonicus</i> Thunb.	NR/E	2
21   Prunus serulata f. spontanea (E.H.Wilson) Chin S.Chang   RR   10   71   Pinus strobus L.   RR   2     22   Quercus variabilis Blume   NR/R   10   72   Quercus calicitara Blume.   NR/R/R   2     23   Rosa multifibrar Thunb.   NR   10   73   Quercus solichara Blume.   NR/R/R   2     24   Lindera obtusiloba Blume   NR   9   75   Abies storana E.H.Wilson   NR/R   1     25   Acar pathatum Thunb.   NR   8   76   Anus japonica (Thunb.) Steud.   RR   1     26   Acer pathatum Thunb.   RR   8   76   Carpinus turczaninowi Hance   NR   1     27   Styrax obasis Siebold & Zucc.   NR/R   8   70   Carpinus turczaninowi Hance   NR   1     28   Styrax obasis Siebold & Zucc.   NR   8   80   Cryptimeria japonica (Thunb.) Starita   RR   1     29   Styrax obasis Siebold & Zucc.   NR   7   81   Elaeagnus macrophylita Thunb.   RR   1     20   Styrax obasis Siebold & Zucc.   NR   7   <	19	Rhododendron mucronulatum Turcz.	NR	11	69	Ginkgo biloba L.	RR	2
22   Quercus variabilis Blume   NR/RR   10   72   Quercus glauca Thunb.   NR/RR/E   2     23   Roso multiflore Thunb.   NR   10   73   Quercus solicina Blume   NR/RR/E   2     24   Lindero obsisiloba Blume   NR   9   74   Taxus cuspiliatar Siebold & Zucc.   RR   2     25   Rhododendron yedoense f. poukhanense (H.Lév.) Sugim. ex TYamaz.   NR   9   75   Abies koreana E.H.Wilson   NR/RR   11     26   Acer painatum Thunb.   RR   8   76   Anius japonica (Thunb.) Steud.   RR   1     27   Betula pendula Roth   RR   8   76   Carpinos turazaninovi Hance   NR   1     28   Corrus controversa Hemsl.   NR/RR   8   78   Castanopsis sieboldi (Makino) Hatus.   NR   1     29   Strax obassis Siebold & Zucc.   NR / R   8   78   Carponerai gaponica (Thunb. ex Lf) D.Don   RR   1   1     20   Iark koernegin (Lamb.) Carrière   RR   7   83   Euroya japonica (Thunb.   NR/RR   1   1     21   Jark koe	20	<i>Acer pseudosieboldianum</i> (Pax) Kom.	NR/RR	10	70	Maackia amurensis Rupr.	RR	2
23   Rosa multiflara Thunb.   NR   10   73   Quercus salicina Blume   NR/R/E   2     24   Lindera obtusiloba Blume   NR   9   74   Taxa cuspidata Siebold & Zucc.   RR   2     25   Rhododendron yedoense f, poukhanense (H,Lév.) Sugim, ex TVamaz, NR   9   75   Abias koreana E,H.Wilson   NR/RR   1     26   Acer painatum Thunb.   RR   8   76   Ahrus japonica (Thunb.) Steud.   RR   1     27   Betula pendula Roth   RR   8   77   Carpinus turcanninovi Hance   NR   1     28   Styrax obassis Siebold & Zucc.   NR/RR   8   79   Crinamomum comphore (L).Prest   RR/E   1     20   Toxicodendron trichocarpum (Miq.) Kuntze   NR   78   22   Longmus fortunei var. Tradicas (Siebold ex Miq.) Reherer   E   1     21   Iarik keengferi (Lamb.) Carriere   RR   7   83   Europartica Struteni var. Tradicas (Siebold ex Miq.) Reherer   E   1     23   Quercus dentata Thunb.   NR/RR   RR   6   85   Ieuro struteni var. Tradicas (Siebold ex Miq.) Reherer   1   1	21	Prunus serrulata f. spontanea (E.H.Wilson) Chin S.Chang	RR	10	71	Pinus strobus L.	RR	2
24   Lindera obtusiloba Blume   NR   9   74   Toxus cuspidata Siebold & Zucc.   RR   2     25   Rhododendron yedoense f. poukhanense (H.Lév.) Sugin. ex TYamaz.   NR   9   75   Ables koreana E. HWilson   NR/RR   1     26   Acer pathatum Thunb.   RR   8   77   Carpinus turczaninowii Hance   NR   1     27   Betula pendula Roth   RR   8   77   Castanopsis siebold (Makino) Hatus.   NR   1     28   Corrus controversa Hemsl.   NR/RR   8   77   Castanopsis siebold (Makino) Hatus.   NR   1     29   Styrax obassis Siebold & Zucc.   NR   8   80   Cryptomeria japonica (Thunb.) Hatus.   RR/E   1     31   Larick koempferi (Lamb.) Carrière   RR   7   83   Euroy apaporica Thunb.   NR/RR   1     33   Quercus dentata Thunb.   NR/RR   7   83   Euroy apaporica Thunb.   NR/RR   1     34   Symplocos sowafutagi Nagam.   NR   7   84   Hedera rhombae (Miq.) Siebold & Zucc. ex Bean   E   1     35   Caret contrata Siebold & Zu	22	<i>Quercus variabilis</i> Blume	NR/RR	10	72	<i>Quercus glauca</i> Thunb.	NR/RR/E	2
25   Rhododendron yedoense f. poukhanense (H.Léx) Sugim. ex Triamaz.   NR   9   75   Abies koreana E.H.Wilson   NR/RR   1     26   Acer palmatum Thunb.   RR   87   A lanus japonica (Thunb.) Steud.   RR   1     27   Betula pendula Roth   RR   87   Carpinus turczoninowi Hance   NR   1     27   Styrax obasis Siebold & Zucc.   NR/RR   88   79   Canamomum camphora (L.) J.Presl   RR/E   1     28   Torikodendron trichocarpum (Miq.) Kuntze   NR   88   60   Cryptomeria japonica (Thunb. ex. Lf.) D.Don   RR   1     29   Izark kongstingen   RR   7   82   Eurograpus tarotikacea (Siebold ex Miq.) Rehder   E   1     20   Ouercus dentata Thunb.   NR/RR   7   83   Eurograpus tarotikacea (Siebold ex Miq.) Rehder   E   1     23   Ouercus dentata Thunb.   NR/RR   7   83   Eurograpus tarotikacea (Siebold ex Miq.) Rehder   E   1     24   Symplocos sawafutagi Nagam.   NR /RR   7   83   Eurograpus tarotikacea (Siebold ex Miq.) Rehder   E   1     26 <t< td=""><td>23</td><td><i>Rosa multiflora</i> Thunb.</td><td>NR</td><td>10</td><td>73</td><td><i>Quercus salicina</i> Blume</td><td>NR/RR/E</td><td>2</td></t<>	23	<i>Rosa multiflora</i> Thunb.	NR	10	73	<i>Quercus salicina</i> Blume	NR/RR/E	2
26Acer palmatum Thunb.RR876Alnus japonica (Thunb.) Steud.RR127Betula pendula RothRRR877Carpinus turzcaninovii HanceNR128Corrus controversa Hemsl.NR/RR878Castanopsis sieboldi (Makino) Hatus.NR129Styrax obassis Siebold & Zucc.NR/RR879Cinnamomum camphora (L.) JPreslRR/E130Toxicodendron trichocarpum (Miq.) KuntzeNR880Cryptomeria japonica (Thunb. ex Lf.) D.DonRR131Larik kaempferi (Lamb.) CamireRR781Elacagrus macrophylla Thunb.E131Quercus dentata Thunb.NR/RR782Euonymus fortunei var. radicans (Siebold ex Miq.) RehderE134Symplocos sawafutagi Nagam.NR784Hedera rhombea (Miq.) Siebold & Zucc. ex BeanE135Castanea arenata Siebold & Zucc.RR685liex rotunda Thunb.NR/R135Castanea arenata Siebold & Zucc.RR685liex rotunda Thunb.NR/E136Castanea arenata Siebold & Zucc.RR685liex rotunda Thunb.NR/E137Celtis sinensis Pers.NRR685Liotadaran tuligifera LRR138Confus theterophylla Fisch.ex Trautv.NR685Liotadaran tuligifera LRR139Indera arythrocarpa MakinoN	24	<i>Lindera obtusiloba</i> Blume	NR	9	74	<i>Taxus cuspidata</i> Siebold & Zucc.	RR	2
27Betula pendula RothRRRRRRRRRRRRRRRRRRRRR28Corrus controversa Hemsl.NRVRRRRRCastanopsis sieboldii (Makino) Hatus.NR129Styrax obasis Siebold & Zucc.NRRRRRRR131Larix kaempferi (Lamb.) CarrièreRRRRRR781Elaeagnus macrophylla Thunb. ex Lf.) D.DonRR132Platycarya strobilacea Siebold & Zucc.NRR782Euroymus fortunei var. radicans (Siebold ex Miq.) RehderE133Quercus dentata Thunb.NR/RR783Eurya japonica Thunb.NR/RR134Symplocos sawafutagi Nagam.NRRR685l/lex rotunda Thunb.NR/R135Acer pictum var. mono (Maxim.) Maxim. ex Franch.NR/RR685l/lex rotunda Thunb.NR/R135Corlus heterophylla Fisch. ex Trautv.NR687Koelreuteria paniculata Laxm.NR136Corlus heterophylla Fisch. ex Trautv.NR688Ligustrum japonicum Thunb.NR/R136Lindera erynthrocarpa (Makino)RR690Mallotus japonicus (Lf.) Müll.Arg.NR137Lindera erynthrocarpa (MakinoRR691Philadelphus schnerkii Rupr.NR138Lindera erynthrocarpa UykiiRR691Philadelphus schnerkii Rupr.NR1	25	Rhododendron yedoense f. poukhanense (H.Lév.) Sugim. ex T.Yamaz.	NR	9	75	<i>Abies koreana</i> E.H.Wilson	NR/RR	1
28   Corrus controversa Hemsl.   NR/RR   8   78   Castanopsis sieboldii (Makino) Hatus.   NR   1     29   Styrax obassis Siebold & Zucc.   NR/RR   8   79   Cinnamomum camphora (L) J. Presl   RR/E   1     30   Toxicodendron trichocarpum (Miq.) Kuntze   NR   8   0   Cryptomeria japonica (Thunb. ex.Lf) D.Don   RR   1     31   Larix kaempferi (Lamb.) Carrière   RR   7   81   Elaeagnus macrophylia Thunb.   E   1     32   Vaercus dentata Thunb.   NR   7   82   Euroy japonica Thunb.   NR/RR/E   1     33   Quercus dentata Thunb.   NR/RR   7   83   Eurog japonica Thunb.   NR/RR/E   1     34   Symplocs sowafutagi Nagam.   NR   7   84   Hedera rhombea (Niq.) Siebold & Zucc. ex Bean   E   1     35   Acer pictum var. mono (Maxim.) Maxim. ex Franch.   NR 6   85   its rotunda Thunb.   NR/RE   1     36   Carstene arenatos Siebold & Zucc.   RR   6   86   Juniperus chinensis L   RR   1     37   Celtis sinensis Pers. <td< td=""><td>26</td><td><i>Acer palmatum</i> Thunb.</td><td>RR</td><td>8</td><td>76</td><td><i>Alnus japonica</i> (Thunb.) Steud.</td><td>RR</td><td>1</td></td<>	26	<i>Acer palmatum</i> Thunb.	RR	8	76	<i>Alnus japonica</i> (Thunb.) Steud.	RR	1
29Styrax obassis Siebold & Zucc.NR/RR879Cinnamonum camphora (L.) J. PreslRR/E130Taxicodendron trichocarpum (Miq.) KuntzeNR8880Cryptomeria japonica (Thunb. ex.Lf.) D.DonRR131Larix kaerngferi (Lamb.) CarrièreRR781Eleaegnus macrophylia Thunb.E132Platycarya strobilacea Siebold & Zucc.NR782Euonymus fortunei var. radicans (Siebold ex Miq.) RehderE133Quercus dentata Thunb.NR/RR783Eurya japonica Thunb.NR/RR/E134Symplocos sawafutagi Nagam.NR784Hedera rhombea (Miq.) Siebold & Zucc. ex BeanE135Acer pictum var. mono (Maxim.) Maxim. ex Franch.NR/RR685liex rotunda Thunb.NR/RE136Castanea crenata Siebold & Zucc.RR685liex rotunda Thunb.NR/E136Castanea crenata Siebold & Zucc.RR685lieux rotunda Thunb.NR/E137Celtis sinensis Pers.NR687Koelreuteria paniculata Laxm.NR139Lindera erythrocarpa MakinoNR689Linodendron tulipifera LRR140Paulownia coreana UyekiRR690Mallotus sponicus (Lf.) Müll.Arg.NR141Pinus kariafan (Mill.) SingleRR594Stewartia koreana Nakai ex RehderRR143Aria antifi	27	<i>Betula pendula</i> Roth	RR	8	77	<i>Carpinus turczaninovii</i> Hance	NR	1
30   Toxicodendron trichocarpum (Miq.) Kuntze   NR   8   80   Gryptomeria japonica (Thunb. ex Lf.) D.Don   RR   1     31   Larix kaempferi (Lamb.) Carrière   RR   7   81   Elaeagnus macrophylla Thunb.   E   1     32   Platycarya strobilacea Siebold & Zucc.   NR   7   82   Euronymus fortunei var. radicans (Siebold ex Miq.) Rehder   E   1     33   Quercus dentata Thunb.   NR   7   83   Euroya japonica Thunb.   NR/RR   1     34   Symplaces sawafittagi Nagam.   NR   7   84   Hedera rhombae (Miq.) Siebold & Zucc. ex Bean   E   1     35   Acer pictum var. mono (Maxim.) Maxim. ex Franch.   NR/RR   6   85   Ilex rotunda Thunb.   NR/E   1     36   Castanea crenata Siebold & Zucc.   RR   6   85   Ilex rotunda Thunb.   NR/E   1     37   Celtis sinensis Pers.   NR   6   85   Ilex rotunda Thunb.   NR/E   1     38   Carylus heterophylifa Fisch. ex Trautv.   NR   6   89   Liriodendron tulipifera L.   RR   1     40 <t< td=""><td>28</td><td>Cornus controversa Hemsl.</td><td>NR/RR</td><td>8</td><td>78</td><td><i>Castanopsis sieboldii</i> (Makino) Hatus.</td><td>NR</td><td>1</td></t<>	28	Cornus controversa Hemsl.	NR/RR	8	78	<i>Castanopsis sieboldii</i> (Makino) Hatus.	NR	1
31Larix kaempferi (Lamb.) CarrièreRR781É laeagnus macrophylla Thunb.E132Platycarya strobilacea Siebold & Zucc.NR782Euronymus fortunei var. radicans (Siebold ex Miq.) RehderE133Quercus dentata Thunb.NR/RR783Eurya japonica Thunb.NR/RR/E134Symplocos sawafutagi Nagam.NR784Hedera rhombea (Miq.) Siebold & Zucc. ex BeanE135Acer pictum var. mono (Maxim.) Maxim. ex Franch.NR/RR685lex rotunda Thunb.NR/E135Cartinea crenata Siebold & Zucc.RR686Juniperus chinensis L.RR136Castonea crenata Siebold & Zucc.RR686Juniperus chinensis L.RR137Ceftis sinensis Pers.NRNR688Ligustrum japonicum Thunb.NR/E138Corylus heterophylla Fisch. ex Trautv.NR688Ligustrum japonicum Thunb.NR/E139Lindera erythrocarpa MakinoNR689Liriodendron tulipifera L.RR141Paulownia coreana UyekiRR690Mallous japonicus (Lf.) Müll.Arg.NR142Allanthus aftissima (Mill.) SwingleRR592Pitosporum tobina (Thunb.) WT.AltonNR/E143Aria aninfolia (Siebold & Zucc.) Decne.NR594Stewartia koreana Nakai ex RehderRR144St	29	<i>Styrax obassis</i> Siebold & Zucc.	NR/RR	8	79	<i>Cinnamomum camphora</i> (L.) J.Presl	RR/E	1
32   Platycarya strobilaceo Siebold & Zucc.   NR   7   82   Euonymus fortunei var. radicans (Siebold ex Miq.) Rehder   E   1     33   Quercus dentata Thunb.   NR/RR   7   83   Eurya japonica Thunb.   NR/RR/E   1     34   Symplocas sawafutagi Nagam.   NR   7   84   Hedera rhombea (Miq.) Siebold & Zucc. ex Bean   E   1     35   Acer pictum var. mono (Maxim.) Maxim. ex Franch.   NR R   6   85   lex rotund a Thunb.   NR/E   1     36   Castanea crenata Siebold & Zucc.   RR   6   85   lex rotund a Thunb.   NR   R   1     37   Celtis sinensis Pers.   NR   6   85   Juniperus chinensis L   RR   1     38   Corylus heterophylla Fisch. ex Trautv.   NR   6   88   Ligustrum japonicur Thunb.   NR/E   1     39   Lindera erythrocarpa Makino   NR   6   89   Liriodendron tulipifera L   RR   1     41   Pinus thunbergii Parl.   NR/R   7   91   Philadelphus schrenkii Rupr.   NR   1     42   Ailanthus attissim	30	<i>Toxicodendron trichocarpum</i> (Miq.) Kuntze	NR	8	80	<i>Cryptomeria japonica</i> (Thunb. ex L.f.) D.Don	RR	1
33Quercus dentata Thunb.NR/RR783Eurya japonica Thunb.NR/RR/E134Symplocos sawafutagi Nagam.NR784Hedera rhombea (Miq.) Siebold & Zucc. ex BeanE135Acer pictum var. mono (Maxim.) Maxim. ex Franch.NR/RR685liex rotunda Thunb.NR/E136Castanea crenata Siebold & Zucc.RR685liex rotunda Thunb.NR/E137Celtis sinensis Pers.NR687Koelreuteria paniculata Laxm.NR138Corylus heterophylla Fisch. ex Trautv.NR688Ligustrum japonicum Thunb.NR/E139Lindera erythrocarpa MakinoNR689Lirodendron tulipifera LRR140Paulownia coreana UyekiRR690Mallotus japonicus (Lf.) Müll.Arg.NR141Pinus thunbergii Parl.NR/RR691Philadelphus schrenkii Rupr.NR143Aria alnifolia (Siebold & Zucc.) Decne.NR593Populus x canadensis MoenchRR144Styrax japonicus Siebold & Zucc.NR/RR594Stewartia koreana Nakai ex RehderRR145Abies holophylla Maxim.RR495Ternstroemia gymnanthera (Wight & Arn.) Bedd.E148Prunus sargentii RehderRR49470Toicodendron vernicifluum (Stokes) F.A.BarkleyRR149Ulmus davidiana var. japonica (	31	<i>Larix kaempferi</i> (Lamb.) Carrière	RR	7	81	<i>Elaeagnus macrophylla</i> Thunb.	Е	1
34Symplocos sawafutagi Nagam.NR784Hedera rhombea (Miq.) Siebold & Zucc. ex BeanE135Acer pictum var. mono (Maxim.) Maxim. ex Franch.NR/RR685Ilex rotunda Thunb.NR/E136Castanea crenata Siebold & Zucc.RR686Juniperus chinensis L.RR137Celtis sinensis Pers.NR687Koelreuteria paniculata Laxm.NR138Corylus heterophylla Fisch. ex Trautv.NR688Ligustrum japonicum Thunb.NR/E139Lindera erythrocarpa MakinoNR689Liriodendron tulipifera L.RR140Paulownia coreana UyekiRR690Mallotus japonicus (Lf.) Müll.Arg.NR141Pinus thunbergii Parl.NR/RR691Philadelphus schrenkii Rupr.NR142Ailanthus altissima (Mill.) SwingleRR592Pittosporum tobira (Thunb.) WT.AitonNR/E143Aria alnifolia (Siebold & Zucc.) Decne.NR/RR594Stewartia koreana Nakai ex RehderR144Styrax japonicus Siebold & Zucc.NR/RR495Ternstroemia gymnanthera (Wight & Arn.) Bedd.E145Abies holophylla Maxim.RR497Toxicodendron vernicifuum (Stokes) F.A.BarkleyRR148Prunus sargenti RehderRR498Vaccinium oldnamii Miq.NR149Ulmus davidiana var.	32	Platycarya strobilacea Siebold & Zucc.	NR	7	82	Euonymus fortunei var. radicans (Siebold ex Miq.) Rehde	r E	1
35Acer pictum var. mono (Maxim.) Maxim. ex Franch.NR/RR685Ilex rotunda Thunb.NR/E136Castanea crenata Siebold & Zucc.RR686Juniperus chinensis L.RR137Celtis sinensis Pers.NR687Koelreuteria paniculata Laxm.NR138Corylus heterophylla Fisch. ex Trautv.NR688Ligustrum japonicum Thunb.NR/E139Lindera erythrocarpa MakinoNR689Liriodendron tulipifera L.RR140Paulownia coreana UyekiRR690Mallotus japonicus (Lf.) Müll.Arg.NR141Pinus thunbergii Parl.NR/RR691Philadelphus schrenkii Rupr.NR142Ailanthus altissima (Mill.) SwingleRR592Pittosporum tobira (Thunb.) WT.AitonNR/E143Aria alnifolia (Siebold & Zucc.) Decne.NR593Populus × canadensis MoenchRR144Styrax japonicus Siebold & Zucc.NRRR495Termstroemia gymnanthera (Wight & Arn.) Bedd.E145Abies holophylla Maxim.RR495Toxicodendron vernicifiluum (Stokes) F.A.BarkleyRR148Prunus sargentii RehderRR497Toxicodendron vernicifiluum (Stokes) F.A.BarkleyRR148Prunus sargentii RehderRR498Vaccinium oldnamii Miq.NR149Ulmus davidiana v	33	<i>Quercus dentata</i> Thunb.	NR/RR	7	83	<i>Eurya japonica</i> Thunb.	NR/RR/E	1
36Castanea crenata Siebold & Zucc.RR686Juniperus chinensis L.RR137Celtis sinensis Pers.NR687Koelreuteria paniculata Laxm.NR138Corylus heterophylla Fisch. ex Trautv.NR688Ligustrum japonicum Thunb.NR/E139Lindera erythrocarpa MakinoNR689Liriodendron tulipifera LRR140Paulownia coreana UyekiRR690Mallotus japonicus (Lf.) Müll.Arg.NR141Pinus thunbergii Parl.NR/RR691Philadelphus schrenkii Rupr.NR142Ailanthus altissima (Mill.) SwingleRR592Pittosporum tobira (Thunb.) WT.AitonNR/E143Aria alnifolia (Siebold & Zucc.) Decne.NR593Populus × canadensis MoenchRR144Styrax japonicus Siebold & Zucc.NR/RR594Stewartia koreana Nakai ex RehderRR145Abies holophylla Maxim.RR495Ternstroemia gymnanthera (Wight & Am.) Bedd.E148Prunus sargentii RehderRR497Toxicodendron vernicifuum (Stokes) F.A.BarkleyRR148Prunus sargentii RehderRR498Vaccinium oldhamii Miq.NR149Ulmus davidiana var. japonica (Rehder) NakaiRR499Viburnum odoratissimum var. awabuki (K.Koch) ZabelNR/R/E140Ulmus davidiana va	34	<i>Symplocos sawafutagi</i> Nagam.	NR	7	84	<i>Hedera rhombea</i> (Miq.) Siebold & Zucc. ex Bean	Е	1
37Celtis sinensis Pers.NR687KoeKoe138Corylus heterophylla Fisch. ex Trautv.NR688Ligustrum japonicum Thunb.NR/E139Lindera erythrocarpa MakinoNR689Liriodendron tulipifera L.RR140Paulownia coreana UyekiRR690Mallotus japonicus (L.f.) Müll.Arg.NR141Pinus thunbergii Parl.NR/RR691Philadelphus schrenkii Rupr.NR142Ailanthus altissima (Mill.) SwingleRR592Pittosporum tobira (Thunb.) WT.AitonNR/E143Aria alnifolia (Siebold & Zucc.) Decne.NR593Populus × canadensis MoenchRR144Styrax japonicus Siebold & Zucc.NRRR495Ternstroemia gymnanthera (Wight & Arn.) Bedd.E145Abies holophylla Maxim.RR495Ternstroemia gymnanthera (Wight & Arn.) Bedd.E148Prunus sargentii RehderRR497Toxicodendron vernicifluum (Stokes) F.A.BarkleyRR149Ulmus davidiana var. japonica (Rehder) NakaiRR499Viburnum odoratissimum var. awabuki (K.Koch) ZabelNR/R/E149Orapinus laxiflora (Siebold & Zucc.) BlumeNR/RR3100Vitex rotundifolia Lf.NR1	35	<i>Acer pictum</i> var. <i>mono</i> (Maxim.) Maxim. ex Franch.	NR/RR	6	85	<i>llex rotunda</i> Thunb.	NR/E	1
38Corylus heterophylla Fisch. ex Trautv.NR688Ligustrum japonicum Thunb.NR/E139Lindera erythrocarpa MakinoNR689Liriodendron tulipifera LRR140Paulownia coreana UyekiRR690Mallotus japonicus (L.f.) Müll.Arg.NR141Pinus thunbergii Parl.NR/RR691Philadelphus schrenkii Rupr.NR142Ailanthus altissima (Mill.) SwingleRR592Pittosporum tobira (Thunb.) W.T.AitonNR/E143Aria alnifolia (Siebold & Zucc.) Decne.NR593Populus × canadensis MoenchRR144Styrax japonicus Siebold & Zucc.NR/RR594Stewartia koreana Nakai ex RehderRR145Abies holophylla Maxim.RR495Ternstroemia gymnanthera (Wight & Arn.) Bedd.E147Pinus koraiensis Siebold & Zucc.NR/RR496Tilia amurensis Rupr.NR/RR148Prunus sargentii RehderRR497Toxicodendron vernicifluum (Stokes) F.A.BarkleyRR149Ulmus davidiana var. japonica (Rehder) NakaiRR499Viburnum odoratissimum var. awabuki (K.Koch) ZabelNR/RR/E150Carpinus laxiflora (Siebold & Zucc.) BlumeNR/RR3100Vitex rotundifolia Lf.NR1	36	Castanea crenata Siebold & Zucc.	RR	6	86	Juniperus chinensis L.	RR	1
39Lindera erythrocarpa MakinoNR689Liriodendron tulipifera L.RR140Paulownia coreana UyekiRR690Mallotus japonicus (L.f.) Müll.Arg.NR141Pinus thunbergii Parl.NR/RR691Philadelphus schrenkii Rupr.NR142Ailanthus altissima (Mill.) SwingleRR592Pittosporum tobira (Thunb.) W.T.AitonNR/E143Aria alnifolia (Siebold & Zucc.) Decne.NR593Populus × canadensis MoenchRR144Styrax japonicus Siebold & Zucc.NR/RR594Stewartia koreana Nakai ex RehderRR145Abies holophylla Maxim.RR495Ternstroemia gymnanthera (Wight & Arn.) Bedd.E146Juniperus rigida Siebold & Zucc.NR/RR496Tilia amurensis Rupr.NR/RR147Pinus koraiensis Siebold & Zucc.NR/RR497Toxicodendron vernicifluum (Stokes) F.A.BarkleyRR148Prunus sargentii RehderRR498Vaccinium oldnamii Miq.NR1149Ulmus davidiana var. japonica (Rehder) NakaiRR499Viburnum odoratissimum var. awabuki (K.Koch) ZabelNR/RR/E150Carpinus laxiflora (Siebold & Zucc.) BlumeNR/RR3100Vitex rotundifolia L.f.NR1	37	Celtis sinensis Pers.	NR	6	87	<i>Koelreuteria paniculata</i> Laxm.	NR	1
40Paulownia coreana UyekiRR690Mallotus japonicus (L.f.) Müll.Arg.NR141Pinus thunbergii Parl.NR/RR691Philadelphus schrenkii Rupr.NR142Ailanthus altissima (Mill.) SwingleRR592Pittosporum tobira (Thunb.) W.T.AitonNR/E143Aria alnifolia (Siebold & Zucc.) Decne.NR593Populus × canadensis MoenchRR144Styrax japonicus Siebold & Zucc.NR/RR594Stewartia koreana Nakai ex RehderRR145Abies holophylla Maxim.RR495Ternstroemia gymnanthera (Wight & Arn.) Bedd.E146Juniperus rigida Siebold & Zucc.NR/RR496Tilia amurensis Rupr.NR/RR147Pinus koraiensis Siebold & Zucc.NR/RR496Toxicodendron vernicifluum (Stokes) F.A.BarkleyRR148Prunus sargentii RehderRR498Vaccinium oldnamii Miq.NR149Ulmus davidiana var. japonica (Rehder) NakaiRR499Viburnum odoratissimum var. awabuki (K.Koch) ZabelNR/RR/E150Carpinus laxiflora (Siebold & Zucc.) BlumeNR/RR3100Vitex rotundifolia Lf.NR1	38	<i>Corylus heterophylla</i> Fisch. ex Trautv.	NR	6	88	<i>Ligustrum japonicum</i> Thunb.	NR/E	1
41Pinus thunbergii Parl.NR/RR691Philadelphus schrenkii Rupr.NR142Ailanthus altissima (Mill.) SwingleRR592Pittosporum tobira (Thunb.) WT.AitonNR/E143Aria alnifolia (Siebold & Zucc.) Decne.NR593Populus × canadensis MoenchRR144Styrax japonicus Siebold & Zucc.NR/RR594Stewartia koreana Nakai ex RehderRR145Abies holophylla Maxim.RR495Ternstroemia gymnanthera (Wight & Arn.) Bedd.E146Juniperus rigida Siebold & Zucc.NR/RR496Tilia amurensis Rupr.NR/RR147Pinus koraiensis Siebold & Zucc.NR/RR497Toxicodendron vernicifluum (Stokes) F.A.BarkleyRR148Prunus sargentii RehderRR498Vaccinium oldhamii Miq.NR149Ulmus davidiana var. japonica (Rehder) NakaiRR499Viburnum odoratissimum var. awabuki (K.Koch) ZabelNR/RR/E150Carpinus laxiflora (Siebold & Zucc.) BlumeNR/RR3100Vitex rotundifolia Lf.NR1	39	<i>Lindera erythrocarpa</i> Makino	NR	6	89	Liriodendron tulipifera L.	RR	1
42Ailanthus altissima (Mill.) SwingleRR592Pittosporum tobira (Thunb.) W.T.AitonNR/E143Aria alnifolia (Siebold & Zucc.) Decne.NR593Populus × canadensis MoenchRR144Styrax japonicus Siebold & Zucc.NR/RR594Stewartia koreana Nakai ex RehderRR145Abies holophylla Maxim.RR495Ternstroemia gymnanthera (Wight & Arn.) Bedd.E146Juniperus rigida Siebold & Zucc.NR496Tilia amurensis Rupr.NR/RR147Pinus koraiensis Siebold & Zucc.NR/RR497Toxicodendron vernicifluum (Stokes) F.A.BarkleyRR148Prunus sargentii RehderRR498Vaccinium oldhamii Miq.NR149Ulmus davidiana var. japonica (Rehder) NakaiRR499Viburnum odoratissimum var. awabuki (K.Koch) ZabelNR/RR/E150Carpinus laxiflora (Siebold & Zucc.) BlumeNR/RR3100Vitex rotundifolia L.f.NR1	40	<i>Paulownia coreana</i> Uyeki		6	90	<i>Mallotus japonicus</i> (L.f.) Müll.Arg.	NR	1
43Aria alnifolia (Siebold & Zucc.) Decne.NR593Populus × canadensis MoenchRR144Styrax japonicus Siebold & Zucc.NR/RR594Stewartia koreana Nakai ex RehderRR145Abies holophylla Maxim.RR495Ternstroemia gymnanthera (Wight & Arn.) Bedd.E146Juniperus rigida Siebold & Zucc.NR496Tilia amurensis Rupr.NR/RR147Pinus koraiensis Siebold & Zucc.NR/RR497Toxicodendron vernicifluum (Stokes) F.A.BarkleyRR148Prunus sargentii RehderRR498Vaccinium oldhamii Miq.NR149Ulmus davidiana var. japonica (Rehder) NakaiRR499Viburnum odoratissimum var. awabuki (K.Koch) ZabelNR/RR/E150Carpinus laxiflora (Siebold & Zucc.) BlumeNR/RR3100Vitex rotundifolia Lf.NR1	41	<i>Pinus thunbergii</i> Parl.	NR/RR	6	91	Philadelphus schrenkii Rupr.	NR	1
44Styrax japonicus Siebold & Zucc.NR/RR594Stewartia koreana Nakai ex RehderRR145Abies holophylla Maxim.RR495Ternstroemia gymnanthera (Wight & Arn.) Bedd.E146Juniperus rigida Siebold & Zucc.NR496Tilia amurensis Rupr.NR/RR147Pinus koraiensis Siebold & Zucc.NR/RR497Toxicodendron vernicifluum (Stokes) F.A.BarkleyRR148Prunus sargentii RehderRR498Vaccinium oldhamii Miq.NR149Ulmus davidiana var. japonica (Rehder) NakaiRR499Viburnum odoratissimum var. awabuki (K.Koch) ZabelNR/RR/E150Carpinus laxiflora (Siebold & Zucc.) BlumeNR/RR3100Vitex rotundifolia Lf.NR1	42	Ailanthus altissima (Mill.) Swingle	RR	5	92	Pittosporum tobira (Thunb.) W.T.Aiton	NR/E	1
45Abies holophylla Maxim.RR495Ternstroemia gymnanthera (Wight & Arn.) Bedd.E146Juniperus rigida Siebold & Zucc.NR496Tilia amurensis Rupr.NR/RR147Pinus koraiensis Siebold & Zucc.NR/RR497Toxicodendron vernicifluum (Stokes) F.A.BarkleyRR148Prunus sargentii RehderRR498Vaccinium oldhamii Miq.NR149Ulmus davidiana var. japonica (Rehder) NakaiRR499Viburnum odoratissimum var. awabuki (K.Koch) ZabelNR/RR/E150Carpinus laxiflora (Siebold & Zucc.) BlumeNR/RR3100Vitex rotundifolia L.f.NR1	43	Aria alnifolia (Siebold & Zucc.) Decne.	NR	5	93	<i>Populus × canadensis</i> Moench	RR	1
46Juniperus rigida Siebold & Zucc.NR496Tilia amurensis Rupr.NR/RR147Pinus koraiensis Siebold & Zucc.NR/RR497Toxicodendron vernicifluum (Stokes) F.A.BarkleyRR148Prunus sargentii RehderRR498Vaccinium oldhamii Miq.NR149Ulmus davidiana var. japonica (Rehder) NakaiRR499Viburnum odoratissimum var. awabuki (K.Koch) ZabelNR/RR/E150Carpinus laxiflora (Siebold & Zucc.) BlumeNR/RR3100Vitex rotundifolia L.f.NR1	44	<i>Styrax japonicus</i> Siebold & Zucc.	NR/RR	5	94	<i>Stewartia koreana</i> Nakai ex Rehder	RR	1
47Pinus koraiensis Siebold & Zucc.NR/RR497Toxicodendron vernicifluum (Stokes) F.A.BarkleyRR148Prunus sargentii RehderRR498Vaccinium oldhamii Miq.NR149Ulmus davidiana var. japonica (Rehder) NakaiRR499Viburnum odoratissimum var. awabuki (K.Koch) ZabelNR/RR/E150Carpinus laxiflora (Siebold & Zucc.) BlumeNR/RR3100Vitex rotundifolia L.f.NR1	45	Abies holophylla Maxim.	RR	4	95	<i>Ternstroemia gymnanthera</i> (Wight & Arn.) Bedd.	E	1
48Prunus sargentii RehderRR498Vaccinium oldhamii Miq.NR149Ulmus davidiana var. japonica (Rehder) NakaiRR499Viburnum odoratissimum var. awabuki (K.Koch) ZabelNR/RR/E150Carpinus laxiflora (Siebold & Zucc.) BlumeNR/RR3100Vitex rotundifolia L.f.NR1	46	<i>Juniperus rigida</i> Siebold & Zucc.	NR	4	96	<i>Tilia amurensis</i> Rupr.	NR/RR	1
49Ulmus davidiana var. japonica (Rehder) NakaiRR499Viburnum odoratissimum var. awabuki (K.Koch) ZabelNR/RR/E150Carpinus laxiflora (Siebold & Zucc.) BlumeNR/RR3100Vitex rotundifolia L.f.NR1	47		NR/RR	4	97	Toxicodendron vernicifluum (Stokes) F.A.Barkley	RR	1
50 Carpinus laxiflora (Siebold & Zucc.) BlumeNR/RR3100 Vitex rotundifolia L.f.NR1	48	<i>Prunus sargentii</i> Rehder	RR	4	98	<i>Vaccinium oldhamii</i> Miq.		1
	49			4	99	<i>Viburnum odoratissimum</i> var. <i>awabuki</i> (K.Koch) Zabel	NR/RR/E	1
	50	<i>Carpinus laxiflora</i> (Siebold & Zucc.) Blume	NR/RR	3	100	Vitex rotundifolia L.f.	NR	1

•			<b>T</b> .1			iniyini	5
5	Lespedeza maximowiczii C.K.Schneid.	NR	14	55	Magnolia sieboldii K.Koch	NR	3
6	<i>Quercus mongolica</i> Fisch. ex Ledeb.	NR/RR	14	56	<i>Quercus aliena</i> Blume	RR	3
7	<i>Aralia elata</i> (Miq.) Seem.	RR	13	57	<i>Quercus myrsinifolia</i> Blume	RR/E	3
8	Fraxinus rhynchophylla Hance	NR/RR	13	58	Sorbus commixta Hedl.	RR	3
9	Parthenocissus tricuspidata (Siebold & Zucc.) Planch.	-	13	59	<i>Trachelospermum asiaticum</i> (Siebold & Zucc.) Nakai	Е	3
10	<i>Pueraria lobata</i> (Willd.) Ohwi	-	13	60	<i>Viburnum erosum</i> Thunb.	NR	3
11	Quercus acutissima Carruth.	NR/RR	13	61	<i>Zelkova serrata</i> (Thunb.) Makino	NR/RR	3
12	Rhus chinensis Mill.	NR	13		Abies nephrolepis (Trautv. ex Maxim.) Maxim.	NR/RR	2
13	<i>Salix pierotii</i> Miq.	NR	13	63	Betula costata Trautv.	NR/RR	2
14	Stephanandra incisa (Thunb.) Zabel	NR	13	64	Camellia japonica L.	, NR/RR/E	2
15	Weigela subsessilis (Nakai) L.H.Bailey	NR	13	65	<i>Chamaecyparis obtusa</i> (Siebold & Zucc.) Endl.	RR	2
16	Lespedeza cyrtobotrya Miq.	NR	12	66	Cornus officinalis Siebold & Zucc.	RR	2
17	<i>Quercus serrata</i> Murray	NR/RR	12	67	Diospyros kaki L.f.	RR	2
18	Robinia pseudoacacia L.	RR	12	68	Euonymus japonicus Thunb.	NR/E	2
19	Rhododendron mucronulatum Turcz.	NR	11	69	Ginkgo biloba L.	RR	2
20	Acer pseudosieboldianum (Pax) Kom.	NR/RR	10	70	Maackia amurensis Rupr.	RR	2
21	Prunus serrulata f. spontanea (E.H.Wilson) Chin S.Chang	RR	10	71	Pinus strobus L.	RR	2
22	<i>Quercus variabilis</i> Blume	NR/RR	10	72	<i>Quercus glauca</i> Thunb.	NR/RR/E	2
22	Rosa multiflora Thunb.	NR	10	72	<i>Quercus salicina</i> Blume	NR/RR/E	2
~ .	Lindera obtusiloba Blume	NR	9	74	Taxus cuspidata Siebold & Zucc.	RR	2
24 25	Rhododendron yedoense f. poukhanense (H.Lév.) Sugim. ex T.Yamaz.	NR	9		Abies koreana E.H.Wilson	NR/RR	2 1
25 26				75		-	1
26 27	Acer palmatum Thunb.	RR	8	76	Alnus japonica (Thunb.) Steud.	RR	1
27	Betula pendula Roth	RR	8	77	<i>Carpinus turczaninovii</i> Hance	NR	1
28	Cornus controversa Hemsl.	NR/RR	8	78	<i>Castanopsis sieboldii</i> (Makino) Hatus.	NR	T
29	Styrax obassis Siebold & Zucc.	NR/RR	8	79	Cinnamomum camphora (L.) J.Presl	RR/E	Ţ
30	<i>Toxicodendron trichocarpum</i> (Miq.) Kuntze	NR	8	80	<i>Cryptomeria japonica</i> (Thunb. ex L.f.) D.Don	RR	1
31	Larix kaempferi (Lamb.) Carrière	RR	7	81	Elaeagnus macrophylla Thunb.	E -	1
32	Platycarya strobilacea Siebold & Zucc.	NR	7	82	<i>Euonymus fortunei</i> var. <i>radicans</i> (Siebold ex Miq.) Rehde		1
33	Quercus dentata Thunb.	NR/RR	7	83	Eurya japonica Thunb.	NR/RR/E	1
34	Symplocos sawafutagi Nagam.	NR	7	84	<i>Hedera rhombea</i> (Miq.) Siebold & Zucc. ex Bean	E	1
35	Acer pictum var. mono (Maxim.) Maxim. ex Franch.	NR/RR	6	85	<i>llex rotunda</i> Thunb.	NR/E	1
36	Castanea crenata Siebold & Zucc.	RR	6	86	Juniperus chinensis L.	RR	1
37	Celtis sinensis Pers.	NR	6	87	<i>Koelreuteria paniculata</i> Laxm.	NR	1
38	<i>Corylus heterophylla</i> Fisch. ex Trautv.	NR	6	88	<i>Ligustrum japonicum</i> Thunb.	NR/E	1
39	<i>Lindera erythrocarpa</i> Makino	NR	6	89	Liriodendron tulipifera L.	RR	1
40	<i>Paulownia coreana</i> Uyeki	RR	6	90	<i>Mallotus japonicus</i> (L.f.) Müll.Arg.	NR	1
41	<i>Pinus thunbergii</i> Parl.	NR/RR	6	91	Philadelphus schrenkii Rupr.	NR	1
42	Ailanthus altissima (Mill.) Swingle	RR	5	92	Pittosporum tobira (Thunb.) W.T.Aiton	NR/E	1
43	Aria alnifolia (Siebold & Zucc.) Decne.	NR	5	93	<i>Populus × canadensis</i> Moench	RR	1
44	Styrax japonicus Siebold & Zucc.	NR/RR	5	94	Stewartia koreana Nakai ex Rehder	RR	1
45	Abies holophylla Maxim.	RR	4	95	<i>Ternstroemia gymnanthera</i> (Wight & Arn.) Bedd.	Е	1
46	Juniperus rigida Siebold & Zucc.	NR	4	96	Tilia amurensis Rupr.	NR/RR	1
47	Pinus koraiensis Siebold & Zucc.	NR/RR	4	97	<i>Toxicodendron vernicifluum</i> (Stokes) F.A.Barkley	RR	1
48	Prunus sargentii Rehder	RR	4	98	Vaccinium oldhamii Miq.	NR	1
49	<i>Ulmus davidiana</i> var. <i>japonica</i> (Rehder) Nakai	RR	4	99	<i>Viburnum odoratissimum</i> var. <i>awabuki</i> (K.Koch) Zabel	NR/RR/E	1
	Carpinus laxiflora (Siebold & Zucc.) Blume	NR/RR	3		Vitex rotundifolia L.f.	NR	1
	2 1 E taxa by fraguency		5	100			<u> </u>

**Fig 1.** The growth type in forest restoration site

### Top 15 taxa by frequency

\* Frequency of 27 regions according to forest landscape and ecosystem management regions

\*\* NR : native plants for forest restoration, RR : recommended trees for reforestation, E : temperate evergreen broadleaf trees

#### Conclusions

- This study is data derived using monitoring data conducted for 72 forest restoration sites in Korea from 2008 to 2020, and it is a study that has not been attempted before.
- Through this result, it was possible to secure basic data on which tree taxa appeared in the forest restoration site.
- Therefore it can be used in the overall project from planning and designing to selecting trees for planting for the future forest restoration projects.  $\bullet$