

Carbon Calculator API Documentation

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The urban tree carbon calculator has a RESTful API which is for now sited at a base URL of <http://169.237.167.66/carboncalc/api>. It is built using the Django REST framework and implements both GET and POST verbs for the included functions. The example GET queries below can be pasted into a browser. POST queries are made using JSON strings, and responses are in JSON. At present the following URLs are active, though long-term availability of this web service is not to be expected:

- <http://169.237.167.66/carboncalc/api/biomass> (Biomass given species, region, DBH, and height)
- <http://169.237.167.66/carboncalc/api/bmasstoCO2> (CO2 equivalent given biomass)
- <http://169.237.167.66/carboncalc/api/invagecalc> (DBH or height given species, region , and age)
- <http://169.237.167.66/carboncalc/api/agecalc> (Age given species, region, DBH, and height)
- <http://169.237.167.66/carboncalc/api/growth> (Growth increment given species, region, DBH and height)
- <http://169.237.167.66/carboncalc/api/avoided> (Avoided emissions based on energy savings from a building shaded by the tree.)
- <http://169.237.167.66/carboncalc/api/futureage> (A list of future biomass and growth values given tree age and number of years to compute over.)
- <http://169.237.167.66/carboncalc/api/futuresize> (A list of future biomass and growth values given tree dbh, height, and number of years to compute over.)

The specifics of each function are listed below. Appendices 1 and 2 give the region and species codes respectively.

1) **Biomass** (<http://169.237.167.66/carboncalc/api/biomass>).

Query parameters:

- spec (species code)
- region (geographic region)
- dbh (tree DBH in centimeters)
- ht (tree height in meters)

Return parameters:

- species (species code)
- region (geographic region)
- dbh (tree DBH in centimeters)
- ht (tree height in meters)
- biomass (kilograms)
- carbon (equivalent mass of carbon)
- co2 (CO2 equivalent)

Example GET query:

<http://169.237.167.66/carboncalc/api/biomass?spec=QUAG®ion=NoCalC&dbh=3&ht=5>

Example POST string:

```
{"spec": "QUAG", "region": "NoCalC", "dbh": "3", "ht": "5"}
```

or

```
[{"spec": "QUAG", "region": "NoCalC", "dbh": "4", "ht": "6", "comptype": "d.b.h."},  
{"spec": "QUAG", "region": "NoCalC", "dbh": "2", "ht": "6"}]
```

(The POST queries take simple name/value pair objects (dictionaries) as well as dictionaries inside of arrays. The latter format allows one to submit lists of data, for instance tree records encoded from a spreadsheet).

2) Biomass to CO2 (<http://169.237.167.66/carboncalc/api/bmasstoCO2>)

Query parameters:

- biomass (biomass in kg)

Return parameters:

- biomass (biomass in kg)
- CO2 (CO2 equivalent)
- errors (description of calculation error)

Example GET query:

<http://169.237.167.66/carboncalc/api/bmasstoCO2?biomass=7>

Example POST strings:

```
{"biomass": "7"}
```

or

```
[{"biomass": "7"}, {"biomass": "4"}, {"biomass": "3.5"}]
```

3) Inverse age calculation (<http://169.237.167.66/carboncalc/api/invagecalc>)

Query parameters:

- spec (species code)
- region (geographic region)
- age (tree age in years)

Return parameters:

- eqtype (whether returned value is dbh or height)
- dbh (dbh at inputted age in cm)
- ht (height at inputted age in meters) For some tree species (e.g. palms), this may be a null return value.
- AppsMin (minimum value over which equation is valid)
- AppsMax (maximum value over which equation is valid)

Example GET query:

<http://169.237.167.66/carboncalc/api/invagecalc?spec=QUAG®ion=NoCalC&age=25>

Example POST string:

```
{"spec": "QUAG", "region": "NoCalC", "age": "25"}
```

4) Age calculation (<http://169.237.167.66/carboncalc/api/agecalc>)

Query parameters:

- spec (species code)<http://169.237.167.66/carboncalc/api/agecalc?spec=QUAG®ion=NoCalC&dbh=5&ht=6&comptype=d.b.h>
- region (geographic region)
- dbh (tree DBH in centimeters)
- ht (tree height in meters)
- comptype (component type, either "d.b.h." or "tree_ht")
- rounded (optional parameter, default is false. Return rounded age)
- lowerbound (optional parameter, lower bound for calculated age)
- upperbound (optional parameter, upper bound for calculated age)

Return parameter:

- age (age in years)

Example GET query:

[http://169.237.167.66/carboncalc/api/agecalc?](http://169.237.167.66/carboncalc/api/agecalc?spec=QUAG®ion=NoCalC&dbh=5&ht=6&comptype=d.b.h)

[spec=QUAG®ion=NoCalC&dbh=5&ht=6&comptype=d.b.h](http://169.237.167.66/carboncalc/api/agecalc?spec=QUAG®ion=NoCalC&dbh=5&ht=6&comptype=d.b.h).

Example POST string:

```
{"spec": "QUAG", "region": "NoCalC", "dbh": "2", "ht": "6", "comptype": "d.b.h."}
```

5) Growth calculation (<http://169.237.167.66/carboncalc/api/growth>)

Query parameters:

- spec (species code)
- region (geographic region)
- dbh (tree DBH in centimeters)
- ht (tree height in meters)
- rounded (optional parameter, default is false. Return rounded age)
- lowerbound (optional parameter, lower bound for calculated age)
- upperbound (optional parameter, upper bound for calculated age)

Return parameters:

- biomass (biomass added over previous year's growth in kg)
- carbon (carbon mass equivalent added over previous year's growth in kg)
- co2 (CO2 mass equivalent added over previous year's growth in kg)

Example GET query:

<http://169.237.167.66/carboncalc/api/growth?spec=QUAG®ion=NoCalC&dbh=5&ht=6>

Example POST string:

```
{"spec": "QUAG", "region": "NoCalC", "dbh": "2", "ht": "6"}
```

6) Avoided emissions calculation (<http://169.237.167.66/carboncalc/api/avoided>)

Query parameters:

- spec (species code)
- region (geographic region)
- dbh (tree DBH in inches)
- ht (tree height in feet)
- azimuth (direction to the shaded building in degrees)
- dist (distance tree is from building in feet. If the tree is greater than 60 feet from the building, there is no shading effect.)
- vintage (the year the building was built)
- shadereduc (shade reduction factor, values typically range 0.5 to 0.85. This factor accounts for the reduction in tree shading effects due to overlapping trees.)
- luconvshade (land use conversion shading factor, values from 0.15 to 1. Multi-use buildings that share walls (e.g. multi-family residences) have reduced sensitivity to temperature reductions from trees. This factor varies by land use type, and represents the trees that are within the shading distance of 60 feet.)
- luconvclim (land use conversion climate factor, values from 0 to 1. Multi-use buildings that share walls (e.g. multi-family residences) have reduced sensitivity to temperature reductions from trees. This factor varies by land use type, and represents the trees that are beyond the shading distance of 60 feet.))
- eqtcoolpot (equivalent cooling potential, value from 0 through 0.9289. This is a factor reducing the cooling transfer function by the degree of saturation of air conditioning in a particular combination of land use and climate zones.)
- eqtheatpot (equivalent heating potential, value from 0 through 0.774. This is a factor reducing the heating transfer function by the degree of saturation of heating equipment in a particular combination of land use and climate zones)

Return parameters:

- spec (species code)
- region (geographic region)
- dbh (tree DBH in inches)
- ht (tree height in feet)
- maxdbh (maximum tree DBH in inches)
- dist (distance tree is from building in feet)
- buildclass (distance class building falls within)
- azimuthclass (cardinal direction to building)
- vintageclass (building vintage, one of 3 classes)
- efemisfactor (CO2 emissions factor relating kWh to CO2 equivalent)
- cooltotaltcc (total cooling emissions reductions in kWh without including reduction factors (CTCC=CUFR Tree Carbon Calculator))
- cooltotal (total cooling emissions reductions in kWh including all reduction factors (e.g. shadereduc)
- heattotaltcc (total heating emissions reductions in MBtu without including reduction factors)

- heattotal (total heating emissions reductions in MBtu including all reduction factors)
- allcoolemisctcc (total cooling emissions reductions in kg CO2 equivalents without including reduction factors.. Note that these incorporate methane and nitrous oxide CO2 equivalents in addition to actual CO2 emissions)
- allcoolemis (total cooling emissions reductions in kg CO2 equivalents including all reduction factors)
- allheatemisctcc (total heating emissions reductions in kg CO2 equivalents without including reduction factors)
- allheatemis (total heating emissions reductions in kg CO2 equivalents including all reduction factors)
- allemisctcc (total emissions reductions in kg CO2 equivalents without including reduction factors)
- allemis (total emissions reductions in kg CO2 equivalents including all reduction factors)

Example GET query:

[http://169.237.167.66/carboncalc/api/avoided?](http://169.237.167.66/carboncalc/api/avoided?spec=WARO®ion=SoCalC&dbh=18.05512786&ht=37.72966&azimuth=85&dist=28&vintage=1954&shadereduc=0.85&luconvshade=1&luconvclim=1&eqcoolpot=0.3029&eqheatpot=0.479)

[spec=WARO®ion=SoCalC&dbh=18.05512786&ht=37.72966&azimuth=85&dist=28&vintage=1954&shadereduc=0.85&luconvshade=1&luconvclim=1&eqcoolpot=0.3029&eqheatpot=0.479](http://169.237.167.66/carboncalc/api/avoided?spec=WARO®ion=SoCalC&dbh=18.05512786&ht=37.72966&azimuth=85&dist=28&vintage=1954&shadereduc=0.85&luconvshade=1&luconvclim=1&eqcoolpot=0.3029&eqheatpot=0.479)

Example POST string:

```
{"spec": "CUAN", "region": "SoCalC", "dbh": "12.07874668", "ht": "24.6063", "azimuth": "170", "dist": "16.2", "vintage": "1953", "shadereduc": "0.85", "luconvshade": "0.575", "luconvclim": "0.8", "eqcoolpot": "0.2711", "eqheatpot": "0.052"}
```

7) Future growth and biomass given tree age (<http://169.237.167.66/carboncalc/api/futureage>)

Query parameters:

- spec (species code)
- region (geographic region)
- age (tree age in years)
- nyrs (number of years in the future over which to calculate biomass and growth)

Return parameters (a list giving values at ages incrementing by one each time):

- age (tree age in years)
- dbh (tree dbh in centimeters using standardized values from growth equations)
- ht (tree height in meters using standardized values from growth equations)
- biomass (kilograms)
- carbon (equivalent mass of carbon in kg)
- co2 (CO2 equivalent)

Example GET query:

<http://169.237.167.66/carboncalc/api/futureage?spec=QUAG®ion=NoCalC&age=10&nyrs=15>

Example POST string:

```
{"spec": "QUAG", "region": "NoCalC", "age": "10", "nyrs": "15"}
```

8) Future growth and biomass given tree size (<http://169.237.167.66/carboncalc/api/futuresize>)

Query parameters:

- spec (species code)
- region (geographic region)
- dbh (tree dbh in centimeters)
- ht (tree height in meters)
- nyrs (number of years in the future over which to calculate biomass and growth)

Return parameters (a list giving values at ages incrementing by one each time):

- age (tree age in years)
- dbh (tree dbh in centimeters using standardized values from growth equations)
- ht (tree height in meters using standardized values from growth equations)
- biomass (kilograms)
- carbon (equivalent mass of carbon in kg)
- co2 (CO2 equivalent)

Example GET query:

[http://169.237.167.66/carboncalc/api/futuresize?](http://169.237.167.66/carboncalc/api/futuresize?spec=QUAG®ion=NoCalC&dbh=20&ht=5&nyrs=15)

[spec=QUAG®ion=NoCalC&dbh=20&ht=5&nyrs=15](http://169.237.167.66/carboncalc/api/futuresize?spec=QUAG®ion=NoCalC&dbh=20&ht=5&nyrs=15)

Example POST string:

```
{"spec": "QUAG", "region": "NoCalC", "dbh": "20", "ht": "5", "nyrs": "15"}
```

Appendix 1 - Region Codes

Region Code	Alternative Region Code	Region Name
CenFla	CenFlaXXX	Central Florida
GulfCo	GulfCoCHS	Coastal Plain
InlEmp	InlEmpCLM	Inland Empire
InlVal	InlValMOD	Inland Valleys
InterW	InterWABQ	Interior West
LoMidW	LoMidWXXX	Lower Midwest
MidWst	MidWstMSP	Midwest
NoCalC	NMtnPrFNL	Northern California Coast
NMtnPr	CaNCCoJBK	North
NoEast	NoEastXXX	Northeast
PacfNW	PacfNWLOG	Pacific Northwest
Piedmt	PiedmtCLT	South
SoCalC	SoCalCSMA	Southern California Coast
SWDsrt	SWDsrtGDL	Southwest Desert
TpIntW	TpIntWBOI	Temperate Interior West
Tropic	TropicPacXXX	Tropical

The API now accepts regions using either region code in column 1 or column 2 of this table.

Appendix 2 - Species Codes

AB	Abies species
ABAL	Abies alba
ABBA	Abies balsamea
ABCO	Abies concolor
ABFR	Abies fraseri
ABGR	Abies grandis
ABHO	Abies holophylla
ABHO2	Abies homolepis
ABLA	Abies lasiocarpa
ABMA	Abies magnifica
ABPI	Abies pinsapo
ABPR	Abies procera
AC	Acer species
ACAC2	Acrocomia aculeata
ACAN	Acacia aneura
ACBA2	Acacia baileyana
ACBU	Acer buergerianum
ACBU	Acer buergerianum
ACCA	Acer campestre
ACCAQE	Acer campestre 'Queen Elizabeth'
ACCI	Acer circinatum
ACCO	Acacia confusa
ACDE	Acacia decurrens
ACDE2	Acacia dealbata
ACFA	Acacia farnesiana
ACFR	Acer x freemanii
ACGI	Acer ginnala
ACGL	Acer glabrum
ACGR	Acer griseum
ACGR3	Acer grandidentatum
ACKO	Acacia koa
ACLO	Acacia longifolia
ACMA	Acer macrophyllum
ACME	Acacia melanoxylon
ACMI	Acacia millefolia
ACNE	Acer negundo
ACNI	Acer nigrum
ACOB	Acer oblongum
ACPA	Acer palmatum
ACPADI	Acer palmatum 'Dissectum'
ACPE	Acer pensylvanicum
ACPL	Acer platanoides
ACPLC	Acer platanoides 'Columnare'
ACPLCK	Acer platanoides 'Crimson King'

ACPLCO	Acer platanoides 'Columnare'
ACPLCR	Acer platanoides 'Crimson King'
ACPLFA	Acer platanoides 'Fairview'
ACPLQE	Acer platanoides 'Emerald Queen'
ACPLSC	Acer platanoides 'Schwedleri'
ACPL_CK	Acer platanoides 'Crimson King'
ACPS	Acer pseudoplatanus
ACPS_S	Acer pseudoplatanus 'Spaethii'
ACRU	Acer rubrum
ACRUA	Acer rubrum 'Armstrong'
ACRUAR	Acer rubrum 'Armstrong'
ACRUG	Acer rubrum 'Gerling'
ACRUMO	Acer rubrum 'Morgan'
ACRUOC	Acer rubrum 'October Glory'
ACRUOG	Acer rubrum 'October Glory'
ACRURS	Acer rubrum 'Red Sunset'
ACRU_O	Acer rubrum 'October Glory'
ACSA	Acacia saligna
ACSA1	Acer saccharinum
ACSA2	Acer saccharum
ACSA2GR	Acer saccharum 'Green Mountain'
ACSA3	Acacia salicina
ACSP2	Acacia species
ACST	Acacia stenophylla
ACTA	Acer tataricum
ACTR	Acer truncatum
ACVE2	Acacia verticillata
ACWR	Acoelorrhaphe wrightii
AE	Aesculus species
AECA	Aesculus x carnea
AECA2	Aesculus californica
AECA3	Aesculus carnea
AECA3_B	Aesculus carnea 'Briottii'
AECA3_S	Aesculus carnea 'Stafford'
AEFL	Aesculus octandra
AEGL	Aesculus glabra
AEHI	Aesculus hippocastanum
AEOC	Aesculus octandra
AEPA	Aesculus pavia
AGFL	Agonis flexuosa
AGVI14	Agathis vitiensis
AIAL	Ailanthus altissima
AL	Alnus species
ALAR	Aloe arborescens
ALCO2	Alnus cordata
ALFA	Falcataria moluccana
ALGL	Alnus glutinosa
ALJU	Albizia julibrissin
ALLE	Albizia lebbbeck

ALMO	<i>Aleurites moluccana</i>
ALRH	<i>Alnus rhombifolia</i>
ALRU2	<i>Alnus rubra</i>
AM	<i>Amelanchier</i> species
AMAR	<i>Amelanchier arborea</i>
AMCA	<i>Amelanchier canadensis</i>
AMNO4	<i>Amherstia nobilis</i>
	<i>Amelanchier</i> x <i>grandiflora</i> 'Autumn Brilliance'
AMUT	
ANCH4	<i>Annona cherimola</i>
ANIM	<i>Andira inermis</i>
ANMU	<i>Annona muricata</i>
ANRE	<i>Annona reticulata</i>
ANSQ	<i>Annona squamosa</i>
ARAL	<i>Archontophoenix alexandrae</i>
ARAL2	<i>Artocarpus altilis</i>
ARAR	<i>Araucaria araucana</i>
ARBI	<i>Araucaria bidwillii</i>
ARCO24	<i>Araucaria columnaris</i>
ARCU	<i>Archontophoenix cunninghamiana</i>
AREX	<i>Araucaria excelsa</i>
ARHE	<i>Araucaria heterophylla</i>
ARHE2	<i>Artocarpus heterophyllus</i>
ARMA2	<i>Arbutus</i> var. <i>marina</i>
ARME	<i>Arbutus menziesii</i>
ARRO	<i>Arecastrum romanzoffianum</i>
ARSP	<i>Aralia spinosa</i>
ARUN	<i>Arbutus unedo</i>
ASTR	<i>Asimina triloba</i>
AU1	<i>Aucuba</i> species
AVBI	<i>Averrhoa bilimbi</i>
AVCA	<i>Averrhoa carambola</i>
AZIN2	<i>Azadirachta indica</i>
BA	Bamboo species
BA13	<i>Bauhinia</i> species
BABL	<i>Bauhinia</i> x <i>blakeana</i>
BAFO	<i>Bauhinia forficata</i>
BAHO3	<i>Bauhinia hookeri</i>
BAPU	<i>Bauhinia purpurea</i>
BAVA	<i>Bauhinia variegata</i>
BDL	
OTHER	Broadleaf Deciduous Large Other
BDL	
OTHER	Broadleaf Deciduous Large
BDM	
OTHER	Broadleaf Deciduous Medium Other
BDM	
OTHER	Broadleaf Deciduous Medium
BDS	Broadleaf Deciduous Small Other

OTHER	
BDS	
OTHER	Broadleaf Deciduous Small
BE	Betula species
BEAL	Betula alleghaniensis
BEAL2	Betula albo-sinensis
BEL	
OTHER	Broadleaf Evergreen Large Other
BEL	
OTHER	Broadleaf Evergreen Large
BELE	Betula lenta
BEM	
OTHER	Broadleaf Evergreen Medium Other
BEM	
OTHER	Broadleaf Evergreen Medium
BENI	Betula nigra
BEPA	Betula papyrifera
BEPE	Betula pendula
BEPEGR	Betula pendula 'Gracilis'
BEPL2	Betula platyphylla
BEPO	Betula populifolia
BERE	Beaucarnea recurvata
BES	
OTHER	Broadleaf Evergreen Small Other
BES	
OTHER	Broadleaf Evergreen Small
BEUT2	Betula utilis
BIJA	Bischofia javanica
BINO	Bismarckia nobilis
BIOR	Bixa orellana
BO9	Bougainvillea species
BOSP	Bougainvillea spectabilis
BOSP8	Bolusanthus speciosus
BR	Brahea species
BRAC	Schefflera actinophylla
BRAC2	Brachychiton acerifolius
BRAR	Brahea armata
BRBR	Brahea brandegeei
BRDI9	Brachychiton discolor
BRED	Brahea edulis
BRPA	Broussonetia papyrifera
BRPO	Brachychiton populneus
BRSU	Brugmansia suaveolens
BUBU	Bucida buceras
BUCA	Butia capitata
BUDA2	Buddleja davidii
BUSP	Buxus species
CA1	Carya species
CA3	Catalpa species

CA4	<i>Castanea species</i>
CA40	<i>Carpinus species</i>
CABE	<i>Carpinus betulus</i>
CABEF	<i>Carpinus betulus</i> 'Fastigiata'
CABE_F	<i>Carpinus betulus</i> 'Fastigiata'
CABI	<i>Catalpa bignonioides</i>
CABI2	<i>Cassia bicapsularis</i>
CACA	<i>Carpinus caroliniana</i>
CACA3	<i>Calodendrum capense</i>
CACA73	<i>Calycophyllum candidissimum</i>
CACI	<i>Callistemon citrinus</i>
CACO	<i>Carya cordiformis</i>
CACU8	<i>Casuarina cunninghamiana</i>
CADE	<i>Castanea dentata</i>
CADE2	<i>Calocedrus decurrens</i>
CAED	<i>Casimiroa edulis</i>
CAEQ	<i>Casuarina equisetifolia</i>
CAER	<i>Catalpa erubescens</i>
CAEX	<i>Cassia excelsa</i>
CAFI	<i>Cassia fistula</i>
CAGL	<i>Carya glabra</i>
CAGR11	<i>Cassia grandis</i>
CAIL	<i>Carya illinoensis</i>
CAIL	<i>Carya illinoensis</i>
CAIN4	<i>Calophyllum inophyllum</i>
CAJA	<i>Carpinus japonica</i>
CAJA9	<i>Camellia japonica</i>
CALA	<i>Carya laciniata</i>
CALE	<i>Cassia leptophylla</i>
CALO	<i>Catalpa longissima</i>
CAMA37	<i>Carissa macrocarpa</i>
CAME	<i>Caesalpinia mexicana</i>
CAMI36	<i>Caryota mitis</i>
CAMO	<i>Castanea mollissima</i>
CANE33	<i>Cassia x nealiae</i>
CAOV	<i>Carya ovata</i>
CAOV2	<i>Carya ovalis</i>
CAPA3	<i>Carica papaya</i>
CAPU	<i>Castanea pumila</i>
CAPU13	<i>Caesalpinia pulcherrima</i>
CARI9	<i>Callistemon rigidus</i>
CARO	<i>Cassia javanica</i>
CASA	<i>Camellia sasanqua</i>
CASA5	<i>Callistemon salignus</i>
CASP	<i>Catalpa speciosa</i>
CASSI	<i>Cassia species</i>
CAST	<i>Casuarina stricta</i>
CASU34	<i>Calliandra schultzei</i>
CATE	<i>Carya texana</i>

CATO	<i>Carya alba</i>
CATO	<i>Carya tomentosa</i>
CATW	<i>Calliandra tweedii</i>
CAVI	<i>Callistemon viminalis</i>
CE2	<i>Celtis species</i>
CE7	<i>Cedrus species</i>
CEAT	<i>Cedrus atlantica</i>
CEAU	<i>Celtis australis</i>
CECA	<i>Cercis canadensis</i>
CEDE	<i>Cedrus deodara</i>
CEFL	<i>Parkinsonia florida</i>
CEJA	<i>Cercidiphyllum japonicum</i>
CEL	
OTHER	Conifer Evergreen Large Other
CEL	
OTHER	Conifer Evergreen Large
CELA	<i>Celtis laevigata</i>
CEM	
OTHER	Conifer Evergreen Medium Other
CEM	
OTHER	Conifer Evergreen Medium
CEMI	<i>Parkinsonia microphylla</i>
CEOC	<i>Celtis occidentalis</i>
CEOC3	<i>Cercis canadensis</i> var. <i>texensis</i>
CEPR	<i>Cercidium praecox</i>
CERE	<i>Celtis reticulata</i>
CERE2	<i>Cercis reniformis</i>
CES	
OTHER	Conifer Evergreen Small Other
CES	
OTHER	Conifer Evergreen Small
CESI2	<i>Cercis siliquastrum</i>
CESI3	<i>Ceratonia siliqua</i>
CESI4	<i>Celtis sinensis</i>
CETH	<i>Ceanothus thyrsiflorus</i>
CH	<i>Chamaecyparis species</i>
CH31	<i>Chitalpa species</i>
CHFU	<i>Cupressus funebris</i>
CHHU	<i>Chamaerops humilis</i>
CHLA2	<i>Chamaecyparis lawsoniana</i>
CHLI	<i>Chilopsis linearis</i>
CHLU	<i>Dyopsis lutescens</i>
CHNO	<i>Chamaecyparis nootkatensis</i>
CHOB	<i>Chamaecyparis obtusa</i>
CHOL	<i>Chrysophyllum oliviforme</i>
CHPI	<i>Chamaecyparis pisifera</i>
CHRE	<i>Chionanthus retusus</i>
CHSP	<i>Chorisia speciosa</i>
CHTA	<i>Chitalpa tashkentensis</i>

CHTH	<i>Chamaecyparis thyoides</i>
CHVI	<i>Chionanthus virginicus</i>
CIAU	<i>Citrus aurantifolia</i>
CIAU2	<i>Citrus aurantium</i>
CICA	<i>Cinnamomum camphora</i>
CIGR	<i>Citrus maxima</i>
CILI	<i>Citrus limon</i>
CIPA	<i>Citrus x paradisi</i>
CIRE3	<i>Citrus reticulata</i>
CISI	<i>Citrus sinensis</i>
CISP	<i>Citrus species</i>
CISP2	<i>Citharexylum spinosum</i>
CIVE2	<i>Cinnamomum verum</i>
CL6	<i>Clerodendrum species</i>
CLLU	<i>Cladrastis kentukea</i>
CLLU	<i>Cladrastis lutea</i>
CLQU	<i>Clerodendrum quadriloculare</i>
CLRO	<i>Clusia rosea</i>
CLTR	<i>Clerodendrum trichotomum</i>
CO1	<i>Cornus species</i>
CO2	<i>Corylus species</i>
COAL	<i>Cornus alternifolia</i>
COAM	<i>Corylus americana</i>
COAU	<i>Cordyline australis</i>
COBU	<i>Cotoneaster buxifolius</i>
COCI	<i>Corymbia citriodora</i>
COCO1	<i>Cotinus coggygria</i>
COCO2	<i>Corylus colurna</i>
COERA2	<i>Conocarpus erectus</i> var. <i>argenteus</i>
COFL	<i>Cornus florida</i>
COKO	<i>Cornus kousa</i>
COLA	<i>Cocculus laurifolius</i>
COLA18	<i>Cotoneaster lacteus</i>
COMA	<i>Cornus mas</i>
COMA2	<i>Corylus maxima</i> var. <i>purpurea</i>
CONU	<i>Cocos nucifera</i>
CONU2	<i>Cornus nuttallii</i>
COOB	<i>Cotinus obovatus</i>
COPR	<i>Copernicia prunifera</i>
CORA	<i>Cornus racemosa</i>
CORA13	<i>Colvillea racemosa</i>
COSE2	<i>Cordia sebestena</i>
COSU2	<i>Cordia subcordata</i>
COUT	<i>Corypha utan</i>
COUV	<i>Coccoloba uvifera</i>
COVI	<i>Cochlospermum vitifolium</i>
CR	<i>Crataegus species</i>
CRCR	<i>Crataegus crus-galli</i>
CRCRI	<i>Crataegus crus-galli</i> 'Inermis'

CRCU	<i>Crescentia cujete</i>
CRDO	<i>Crataegus douglasii</i>
CRJA	<i>Cryptomeria japonica</i>
CRLA	<i>Crataegus x lavalleyi</i>
CRLA80	<i>Crataegus laevigata</i>
CRMO2	<i>Crataegus mollis</i> 'Scheele'
CROX	<i>Crataegus monogyna</i>
CRPA	<i>Crinodendron patagua</i>
CRPH	<i>Crataegus phaenopyrum</i>
CRRU	<i>Cryptocarya rubra</i>
CRVI	<i>Crataegus viridis</i> 'Winter King'
CRVI	<i>Crataegus viridis</i>
CU	<i>Cupressus species</i>
CUAN	<i>Cupaniopsis anacardioides</i>
CUAR	<i>Cupressus arizonica</i>
CUGU	<i>Cupressus guadalupensis</i>
CULA	<i>Cunninghamia lanceolata</i>
CULE	<i>x Cupressocyparis leylandii</i>
CULE2	<i>x Cupressocyparis leylandii</i>
CUMA	<i>Cupressus macrocarpa</i>
CUSE	<i>Cupressus sempervirens</i>
CYCI	<i>Cycas circinalis</i>
CYOB	<i>Cydonia oblonga</i>
CYRE11	<i>Cycas revoluta</i>
CYSC4	<i>Cytisus scoparius</i>
DA2	<i>Dalbergia species</i>
DAIM	<i>Dahlia imperialis</i>
DASI	<i>Dalbergia sissoo</i>
DERE	<i>Delonix regia</i>
DIKA	<i>Diospyros kaki</i>
DIVI	<i>Diospyros virginiana</i>
DOVI	<i>Dodonaea viscosa</i>
DR	<i>Dracaena species</i>
DRDR	<i>Dracaena draco</i>
DUER	<i>Duranta erecta</i>
DYDE2	<i>Dyopsis decaryi</i>
EBEB	<i>Ebenopsis ebano</i>
EL1	<i>Elaeagnus species</i>
ELAN	<i>Elaeagnus angustifolia</i>
ELDE	<i>Elaeocarpus decipiens</i>
ELOR2	<i>Elaeodendron orientale</i>
ELUM	<i>Elaeagnus umbellata</i>
ENCY	<i>Enterolobium cyclocarpum</i>
ER15	<i>Erythrina species</i>
ERBI	<i>Erythrina bidwillii</i>
ERCA	<i>Erythrina caffra</i>
ERCO	<i>Erythrina coralloides</i>
ERCR	<i>Erythrina crista-galli</i>
ERDE	<i>Eriobotrya deflexa</i>

ERJA	<i>Eriobotrya japonica</i>
ERLY	<i>Erythrina lysistemon</i>
ERSA11	<i>Erythrina sandwicensis</i>
ERVA7	<i>Erythrina variegata</i>
ERVAO	<i>Erythrina variegata</i> v. <i>orientalis</i>
EU1	<i>Eucalyptus</i> species
EUCA1	<i>Eucalyptus camaldulensis</i>
EUCI	<i>Eucalyptus cinerea</i>
EUCI2	<i>Eucalyptus citriodora</i>
EUCL	<i>Eucalyptus cladocalyx</i>
EUCO24	<i>Euphorbia cotinifolia</i>
EUCO3	<i>Eucalyptus cornuta</i>
EUCR	<i>Eucalyptus crebra</i>
EUDE	<i>Eucalyptus deglupta</i>
EUER	<i>Eucalyptus erythrocorys</i>
EUF181	<i>Eucalyptus ficifolia</i>
EUGL	<i>Eucalyptus globulus</i>
EUGLCO	<i>Eucalyptus globulus</i> var <i>compacta</i>
EUGR	<i>Eucalyptus grandis</i>
EUGU	<i>Eucalyptus gunnii</i>
EULE	<i>Eucalyptus leucoxylon</i>
EULE2	<i>Eucalyptus lehmannii</i>
EUMA	<i>Eucalyptus macrocarpa</i>
EUMA23	<i>Eucalyptus maculata</i>
EUMI2	<i>Eucalyptus microtheca</i>
EUNI	<i>Eucalyptus nicholii</i>
EUNY	<i>Eucryphia</i> x <i>nymansensis</i> 'Nymansay'
EUPA2	<i>Syzygium paniculatum</i>
EUPA26	<i>Eucalyptus parvula</i>
EUPO	<i>Eucalyptus polyanthemus</i>
EURO	<i>Eucalyptus robusta</i>
EURU	<i>Eucalyptus rudis</i>
EUSA	<i>Eucalyptus saligna</i>
EUSI	<i>Eucalyptus sideroxylon</i>
EUSM	<i>Syzygium smithii</i>
EUSM	<i>Eugenia smithii</i>
EUSP	<i>Euonymus</i> species
EUSP	<i>Eucalyptus spathulata</i>
EUTE	<i>Eucalyptus tereticornis</i>
EUTI	<i>Euphorbia tirucalli</i>
EUTO11	<i>Eucalyptus torquata</i>
EUUL	<i>Eucommia ulmoides</i>
EUUN2	<i>Eugenia uniflora</i>
EUVI	<i>Eucalyptus viminalis</i>
FA	<i>Fagus</i> species
FABE	<i>Fagraea berteriana</i>
FAGR	<i>Fagus grandifolia</i>
FASY	<i>Fagus sylvatica</i>
FASYAT	<i>Fagus sylvatica</i> 'Atropunicea'

FASYP	Fagus sylvatica 'Purpurea'
FE	Feijoa species
FESE	Feijoa sellowiana
FI1	Ficus species
FIAL5	Ficus binnendijkii
FIBE	Ficus benjamina
FIBE2	Ficus benghalensis
FICA	Ficus carica
FIDE6	Filicium decipiens
FIEL	Ficus elastica
FILY	Ficus lyrata
FIMA2	Ficus macrophylla
FIMI	Ficus thonningii
FIMI2	Ficus microcarpa
FIMINI	Ficus microcarpa nitida var 'Green Gem'
FIRE3	Ficus religiosa
FIRE4	Ficus retusa ssp. nitida
FIRU	Ficus rubiginosa
FISI	Firmiana simplex
FIVI3	Ficus virens
FIWA	Ficus watkinsiana
FOIN3	Forsythia x intermedia
FOPU2	Forestiera pubescens
FORS	Forsythia species
FR	Fraxinus species
FRAM	Fraxinus americana
FRAMAA	Fraxinus americana 'Autumn Applause'
FRAMCC	Fraxinus americana 'Champaign County'
FRAM_A	Fraxinus americana 'Autumn Purple'
FRAM_R	Fraxinus americana 'Rosehill'
FRAN2	Fraxinus angustifolia
FRANR	Fraxinus oxycarpa 'Raywood'
FRAN_R	Fraxinus angustifolia 'Raywood'
FRBE	Fraxinus berlandieriana
FRCA	Fraxinus caroliniana
FRCA6	Fremontodendron californicum
FREX	Fraxinus excelsior
FREXH	Fraxinus excelsior 'Hessei'
FREX_H	Fraxinus excelsior 'Hessei'
FREX_K	Fraxinus excelsior 'Kimberly'
FRHO	Fraxinus holotricha
FRLA	Fraxinus latifolia
FRMA	Fraxinus mandshurica
FRME2	Fremontodendron mexicanum
FRNI	Fraxinus nigra
FROR	Fraxinus ornus
FROR2	Fraxinus oregona
FROX	Fraxinus oxycarpa
FROXA	Fraxinus oxycarpa 'Aureafolia'

FROX_F	Fraxinus oxycarpa 'Flame'
FRPE	Fraxinus pennsylvanica
FRPE2	Fraxinus pennsylvanica 'Patmore'
FRPE3	Fraxinus pennsylvanica 'Marshall'
FRPEM	Fraxinus pennsylvanica 'Marshall'
FRPES	Fraxinus pennsylvanica 'Summit'
FRPESG	Fraxinus pennsylvanica 'Sherwood Glen'
FRPE_M	Fraxinus pennsylvanica 'Marshall'
FRPE_P	Fraxinus pennsylvanica 'Patmore'
FRPE_S	Fraxinus pennsylvanica 'Summit'
FRQU	Fraxinus quadrangulata
FRUH	Fraxinus uhdei
FRVE	Fraxinus velutina
FRVEG	Fraxinus velutina 'Modesto'
FRVE_FW	Fraxinus velutina 'Fan West'
FRVE_G	Fraxinus velutina 'Modesto'
GA2	Gardenia species
GAEL	Garrya elliptica
GEPA	Geijera parviflora
GIBI	Ginkgo biloba
GIBI(F)	Ginkgo biloba, female
GIBIF2	Ginkgo biloba 'Fastigiata'
GIBI_AG	Ginkgo biloba 'Autumn Gold'
GIBI_F	Ginkgo biloba 'Fairmont'
GL3	Gleditsia species
GLCA	Gleditsia caspica
GLTR	Gleditsia triacanthos
GLTRI	Gleditsia triacanthos 'Imperial'
GLTRIN	Gleditsia triacanthos inermis
GLTRS	Gleditsia triacanthos 'Shademaster'
GLTRS1	Gleditsia triacanthos 'Sunburst'
GLTR_S	Gleditsia triacanthos 'Sunburst'
GRRÖ	Grevillea robusta
GUOF	Guaiacum officinale
GYDI	Gymnocladus dioicus
HA4	Hakea species
HACA	Halesia carolina
HACA3	Harpephyllum caffrum
HADI	Halesia diptera
HALA	Hakea laurina
HAPE7	Harpullia pendula
HASU	Hakea suaveolens
HAVI	Hamamelis virginiana
HEAR	Heteromeles arbutifolia
HELI9	Heritiera littoralis
HENY	Hernandia nymphaeifolia
HIMO	Hibiscus moscheutos
HIMU3	Hibiscus mutabilis
HISP	Hibiscus species

HISY	Hibiscus syriacus
HITI	Hibiscus tiliaceus
HUCR	Hura crepitans
HYFL	Hymenosporum flavum
HYLA	Hyophorbe lagenicaulis
HYLA15	Hyophorbe lagenicaulis
HYVE9	Hyophorbe verschaffeltii
ILAL	Ilex altaclarensis
ILAQ	Ilex aquifolium
ILAT	Ilex x attenuata
ILCA	Ilex cassine
ILCO2	Ilex cornuta
ILMY	Ilex myrtifolia
ILOP	Ilex opaca
ILOP_S	Ilex opaca x attenuata 'Savannah'
ILPA2	Ilex paraguariensis
ILSP	Ilex species
ILVO	Ilex vomitoria
JA6	Jasminum species
JAIN	Jatropha integerrima
JAMI	Jacaranda mimosifolia
JU	Juniperus species
JU1	Juglans species
JUCA1	Juniperus californica
JUCA2	Juglans californica
JUCH	Juniperus chinensis
JUCHS6	Juniperus chinensis 'Torulosa'
JUCI	Juglans cinerea
JUCO1	Juniperus communis
JUCO3	Juniperus conferta
JUHI	Juglans hindsii
JUMO	Juniperus monosperma
JUNI	Juglans nigra
JUOC	Juniperus occidentalis
JUPR	Juniperus procumbens
JURE	Juglans regia
JUSC	Juniperus scopulorum
JUSI	Juniperus virginiana var. silicicola
JUVI	Juniperus virginiana
KOBI	Koelreuteria bipinnata
KOEL	Koelreuteria elegans
KOELFO	Koelreuteria elegans
KOPA	Koelreuteria paniculata
KOPA_F	Koelreuteria paniculata 'Fastigiata'
LA10	Larix species
LA6	Lagerstroemia species
LA6_M	Lagerstroemia x 'Muskogee'
LA6_N	Lagerstroemia x 'Natchez'
LA6_T1	Lagerstroemia x 'Tuscarora'

LA6_T2	Lagerstroemia x 'Tuskegee'
LAAN2	Laburnum anagyroides
LADE	Larix decidua
LADEWPE	Larix decidua 'Pendula'
LAIN	Lagerstroemia indica
LANO	Laurus nobilis
LAPA	Lagunaria patersonii
LASP	Lagerstroemia speciosa
LAWA	Laburnum x watereri
LE14	Leptospermum species
LELA12	Leptospermum laevigatum
LELE	Leucaena leucocephala
LICH	Livistona chinensis
LICH4	Litchi chinensis
LIDE	Lithocarpus densiflorus
LIDE2	Livistona decipiens
LIFO	Liquidambar formosana
LIJA	Ligustrum japonicum
LILU	Ligustrum lucidum
LIOR	Liquidambar orientalis
LIOV	Ligustrum ovalifolium
LISI	Ligustrum sinense
LISP	Ligustrum species
LIST	Liquidambar styraciflua
LITU	Liriodendron tulipifera
LOGO	Gordonia lasianthus
LOSP	Lonicera species
LYAS	Lyonothamnus f. asplenifol
LYFL	Lyonothamnus floribundus
LYMI	Lysiloma microphylla
LYRA	Lycianthes rantonnei
MA1	Magnolia species
MA2	Malus species
MAAC	Magnolia acuminata
MAAM	Maackia amurensis
MAAM9	Maackia amurensis
MABE	Mahonia bealei
MABO	Maytenus boaria
MADE	Magnolia denudata
MAFL80	Malus floribunda
MAGR	Magnolia grandiflora
MAGR_L	Magnolia grandiflora 'Little Gem'
MAHA	Malus 'Harvest Gold'
MAIN	Mangifera indica
MAIN8	Macadamia integrifolia
MAIO	Malus ioensis var. plena
MALA6	Malosma laurina
MAMA	Magnolia macrophylla
MAPO	Maclura pomifera

MAPU	<i>Malus pumila</i>
MAPUEL	<i>Malus x purpurea</i> var <i>eleyi</i>
MAPY	<i>Magnolia soulangiana</i>
MASO	<i>Magnolia x soulangiana</i>
MASO_G	<i>Magnolia soulangiana</i> 'Galaxy'
MAST	<i>Magnolia stellata</i>
MASY2	<i>Malus sylvestris</i>
MATE	<i>Macadamia tetraphylla</i>
MATI	<i>Tipuana tipu</i>
MATR	<i>Magnolia tripetala</i>
MATS	<i>Malus tschonoskii</i>
MAVI	<i>Magnolia virginiana</i>
MAZA	<i>Manilkara zapota</i>
MEAR	<i>Melaleuca armillaris</i>
MEAZ	<i>Melia azedarach</i>
MEEX	<i>Metrosideros excelsa</i>
MEEX	<i>Metrosideros excelsus</i>
MEGL	<i>Metasequoia glyptostroboides</i>
MELE	<i>Melaleuca leucadendra</i>
MELI7	<i>Melaleuca linariifolia</i>
MENE	<i>Melaleuca nesophila</i>
MEPO5	<i>Metrosideros polymorpha</i>
MEQU	<i>Melaleuca quinquenervia</i>
MEST	<i>Melaleuca styphelioides</i>
MICA21	<i>Mimusops caffra</i>
MO	<i>Morus species</i>
MOAL	<i>Morus alba</i>
MOAR	<i>Montanoa arborescens</i>
MOCI3	<i>Morinda citrifolia</i>
MONI	<i>Morus nigra</i>
MOOL	<i>Moringa oleifera</i>
MORU	<i>Morus rubra</i>
MU5	<i>Musa species</i>
MUPA	<i>Murraya exotica</i>
MUPA3	<i>Musa x paradisiaca</i>
MUPA4	<i>Murraya paniculata</i>
MYCA	<i>Morella californica</i>
MYCE	<i>Morella cerifera</i>
MYCE	<i>Myrica cerifera</i>
MYCO	<i>Myrtus communis</i>
MYLA	<i>Myoporum laetum</i>
NEOL	<i>Nerium oleander</i>
NIGL	<i>Nicotiana glauca</i>
NOEM	<i>Noronhia emarginata</i>
NYSY	<i>Nyssa sylvatica</i>
OCEL	<i>Ochrosia elliptica</i>
OCSE2	<i>Ochna serrulata</i>
OLEU	<i>Olea europaea</i>
OLEU2	<i>Olea europaea</i> 'Swan Hill'

OLTE	<i>Olneya tesota</i>
OPFI	<i>Opuntia ficus-indica</i>
ORCO9	<i>Orbignya cohune</i>
OSFR	<i>Osmanthus fragrans</i>
OSVI	<i>Ostrya virginiana</i>
OTHER	Other
OXAR	<i>Oxydendrum arboreum</i>
PA19	<i>Paulownia species</i>
PAAC	<i>Parkinsonia aculeata</i>
PACE8	<i>Parmentiera cereifera</i>
PALO8	<i>Paraserianthes lophantha</i>
PAPE	<i>Parrotia persica</i>
PASP	<i>Palm species</i>
PATE2	<i>Pandanus tectorius</i>
PATO	<i>Paulownia tomentosa</i>
PEAM	<i>Persea americana</i>
PEBO	<i>Persea borbonia</i>
PEL OTHER	Palm Evergreen Large Other
PEL OTHER	Palm Evergreen Large
PEM	
OTHER	Palm Evergreen Medium Other
PEM	
OTHER	Palm Evergreen Medium
PEPT	<i>Peltophorum pterocarpum</i>
PES OTHER	Palm Evergreen Small Other
PES OTHER	Palm Evergreen Small
PH18	<i>Phyllostachys species</i>
PH7	<i>Phoenix species</i>
PHAM	<i>Phellodendron amurense</i>
PHCA	<i>Phoenix canariensis</i>
PHDA4	<i>Phoenix dactylifera</i>
PHFR	<i>Photinia x fraseri</i>
PHRE	<i>Phoenix reclinata</i>
PHRO	<i>Phoenix roebelenii</i>
PHSE	<i>Photinia serratifolia</i>
PHSP2	<i>Photinia species</i>
PHSY	<i>Phoenix sylvestris</i>
PI1	<i>Picea species</i>
PI2	<i>Pinus species</i>
PI23	<i>Pittosporum species</i>
PIAB	<i>Picea abies</i>
PIAR	<i>Pinus aristata</i>
PIAR9	<i>Pittosporum arborescens</i>
PIAS	<i>Picea asperata</i>
PIAT	<i>Pinus attenuata</i>
PIAT4	<i>Pistacia atlantica</i>
PIBA	<i>Pinus banksiana</i>
PIBR2	<i>Pinus brutia</i>
PICA	<i>Pinus canariensis</i>

PICE	<i>Pinus cembroides</i>
PICE2	<i>Pinus cembra</i>
PICH	<i>Pistacia chinensis</i>
PICH_PS	<i>Pistacia chinensis</i> 'Pearl Street'
PICL	<i>Pinus clausa</i>
PICO	<i>Pinus contorta</i>
PICO2	<i>Pinus coulteri</i>
PICO5	<i>Pinus contorta</i> var. <i>bolanderi</i>
PICO5	<i>Pinus contorta</i>
PICO6	<i>Pinus contorta</i> var. <i>latifolia</i>
PICR	<i>Pittosporum crassifolium</i>
PIDE	<i>Pinus densiflora</i>
PIDI3	<i>Pimenta dioica</i>
PIDU	<i>Pithecellobium dulce</i>
PIEC	<i>Pinus echinata</i>
PIED	<i>Pinus edulis</i>
PIEL	<i>Pinus elliottii</i>
PIEL2	<i>Pinus elliottii</i>
PIEL2	<i>Pinus eldarica</i>
PIEN	<i>Picea engelmannii</i>
PIEU	<i>Pittosporum eugenioides</i>
PIFE	<i>Pittosporum ferrugineum</i>
PIFL	<i>Pinus flexilis</i>
PIGL1	<i>Picea glauca</i>
PIGL2	<i>Pinus glabra</i>
PIHA	<i>Pinus halepensis</i>
PIMA	<i>Picea mariana</i>
PIMO3	<i>Pinus monticola</i>
PIMU	<i>Pinus mugo</i>
PIMU2	<i>Pinus muricata</i>
PINI	<i>Pinus nigra</i>
PIOM	<i>Picea omorika</i>
PIOR	<i>Picea orientalis</i>
PIPA	<i>Pinus palustris</i>
PIPA4	<i>Pinus patula</i>
PIPE8	<i>Pittosporum pentandrum</i>
PIPH2	<i>Pittosporum phillyraeoides</i>
PIPI2	<i>Pinus pinea</i>
PIPI6	<i>Pinus pinaster</i>
PIPO	<i>Pinus ponderosa</i>
PIPU	<i>Picea pungens</i>
PIPUGL	<i>Picea pungens</i> 'Glauca'
PIRA	<i>Pinus radiata</i>
PIRA2	<i>Pimenta racemosa</i>
PIRE	<i>Pinus resinosa</i>
PIRH	<i>Pittosporum rhombifolium</i>
PIRI	<i>Pinus rigida</i>
PIRO	<i>Pinus roxburghii</i>
PIRU	<i>Picea rubens</i>

PISA2	<i>Samanea saman</i>
PISE	<i>Pinus serotina</i>
PISI	<i>Picea sitchensis</i>
PIST	<i>Pinus strobus</i>
PIST2	<i>Pinus strobiformis</i>
PISY	<i>Pinus sylvestris</i>
PITA	<i>Pinus taeda</i>
PITH	<i>Pinus thunbergiana</i>
PITO	<i>Pittosporum tobira</i>
PITO2	<i>Pinus torreyana</i>
PIUN	<i>Pittosporum undulatum</i>
PIVI	<i>Pinus virginiana</i>
PIV15	<i>Pittosporum viridiflorum</i>
PIWA3	<i>Pinus wallichiana</i>
PL13	<i>Plumeria species</i>
PL3	<i>Platanus species</i>
PLAC	<i>Platanus hybrida</i>
PLAC	<i>Platanus x acerifolia</i>
PLAC	<i>Platanus acerifolia</i>
PLAC1	<i>Plumeria acuminata</i>
PLAC_B	<i>Platanus acerifolia</i> 'Bloodgood'
PLAC_C	<i>Platanus acerifolia</i> 'Columbia'
PLOC	<i>Platanus occidentalis</i>
PLOR	<i>Platanus orientalis</i>
PLOR80	<i>Platycladus orientalis</i>
PLPI4	<i>Platymiscium pinnatum</i>
PLRA	<i>Platanus racemosa</i>
PLWR	<i>Platanus wrightii</i>
PO	<i>Populus species</i>
PO3	<i>Podocarpus species</i>
POAC5	<i>Populus x acuminata</i>
POAL	<i>Populus alba</i>
POALPY	<i>Populus alba</i> 'Pyramidalis'
POAN	<i>Populus angustifolia</i>
POBA	<i>Populus balsamifera</i>
POBAB2	<i>Populus balsamifera</i> ssp. <i>balsamifera</i>
POCA	<i>Populus x canescens</i>
POCA2	<i>Populus x canadensis</i>
PODE	<i>Populus deltoides</i>
POFR	<i>Populus fremontii</i>
POGR	<i>Populus grandidentata</i>
POGR2	<i>Podocarpus gracilior</i>
POHE2	<i>Podocarpus henkelii</i>
POLO21	<i>Polyalthia longifolia</i>
POMA	<i>Podocarpus macrophyllus</i>
PONA	<i>Podocarpus nagi</i>
PONE21	<i>Podocarpus neriifolius</i>
PONI	<i>Populus nigra</i>
PONIIT	<i>Populus nigra</i> 'Italica'

POPI	<i>Derris indica</i>
POSA	<i>Populus sargentii</i>
POTR1	<i>Populus tremuloides</i>
POTR2	<i>Populus balsamifera</i> ssp. <i>trichocarpa</i>
POTR2	<i>Populus trichocarpa</i>
POUS2	<i>Podocarpus usambarensis</i>
PR	<i>Prunus</i> species
PR	<i>Prunus</i> species
PR2	<i>Prestoea</i> species
PR6	<i>Prosopis</i> species
PRAL2	<i>Prosopis alba</i>
PRAM	<i>Prunus americana</i>
PRAM2	<i>Prunus amygdalus</i>
PRAN	<i>Prunus angustifolia</i>
PRAR	<i>Prunus armeniaca</i>
PRAV	<i>Prunus avium</i>
PRBL	<i>Prunus blireiana</i>
PRCA	<i>Prunus caroliniana</i>
PRCA2	<i>Prunus campanulata</i>
PRCE	<i>Prunus cerasifera</i>
PRCEKV	<i>Prunus cerasifera</i> 'Krauter Vesuvius'
PRCEKW	<i>Prunus cerasifera</i> 'Thundercloud'
PRCH	<i>Prosopis chilensis</i>
PRCI	<i>Prunus</i> x <i>cistena</i>
PRDO	<i>Prunus domestica</i>
PRDU	<i>Prunus dulcis</i>
PRGL2	<i>Prosopis glandulosa</i>
PRHAJO	<i>Prunus</i> 'Hally Jolivette'
PRIL	<i>Prunus ilicifolia</i>
PRLA	<i>Prunus laurocerasus</i>
PRLY	<i>Prunus ilicifolia</i> ssp. <i>lyonii</i>
PRMA	<i>Prunus maackii</i>
PRPA	<i>Prunus padus</i>
PRPA11	<i>Pritchardia pacifica</i>
PRPA2	<i>Prosopis pallida</i>
PRPE1	<i>Prunus pensylvanica</i>
PRPE2	<i>Prunus persica</i>
PRPI	<i>Prunus pissardii</i>
PRPU2	<i>Prosopis pubescens</i>
PRSA	<i>Prunus sargentii</i>
PRSE1	<i>Prunus serotina</i>
PRSE2	<i>Prunus serrulata</i>
PRSE2	<i>Prunus shrubs</i>
PRSEAM	<i>Prunus serrulata</i> 'Amanogawa'
PRSESH	<i>Prunus serrulata</i> 'Shirofugen'
PRSESO	<i>Prunus serrulata</i> 'Shirotae'
PRSU	<i>Prunus subhirtella</i>
PRTO	<i>Prunus tomentosa</i>
PRTR	<i>Prunus triloba</i>

PRVE	<i>Prosopis velutina</i>
PRVI	<i>Prunus virginiana</i>
PRVISH	<i>Prunus virginiana</i> 'Schubert'
PRYE	<i>Prunus yedoensis</i>
PSCA	<i>Psidium cattleianum</i>
PSEL5	<i>Pseudobombax ellipticum</i>
PSGU	<i>Psidium guajava</i>
PSME	<i>Pseudotsuga menziesii</i>
PTCO	<i>Pterostyrax corymbosa</i>
PTIN	<i>Pterocarpus indicus</i>
PTMA8	<i>Ptychosperma macarthurii</i>
PTST	<i>Pterocarya stenoptera</i>
PTTR	<i>Ptelea trifoliata</i>
PUGR	<i>Punica granatum</i>
PY	<i>Pyrus species</i>
PYAN	<i>Malus angustifolia</i>
PYCA	<i>Pyrus calleryana</i>
PYCAA	<i>Pyrus calleryana</i> 'Aristocrat'
PYCAAR	<i>Pyrus calleryana</i> 'Aristocrat'
PYCACL	<i>Pyrus calleryana</i> 'Cleveland'
PYCA_A	<i>Pyrus calleryana</i> 'Aristocrat'
PYCA_B	<i>Pyrus calleryana</i> 'Bradford'
PYCA_C	<i>Pyrus calleryana</i> 'Capital'
PYCA_CH	<i>Pyrus calleryana</i> 'Chanticleer'
PYCA_R	<i>Pyrus calleryana</i> 'Redspire'
PYCA_T	<i>Pyrus calleryana</i> 'Trinity'
PYCA_W	<i>Pyrus calleryana</i> 'Whitehouse'
PYCO	<i>Pyrus communis</i>
PYCO2	<i>Pyracantha coccinea</i>
PYFA	<i>Pyrus fauriei</i>
PYIO	<i>Malus ioensis</i>
PYKA	<i>Pyrus kawakamii</i>
PYKO	<i>Pyracantha koidzumii</i>
PYSP	<i>Pyracantha species</i>
QU	<i>Quercus species</i>
QUAC	<i>Quercus acutissima</i>
QUAC2	<i>Quercus acerifolia</i>
QUAG	<i>Quercus agrifolia</i>
QUAL	<i>Quercus alba</i>
QUAL3	<i>Quercus aliena</i>
QUAU	<i>Quercus austrina</i>
QUBI	<i>Quercus bicolor</i>
QUCH	<i>Quercus chrysolepis</i>
QUCI	<i>Quercus incana</i>
QUCO	<i>Quercus coccinea</i>
QUEL	<i>Quercus ellipsoidalis</i>
QUEN	<i>Quercus engelmannii</i>
QUFA	<i>Quercus falcata</i>
QUGE	<i>Quercus georgiana</i>

QUHE	<i>Quercus hemisphaerica</i>
QUIL2	<i>Quercus ilex</i>
QUIM	<i>Quercus imbricaria</i>
QUKE	<i>Quercus kelloggii</i>
QULA	<i>Quercus laceyi</i>
QULA1	<i>Quercus laevis</i>
QULA2	<i>Quercus laurifolia</i>
QULO	<i>Quercus lobata</i>
QULY	<i>Quercus lyrata</i>
QUMA1	<i>Quercus macrocarpa</i>
QUMA2	<i>Quercus marilandica</i>
QUMI	<i>Quercus michauxii</i>
QUMU	<i>Quercus muehlenbergii</i>
QUNI	<i>Quercus nigra</i>
QUNU	<i>Quercus texana</i>
QUPA	<i>Quercus palustris</i>
QUPAFA	<i>Quercus palustris fastigiata</i>
QUPH	<i>Quercus phellos</i>
QUPR	<i>Quercus prinus</i>
QURO	<i>Quercus robur</i>
QUROF	<i>Quercus robur 'Fastigiata'</i>
QURU	<i>Quercus rubra</i>
QUSE	<i>Quercus glandulifera</i>
QUSH	<i>Quercus shumardii</i>
QUST	<i>Quercus stellata</i>
QUSU	<i>Quercus suber</i>
QUVE	<i>Quercus velutina</i>
QUVI	<i>Quercus virginiana</i>
QUWI	<i>Quercus wislizeni</i>
RAGL	<i>Ravenea glauca</i>
RAMA	<i>Ravenala madagascariensis</i>
RARI	<i>Ravenea rivularis</i>
RHCA	<i>Rhamnus cathartica</i>
RHFR	<i>Frangula alnus</i>
RHGL	<i>Rhus glabra</i>
RHIN	<i>Rhus integrifolia</i>
RHIN2	<i>Rhaphiolepis indica</i>
RHIN62	<i>Rhaphiolepis indica</i>
RHLA	<i>Rhus lancea</i>
RHOV	<i>Rhus ovata</i>
RHSP	<i>Rhus species</i>
RHSP1	<i>Rhododendron species</i>
RHSP2	<i>Rhamnus species</i>
RHTR	<i>Rhus typhina</i>
RHTY	<i>Rhus typhina</i>
RHTY	<i>Rhus hirta</i>
ROAMI	<i>Robinia x ambigua 'Idahoensis'</i>
ROBA	<i>Rosa banksiae</i>
ROPS	<i>Robinia pseudoacacia</i>

ROPS_PR	Robinia pseudoacacia 'Purple Robe'
RORE2	Roystonea regia
ROVI	Robinia viscosa
SA	Salix species
SA12	Salvia species
SAAL	Sassafras albidum
SAAL4	Salix alba
SAALT	Salix alba 'Tristis'
SAAM	Salix amygdaloides
SABA	Salix x sepulcralis Simonkai
SACA	Sambucus nigra ssp. Canadensis
SACANE	Sambucus caerulea var neomexicana
SADI	Salix discolor
SAFR	Salix fragilis
SAGR	Salix gracilistyla
SALA1	Salix lasiolepis
SALU	Salix lucida
SAMA	Salix matsudana
SAMA_T	Salix matsudana 'Tortuosa'
SAMI8	Sabal minor
SANI	Salix nigra
SANI4	Sambucus nigra
SAPA	Sabal palmetto
SAPE12	Salix babylonica
SAPE12	Salix x pendulina Wenderoth
SASC	Salix scouleriana
SC3	Schefflera species
SCMO	Schinus molle
SCPO	Schinus polygamus
SCPU18	Schefflera pueckleri
SCTE	Schinus terebinthifolius
SCVE	Sciadopitys verticillata
SEBI5	Cassia bicapsularis
SECO9	Senna corymbosa
SEGI	Sequoiadendron giganteum
SEGR5	Sesbania grandiflora
SEPU7	Sesbania punicea
SERE2	Serenoa repens
SESE	Sequoia sempervirens
SESU4	Senna surattensis
SETR	Sesbania tripetii
SIGL	Simarouba glauca
SO	Sorbus species
SOAL	Sorbus alnifolia
SOAM	Sorbus americana
SOAU	Sorbus aucuparia
SOHUCF	Sorbus hupehensis var coral fire
SOHUCQ	Sorbus hupehensis var columbia queen
SOJA	Sophora japonica

SOSE	<i>Sophora secundiflora</i>
SPCA	<i>Spathodea campanulata</i>
SPVA2	<i>Spirea</i> species
STJA	<i>Styrax japonicus</i>
STNI	<i>Strelitzia nicolai</i>
STSI	<i>Stenocarpus sinuatus</i>
SWMA	<i>Swietenia mahogani</i>
SYCO	<i>Syagrus coronata</i>
SYJA	<i>Syzygium jambos</i>
SYPA2	<i>Syzygium paniculatum</i>
SYRE	<i>Syringa reticulata</i>
SYRO	<i>Syagrus romanzoffiana</i>
SYSP	<i>Syringa</i> species
SYVU	<i>Syringa vulgaris</i>
TA	<i>Taxus</i> species
TAAR	<i>Tabebuia aurea</i>
TAAS	<i>Taxodium ascendens</i>
TAAV	<i>Tabebuia avellaneda</i>
TABA	<i>Taxus baccata</i>
TABA2	<i>Tabebuia bahamensis</i>
TABR	<i>Taxus brevifolia</i>
TACA	<i>Taxus canadensis</i>
TACH	<i>Tabebuia chrysantha</i>
TACH	<i>Tabebuia ochracea</i> subsp. <i>neochrysantha</i>
TACH2	<i>Tamarix chinensis</i>
TACH3	<i>Tabebuia chrysotricha</i>
TADI	<i>Taxodium distichum</i>
TADO2	<i>Tabebuia donnell-smithii</i>
TAIM	<i>Tabebuia impetiginosa</i>
TAIN	<i>Tamarindus indica</i>
TAMU	<i>Taxodium mucronatum</i>
TAPA	<i>Tabebuia heterophylla</i>
TAPA13	<i>Tabernaemontana pandacaqui</i>
TASP	<i>Tabebuia</i> species
TECA	<i>Terminalia catappa</i>
TH9	<i>Thuja</i> species
THOC	<i>Thuja occidentalis</i>
THOR	<i>Platycladus orientalis</i>
THPE3	<i>Thevetia peruviana</i>
THPL	<i>Thuja plicata</i>
THPU	<i>Thespesia populnea</i>
TI	<i>Tilia</i> species
TIAM	<i>Tilia americana</i>
TICO	<i>Tilia cordata</i>
TICOG	<i>Tilia cordata</i> 'Greenspire'
TICOG	<i>Tilia cordata</i> 'Greenspire'
TIEU	<i>Tilia x vulgaris</i>
TIGR3	<i>Tibouchina granulosa</i>
TIHE	<i>Tilia americana</i> var. <i>heterophylla</i>

TIPL	<i>Tilia platyphyllos</i>
TITI2	<i>Tipuana tipu</i>
TITO	<i>Tilia tomentosa</i>
TITOSS	<i>Tilia tomentosa</i> 'Sterling Silver'
TITU	<i>Tipuana tipu</i>
TIUR	<i>Tibouchina urvilleana</i>
TOAR2	<i>Tournefortia argentea</i>
TOTA	<i>Torreya taxifolia</i>
TRAC	<i>Trithrinax acanthocoma</i>
TRCO	<i>Tristaniopsis conferta</i>
TRFO	<i>Trachycarpus fortunei</i>
TRLA	<i>Tristaniopsis laurina</i>
TRLA_E	<i>Tristania laurina</i> 'Elegans'
TRSE6	<i>Triadica sebifera</i>
TRSE6	<i>Sapium sebiferum</i>
TSCA	<i>Tsuga canadensis</i>
TSHE	<i>Tsuga heterophylla</i>
TSME	<i>Tsuga mertensiana</i>
TUCA	<i>Tupidanthus calyptratus</i>
UKNW	Unknown species
UKWN	Unknown species
ULAL	<i>Ulmus alata</i>
ULAM	<i>Ulmus americana</i>
ULAMLI	<i>Ulmus americana</i> 'Liberty'
ULCAHO	<i>Ulmus carpinifolia</i>
ULGL	<i>Ulmus glabra</i>
ULPA	<i>Ulmus parvifolia</i>
ULPA99	<i>Ulmus parvifolia</i> evergreen
ULPA_D	<i>Ulmus parvifolia</i> 'Drake'
ULPA_E	<i>Ulmus parvifolia</i> 'Emer II'
ULPR	<i>Ulmus procera</i>
ULPU	<i>Ulmus pumila</i>
ULRU	<i>Ulmus rubra</i>
ULS	<i>Ulmus</i> species
ULSE	<i>Ulmus serotina</i>
ULTH	<i>Ulmus thomasii</i>
ULX	<i>Ulmus</i> x
UMCA	<i>Umbellularia californica</i>
UNID	Unidentified species
UNKN	Unknown species
UNKNB	Broadleaf miscellaneous
UNKNC	Conifer miscellaneous
UNKNL	Unknown large
UNKNM	Unknown medium
UNKNS	Unknown small
UNKNS	Shrub
UNKNT	Unknown
UNKWN	Other species
UNP	Unknown palm

UNS	Unknown shrub
UNT	Unknown tree
VEME	Veitchia merrillii
VI5	Vitex species
VIAG	Vitex agnus-castus
VIJA	Viburnum japonicum
VIOD	Viburnum odoratissimum
VIPA6	Vitex parviflora
VIPR	Viburnum prunifolium
VISP2	Viburnum species
VITI2	Viburnum tinus
WAFI	Washingtonia filifera
WARO	Washingtonia robusta
WIFL	Wisteria floribunda
WISI	Wisteria sinensis
WOB12	Wodyetia bifurcata
XYCO	Xylosma congestum
YU1	Yucca species
YUAL	Yucca aloifolia
YUGL2	Yucca gloriosa
YUGU	Yucca guatemalensis
YURE	Yucca recurvifolia
YUTO	Yucca torreyi
ZE	Zelkova species
ZESE	Zelkova serrata
ZESE_V	Zelkova serrata 'Village Green'