



PORTLAND PARKS & RECREATION

Healthy Parks, Healthy Portland



Street Tree Inventory Manual

2016

Street Tree Inventory Manual

2016

Prepared By Portland Parks & Recreation
City Nature Urban Forestry

Project Staff - Portland Parks & Recreation

Angie DiSalvo, Tree Inventory Project Manager
Sachi Arakawa, Inventory Neighborhood Coordinator
Carrie Black, Inventory Project Coordinator
Jon Burgbacher, Inventory Technician
Daphne Cissnell, Inventory Technician
Kat Davidson, Analysis & Reporting Coordinator
Matthew Downs, Inventory Technician
Julie Fukuda, Inventory Project Coordinator
Jim Gersbach, Inventory Neighborhood Coordinator
Lily Glaeser, Inventory Neighborhood Coordinator
Jeremy Grotho, GIS Data Coordinator
Patrick Key, Inventory Technician

Questions? Please contact:

Angie DiSalvo, Tree Inventory Project Manager
PP&R Urban Forestry
10910 N. Denver Ave., Portland, OR 97217
503-823-4484
treeinventory@portlandoregon.gov
<http://portlandoregon.gov/parks/treeinventory>

ver. 5/25/16

Portland Parks & Recreation

City Nature Urban Forestry
10910 N. Denver
Portland, Oregon 97217
www.PortlandParks.org



Mayor Charlie Hales
Director Mike Abbate

Contents

Introduction	1
Section 1: Inventory Protocol	3
Team Leader Role and Responsibilities	4
Team Leader Materials	7
Recording Tree Locations and Data	8
Measuring Tree Size: Diameter at Breast Height.	14
Condition Rating.	19
High Voltage Wires.	21
Planting Site Types with Width Measurement.	22
Planting Site Types without Width Measurement	23
Clues for Finding Property Boundaries in Unimproved Rights-of-Way	24
Need Help or Have Questions During the Inventory	26
Section 2: Learning to Identify Portland's Street Trees	27
Tree Names and Tree Codes Recommended Resources	28
Complete Tree Code List	30
How to Identify a Tree Using a Key.	33
Most Common Trees in Portland.	34
Section 3: Places to Practice Tree Identification	65
Recommended Resources	66
PP&R Urban Forestry Resources.	68
Ainsworth Arboretum	69
East Delta Park	71
Couch Park	73
Inventory Work Days Listed by Date.	74
Inventory Work Days Listed by Neighborhood	75

Introduction



Street Tree Inventories and Neighborhood Tree Plans

Walking around your neighborhood, do you see areas available for tree planting, street trees in need of maintenance, and neighbors who are concerned about trees but don't know where to begin? Urban Forestry is helping Portlanders take action to improve their community's street trees by conducting tree inventories and creating Neighborhood Tree Plans.

Active community groups interested in the cause begin by gathering volunteers to help conduct a street tree inventory. Volunteers are guided by Urban Forestry staff, who provide training, tools, and event organization. Together, information is collected on tree species, size, health, site conditions, and available planting spaces. Data is analyzed by Urban Forestry staff, and findings are presented to neighborhood stakeholders. Achievable goals are set by Neighborhood Tree Teams to improve existing trees, identify opportunities for an expanding tree canopy, and connect the neighborhood with city and nonprofit resources. The result is a Neighborhood Tree Plan. The plan identifies the current status and health of neighborhood street trees and provides recommendations for neighborhood action. This final product serves as a catalyst for neighborhood implementation and stewardship.

Why a Tree Inventory is Important

Street trees are an important public asset in urban environments, where they serve as a buffer between our transportation corridors and our homes. In this role, street trees filter stormwater, reduce the effects of car emissions, increase property values, calm traffic, and regulate summer temperatures, among other benefits.

The estimated 250,000 street trees in Portland constitute a large portion of our urban forest, and are subject to unique challenges to growth and development. Protecting and expanding this public asset requires the help of neighborhood groups, who can use inventory data to identify planting opportunities, assess the health and diversity of the forest, and advocate for planting and management goals in the future. The Tree Inventory Project assists neighborhoods in promoting awareness of local trees and provides tools for utilizing inventory data to develop a Neighborhood Tree Plan, raise funds for new plantings, and educate neighbors about the important role of trees in their neighborhood.

A healthy urban forest that provides benefits to all of a city's residents depends on the active engagement of neighbors to care for street trees. Empowering neighborhood groups to care for their trees is what the Tree Inventory Project is all about.

Volunteers are the Backbone of Tree Inventories

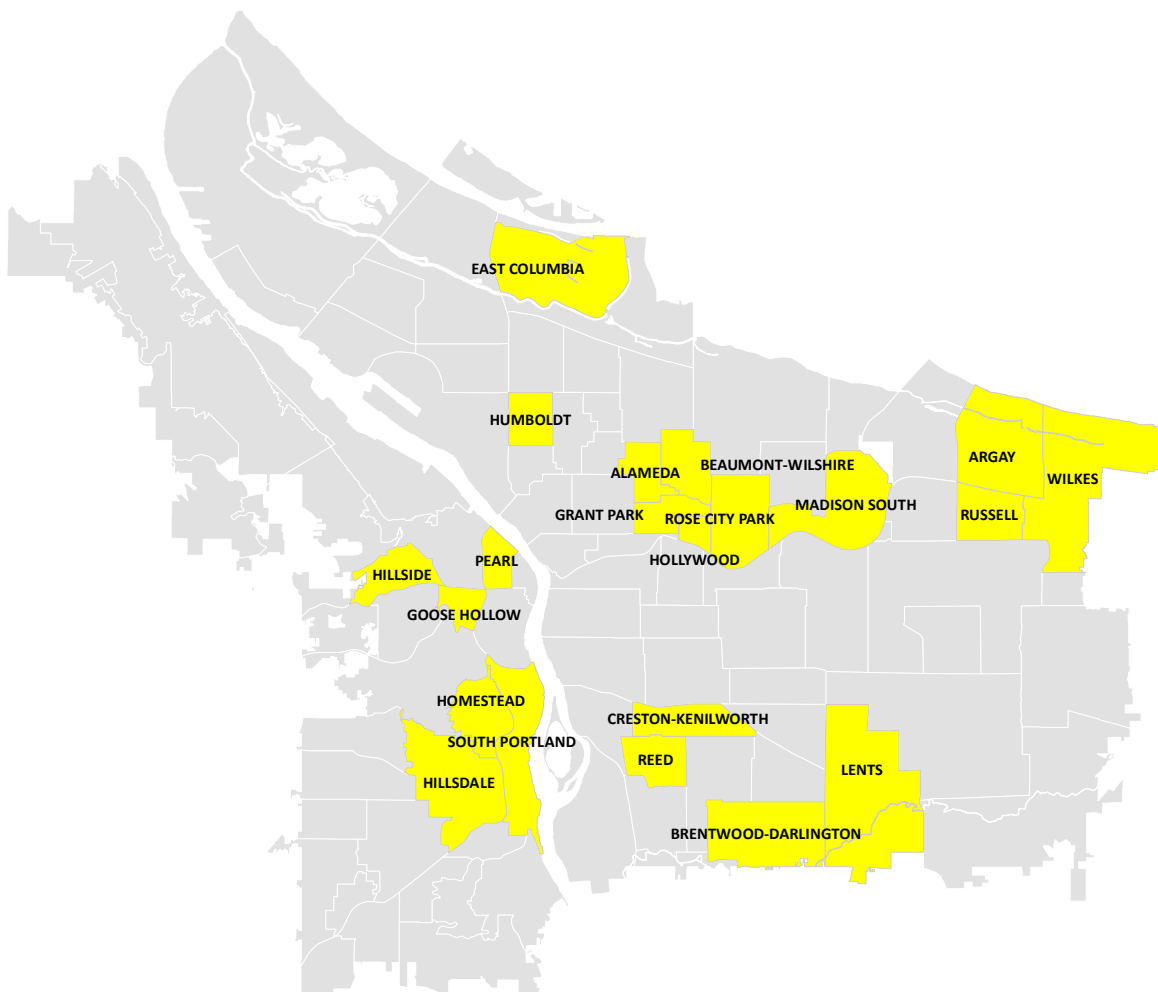
Tree inventories are organized and completed by volunteers. To date, more than 900 volunteers have devoted nearly 15,000 hours to collecting and entering data on more than 160,000 trees. 2016 is the final year to gather the baseline, city-wide inventory, and 21 neighborhoods will be inventoried by volunteers and Urban Forestry staff. The Street Tree Inventory Project would not be successful without dedicated volunteers, in particular, inventory Team Leaders.

2016 Inventory Locations

In 2016 inventories will be conducted in Alameda, Argay, Beaumont-Wilshire, Brentwood-Darlington, Creston-Kenilworth, East Columbia, Goose Hollow, Grant Park, Hillsdale, Hillside, Hollywood, Homestead, Humboldt, Lents, Madison South, Pearl, Reed, Rose City Park, Russell, South Portland, and Wilkes. Thirty-five work days are planned on Wednesdays and Saturdays throughout the summer.

For more information visit:

<http://portlandoregon.gov/parks/treeinventory>



Section 1: Inventory Protocol



Team Leader Role and Responsibilities

Role of the Team Leader

Team Leaders are responsible for data collection on inventory work days, acting as experts in tree identification, and leading volunteers on data collection routes. Team Leaders are also the public face of the Tree Inventory Project, educating the public about the program and the importance of street trees to our communities.

In your Team Leader Training, we will teach you tips for identifying the most common street trees in Portland, how to assess the health of a tree, and protocol for measuring and mapping trees in the field.

Expectations of a Team Leader

- Attend Team Leader Training: 1 classroom session and 3 inventory work days during the summer to practice tree ID and data collection.
- Lead novice volunteers in data collection.
- Ensure that data collected is correct, legible, and complete.
- Answer questions of the public about the Tree Inventory Project.
- Understanding and promoting the community benefits of trees.

Talking With Residents

Volunteering with the Tree Inventory Project is a great way to meet your neighbors, many of whom love the trees in front of their houses. Seeing someone in a yellow safety vest wrap a DBH tape around their tree will usually elicit questions!

When talking with the public, always remember to mention the following:

- The Tree Inventory Project is an effort to learn more about neighborhood street trees, and the data you collect will not result in removal or maintenance activities.
- You are a volunteer, and if they have specific questions about the health of their tree, to call PP&R Urban Forestry to request a FREE health inspection.
- For those interested in the project, RECRUIT! Your clipboard will include a handout with more information and the dates of future inventory work days. For everyone else, always remember to be patient with questions, and remind residents that the goal of this project is to protect street trees, not remove them.

rees

Street trees provide numerous benefits to all of Portland's residents. The goal of the Tree Inventory Project is to work with neighborhood groups to increase and expand these benefits throughout the community. Here is a small list for you to use when explaining the Tree Inventory Project or advocating for street trees in your neighborhood:

Cleaner Environment

- Reduce air pollution
- Cool our homes and streets
- Reduce the amount of rainfall entering sewers, which improves water quality for humans and wildlife
- Provide important wildlife habitat

Safer, Healthier, and More Attractive Neighborhoods

- Reduce crime
- Slow traffic
- Create safer spaces for pedestrians
- Improve mental and physical health of residents
- Provide year-round beauty

Benefits of Diversity

- Resilience to pests and diseases. A diverse urban forest ensures that the benefits our street trees provide will continue even if certain types of trees are lost to pests, disease, or environmental stress.
- A diverse urban forest also provides year-round beauty, with a variety of flowers, textures, and even bark characteristics highlighted throughout the year.
- Diversity also ensures a variety of habitats and food sources for wildlife during all seasons.

Section 1: Inventory Protocol

Other Volunteer Roles

There are many ways to volunteer for the Tree Inventory Project beyond your role as Team Leader. Opportunities include:

Data Entry: Volunteers work at the Urban Forestry office in Delta Park to input inventory data into an ArcGIS database. No experience is necessary, although data entry volunteers are asked to attend either the July 8th or August 17th training, where inventory staff will teach the basics of ArcGIS editing.

Join your neighborhood Tree Team: If you live in an inventory neighborhood, join the group of residents who will be using inventory data to create a Neighborhood Tree Plan and organize community events to manage and enhance the neighborhood urban forest.

Organize a tree inventory: If your neighborhood has not been inventoried, you can apply for next year! Applications are due by January 15th each year and all neighborhood groups create a Tree Team consisting of interested neighbors that is often partnered with the local neighborhood association. For more information, visit the project website at <http://portlandoregon.gov/parks/treeinventory>.

Inventory Work Day Timeline

Each neighborhood organizes 2-4 work days during which inventory data are collected. Neighborhoods bring volunteers and Urban Forestry staff bring all supplies and materials. Work days follow this typical agenda:

Morning/Evening Inventories

8:00 a.m. / 4:00 p.m. Participants arrive for registration and snacks. Inventory coordinator will pair Team Leaders and volunteers up in groups and assign sections.

8:30 a.m. / 4:30 p.m. Brief introduction and lesson on collecting data in the field.

8:45 a.m. / 4:45 p.m. Inventory begins! Teams walk or drive to sections.

9-noon / 5-8 p.m. Volunteers conduct inventory. Staff and Arborists-on-call are available to answer questions as needed. Teams that finish early can call to request another section. Staff will return to meeting site by 11:30 am.

11:45a.m./ 7:45 p.m. Teams begin to return from the field. Data sections are reviewed, notes written, and completed paperwork is handed in to staff. Team leaders requesting homework sections are assigned additional sections.

12:00 p.m./ 8:00 p.m. Work day finished!

Team Leader Materials

Team Leaders will be given the following materials to use during inventory work days:

- Clipboard containing a wayfinding map, inventory section map, data sheets, species codes, list of trees planted by Friends of Trees, and other information
- Diameter tape: one side of the tape measures diameter and the other side measures distance
- *Smithsonian Handbook: Trees*
- Ziplock bags for collecting samples of unknown species
- Safety vest
- Phone numbers for the arborist-on-call and UF staff



Team leader clipboards contain all the important maps and documentation needed for inventory.

We recommend that you bring the following on inventory work days:

- Tote bag to carry supplies
- Cell phone
- Water bottle
- Weather-appropriate clothing

Safety

Safety is always a top priority. Working in the right-of-way means that you may end up somewhere that drivers would not expect. Always be aware of your team's surroundings and avoid dangerous situations. Skip unsafe areas and mark them on your map for staff to collect data at a later date. Remember:

- Wear yellow safety vests at all times. In addition to making you more visible, they also let homeowners know that you are part of a sanctioned event.
- Keep your eyes on the road! Although it is easy to walk around with your eyes in the canopy, always make sure to look for oncoming traffic before stepping into the road.
- When walking through the neighborhood, always use the sidewalk (if there is one) and stay off the road as much as you can.
- Dress for the weather. Wear a hat, bring ample water, and dress in layers. It is often chilly in the mornings when we start, and very hot by the end of the work day.

In case of an accident, call 911 immediately. Ensure that the site is safe for you and your team, then call inventory staff. Inventory coordinators will always have a first aid kit on hand in case of minor injuries—call for assistance.

Recording Tree Locations and Data

As a team leader you will be responsible for mapping each tree on your assigned section map and recording data about each tree mapped on data sheets. Before you start collecting data be sure to **fill in the header information (date, name, section ID) on your section map and each data sheet you use to record data.**

How to Read Your Section Map

Each inventory team works in a section consisting of three to four blocks. The section map indicates where your group will be working, and trees inventoried will be noted directly on the section map. Tree data is recorded separately on a data sheet. See pages 10 and 11 for an example section map.

The header at the top of the map contains the following:

- **Section ID:** In the upper left hand corner is the section ID with a two or three letter neighborhood abbreviation and the section number, for example “VR 1” is section 1 of Vernon neighborhood.
- **North arrow:** Many maps are oriented at angles; north is not always located toward the top of the section map. Use the north arrow to orient yourself.
- **Scale bar:** Not all maps are to the same scale. Use the scale bar to determine the size of the section and to determine how much walking will be required throughout the section.
- **Data collector info fields:** Record the date and team leader(s) completing the inventory here.
- **Office Use field:** This area is used for inter-office tracking, and should not be completed during the tree inventory.

The body of the map contains the following elements:

- **Section boundaries:** Shown as a cross hatched area with a section number. Do not conduct tree inventory in these areas as they are assigned to another section or are outside the inventory area. Only inventory street trees within the central map.
- **Public right-of-way:** Appears as white area and displays roadways, medians, planting strips, and areas outside the tax lot. This is where the inventory occurs. Remember to place the tree dot within this area on the map, as close to the actual location as possible.
- **Tax lot lines (private property):** Tax lot lines are represented with a dotted line that shows the



Record tree locations using dots and numbers on the section map

division between private property and public right-of-way. Tax lots are light-gray or light-green and show their assigned address number in the middle of the lot. Do not inventory trees on private property or cross the dotted line to collect information.

- **Buildings:** Building footprints are outlined within the tax lots and contain address numbers.
- **Curbs/Edge of Street Pavement:** Shown as the outermost edge of blocks, appearing as a thick black line.
- **Sidewalk/concrete:** Appear as solid, darker grey areas. Trees may appear within this area during the inventory, particularly if they are in concrete cut outs (tree wells).
- **Parks:** Labeled with their park name and appear as solid, medium-grey or medium-green areas. Do not collect tree inventory data within these areas.

Which Trees to Inventory

Inventory only the street trees inside the central map area. Ignore street trees in the cross-hatched “do not inventory” area.

Inventory only street trees. Street trees are located in the public right-of-way (usually white on the map), between the curb and private property. Occasionally you may inventory an area that does not have sidewalks and curbs and in these cases refer to guidelines about finding property boundaries in unimproved areas on **page 24**.

How to Map Trees

Record the specific location of trees on the section map. Use solid black dots to indicate trees and clearly write tree numbers next to the dots.

Number each tree you record on the map and begin with number “1”. These numbers will correspond to the tree numbers on your data sheet.



What is a Street Tree?

As a good rule of thumb, trees are woody plants that typically have one main stem, called a trunk, and are over 15 feet tall at maturity.

Do count:

- All trees, regardless of size that appear to be intentionally planted and cared for as street trees.

Do NOT count:

- If a small tree, less than 6 ft. appears to be a volunteer (i.e. not intentionally planted).
- Shrubs, woody plants typically with more than one main stem and typically with a mature height of less than 15 ft.
- Specimens bred or pruned to be maintained as hedges.

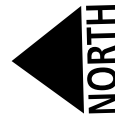
Example Section Map

Section ID

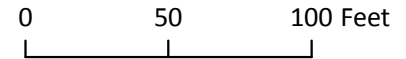
**VR
1**

-  Curb
-  Shoulder
-  Sidewalk/concrete
-  Private Property
-  Parks Property
-  Do not inventory

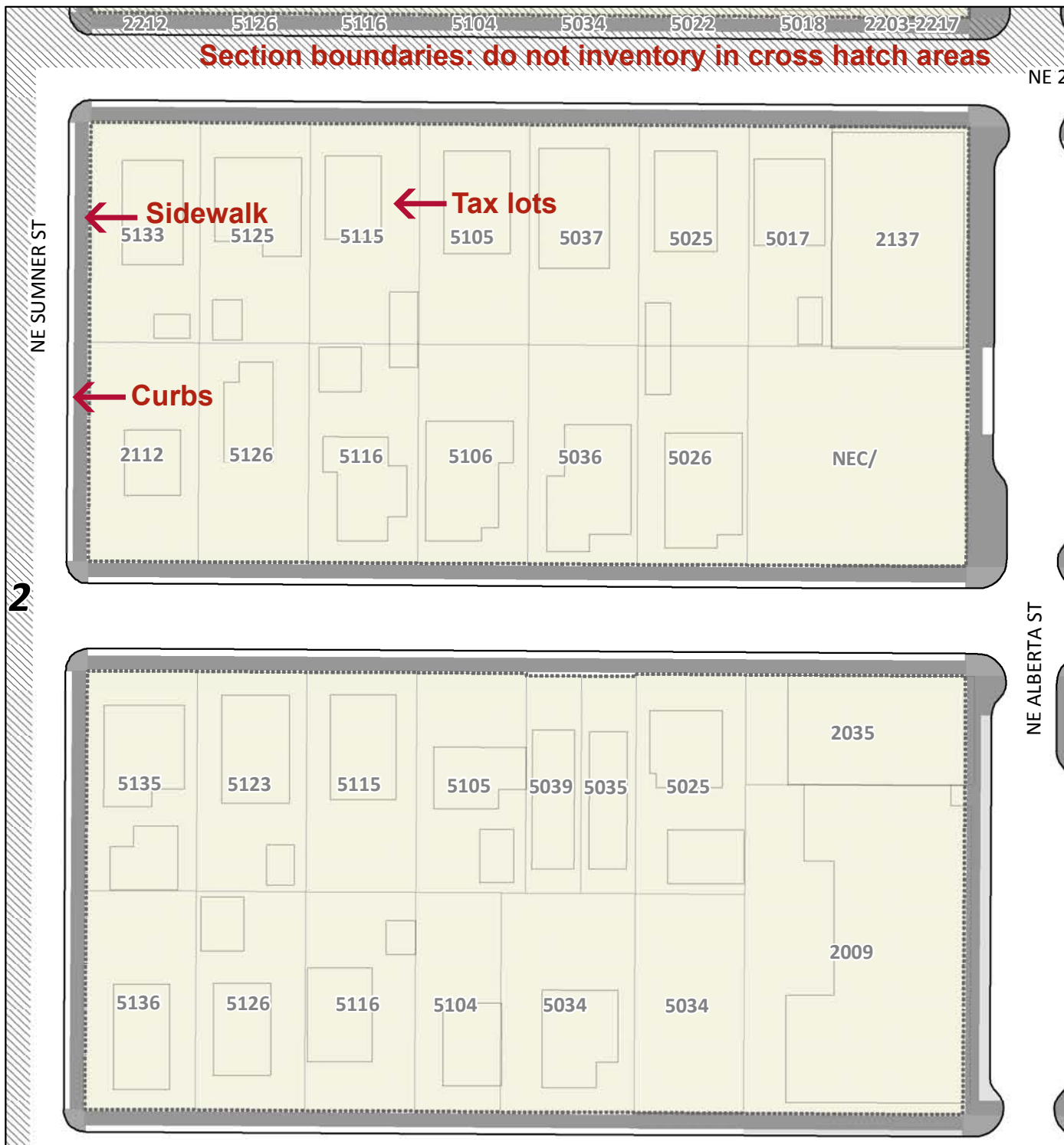
North arrow



Scale bar



OFFICE US



Data collector info

Inventory Date: ____ / ____

Volunteers(s): _____

Field Check Date & Staff: ____ / ____

Data Entry By: _____

Data Entry Check & Staff: ____ / ____

Remaining points on App? Y / N

Is this a homework section? Y / N

Data Upload & Staff: ____ / ____

2204

4926

4920

4912

4906

4836

4826

4814

4806

22ND AVE

2132-2136

4933

4925

4913

4907

4835

4827

4811

2125-2133

2124

2112

4934

4926

4916

4904

4832

4824

4814

4806

2104

← Building outlines

Address numbers ←

NE WYGANT ST

NE 21ST AVE

2032-2038

4935

4923

4911

4903

4835

4823

4813

4807

2022-2026

2012-2016

2000

4926

4916

4904

4834

4824

4814

4806

Recording Tree and Site Data on Data Sheets

Use the data sheets to record inventory data using a separate row for each tree. For each tree you will record the following information:

- **Tree #:** Label the first tree in your section as number “1” and continue counting up with each tree you record. Make sure the tree number on the data sheet corresponds with the tree number on the map.
- **Address:** Record the street name and adjacent property address. Take care when identifying the street name and address of corner lots. Use the number sequence of surrounding addresses and the location of the front door to guide you.
- **Species code:** Use the two or four letter tree species codes on the back of the clipboard. See **page 30** for a complete list of species codes.
- **DBH:** Record the diameter at breast height (4.5 ft above ground) in inches to one decimal point (e.g., 12.4). If the tree has more than one main stem refer to the section on how to measure DBH **page 14**.
- **Condition:** Record the tree’s condition Good (G), Fair (F), Poor (P), Dead (D). See **page 19** for tips on condition ratings.
- **Site Type:** Record the site type code. See **pages 22 and 23** for site type descriptions
- **Site Width:** Measure and record site width in feet to one decimal point (e.g., 4.8). Only record site width for cuttouts (C), medians (M), strips (S), and bio-swales (SW). All other site types do not need to be measured.
- **Wires:** Record presence of wires above the planting site as high-voltage (HV), none (N), or other (O). Other wires including low-voltage or communication wires above planting sites. Refer to **page 21** for tips on identifying high-voltage wires.
- **Need Staff Review?** Check this box only if you are unsure about the data you have collected for a particular tree and have been unable to contact the Arborist-on-Call or staff member.

If data repeats, you can use quote marks or arrows to indicate that the data is the same from line to line, rather than writing the same text multiple times. In the example **on page 13** the street name is written only once and the quote marks indicate that the street name repeats on the following lines.

Date:		Collected by:		Neighborhood:			Section #:			
Tree #	Address	Species Code	DBH (inches) Stem 1	DBH Stem 2	DBH Stem 3	Cond G/F/P/D	Site Type	Site Width (ft)	Wires HV/O/N	Need Staff Review?
										☐
										☐
										☐
										☐
										☐
										☐
										☐
										☐

Data on each tree is recorded on the data sheet.

Quality Control

One of the most important roles of a Team Leader is to ensure that the data turned in at the end of the work day is correct and easy to read. Here are some tips for making sure that happens:

- Every tree that you map has a number that corresponds to a line on data sheets.
- All handwriting is legible.
- Double check that tree points put on the map are associated with the correct property. Confirm that the address on your map matches the site where the tree is located.
- If you are unsure about the ID of a tree, call the arborist or take a sample and make sure to write the address of the tree and tree number on your sample bag.
- While it not required that Team Leaders record data on maps and data sheets, it is recommended. If your partner will be taking this role, check their work multiple times throughout the work day to make sure that the data they write down is correct.

Measuring Tree Size: Diameter at Breast Height

Tree size is measured using diameter at breast height (DBH), which is the diameter of the tree at 4.5 feet above ground. Diameter, the distance across the trunk, is measured indirectly by measuring circumference with a specially calibrated tape.

Using a Diameter Tape

During work days, volunteers will use a professional diameter tape. These large diameter tapes have a claw hook that attaches to the tree. If volunteers wish to check out sections to complete outside of work days they will be assigned a pocket diameter tape. This tape is smaller than the professional version. The two tapes measure diameter in the same way, but have some differences.



Professional diameter tape (left) and a pocket diameter tape (right)

Both tapes have two sides—one side calibrated for measuring tree diameter, and the other side for measuring distance (planting site width). Always keep in mind which side of the tape you are using, and make sure that the tape is not twisted.



Diameter measuring side, front of tape, (above) and distance measuring side, back of tape, (below).



Measuring Diameter at Breast Height (DBH)

Tree size is measured using diameter at breast height (DBH), the distance across the trunk at 4.5 feet. DBH is measured indirectly by measuring a tree's circumference with a specially calibrated diameter tape.

Measure DBH using the following steps:

1. Locate “breast height” (4.5’) on your body.

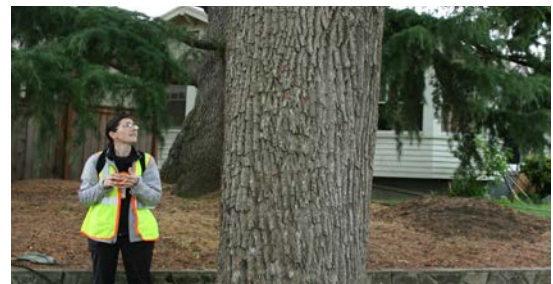
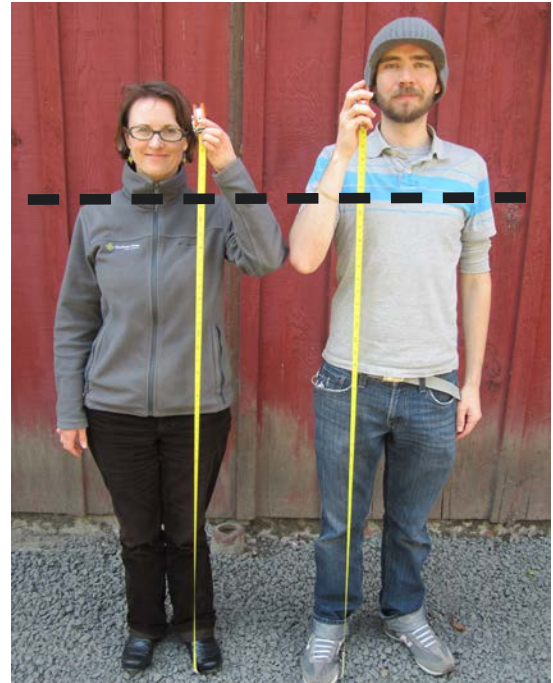
This will save you a lot of time in the field trying to measure 4.5 feet from the ground. Urban Foresters come in all shapes and sizes, and DBH will vary from person to person.

2. Examine the tree and identify where you will measure DBH. If the tree has a single stem and a gradually tapering trunk, measure at 4.5’. Unfortunately, not all trees grow in such a straightforward manner. A guide on other common scenarios follows this section.

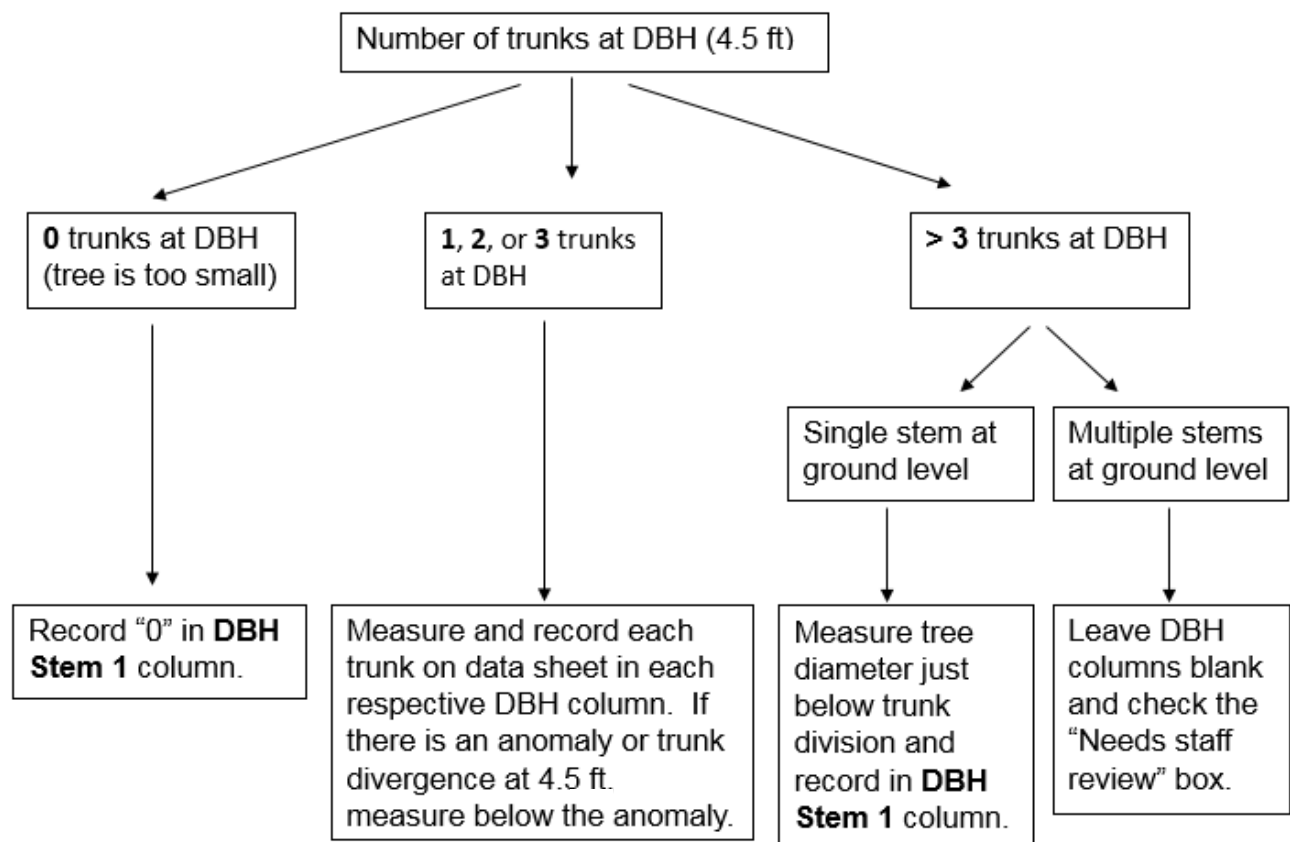
3. Attach the claw end of the tape to the tree, then stretch the tape around the trunk at breast height. Pocket diameter tapes do not have claws - you may need to use a safety pin or partner if the tree is very large. Ensure the tape does not twist and that you are using the diameter side of the tape for measuring.

4. Read diameter from the mark that overlaps with zero on the tape. Measurements are taken in decimal inches. Again, ensure that you are using the correct side of the tape and that it is not twisted. The diameter of this tree is 21.2 inches.

A common mistake is using the wrong side of the tape. Remember, one side measures distance, just like any other tape. Don't use that side! Use the other side, which reads diameter when the tape is wrapped around the trunk.



Examples of Where to Measure DBH



Tree is shorter than 4.5 ft

Record "0" in the column for "DBH stem 1".



1, 2, or 3 trunks at 4.5 ft

Measure and record each trunk on the data sheet in each respective DBH column. If there is an anomaly or trunk divergence at 4.5 ft, measure below the anomaly or trunk divergence.



Section 1: Inventory Protocol

More than 3 trunks at 4.5 ft but has a single trunk at ground level

Measure tree diameter just below trunk divergence and record measurement in “DBH Stem 1” column.



More than 3 trunks at 4.5 ft at ground level

Leave DBH columns blank and check the “Need Staff Review” box.



Condition Rating

Tree condition is a general assessment of the well-being of the tree. Examine the tree from top to bottom, and circle the tree completely for a full visual assessment.

Tree condition is impacted by health problems, damage, and past pruning. After examining the tree, characterize the tree as either good, fair, poor, or dead.

Look for the following signs and symptoms of health problems, damage, and poor pruning practices on each tree:

- **Wounds** are an opening or series of openings where bark has been removed or the inner wood has been exposed and no signs of advanced decay are present. Includes recent damage by mowers or pruning.
- **Decay** is degraded wood that has lost its structural strength. It is often soft and moist.
- **Conks** are the perennial fruiting body of wood-rooting fungi.
- **Cavities** are holes in the tree body. Cavities are signs of decay.
- **Dead branches** may be small or significant, and may indicate crown dieback.
- **Root heaving** is when roots are broken or pulled out of the ground by a leaning tree.
- **Cankers** are sunken, dead, or diseased wood on a branch or trunk.
- **Gummosis** is sap or liquid exuded from cracks at branch junctions.
- **Small and discolored foliage** is determined by comparing to a healthy tree of the same species.



Cavities



Conks



*Crown dieback
in a topped tree*



Canker

Section 1: Inventory Protocol

Depending on findings and severity of issues, place the tree into one of these categories:

Good (G): Tree is healthy and vigorous with no apparent problems. Roots are sound, trunk is solid with no bark damage, and crown is full with no significant structural problems. No wounds, decay, conks, cavities, root heaving or other symptoms.

Fair (F): Tree is in average condition. Tree may need some structural pruning and have some dead branches. Wounds are minimal but there is no major decay. Other signs and symptoms are minimal.

Poor (P): Tree is in a **general state of decline** as indicated by the presence of cavities, decay, conks, root heaving, or significant dead crown areas.

Dead (D): Tree is dead or close to dying.



Good



Fair



Poor



Dead

High Voltage Wires

Wires above trees are categorized as either high voltage (HV) or other (O) wires. High voltage wires often (but not always) run on only one side of the street.

Signs that wires are high voltage:

- Transformers
- Insulators
- Trees along the street are pruned away from wires

Signs that wires are not high voltage:

- Trees are permitted to grow into wires

High voltage wires



Transformer and insulator present

Not high voltage wires



Communication and service wires



Tree is pruned away from wires



Tree is growing through wires

Planting Site Types with Width Measurements

Assign the site where the tree is planted to one of the following categories:

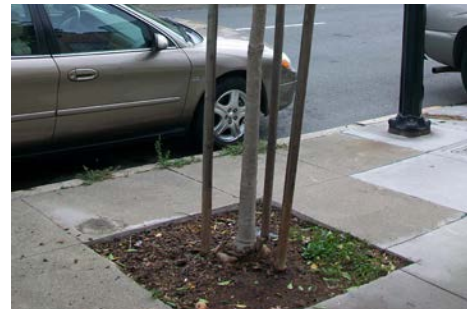
- **Cutout (C):** The site is a concrete cutout, also called a tree pit or tree well.
- **Median (M):** The site is in the middle of the street.
- **Strip (S):** The tree is between a curb and a sidewalk.
- **Swale (SW):** Bio-swales are intentionally designed for stormwater capture. They are usually recessed, have inlets for water to flow in from the street or sidewalk, are bound by concrete, and are usually planted with a variety of grasses and sedges.

Measure the width of the planting site using the distance side of the DBH tape. The DBH tape has two sides: one measures diameter and one measures distance. Be sure to use the distance side for measuring site width.

- Measure from the inside of the curb to the sidewalk.
- Measure only the width, not the length.
- When using a professional diameter tape, measurements are taken in decimal feet.
- When using small tapes, the only option is to measure in inches—convert to decimal feet when recording data. Decimal ft = inches/12.



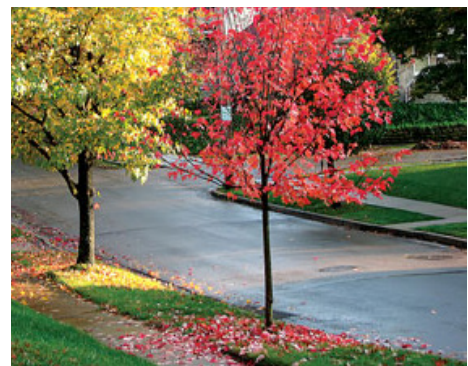
Measure from the inside of the curb to the sidewalk.



Cutout (C)



Median (M)



Strip (S)



Swale (SW)

Planting Site Types without Width Measurement

- **Curbtight (CT):** Sidewalk is adjacent to curb and tree is adjacent to the taxlot

When the sidewalk and curb are continuous with no planting strip in between, it is known as curbtight. In these cases, right-of-way often extends beyond the sidewalk into what looks like the private tax lot. Section maps should clearly show whether or not the right-of-way extends towards the tax lot—if it does, inventory trees in this area. Another clue is if trees in the right-of-way are planted in a linear fashion near the sidewalk.

- **Other (O):** Traffic circles and other miscellaneous scenarios.

Unimproved Site Types

Trees in the public right-of-way are still street trees even if they are not found in traditional planting strips or cutouts. Some neighborhoods have many streets lacking sidewalks and/or curbs. These sites are called “unimproved.” In these areas it can be difficult to judge where the public right-of-way ends and the tax lot begins, and thus whether trees are street trees or private trees.

- **Curb No Sidewalk (CNS):** The site has a curb but no sidewalk.
- **No Curb No Sidewalk (NCNS):** The site is undeveloped with no curb or sidewalk.

Some right-of-way trees are excluded from this inventory.
DO NOT INVENTORY:

- Trees located along busy roads where no shoulder or sidewalk exists. If it is not safe to inventory on foot, do not inventory! Mark these areas on the map and **leave notes for staff to inventory.**
- Trees in stands that resemble “natural areas.” Trees may appear in clusters, have many small stems, or be growing alongside understory plants.

If you are unable to determine if trees should be inventoried, make notes on your map and datasheet and staff can inventory those areas at a later date.



Curbtight (CT)



Curb No Sidewalk (CNS)



No Curb No Sidewalk (NCNS)



DO NOT INVENTORY

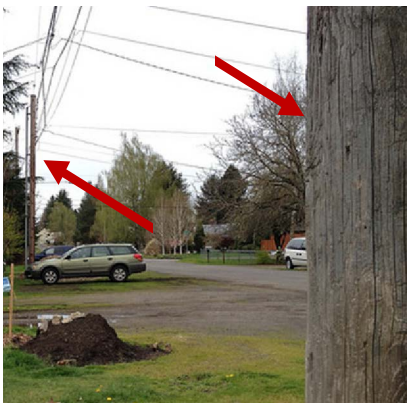
Clues for Finding Property Boundary in Unimproved Rights-of-Way

It can be challenging to determine where streets, rights-of-way, and private lots begin and end in unimproved areas. Use the following guidelines to determine where trees are located:

- Always check the map first to determine how wide the right-of-way is and whether or not trees fall in the tax lot or right-of-way.
- Inventory trees that “resemble street trees”—trees are planted in rows somewhat close to the curb line.

The following are clues to the locations of the street curb, rights-of-way, and private lot lines:

- Utility poles, street signs, and water meters will always be located in the right-of-way.



Utility Poles



Street Signs



Water meter

- Fencelines and retaining walls often run along the taxlot line separating the right-of-way and tax lot
- The separation between the driveway and driveway apron may indicate where the taxlot ends and right-of-way begins



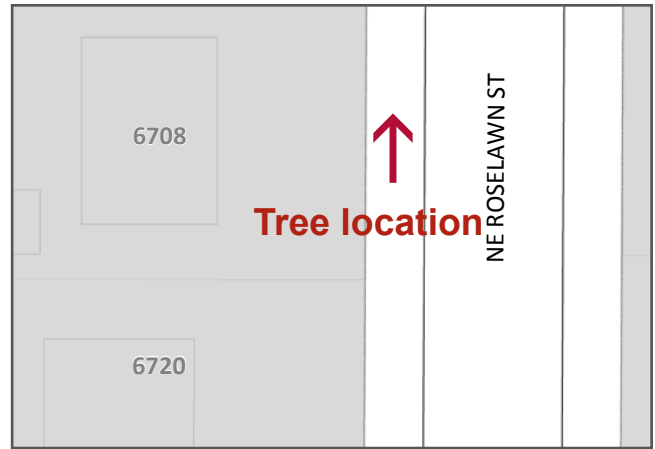
Fenceline



Driveway apron



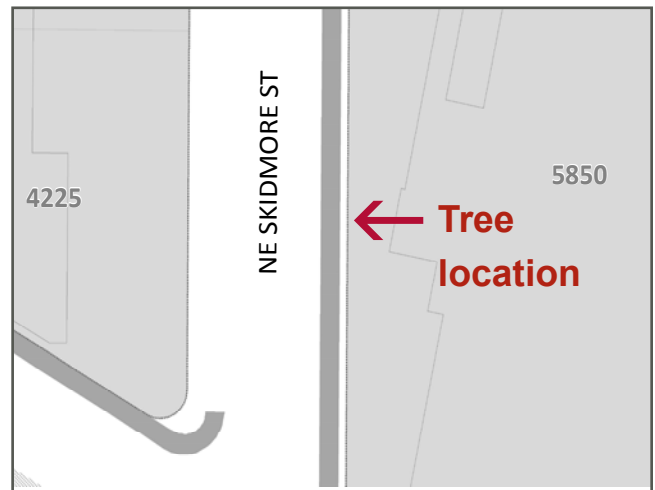
Retaining wall



The driveway apron extending from the lot to the street is often made of different materials than the driveway section on the private lot.



Traffic signs, utility poles, and fence lines provide clues as to where the right-of-way ends and the tax lot begins.



The right-of-way extends beyond this curbtight sidewalk and is confirmed by the white space on the map.

Need help or have questions during the inventory?

Help is available! Phone numbers are on the back of your clipboard.

T



1. Check your Friends of Tree (FOT) list.
2. Call the Arborist-on-Call for immediate assistance.
3. Take a sample from the tree and label the sample with the tree number and the address where the tree was located. Attempt to collect enough leaves to determine whether leaf arrangement is opposite or alternate. In the species ID column write “UNKN.” At the staging location, the arborist-on-call will help you to identify the tree.

What if there is no code for my species on the list?

Every year, we find new tree types and add to our list of tree codes. If you can’t find a code for the tree that you have identified, record the species code as “UNKN” and write the species in the notes section of your data sheet. Remember that for many genera of trees, we do not record the species, so simply marking, for example, “FR” (for ash trees) is enough.

Inventory protocol, maps, equipment, or datasheet problems:

Call the staff member working.



Call the Arborist-on-Call! Our volunteer arborists are excited to help and will arrive on site within minutes of your request to troubleshoot and help with tree identification.

Section 2: Learning to Identify Portland's Street Trees



Tree Names and Tree Codes

Tree names can be confusing because there are often many names for the same tree. Common names are written in English (or in German if you're in Germany, or in French if you're in France) but scientific names are always written in Latin, and typically *italicized* so they can be understood anywhere in the world.

Scientific names are also useful because they give you a clue about how different species are related to each other. A scientific name has two parts. The first part is the genus, *Acer*, and the second is the species, *platanoides* (the scientific name of Norway maple). Therefore if you encounter another *Acer*, for example *Acer rubrum* (or red maple), you know that these two plants are closely related and likely share some similar characteristics.

While most people are much more familiar with common names for trees (e.g. birch or oak) than their Latin counterparts, common names can be misleading. While different types of trees may have similar common names, no two types of trees will have the same scientific name. One of the most well-known native trees to Portland is a good example. Many people know the western redcedar (*Thuja plicata*) simply as a “cedar” tree, however true cedars (genus *Cedrus*) are native to North Africa and western Asia and are only distantly related. Both western redcedars and true cedars are quite common in Portland, so we use tree codes (THPL for redcedars and CE for true cedars). This way, there is no confusion.

A primary goal of the Tree Inventory Project is to identify trees accurately. For the purposes of this inventory we are identifying “tree types” using a 2 or 4 letter code. In most cases this means identifying the tree only to the genus. For example all types of dogwoods, *Cornus*, are categorized as CO. An abbreviated list of which is on the back of your clipboard.

When do I Identify Beyond Genus?

Trees are only identified to the genus except for the following:

***Acer* genus (Maples):** Maples comprise a large component of the urban forest and come in all shapes and sizes. Some species are native (*Acer macrophyllum*), while others are invasive (*Acer platanoides*). The following species have distinctive codes in this inventory:

- *Acer griseum* (ACGR) paperbark maple
- *Acer macrophyllum* (ASMA) bigleaf maple
- *Acer negundo* (ACNE) boxelder
- *Acer palmatum* (ACPA) Japanese maple
- *Acer platanoides* (ACPL) Norway maple
- *Acer rubrum* (ACRU) red maple
- *Acer saccharinum* (ACSA) silver maple
- *Acer* spp. (AC) all other maple species

***Prunus* genus:** The *Prunus* genus comprises another significant portion of Portland's street trees, primarily because of ornamental cherries and ornamental plums. There are also certain *Prunus* species that are evergreen and therefore provide benefits throughout the year. Each of these codes captures numerous species.

- *Prunus* spp. (PRCH) cherry
- *Prunus* spp. (PRPL) plum
- *Prunus* spp. (PRPE) peach, nectarine
- *Prunus* spp. (PR) other species

***Malus* genus:** The species *Malus domestica*, which includes all varieties of apple that are grown for food consumption, are distinguished from the numerous other *Malus* species, which are considered crabapples.

- *Malus domestica* (MAAP) apple
- *Malus* spp. (MA) crabapple

***Quercus* genus (Oaks):** The *Quercus* genus is divided into two groups, evergreen and deciduous species.

- *Quercus* spp. (QUEV) evergreen
- *Quercus* spp. (QU) deciduous

***Magnolia* genus:** The *Magnolia* genus is divided into two groups, evergreen and deciduous species.

- *Magnolia* spp. (MGGR) evergreen
- *Magnolia* spp. (MG) deciduous

***Thuja* genus:**

- *Thuja plicata* (THPL) western redcedar
- *Thuja arborvitae* (THAR) arborvitae

***Arbutus* genus:**

- *Arbutus menziesii* (ARME) madrone
- *Arbutus unedo* (AR) strawberry tree

Section 2: Learning to Identify Portland's Street Trees

Complete Tree Code List

Code	Scientific Name	Common Name	Family
AB	<i>Abies</i>	fir	Pinaceae
ACGR	<i>Acer griseum</i>	maple, paperbark	Sapindaceae
ACMA	<i>Acer macrophyllum</i>	maple, bigleaf	Sapindaceae
ACNE	<i>Acer negundo</i>	boxelder	Sapindaceae
ACPA	<i>Acer palmatum</i>	maple, Japanese	Sapindaceae
ACPL	<i>Acer platanoides</i>	maple, Norway	Sapindaceae
ACRU	<i>Acer rubrum</i>	maple, red (red x silver)	Sapindaceae
ACSA	<i>Acer saccharinum</i>	maple, silver	Sapindaceae
AC	<i>Acer spp.</i>	maple, other	Sapindaceae
AE	<i>Aesculus</i>	horse chestnut; buckeye	Sapindaceae
AIAL	<i>Ailanthus altissima</i>	tree of heaven	Simaroubaceae
ALJU	<i>Albizia julibrissin</i>	mimosa tree	Leguminosae
AL	<i>Alnus</i>	alder	Betulaceae
AM	<i>Amelanchier</i>	serviceberry	Rosaceae
AA	<i>Aralia</i>	devil's walking stick	Araliaceae
ARAR	<i>Araucaria araucana</i>	monkey puzzle	Araucariaceae
ARME	<i>Arbutus menziesii</i>	madrone	Ericaceae
AR	<i>Arbutus spp.</i>	strawberry tree	Ericaceae
ASTR	<i>Asimina triloba</i>	paw paw	Annonaceae
AZ	<i>Azara</i>	azara	Salicaceae
BE	<i>Betula</i>	birch	Betulaceae
CC	<i>Callicarpa</i>	beautyberry	Lamiaceae
CADE	<i>Calocedrus</i>	incense cedar	Cupressaceae
CM	<i>Camellia</i>	camellia	Theaceae
CA	<i>Carpinus</i>	hornbeam	Betulaceae
CN	<i>Carya illinoensis</i>	pecan	Juglandaceae
CAHI	<i>Carya spp.</i>	hickory	Juglandaceae
CS	<i>Castanea</i>	chestnut	Fagaceae
CP	<i>Catalpa</i>	catalpa	Bignoniaceae
CHCA	<i>Catalpa X Chilopsis</i>	chitalpa	Bignoniaceae
CX	<i>Ceanothus</i>	California lilac	Rhamnaceae
CE	<i>Cedrus</i>	cedar (atlas, deodar)	Pinaceae
CEOC	<i>Celtis</i>	hackberry	Cannabaceae
CEJA	<i>Cercidiphyllum</i>	katsura	Cercidiphyllaceae
CECA	<i>Cercis</i>	redbud	Leguminosae
CH	<i>Chamaecyparis</i>	false cypress; Alaska cedar	Cupressaceae
CHRE	<i>Chionanthus</i>	fringe tree	Oleaceae
CD	<i>Cinnamomum</i>	camphor tree	Lauraceae
CI	<i>Citrus</i>	citrus	Rutaceae
CLLU	<i>Cladrastis</i>	yellow wood	Leguminosae
CL	<i>Clerodendrum</i>	glorybower	Verbenaceae
CO	<i>Cornus</i>	dogwood	Cornaceae
CY	<i>Corylus</i>	hazelnut	Betulaceae
CT	<i>Cotinus</i>	smoketree	Anacardiaceae
CR	<i>Crataegus</i>	hawthorn	Rosaceae
CB	<i>Cryptomeria</i>	cryptomeria	Taxodiaceae
CULA	<i>Cunninghamia lanceolata</i>	China-fir	Taxodiaceae
CU	<i>Cupressus</i>	cypress	Cupressaceae
CYOB	<i>Cydonia oblonga</i>	quince	Rosaceae
DAIN	<i>Davidia involucrata</i>	dove tree	Cornaceae

Code	Scientific Name	Common Name	Family
DIVI	<i>Diospyros</i>	persimmon	Ebenaceae
EL	<i>Elaeagnus</i>	oleaster	Elaeagnaceae
ERJA	<i>Eriobotrya</i>	loquat	Rosaceae
EU	<i>Eucalyptus</i>	eucalyptus	Myrtoideae
EUUL	<i>Eucommia</i>	hardy rubber tree	Eucommiaceae
EO	<i>Euonymus</i>	spindle tree	Celastraceae
EUPL	<i>Euptelea pleiosperma</i>	euptelea	Eupteleaceae
FA	<i>Fagus</i>	beech	Fagaceae
FI	<i>Ficus</i>	fig	Moraceae
FISI	<i>Firmiana simplex</i>	Chinese parasol tree	Malvaceae
FRAL	<i>Franklinia alatamaha</i>	franklinia	Theaceae
FR	<i>Fraxinus</i>	ash	Oleaceae
GIBI	<i>Ginkgo biloba</i>	ginkgo	Ginkgoaceae
GLTR	<i>Gleditsia</i>	honey locust	Leguminosae
GYDI	<i>Gymnocladus</i>	Kentucky coffeetree	Leguminosae
HA	<i>Halesia</i>	silverbell	Styracaceae
HM	<i>Hamamelis</i>	witch hazel	Hamamelidaceae
HEMI	<i>Heptacodium miconioides</i>	seven son flower	Caprifoliaceae
HISY	<i>Hibiscus syriacus</i>	rose of Sharon	Malvaceae
HIRH	<i>Hippophae rhamnoides</i>	seaberry	Eleagnaceae
HODU	<i>Hovenia dulcis</i>	Japanese raisin tree	Rhamnaceae
IL	<i>Ilex</i>	holly	Aquifoliaceae
JU	<i>Juglans</i>	walnut	Juglandaceae
JN	<i>Juniperus</i>	juniper	Cupressaceae
KOPA	<i>Koelreuteria</i>	golden rain tree	Sapindaceae
LAAN	<i>Laburnum</i>	golden chain tree	Leguminosae
LAIN	<i>Lagerstroemia</i>	crape myrtle	Lythraceae
LA	<i>Larix</i>	larch	Pinaceae
LANO	<i>Laurus nobilis</i>	bay laurel	Lauraceae
LE	<i>Leptospermum</i>	tea tree	Myrtaceae
LIOB	<i>Lindera obtusiloba</i>	Japanese spice bush	Lauraceae
LIST	<i>Liquidambar</i>	sweetgum	Altingiaceae
LITU	<i>Liriodendron</i>	tulip poplar	Magnoliaceae
LY	<i>Lyonothamnus</i>	Catalina ironwood	Rosaceae
MAAM	<i>Maackia</i>	Amur maackia	Leguminosae
MAPO	<i>Maclura pomifera</i>	osage orange	Moraceae
MG	<i>Magnolia spp.</i>	magnolia, deciduous	Magnoliaceae
MGGR	<i>Magnolia spp.</i>	magnolia, evergreen	Magnoliaceae
MAAP	<i>Malus domestica</i>	apple	Rosaceae
MA	<i>Malus spp.</i>	crabapple	Rosaceae
ME	<i>Mespilus</i>	medlar	Rosaceae
MEGL	<i>Metasequoia glyptostroboides</i>	dawn redwood	Taxodiaceae
MO	<i>Morus</i>	mulberry	Moraceae
NOOB	<i>Nothofagus</i>	Southern beech	Nothofagaceae
NODE	<i>Notholithocarpus</i>	tanoak	Fagaceae
NYSY	<i>Nyssa</i>	tupelo	Cornaceae
OL	<i>Olea</i>	olive	Oleaceae
OS	<i>Ostrya</i>	hophornbeam	Betulaceae
OXAR	<i>Oxydendrum arboreum</i>	sourwood	Ericaceae
PAPE	<i>Parrotia persica</i>	Persian ironwood	Hamamelidaceae

Section 2: Learning to Identify Portland's Street Trees

Code	Scientific Name	Common Name	Family
PATO	<i>Paulownia</i>	empress tree	Paulowniaceae
PL	<i>Phellodendron</i>	corktree	Rutaceae
PT	<i>Photinia</i>	photinia	Rosaceae
PH	<i>Physocarpus</i>	ninebark	Rosaceae
PC	<i>Picea</i>	spruce	Pinaceae
PI	<i>Pinus</i>	pine	Pinaceae
PICH	<i>Pistacia</i>	Chinese pistache	Anacardiaceae
PLOC	<i>Platanus</i>	planetree; sycamore	Platanaceae
PLOR	<i>Platycladus</i>	oriental arborvitae	Cupressaceae
PO	<i>Populus</i>	poplar; aspen	Salicaceae
PR	<i>Prunus spp.</i>	cherry laurel, other	Rosaceae
PRCH	<i>Prunus spp.</i>	cherry	Rosaceae
PRPE	<i>Prunus spp.</i>	peach; nectarine	Rosaceae
PRPL	<i>Prunus spp.</i>	plum	Rosaceae
PSME	<i>Pseudotsuga menziesii</i>	Douglas-fir	Pinaceae
PY	<i>Pyrus</i>	pear	Rosaceae
QU	<i>Quercus spp.</i>	oak (deciduous)	Fagaceae
QUEV	<i>Quercus spp.</i>	oak (evergreen)	Fagaceae
RHPU	<i>Rhamnus</i>	cascara	Rhamnaceae
RH	<i>Rhus</i>	sumac	Anacardiaceae
ROPS	<i>Robinia</i>	black locust	Leguminosae
SA	<i>Salix</i>	willow	Salicaceae
SM	<i>Sambucus</i>	elderberry	Caprifoliaceae
SAAL	<i>Sassafras</i>	sassafras	Lauraceae
SCVE	<i>Sciadopitys verticillata</i>	umbrella pine	Sciadopityaceae
SESE	<i>Sequoia sempervirens</i>	costal redwood	Taxodiaceae
SEGI	<i>Sequoiadendron giganteum</i>	giant sequoia	Taxodiaceae
SOJA	<i>Sophora japonica</i>	pagoda tree	Leguminosae
SO	<i>Sorbus</i>	mountain ash; whitebeam	Rosaceae
ST	<i>Stewartia</i>	stewartia	Theaceae
STJA	<i>Styrax</i>	snowbell	Styracaceae
SC	<i>Sycoparrotia</i>	sycoparrotia	Hamamelidaceae
SY	<i>Syringa reticulata</i>	lilac tree	Oleaceae
TX	<i>Tamarix</i>	salt cedar	Tamaricaceae
TD	<i>Taxodium distichum</i>	baldcypress	Taxodiaceae
TA	<i>Taxus</i>	yew	Taxaceae
THAR	<i>Thuja arborvitae</i>	arborvitae	Cupressaceae
THPL	<i>Thuja plicata</i>	Western redcedar	Cupressaceae
THDO	<i>Thujaopsis dolobrata</i>	elkhorn cedar	Cupressaceae
TI	<i>Tilia</i>	linden	Malvaceae
TOCA	<i>Torreya californica</i>	California torreyia	Taxaceae
TR	<i>Trachycarpus</i>	palm	Arecaceae
TS	<i>Tsuga</i>	hemlock	Pinaceae
UL	<i>Ulmus</i>	elm	Ulmaceae
UMCA	<i>Umbellularia californica</i>	myrtlewood	Lauraceae
UNKN	unknown	unknown	unknown
VI	<i>Vitex</i>	chaste tree	Lamiaceae
ZA	<i>Zanthoxylum</i>	prickly ash	Rutaceae
ZESE	<i>Zelkova</i>	zelkova	Ulmaceae
ZIJU	<i>Ziziphus jujuba</i>	jujube	Rhamnaceae

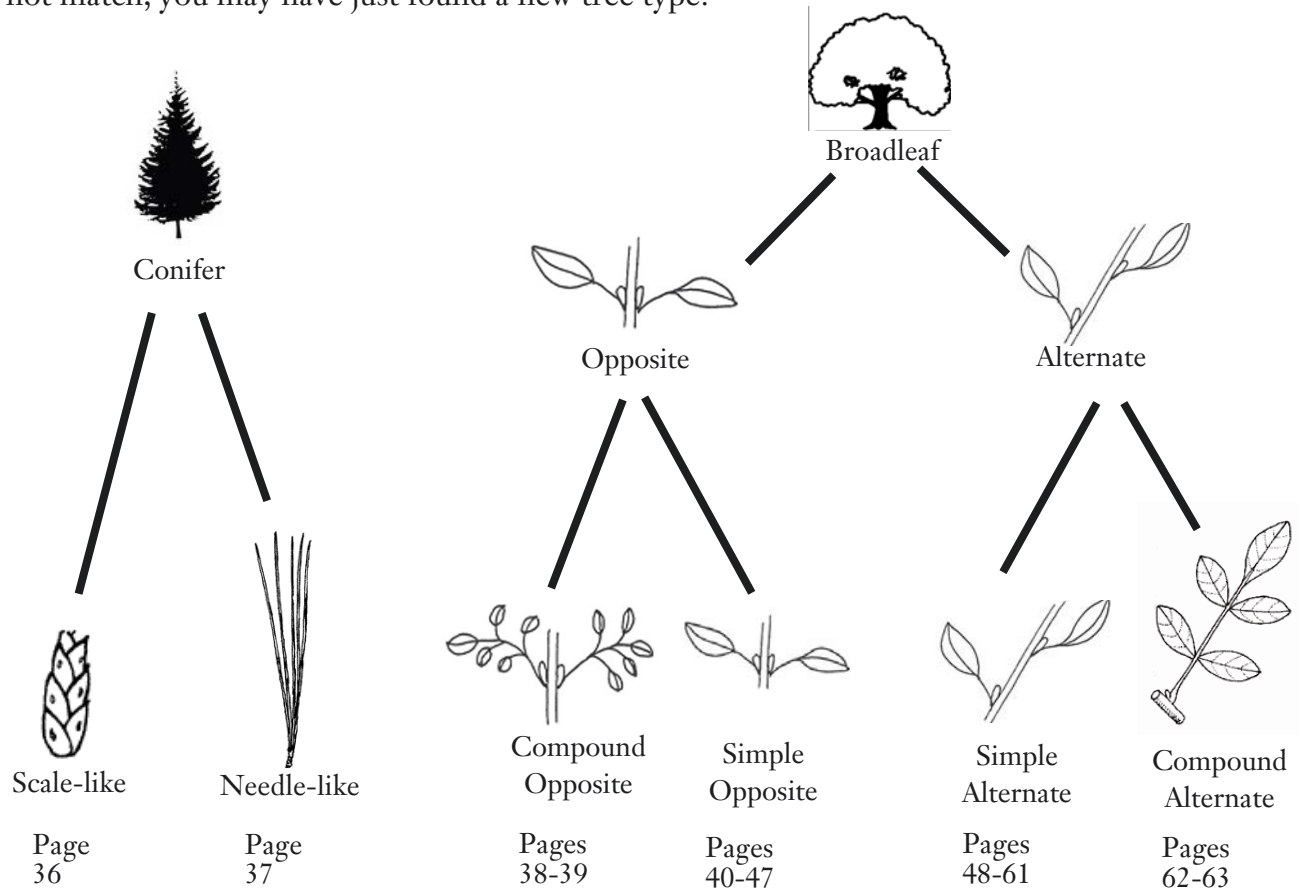
How to Identify a Tree Using a Key

Identifying trees is a lot like identifying people. You can easily recognize a close friend even if you only catch a glimpse. However, if you meet a room full of strangers, you need to concentrate on individual characteristics before you can tell them apart.

It is the same with trees. When you know a tree well, you will be able to name it whether you see its leaves, its fruit, its flowers, or even its shape.

Tree identification keys can help us learn to identify trees by narrowing down the possibilities. Each step along the key uses a characteristic such as leaf arrangement to split all possible tree types into smaller groups until we are left with a small number of possible tree types.

The key in this manual does not include all possible tree types you will come across during the inventory. We have only included the most common tree types. Make sure to check the description in the *Smithsonian Handbook* to confirm your identification. If the description does not match, you may have just found a new tree type!





Most Common Trees in Portland

Common Conifers

Scale-like	36
<i>Chamaecyparis</i> spp. (CH) False Cypress	
<i>Calocedrus decurrens</i> (CADE) Incense Cedar	
<i>Thuja plicata</i> (THPL) Western Redcedar	
Needle-like.....	37
<i>Pinus</i> spp. (PI) Pine	
<i>Picea</i> spp. (PC) Spruce	
<i>Abies</i> spp. (AB) Fir	
<i>Cedrus</i> spp. (CE) Cedar	
<i>Pseudotsuga menziesii</i> (PSME) Douglas-fir	

Broadleaf Trees with Opposite Branching

<i>Fraxinus</i> spp. (FR) Ash	38
<i>Acer griseum</i> (ACGR) Paperbark Maple	39
<i>Acer platanoides</i> (ACPL) Norway Maple	40
<i>Acer palmatum</i> (ACPA) Japanese Maple.....	41
<i>Acer rubrum</i> (ACRU) Red maple.....	42
<i>Acer saccharinum</i> (ACSA) Silver Maple	43
<i>Acer macrophyllum</i> (ACMA) Bigleaf Maple	44
<i>Acer</i> spp. (AC) Other Maples.....	45
<i>Cornus</i> spp. (CO) Dogwood.....	46
Other Trees with Opposite Simple Leaves	47
<i>Catalpa</i> spp. (CP) Catalpa	
<i>Paulownia tomentosa</i> (PATO) Empress Tree	
<i>Syringa reticulata</i> (SY) Tree Lilac	
<i>Clerodendrum</i> spp. (CL) Glorybower	
<i>Cercidiphyllum japonicum</i> (CEJA) Katsuratree	



Broadleaf Trees with Alternate Branching

<i>Crataegus</i> spp. (CR) Hawthorn	48
<i>Malus</i> spp. (MA) Crabapple	49
<i>Prunus</i> spp. (PRCH) Cherry	50
<i>Prunus</i> spp. (PRPL) Plum	51
<i>Pyrus</i> spp. (PY) Pear	52
<i>Styrax</i> spp. (STJA) Snowbell	53
<i>Carpinus</i> spp. (CA) Hornbeam	54
<i>Betula</i> spp. (BE) Birch	55
<i>Ulmus</i> spp. (UL) Elm	56
<i>Tilia</i> spp. (TI) Linden	57
<i>Magnolia</i> spp. (MG; MGGR) Magnolia	58
<i>Quercus</i> spp. (QU; QUEV) Oak	59
<i>Liquidambar styraciflua</i> (LIST) Sweetgum	60
Other Trees with Alternate Simple Leaves	61
<i>Amelanchier</i> spp. (AM) Serviceberry	
<i>Rhamnus purshiana</i> (RHPU) Cascara	
<i>Parrotia persica</i> (PAPE) Persian Ironwood	
<i>Nyssa</i> spp. (NYSY) Tupelo	
<i>Zelkova serrata</i> (ZESE) Zelkova	
Trees with Alternate Compound Leaves	62
<i>Ailanthus altissima</i> (AIAL) Tree-of-Heaven	
<i>Juglans</i> spp. (JU) Walnut	
<i>Koelreuteria</i> spp. (KOPA) Golden Raintree	
<i>Pistachia chinensis</i> (PICH) Chinese Pistache	
<i>Gleditsia</i> spp. (GLTR) Honey Locust	
<i>Robinia</i> spp. (ROPS) Black Locust	
<i>Maackia</i> spp. (MAAM) Maackia	
<i>Sorbus</i> spp. (SO) Mountain-Ash	
<i>Cladrastis</i> spp. (CLLU) Yellowwood	

Section 2: Learning to Identify Portland's Street Trees

Common Conifers

Reference pages in *Smithsonian Handbook Trees*: 34-83

<i>Chamaecyparis</i> spp.	False cypress	CH
Scientific Name	Common Name	Scientific Name
 Developing cones Previous season's cones		 Conifer Scale-like
<i>Chamaecyparis lawsoniana</i> Port-Orford-cedar	<i>Chamaecyparis nootkatensis</i> Alaska yellowcedar	<i>Chamaecyparis pisifera</i> 'Squarrosa'
<i>Calocedrus decurrens</i>	CADE	<i>Thuja plicata</i>
Scientific Name	Species Code	Scientific Name
Incense cedar		Western redcedar
		

Pinus spp.

Scientific Name

Pine

Common Name

PI

Species Code



Conifer
Needle-like

Picea spp.

Scientific Name

Spruce

PC

Species Code



Abies spp.

Scientific Name

Fir

AB

Species Code



Cedrus spp.

Scientific Name

Cedar

CE

Species Code



Pseudotsuga menziesii

Scientific Name

Douglas-fir

PSME

Species Code



***Fraxinus* spp.**

Scientific Name

Ash

Common Name

FR

Species Code

Reference pages in *Smithsonian Handbook Trees*: 228-230

Identifying characteristics

Leaf: Usually toothed

Fruit: Paddle shaped winged fruits

Other: Buds are often brown and velvety
In some species, small branches are yellowish



Compound
Opposite



Fraxinus ornus
Flowering Ash



Fraxinus pennsylvanica 'Leprechaun'
Leprechaun Ash



Fraxinus americana
White Ash



Fraxinus pennsylvanica
Green Ash

Acer griseum

Scientific Name

Paperbark Maple

Common Name

ACGR

Species Code

Reference page in *Smithsonian Handbook Trees*: 89

Identifying characteristics

Leaf: Compound trifoliate leaf with lobed leaflets

Fruit: Samaras are 1" to 1.5" long and diverge at a 60 to 90 degree angle

Other: Typically a small tree
Copper-red bark that exfoliates



Compound
Opposite



Acer platanoides

Scientific Name

Norway Maple

Common Name

ACPL

Species Code

Reference pages in *Smithsonian Handbook Trees*: 97-98

Identifying characteristics

Leaf: Palmately lobed
Milky sap appears when petiole is broken
Green to purplish leaves depending upon variety



Simple
Opposite

Fruit: Winged samara 1.5-2" long and is shaped like a handlebar mustache

Other: To distinguish from other maples, check for milky sap when leaf stem is broken
Check for fat, rounded terminal bud



Acer palmatum

Scientific Name

Japanese Maple

Common Name

ACPA

Species Code

Reference page in *Smithsonian Handbook Trees*: 94-95

Identifying characteristics

Leaf: Toothed
Palmately lobed
Leaves have 5-7 lobes, deeply tapered and pointed
Leaves are small and up to 4"



Simple
Opposite

Fruit: Red or green winged samaras are 0.5" long

Other: Typically a small tree
Many varieties exist with many variations in leaf shape and color



Acer rubrum

Scientific Name

Red maple

Common Name

ACRU

Species Code

Reference page in *Smithsonian Handbook Trees*: 100

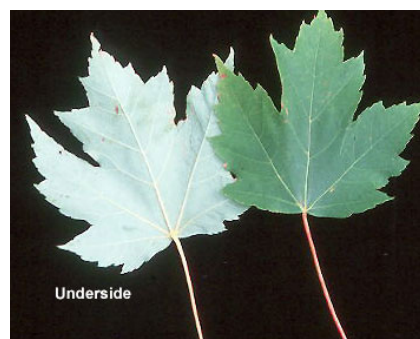
Identifying characteristics

Leaf: Palmate
Leaves are typically 4" wide and long
Commonly 3 toothed lobes (occasionally 5 lobed)



Simple
Opposite

Fruit: Winged samaras appear in clusters, dropped by early summer
Angle of samaras is typically small



Acer x fremanii (ACRU) Red-silver maple hybrid

Acer saccharinum

Scientific Name

Silver Maple

Common Name

ACSA

Species Code

Reference page in *Smithsonian Handbook Trees*: 101

Identifying characteristics

Leaf: Palmately lobed
Top of leaf is glossy green and back is silvery grey
Leaf is 6" long and deeply lobed
Leaf lobes are narrow compared to other maples

Fruit: Winged samara is 1-2" long

Bark: Gray, smooth, flaking with age

Other: To distinguish from other maples, check for silvery color on back of leaf and narrow lobes



Simple
Opposite



Acer macrophyllum

Scientific Name

Bigleaf maple

Common Name

ACMA

Species Code

Reference page in *Smithsonian Handbook Trees*: 91

Identifying characteristics

Leaf: Palmately lobed
Leaf is very large, up to 12"
Middle lobe has a "waist" that cinches inwards

Flowers: Yellow and hang in clusters in early spring

Fruit: Winged samaras appear in hanging clusters
Wings are at right angles to each other
Very pubescent (hairy)

Other: Has milky white sap when leaf stem is broken



Simple
Opposite



Acer spp.

Scientific Name

Maple

Common Name

AC

Species Code

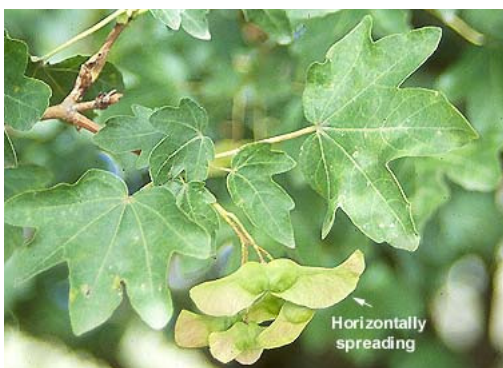
Reference pages in *Smithsonian Handbook Trees*: 84-104



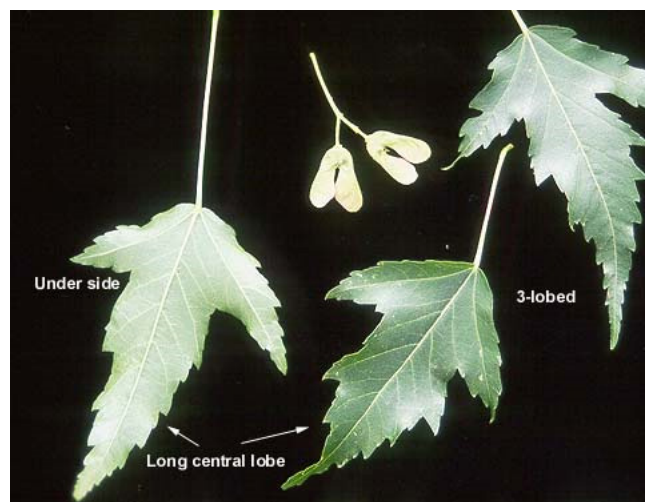
Acer saccharum
Sugar maple



Simple
Opposite



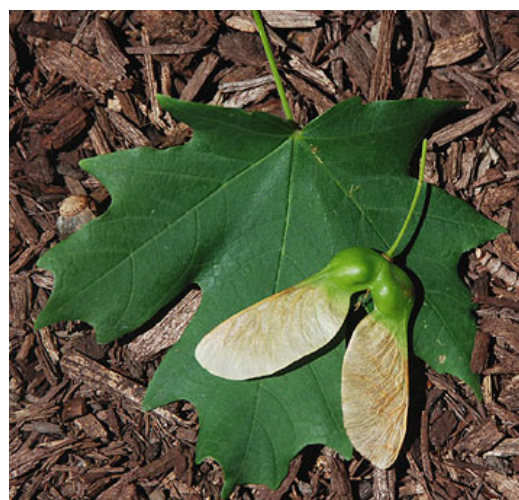
Acer campestre
Hedge maple



Acer ginnala
Amur maple



Acer pseudoplatanus
Sycamore maple



Acer grandidentatum
Rocky Mountain Glow maple

***Cornus* spp.**

Scientific Name

Dogwood

Common Name

CO

Species Code

Reference pages in *Smithsonian Handbook Trees*: 133-138

Identifying characteristics

Leaf: Untoothed
Ovate to elliptic
Taper pointed
Leaf veins curve up towards tip of leaf

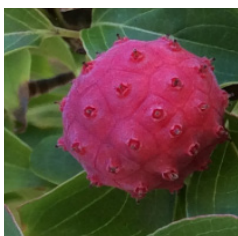
Flowers: White or pink in spring

Fruit: Individual small round fruits, typically red

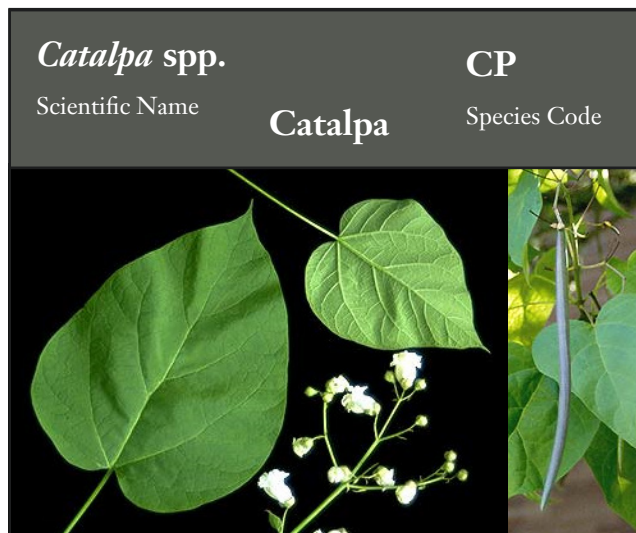
Other: Typically small trees
Twigs often curve upwards in a
“canoe” shape



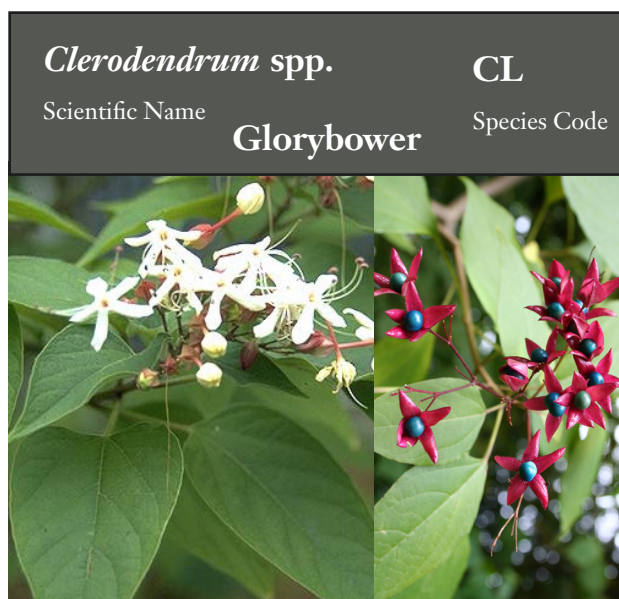
Simple
Opposite



Other Common Trees with Simple Leaves in Opposite Arrangement



Simple
Opposite



***Crataegus* spp.**

Scientific Name

Hawthorn

Common Name

CR

Species Code

Reference pages in *Smithsonian Handbook Trees*: 241-243

Identifying characteristics

- Leaf:** Toothed
Shape varies with variety
Leaves are small
- Bark:** English hawthorn trunk has deep vertical waves
- Fruit:** Round or slightly oblong, similar to crabapple
- Other:** Usually has thorns



Simple
Alternate



Crataegus x lavalleyi Lavalley
Hawthorn



Crataegus douglasii
Douglas Hawthorn



Crataegus phaenopyrum
Washington Hawthorn



Crataegus laevigata English
Hawthorn

***Malus* spp.**

Scientific Name

Crabapple

Common Name

MA

Species Code

Reference pages in *Smithsonian Handbook Trees*: 246-254

Identifying characteristics

Leaf: Toothed
Small leaves
Different varieties may have different shapes
Leaves seem to appear in clusters on spurs
The same tree may have leaves with varying sizes and shapes



Simple
Alternate

Fruit: Small, round, hard fruits on stalks



Malus 'Prairifire'
Prairifire Crabapple



Malus transitoria 'Golden Raindrops'
Golden Raindrops Crabapple



Malus sargentii Sargent
Crabapple

***Prunus* spp.**

Scientific Name

Cherry

Common Name

PRCH

Species Code

Reference pages in *Smithsonian Handbook Trees*: 261-265

Identifying characteristics

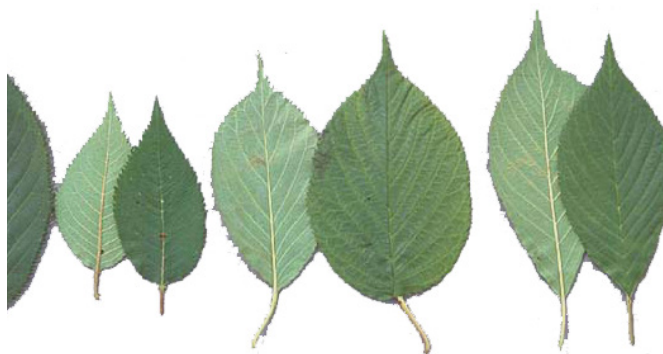
Leaf: Toothed
Ovate
Small glands appear at the leaf base of almost all cherries

Flowers: White or pink in early spring

Bark: Lenticels appear in horizontal stripes



Simple
Alternate



***Prunus* spp.**

Scientific Name

Plum

Common Name

PRPL

Species Code

Reference pages in *Smithsonian Handbook Trees*: 259-260

Identifying characteristics

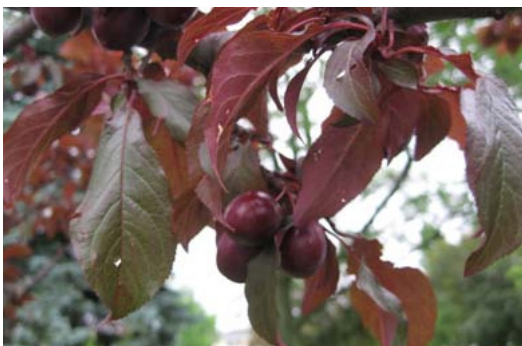
Leaf: Toothed
Leaves are often purple

Flowers: Pink in early spring

Fruit: Small purple fruit with pit



Simple
Alternate



Pyrus spp.

Scientific Name

Pear

Common Name

PY

Species Code

Reference page in *Smithsonian Handbook Trees*: 273

Identifying characteristics

Leaf: Glossy above and smooth underneath
Leaves often appear to be clustered

Flowers: Five petaled white flower in spring



Simple
Alternate



***Styrax* spp.**

Scientific Name

Snowbell

Common Name

STJA

Species Code

Reference page in *Smithsonian Handbook Trees*: 299

Identifying characteristics

Leaf: Toothed

Flowers: Bell-like white flowers that hang down

Fruit: Egg shaped white fruit

Other: Japanese snowbell (*S. japonica*) has small leaves to 2" (most common species) and is a small tree
Fragrant snowbell (*S. obassia*) has large leaves to 8"



Simple
Alternate



Styrax japonica
Japanese snowbell



Styrax obassia
Fragrant snowbell

***Carpinus* spp.**

Scientific Name

Hornbeam

Common Name

CA

Species Code

Reference pages in *Smithsonian Handbook Trees*: 308-309

Identifying characteristics

Leaf: Toothed leaf margin doubly serrated
Veins straight

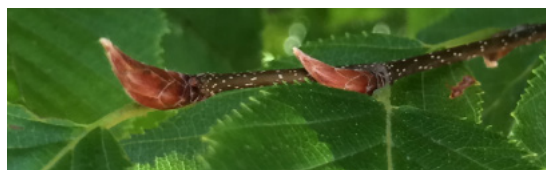
Fruit: Nutlet in three lobed bract

Form: Often pyramidal in form, particularly when young

Bark: Often smooth and gray



Simple
Alternate



***Betula* spp.**

Scientific Name

Birch

Common Name

BE

Species Code

Reference pages in *Smithsonian Handbook Trees*: 118-125

Identifying characteristics

Leaf: Toothed
Leaves taper to a point

Bark: Often white, peeling, and with horizontal lenticels

Fruit: Catkins



Simple
Alternate



Betula jacquemontii
Whitebarked Himalayan Birch



Betula nigra
River Birch



Betula pendula 'Laciniata'
Cutleaf European White Birch

Ulmus spp.

Scientific Name

Elm

Common Name

UL

Species Code

Reference pages in *Smithsonian Handbook Trees*: 308-309

Identifying characteristics

Leaf: Toothed, unequal sided leaf base
Sometimes fuzzy, sandpapery

Fruit: Winged seed, often abundant

Bark: Gray-brown, fissured with age



Simple
Alternate



Ulmus pumila
Siberian Elm



Ulmus sp.
mature elm form



Ulmus americana
American Elm



Ulmus parvifolia
Chinese Elm



Ulmus 'Frontier'
Frontier Elm

Tilia spp.

Scientific Name

Linden

Common Name

TI

Species Code

Reference pages in *Smithsonian Handbook Trees*: 302-305

Identifying characteristics

Leaf: Toothed
Ovate to rounded, somewhat heart shaped
Pointed tip
Unequal leaf base similar to an elm

Flowers: Small, fragrant, yellow to white flowers

Fruit: Small, round, fruit attached to pale green bract (hockey stick and puck)



Simple
Alternate



Magnolia spp.

Scientific Name

Magnolia (deciduous)

Common Name

MG

Species Code

Reference pages in *Smithsonian Handbook Trees*: 202-215

Identifying characteristics

Leaf: Usually untoothed
Elliptic to oblong

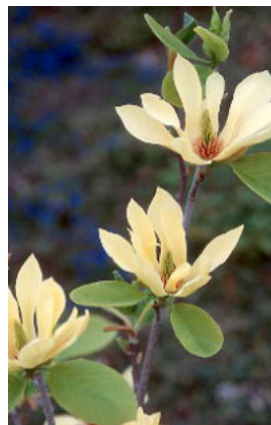
Flowers: Large white, yellow, or pink upright flowers in spring

Fruit: Clustered fruit resembles a pickle

Other: Buds are fuzzy



Simple
Alternate



Magnolia spp.

Scientific Name

Magnolia (evergreen)

Common Name

MGGR

Species Code



Magnolia grandiflora
Southern Magnolia

***Quercus* spp.**

Scientific Name

Oak (deciduous)

Common Name

QU

Species Code

Reference pages in *Smithsonian Handbook Trees*: 158-173

Identifying characteristics

Leaf: Toothed and untoothed species
Most deeply lobed, but some species not

Flower: Catkins

Fruit: Acorns

Other: Buds clustered at the end of the twig



Simple
Alternate



Quercus rubra
Red Oak



Quercus palustris
Pin Oak



Quercus garryana
Oregon White Oak

***Quercus* spp.**

Scientific Name

Oak (evergreen)

Common Name

QUEV

Species Code



Quercus suber
Cork Oak



Quercus myrsinifolia
Bamboo-Leaf Oak



Quercus chrysolepis
Canyon Live Oak

Liquidambar styraciflua

Scientific Name

Sweetgum

Common Name

LIST

Species Code

Reference page in *Smithsonian Handbook Trees*: 176

Identifying characteristics

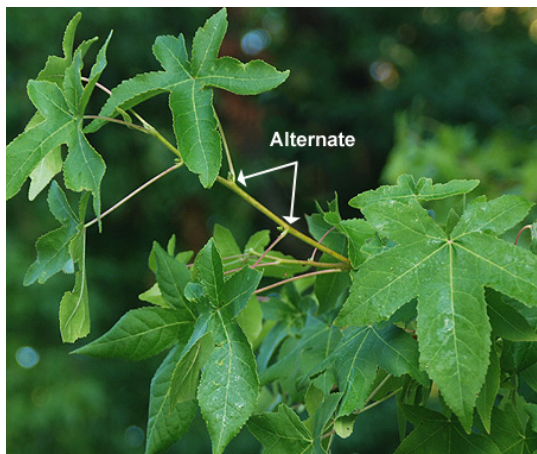
Leaf: Toothed
8" star-shaped leaf with 5 lobes

Fruit: Spiny gumball

Other: Often confused with maple, but leaf arrangement is alternate



Simple
Alternate



Other Common Trees with Simple Leaves in Alternate Arrangement

<i>Amelanchier</i> spp. Scientific Name Serviceberry Species Code 	AM Species Code  Simple Alternate
<i>Rhamnus purshiana</i> Scientific Name Cascara Species Code 	<i>Parrotia persica</i> Scientific Name Persian Ironwood Species Code 
<i>Nyssa</i> spp. Scientific Name Tupelo Species Code 	<i>Zelkova serrata</i> Scientific Name Zelkova Species Code 

Common Tree Types with Compound Leaves Alternately Arranged

<i>Ailanthus altissima</i>	Tree-of-Heaven	AIAL
Scientific Name		Species Code
		 Compound Alternate
<i>Juglans spp.</i>	Walnut	JU
Scientific Name		Species Code
		
<i>Koelreuteria spp.</i>	KOPA	PICH
Scientific Name	Species Code	Species Code
Golden Raintree	Chinese Pistache	
		

Gleditsia spp.

Scientific Name

Honey Locust

GLTR

Species Code



Compound
Alternate

Robinia pseudoacacia

Scientific Name

Black Locust

ROPS

Species Code



Maackia spp.

Scientific Name

Maackia

MAAM

Species Code



Cladrastis spp.

Scientific Name

Yellowwood

CLLU

Species Code



Petiole base encloses bud



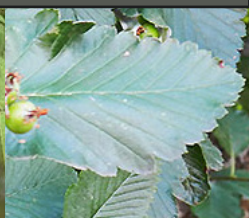
Sorbus spp.

Scientific Name

Mountain-Ash

SO

Species Code



Some species have
simple leaves

Section 1: Inventory Protocol

Section 3: Places to Practice Tree Identification



Section 3: Places to Practice Tree Identification

Recommended Resources

Urban Forestry recommends the following two books and web sites for identification of street trees in Portland. Together, these inexpensive sources cover nearly all species found in the city.

Smithsonian Handbooks: Trees. Coombes, Allen J. 2002. ISBN 078948989.

Trees to Know in Oregon. Oregon State University Extension Service. 2005. ISBN 1931979049.

Oregon State University Department of Agriculture Landscape Plants database.

<http://oregonstate.edu/dept/ldplants/>

This amazing database features images and information on over 1,700 landscape plants (mostly woody). All images were taken near the OSU campus in Corvallis, which means that they feature typical growth forms found in our area.

Additional Resources

Many other great tree books on tree identification exist. Here are a few more of our favorites:

Dirr's Encyclopedia of Trees and Shrubs. Dirr, Michael A. 2011.

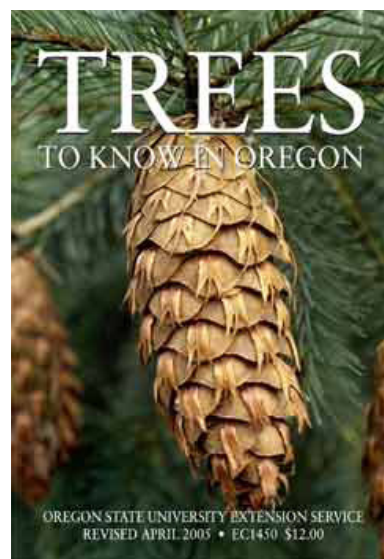
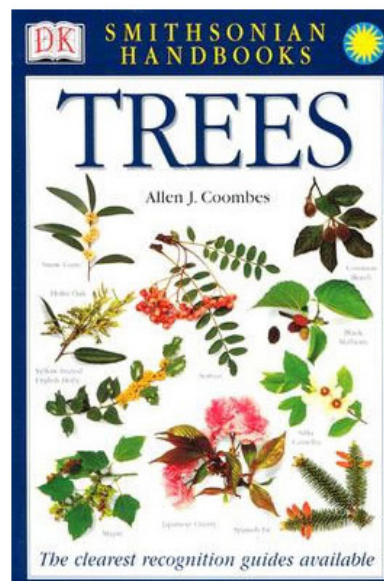
Maples of the World. Gelderen, D. M. van, Jong, P. C. de, and H. J. Oterdoom. 1994.

The Sibley Guide to Trees. Sibley, David Allen.

Northwestern Trees: Identifying and Understanding Our Native Trees. Arno, Stephen F. and Ramona P. Hammerly. 2010.

Trees for All Seasons: Broadleaved Evergreens for Temperate Climates. Hogan, Sean. 2008.

Trees of North America and Europe. Phillips, Roger. 1978.



Portland Parks & Recreation Urban Forestry Resources

Tree Walks

Portland Parks & Recreation Urban Forestry has tree walk maps on their website for download.
<http://www.portlandoregon.gov/parks/66728>

Three examples are included at the end of this book for the Ainsworth Linear Arboretum, Couch Park, and East Delta Park.



The Ainsworth Linear Arboretum includes 60 species of street and yard trees.

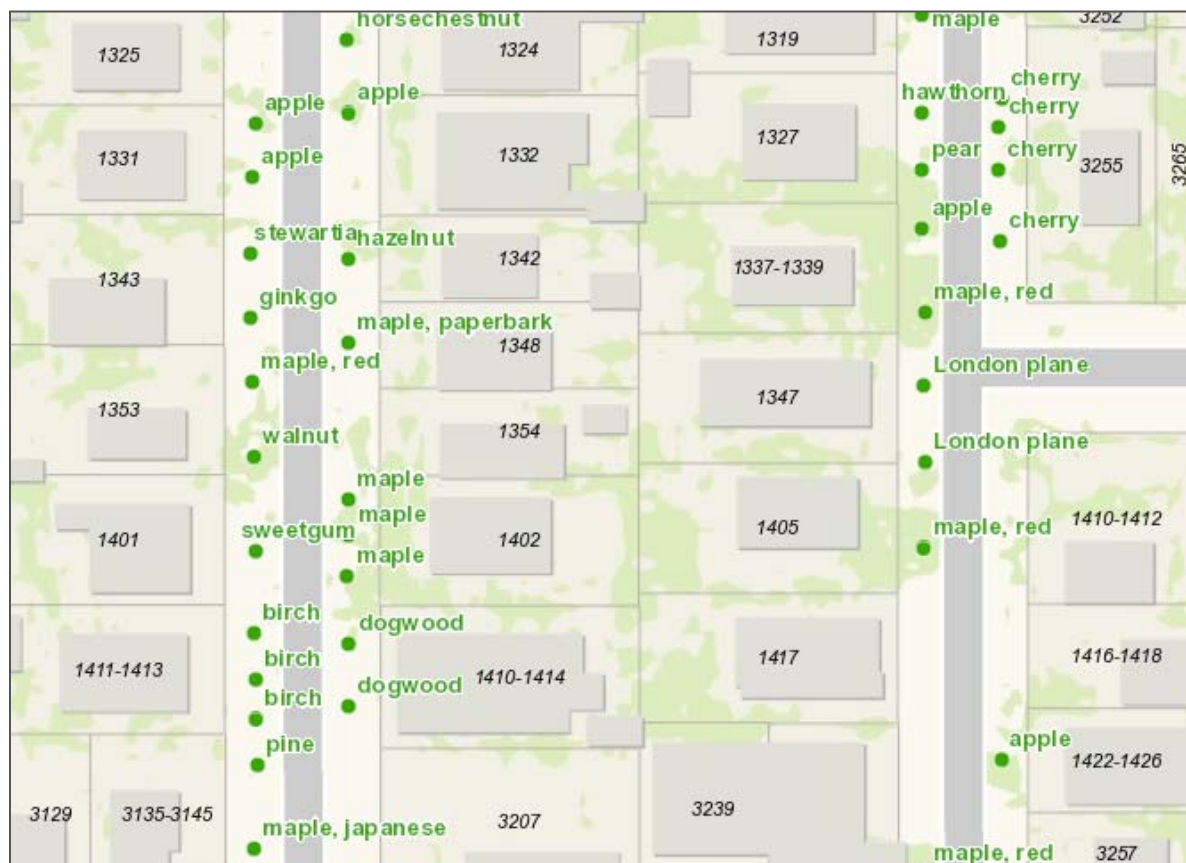
Hoyt Arboretum

Hoyt Arboretum has a collection of over 1,000 species of trees. All are labeled with scientific and common names. Visit www.hoytarboretum.org/ for more information.

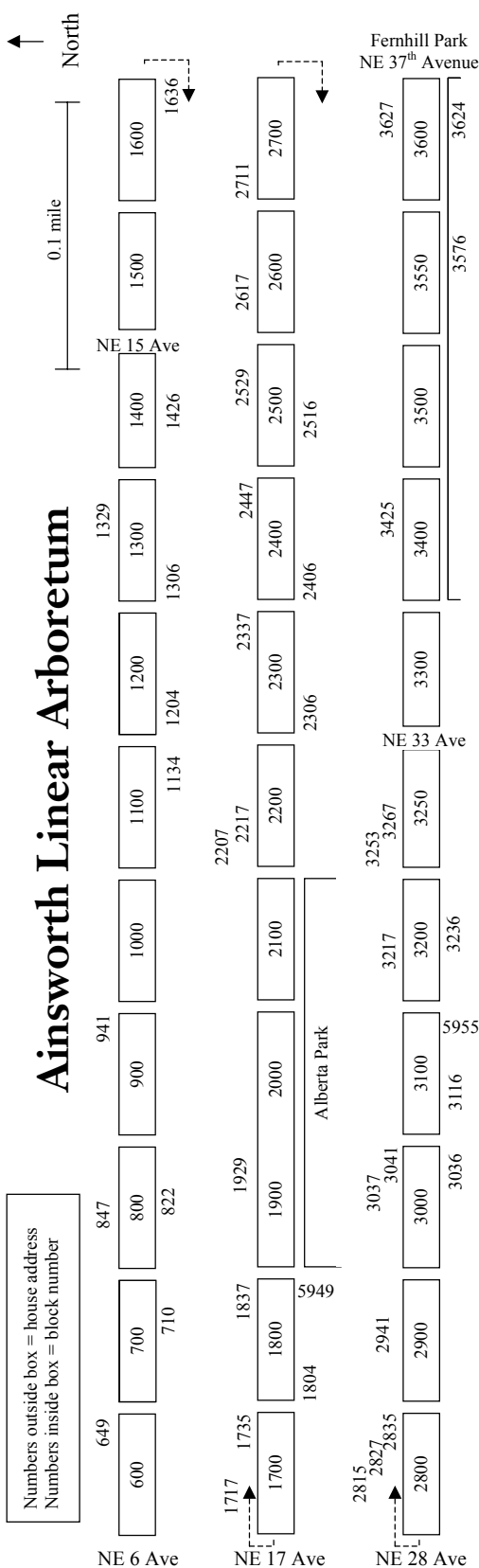
Section 3: Places to Practice Tree Identification

Tree Inventory Data

The Tree Inventory website has an interactive map of all past data collected. Visit <http://portlandoregon.gov/parks/treeinventory> and click on “Inventory Data.” Zoom to an inventoried area and print a map, or access via your smart phone in the field.



Tree inventory map in Sunnyside neighborhood.



The Ainsworth Linear Arboretum is located along NE Ainsworth Boulevard from NE 6th Ave to NE 37th, in Portland Oregon. Numbers on this map correlate to the house address. The year refers to the year the tree was planted by Friends of Trees.

- 649** 2 horse chestnuts *Aesculus hippocastaneum* European native. Nuts are poisonous.
- 710** 2 Paperbark maples (*Acer griseum*). - 2003 1 Bamboo oak *Quercus myrsinifolia* Rare Asian evergreen oak. - 2003
- 842** 1 Queen Elizabeth hedge maple *Acer campestre*. - 2003 1 Tatarian maple *Acer tataricum*. -2003 in the middle
- 879** 3 Magyar ginkgos *Ginkgo biloba* 'Magyar' - 2004 Chinese native can live centuries. Resists air pollution. Disease and pest free. Yellow fall color. Fruitless male clone.
- 941** 2 Paperbark maples *Acer griseum* Native to China. Red fall color, attractive peeling bark.
- 1134** 2 Japanese hornbeam *Carpinus japonica* Mostly troublefree and tidy - 2005. 1 Heartleaf hornbeam *Carpinus cordata*. - 2005

- 1204** 2 American hophornbeams *Ostrya virginiana*. 2004 2 American hornbeams *Carpinus caroliniana* - on 12th Street - 2004 Native to the eastern U.S., papery nutlets in fall. Leaves cling to tree into winter. Extremely rare in Portland. Eastern U.S. native with strong wood, orange-tinged fall color, papery nutlets.
- 1306** 1 Chinese dogwood *Cornus kousa* - 2003 1 Southern magnolia *Magnolia grandiflora* 'Edith Bogue'. - 2003
- 1329** 1 Oregon white oak *Quercus garryana* 2003 Native from British Columbia to Oregon. Can live 300 years.
- 1426** Lavalle Hawthorn *Crataegus x lavallei*
- 1636** 1 Deodar cedar *Cedrus deodara* in yard
- 1715** 1 Eastern redbud *Cercis canadensis* Rosy purple flowers in spring. Fast growth but short lived.
- 1735** 2 Katsura *Cercidiphyllum japonicum* Attractive fall color. Native to Japan and China, needs summer water to look best. Leaves out and drops leaves early.
- 1804** 3 Snow gums *Eucalyptus pauciflora* ssp. *niphophila* - in yard. Planted 2004
- 1814** 1 Saucer magnolia *Magnolia x soulangeana*
- 5949** NE 19th 1 Korean mountain ash *Sorbus alnifolia* -

- 1837** 1 Southern magnolia *Magnolia grandiflora* Evergreen tree from the eastern U.S. Large scented white flowers off and on through summer.
- 1929** 2 Tulip trees *Liriodendron tulipifera* From the southern and eastern U.S. Greenish-white flowers often hidden by leaves. Yellow fall color. Attracts aphids.
- Alberta Park** 3 Yellowwoods *Cladrastis kentukea*. - 2004
- 2207** 2 Sweet gums *Liquidambar styraciflua*
- Often breaks in ice storms. Shallow surface roots lift sidewalks. Grown for pretty fall color but produces large crops of spiky "gumball" fruits that litter ground.
- 2217** 1 Yellowwood *Cladrastis kentukea* - 2004 Wisteria-like white flowers, yellow fall color. Native to the Appalachians.
- 2306** 1 Yellow Fever magnolia *Magnolia x acuminata* 'Yellow Fever'. - 2004
- 2337** 1 Kentucky coffee tree *Gymnocladus dioica* 2004 1 Coastal redwood *Sequoia sempervirens* in yard
- 2406** 1 Kentucky coffee tree *Gymnocladus dioica* 2004 2 Mountain silverbellies *Halesia monticola* on west side of NE 24th. White flowers in spring - 2004
- 2417** 1 Chinese dogwood *Cornus kousa* 2004 China native

- with showy white flowers, large pink fruits, red fall color. attractive mottled bark with age. Needs summer watering to do best.
- 2516** 2 Persian ironwoods *Parrotia persica*. - 2004
- 2529** 1 Kentucky coffee tree *Gymnocladus dioica* 2004 Eastern U.S. native with sculpted bark, yellow fall color.
- 2617** 1 European beech *Fagus sylvatica* 'Riversii' Purple leaves, shade tolerant. Native to Europe.
- 2711** 1 Southern magnolia *Magnolia grandiflora* See 1837
- 2815** 1 Sweet gum *Liquidambar styraciflua* See 2207
- 2827** 2 Sweet gums *Liquidambar styraciflua* See 2207
- 2835** 3 Sweet gums *Liquidambar styraciflua* 1 Oregon white oak *Quercus garryana* in yard. See 2207 See 1329
- 2941** 5 Katsura *Cercidiphyllum japonicum* See 1735
- 3027** 2 Scarlet oaks *Quercus coccinea* - 2004 Strong-rooted, majestic tree can live hundreds of years. Magnificent red fall color. Native to eastern U.S.
- 3036** 1 Yellow Fever magnolia *Magnolia x acuminata* 'Yellow Fever' on Ainsworth -2004

- 1 Magyar ginkgo *Ginkgo biloba* 'Magyar' on west side of NE 31st. - 2004 1 Frontier elm *Ulmus* 'Frontier' on west side of NE 31st. - 2003 1 Purple European beech *Fagus sylvatica* 'Riversii' on west side of NE 31st. - 2004
- 3041** 1 Silver linden *Tilia tomentosa* 'Sterling' - 2004
2 Tupelos *Nyssa sylvatica* - on west side of NE 31st. - 2004
- 3116** 2 American hornbeams *Carpinus caroliniana* Native to eastern U.S. 2004 See 1134
- 5955** NE 32nd 1 Bambooleaf oak *Quercus myrsinaefolia* - 2003 Evergreen oak from Japan with unlobed leaves. New growth briefly tinged purplish.
- 3217** 2 Sweet gums *Liquidambar styraciflua* See 2207
- 3236** 1 Deodar cedar *Cedrus deodar* in yard
- 3253** 2 Honey locusts *Gleditsia triacanthos* - on east side of NE 32nd Place.
- 3267** 1 Atlas cedar *Cedrus libanii* ssp. *atlantica* in yard.
- 3425** 1 Oregon white oak *Quercus garryana* - 2004
- 3576** 1 Natchez crape myrtle *Lagerstroemia x fauriei* 'Natchez' - 2003 Compact hybrid has showy white flowers for long period in summer, cinnamon-colored bark, red to orange fall color.
- 3624** 2 Sweet gums *Liquidambar styraciflua* See 2207
- 3627** 1 Tricolor European beech *Fagus sylvatica* 'Roseomarginata'

Ainsworth Linear Arboretum trees

- Beech, purple European *Fagus sylvatica* 'Riversii' - 2617 Ainsworth and SW corner of NE 31st and Ainsworth
- Beech, tricolor *Fagus sylvatica* 'Roseomarginata' - 3627 Ainsworth
- Cedar, Atlas *Cedrus libanii* ssp. *atlantica* - in yards at 2406 and 3267 Ainsworth
- Cedar, Deodar *Cedrus deodara* - in yards at 1636 and 3236 Ainsworth
- Crape myrtle, *Lagerstroemia x fauriei* 'Natchez' 3576 Ainsworth
- Dogwood, Chinese *Cornus kousa* - 1306 and 2417 Ainsworth
- Elm, Frontier *Ulmus* 'Frontier' - SW corner of 31st Street and Ainsworth

(Tree species cont.)

- Eucalyptus, snow gum *Eucalyptus pauciflora* ssp. *niphophila* - in yard at 1804 Ainsworth
- Ginkgo *Ginkgo biloba* 'Magyar' - 879 Ainsworth and SW corner of 31st Street and Ainsworth
- Hawthorn, Lavalley *Crataegus x lavalleyi* - 1426 Ainsworth
- Honey locust *Gleditsia triacanthos* - NE corner of 32nd Place and Ainsworth
- Hophornbeam, American *Ostrya virginiana* - 1204 Ainsworth
- Hornbeam, American *Carpinus caroliniana* - 3116 Ainsworth, SE corner of 12th Street
- Hornbeam, Heartleaf *Carpinus cordata* - 1134 Ainsworth (between 2 Japanese hornbeams)
- Hornbeam, Japanese *Carpinus japonica* - 1134 Ainsworth
- Horse chestnut *Aesculus hippocastaneum* - 649 Ainsworth
- Katsura *Cercidiphyllum japonicum* - 1735 and 2941 Ainsworth (Church building)
- Kentucky coffee tree *Gymnocladus dioica* - 2337 and 2529 Ainsworth
- Linden, Silver *Tilia tomentosa* 'Sterling' - 3041 Ainsworth
- Magnolia, saucer *Magnolia x soulangeana* - 833, 1814 and 1945 Ainsworth
- Magnolia, southern *Magnolia grandiflora* - 1306, 1837 and 2711 Ainsworth
- Magnolia, Yellow Fever *Magnolia x acuminata* 'Yellow Fever' - 2306 and 3036 Ainsworth
- Maple, tatarian *Acer tataricum* 842 Ainsworth
- Maple, hedge *Acer campestre* - 842 Ainsworth, NE corner of 30th Street and Ainsworth
- Maple, paperbark *Acer griseum* - 710 Ainsworth
- Mountain ash, Korean *Sorbus alnifolia* - on Ainsworth in front of house at 5949 NE 19th
- Oak, bambooleaf *Quercus myrsinaefolia* - 710 Ainsworth and on Ainsworth at 5955 NE 32nd
- Oak, Oregon white *Quercus garryana* - 1329 and 3425 Ainsworth
- Oak, scarlet *Quercus coccinea* - 3027 Ainsworth
- Persian ironwood *Parrotia persica* - 2516 Ainsworth
- Redbud, Eastern *Cercis canadensis* - 1715 Ainsworth
- Redwood, Coastal *Sequoia sempervirens* - in yards at 2306 Ainsworth
- Silverbell, mountain *Halesia monticola* - NW corner of Ainsworth and 24th

(Tree species cont.)

- Sweet gum *Liquidambar styraciflua* - 2207, 2815, 2827, 2835, 3217 and 3624 Ainsworth
- Tulip tree *Liriodendron tulipifera* - 1929 Ainsworth
- Tupelo *Nyssa sylvatica* - NW corner of 31st Street and Ainsworth
- Yellowwood *Cladrastis kentukea* - 2217 Ainsworth, and three along Ainsworth in front of Alberta Park

One of our urban forest's best defenses against devastating diseases and pests is planting many different kinds of trees. Trees planted by Friends of Trees on Ainsworth in 2003-05 showcase a wide variety adapted to our climate and city conditions. Many are rare and greatly add to Portland's tree diversity.

The Ainsworth Linear Arboretum was conceived by Concordia Neighborhood Tree Liaison and Friends of Trees volunteer Jim Gersbach. For more information about planting street trees, go to the Urban Forestry Division website at www.portlandparks.org or call Urban Forestry Division at 503-823-4489 for a free site inspection and planting permit. To get involved in a community tree planting contact Friends of Trees at 503-282-8846 or www.friendsoftrees.org.

Please enjoy the Arboretum from the sidewalk.



Printed courtesy of:



PORTLAND PARKS & RECREATION
Healthy Parks, Healthy Portland

Director Zari Santner ♦ www.portlandparks.org

Ainsworth Linear Arboretum



PORTLAND PARKS & RECREATION
Healthy Parks, Healthy Portland

A Street Tree Arboretum

In the mid-1970s, two areas designated as Experimental Plots were planted with street trees suited to Portland's growing conditions. The experimental arboretum, the first of its kind in the country, gave visitors to East Delta Park the opportunity to compare potential trees for citizen planting. The plots were planted with two adjacent trees of the same variety, with the idea that they could create a window through which to view one's home. Unfortunately, due to its 'experimental' status and inconsistent financial resources, the arboretum has suffered upheaval over the years. With construction of the Rob Strasser soccer field in 1980, nearly half of the street tree arboretum had to be removed.

More recently, several of the original trees have been transplanted to new locations in the arboretum and new species added, such as the Accolade Elm. The plots are no longer considered experimental, but have made their way onto the master plan for East Delta Park. Arborists from around the country have toured the East Delta Park street tree arboretum, which has become renowned in the tree industry. The potential for this unique street tree arboretum is great, but resources remain tight.

The street tree arboretum is a valuable educational resource. The arboretum is used to teach tree identification to Neighborhood Tree Liaison (NTL) classes, a volunteer outreach program of the Urban Forestry Division that teaches community tree stewardship. In addition to the NTL program, Vancouver's Neighborwoods classes and Portland's Friends of Trees organization also use the arboretum for educational activities. For more information about the Neighborhood Tree Liaison program or a guided tour of the arboretum, please call the Urban Forestry Division at **503-823-4489**.

While at East Delta Park, be sure to visit the newly restored Walker Slough. After four years of removing invasive plants, deepening the channel, and planting native species, Walker Slough has been restored to its native wetland habitat.

1/03

The Trees of East Delta Park

The trees in this arboretum are recommended by the City of Portland's Urban Forestry Division for planting in the public right-of-way (between curb and sidewalk). Not all trees are suitable for all locations, depending on the width of the right-of-way, existence of overhead wires, etc. The City of Portland requires a permit to plant, remove, or prune any street tree. Call the **Urban Forestry Division at 503-823-4489** for a free permit and to consult with a Tree Inspector. Inspectors are certified International Society of Arboriculture (ISA) arborists and will assist the property owner in selecting the best tree, determining the appropriate location for planting in the public right-of way, and answering other street tree care questions.

Directions to East Delta Park:
travel north on I-5, take the Expo Center Exit (306B), turn right from the exit ramp, then turn left into the park at the gas station.

Portland Parks & Recreation
Urban Forestry Division
10910 N. Denver
Portland, Oregon 97217
503-823-4489

www.PortlandParks.org



PORTLAND PARKS
& RECREATION

Section 3: Places to Practice Tree Identification

Urban Forestry Division Headquarters
10910 N Denver

North Entrance

Owen Softball Complex

Parking

Gas Station

South Entrance

Exit 306b off I-5 N Bound

The Trees of East Delta Park

1. Jacquemontii Birch *Betula jacquemontii*
2. Flame Ash *Fraxinus oxycarpa* 'Flame'
3. Greenspire Linden *Tilia cordata* 'Greenspire'
4. Globe European Hornbeam *Carpinus betulus* 'Globosa'
5. Alnira Norway Maple *Acer platanoides* 'Alnira'
6. Wineleaf Sycamore Maple *Acer pseudoplatanus* 'Purpureum Spathetii'
7. Cleveland Norway Maple *Acer platanoides* 'Cleveland'
8. Pyramidal Sycamore Maple *Acer pseudoplatanus* 'Pyramidalis'
9. Accolade Elm *Ulmus japonicus* x *wilsoniana* 'Morton'
10. Chanticleer Pear *Pyrus calleryana* 'Chanticleer'
11. Double Flowering Cherry *Prunus serrulata* 'Double Flowering'
12. Madonna Crabapple *Malus 'Madam'*
13. Southern Magnolia *Magnolia grandiflora*
14. Turkish Hazelnut *Corylus colurna*
15. Red Jade Crabapple *Malus 'Red Jade'*
16. Deciduous Magnolia *Magnolia*
17. Flowering Ash *Fraxinus ornus*
18. Golden Desert Ash *Fraxinus excelsior* 'Aureaefolia'
19. Big Leaf Linden *Tilia platyphyllos*
20. Japanese Snowbell *Syrinx japonicus*
21. Japanese Lilac Tree *Syringa reticulata*
22. Ginkgo biloba *Saragatu*
23. Centurion Crab *Malus 'Centzian'*
24. Kwanzan Cherry *Prunus serrulata* 'Kwanzan'
25. Tri Color Beech *Fagus sylvatica* 'Roseomarginata'
26. Cork Tree *Phellodendron amurense*
27. Parkway Maple *Acer platanoides* 'Columnar Broad'
28. Norway Maple *Acer platanoides*
29. Pioneer Elm *Ulmus x hollandica* 'Pioneer'
30. Legacy Sugar Maple *Acer saccharum* 'Legacy'
31. Ischonoski Crabapple *Malus 'Ischonoski'*
32. Bicentennial Linden *Tilia cordata* 'Bicentennial'
33. Krauter's Vesuvius Plum *Prunus cerasifera* 'Krauter's Vesuvius'
34. Homestead Elm *Ulmus 'Homestead'*
35. Removed
36. Willow Oak *Quercus phellos*
37. Ohio Buckeye *Aesculus glabra*
38. Sugar Maple *Acer saccharum*
39. Summershade Norway Maple *Acer platanoides* 'Summershade'
40. Double Flowering Cherry *Prunus serrulata* 'Double Flowering'
41. Doric Red Maple *Acer rubrum* 'Doric'
42. Baumann Horse Chestnut *Aesculus*
43. Ruby Red Horsechestnut *Aesculus carnea* 'Briotti'
44. Van Eseltine Crabapple *Malus 'Van Eseltine'*
45. Amur Maple *Acer ginnala*
46. Mongolian Linden *Tilia cordata* 'Mongolian'
47. Winter Gold Crab *Malus 'Winter Gold'*
48. Globe Norway Maple *Acer platanoides* 'Globosum'
49. Black Tupelo *Nyssa sylvatica*
50. Pyramidal European Hornbeam *Carpinus*
51. Urbanite Ash *Fraxinus pennsylvanica* 'Urbanite'
52. Rancho Roundhead Ash *Fraxinus excelsior* 'Rancho'
53. Summit Ash *Fraxinus pennsylvanica* 'Summit'
54. Marshall's Seedless Ash *Fraxinus pennsylvanica* 'Marshall'
55. Pin Oak *Quercus palustris*
56. Crimson King Norway Maple *Acer platanoides* 'Crimson King'
57. Golden Sweetgum *Liquidambar styraciflua* 'Golden'
58. Schwedler Maple *Acer Platanoides* 'Schwedleri'
- 58a. Norway Maple sp. *Acer Platanoides* sp.
59. Pioneer Elm *Ulmus x hollandica* 'Pioneer'
60. Red Sunset Maple *Acer Rubrum* 'Frankford'
61. Forest Green Oak *Quercus frainetto* 'Schmidt'
62. Hedge Maple *Acer campestre*
63. Princess Pear *Pyrus calleryana* 'Princess'
64. Columnar Siberian Crabapple *Malus bucatia* 'Columnaris'
65. Edith Bogue Magnolia *Magnolia grandiflora* 'Edith Bogue'
66. Norwegian Sunset Maple *Acer truncatum* x *A. platanoides* 'Kerthstorm'
67. Katsura *Cercidiphyllum japonicum*
68. Globehead European Ash *Fraxinus excelsior* 'Globosa'
69. Paperbark Maple *Acer griseum*
70. Shakespear Crabapple *Malus* 'Shakespear'
71. Koebel Crabapple *Malus 'Koebel'*
72. Sargent Crabapple *Malus 'Sargent'*
73. Galaxy Magnolia *Magnolia liliflora* 'Nigra' x *M. sprengeri* 'Diva'
74. Profusion Crabapple *Malus 'Profusion'*
75. Lavelle Hawthorne *Crataegus x lavallei*
76. Thundercloud Plum *Prunus cerasifera* 'Thundercloud'
77. Hackberry *Celtis occidentalis*
78. Striped Maple *Acer pensylvanicum*
79. Yellow Wood *Cladrastis lutea*
80. White Ash *Fraxinus americana*
81. Japanese Zelkova *Zelkova serrata*
82. London Plane tree *Platanus acerifolia*

Photos at right, top to bottom: Atlas cedars along path, Sycamore maple leaves, European white birch leaves, Sweetgum leaves, Chinese elm bark. Photo at bottom left corner of map: Sweetgum, Norway maple, English elm and Northern red oak leaves.



Sweetgum
Tulip tree
Cucumber tree
Southern magnolia
Butterflies magnolia
Crab apple
White mulberry
Empress tree
Spruce
Austrian pine
Eastern white pine
Thundercloud plum
Flowering plum
Douglas fir
Northern red oak
Giant sequoia
American elm
Wych elm
Chinese elm
English elm

Trees are labeled with the first two letters of the genus and first two letters of the species.



Trees may die, be removed, and other trees planted. This map is a snapshot of the spring season 2010.

Section 3: Places to Practice Tree Identification

Inventory Work Days Listed by Date

Date	Day	Neighborhood	Location
6/18/2016	Sat	Hollywood	Hollywood Library, 4040 NE Tillamook St
6/18/2016	Sat	Humboldt	Peninsula Park, 700 N Rosa Parks Way
6/25/2016	Sat	Alameda	Fremont United Methodist Church, 2620 NE Fremont St
6/25/2016	Sat	Beaumont-Wilshire	Grand Central Baking Co., 4440 NE Fremont St
6/29/2016	Wed	Brentwood-Darlington/Lents	Lents Park, 9000 SE Holgate Blvd
6/29/2016	Wed	Creston-Kenilworth	Kailash Ecovillage, 4311 SE 37th Ave
7/9/2016	Sat	Brentwood-Darlington/Lents	Bloomington Park, 5100 SE 100th Ave
7/9/2016	Sat	Hillsdale	Starbucks, 7421 SW Barbur Blvd, Suite 100
7/9/2016	Sat	Rose City Park	St. Rose of Lima Catholic Church, 2727 NE 54th Ave
7/13/2016	Wed	Beaumont-Wilshire	Wilshire Park, NE 33rd Ave & Skidmore St
7/16/2016	Sat	Alameda	Mars Bar, NE 24th & Fremont
7/16/2016	Sat	Creston-Kenilworth	Community Music Center, 3350 SE Francis St
7/16/2016	Sat	Grant Park	Private residence, 2523 NE 45th Ave
7/20/2016	Wed	Hillsdale	Food Front, 6344 SW Capitol Highway at Hillsdale Center
7/20/2016	Wed	Rose City Park	Normandale Park, NE 57th Ave & NE Wasco St
7/23/2016	Sat	Beaumont-Wilshire	Fire & Stone, 3707 NE Fremont St
7/23/2016	Sat	Brentwood-Darlington/Lents	Glenwood Park, 8800 SE Claybourne St
7/30/2016	Sat	Alameda	Wilshire Park, NE 33rd & Skidmore
7/30/2016	Sat	Hollywood	Hollywood Library, 4040 NE Tillamook St
7/30/2016	Sat	Humboldt	Peninsula Park, 700 N Rosa Parks Way
8/6/2016	Sat	Creston-Kenilworth	Creston Park, SE 44th & Powell Blvd
8/10/2016	Wed	Hollywood	Hollywood Library, 4040 NE Tillamook St
8/13/2016	Sat	Brentwood-Darlington/Lents	Harney Park, SE Harney St & SE 67th Ave
8/13/2016	Sat	Grant Park	New Seasons Market, 3210 NE Broadway
8/13/2016	Sat	Rose City Park	Normandale Park, NE 57th Ave & NE Wasco St
8/17/2016	Wed	Humboldt	Peninsula Park, 700 N Rosa Parks Way
8/20/2016	Sat	Beaumont-Wilshire	Wilshire Park, NE 33rd Ave & Skidmore St
8/20/2016	Sat	Creston-Kenilworth	YMCA Child Development Center, 6036 SE Foster Rd
8/24/2016	Wed	Alameda	private residence, 4317 NE 24th Ave
8/27/2016	Sat	Grant Park	Grant Park Church, 2728 NE 34th Ave
8/27/2016	Sat	Humboldt	Peninsula Park, 700 N Rosa Parks Way
8/27/2016	Sat	Rose City Park	Rose City Park United Methodist Church, 5830 NE Alameda
9/10/2016	Sat	Grant Park	Grant Park, NE 33rd Ave & Brazee St
9/10/2016	Sat	Wilkes	Wilkes Park, NE 154th Ave & NE Beech St
9/17/2016	Sat	Wilkes	Wilkes Park, NE 154th Ave & NE Beech St

Inventory Work Days Listed by Neighborhood

Neighborhood	Date	Day	Location
Alameda	6/25/2016	Sat	Fremont United Methodist Church, 2620 NE Fremont St
Alameda	7/16/2016	Sat	Mars Bar, NE 24th & Fremont
Alameda	7/30/2016	Sat	Wilshire Park, NE 33rd & Skidmore
Alameda	8/24/2016	Wed	private residence, 4317 NE 24th Ave
Beaumont-Wilshire	6/25/2016	Sat	Grand Central Baking Co., 4440 NE Fremont St
Beaumont-Wilshire	7/23/2016	Sat	Fire & Stone, 3707 NE Fremont St
Beaumont-Wilshire	8/20/2016	Sat	Wilshire Park, NE 33rd Ave & Skidmore St
Beaumont-Wilshire	7/13/2016	Wed	Wilshire Park, NE 33rd Ave & Skidmore St
Brentwood-Darlington/Lents	6/29/2016	Wed	Lents Park, 9000 SE Holgate Blvd
Brentwood-Darlington/Lents	7/9/2016	Sat	Bloomington Park, 5100 SE 100th Ave
Brentwood-Darlington/Lents	7/23/2016	Sat	Glenwood Park, 8800 SE Claybourne St
Brentwood-Darlington/Lents	8/13/2016	Sat	Harney Park, SE Harney St & SE 67th Ave
Creston-Kenilworth	6/29/2016	Wed	Kailash Ecovillage, 4311 SE 37th Ave
Creston-Kenilworth	7/16/2016	Sat	Community Music Center, 3350 SE Francis St
Creston-Kenilworth	8/6/2016	Sat	Creston Park, SE 44th & Powell Blvd
Creston-Kenilworth	8/20/2016	Sat	YMCA Child Development Center, 6036 SE Foster Rd
Grant Park	8/13/2016	Sat	New Seasons Market, 3210 NE Broadway
Grant Park	8/27/2016	Sat	Grant Park Church, 2728 NE 34th Ave
Grant Park	9/10/2016	Sat	Grant Park, NE 33rd Ave & Brazee St
Grant Park	7/16/2016	Sat	Private residence, 2523 NE 45th Ave
Hillsdale	7/9/2016	Sat	Starbucks, 7421 SW Barbur Blvd, Suite 100
Hillsdale	7/20/2016	Wed	Food Front, 6344 SW Capitol Highway at Hillsdale Center
Hollywood	6/18/2016	Sat	Hollywood Library, 4040 NE Tillamook St
Hollywood	7/30/2016	Sat	Hollywood Library, 4040 NE Tillamook St
Hollywood	8/10/2016	Wed	Hollywood Library, 4040 NE Tillamook St
Humboldt	6/18/2016	Sat	Peninsula Park, 700 N Rosa Parks Way
Humboldt	7/30/2016	Sat	Peninsula Park, 700 N Rosa Parks Way
Humboldt	8/17/2016	Wed	Peninsula Park, 700 N Rosa Parks Way
Humboldt	8/27/2016	Sat	Peninsula Park, 700 N Rosa Parks Way
Rose City Park	7/9/2016	Sat	St. Rose of Lima Catholic Church, 2727 NE 54th Ave
Rose City Park	7/20/2016	Wed	Normandale Park, NE 57th Ave & NE Wasco St
Rose City Park	8/13/2016	Sat	Normandale Park, NE 57th Ave & NE Wasco St
Rose City Park	8/27/2016	Sat	Rose City Park United Methodist Church, 5830 NE Alameda
Wilkes	9/10/2016	Sat	Wilkes Park, NE 154th Ave & NE Beech St
Wilkes	9/17/2016	Sat	Wilkes Park, NE 154th Ave & NE Beech St



PORTLAND PARKS & RECREATION

Healthy Parks, Healthy Portland

Join us for Tree Inventory Work Days in 2016!

In 2016 volunteer workdays will be held in Alameda, Beaumont-Wilshire, Brentwood-Darlington, Creston-Kenilworth, Grant Park, Hillsdale, Hollywood, Humboldt, Lents, Rose City Park, Russell, and Wilkes. Thirty-five work days are planned on Wednesdays and Saturdays throughout the summer.

Sign up for work days online at: <http://portlandoregon.gov/parks/treeinventory>

