



# BC BigTree Field Package

<b>Field Package Contents</b>	
<b>How to get a tree into the Registry.....</b>	<b>2</b>
<b>Tree nomination.....</b>	<b>2</b>
<b>Nominator registration.....</b>	<b>2</b>
<b>Nomination form information.....</b>	<b>3</b>
1. Tree information.....	3
2. Location information.....	3
3. Ownership information.....	4
4. Tree measurements.....	5
5. Tree, site and access notes.....	5
6. Digital image submissions.....	6
<b>Measurement guidelines.....</b>	<b>7</b>
<b>Circumference.....</b>	<b>7</b>
<b>Height.....</b>	<b>8</b>
<b>Crown spread.....</b>	<b>11</b>
<b>Measurement verification.....</b>	<b>11</b>
<b>Re-measuring a tree already in the Registry.....</b>	<b>11</b>
<b>Printable field nomination form.....</b>	<b>12</b>

## How to get a tree into the Registry

The two ways to get a big tree into the BC BigTree Registry

<p><b>OPTION 1.</b> Measure the tree yourself</p> <hr/> <p style="text-align: right;"><b>Stop here»</b></p>	Step 1. Find and photograph a big tree	
	Step 2. Measure the tree and collect information	
	Step 3. Register/login as a Nominator	
	Step 4. Nominate the tree	
	Step 5. Verify the measurements and information	Done by us
	Step 6. BC BigTree Registry - review and display	Done by us
<p><b>OPTION 2.</b> Bring a qualified verifier with you to measure the tree</p> <hr/> <p style="text-align: right;"><b>Stop here»</b></p>	Step 1. Find and photograph a big tree	
	Step 2. Measure and verify	
	Step 3. Register/login as a Nominator	
	Step 4. Nominate the tree	
	Step 5. BC BigTree Registry - review and display	Done by us

## Tree nomination

### Nominator registration

To nominate a tree you must first register as a nominator with BC BigTree Registry. Nominators must provide a valid email address, their first and last name and personal contact information. All personal contact information is kept confidential. The email address you provide becomes your login ID. Once registered, you can nominate any number of trees. You can elect to remain anonymous (i.e. your name will not be publicly display in the Registry) on a tree by tree basis.

### Group nominations

If you would like to nominate a tree as a group of individuals (e.g. school group or club), have the primary contact person complete the nominator registration. The first and last name fields are mandatory so you need to use both of them when entering a group name. For example, **first name:** Grade 4 Class, **last name:** Gabriola Elementary School. If you have nothing to add to the first name field, use the initials of the group. For example, **first name:** FOS, **last name:** Friends of Stoltmann.

## Nomination form information

To guide you through the nomination process we have described the categories and types of information collected on the on-line nomination form. They are presented here in the same order that they appear on the form. Required information fields are marked with an \*. Confidential information fields (i.e. those containing sensitive or personal information that will not be publicly displayed) are shaded in grey in the field nomination form. The printable field nomination form can be used to help you keep track of the information you collect.

### 1. Tree information

#### Species name \*

To nominate a tree you need to know the scientific and common name of the tree. See the BC BigTree Website "[Links](#)" page for a list of tree identification resources.

#### Co-nominators and anonymous nominations

Up to 3 co-nominators can be identified. On the nomination form you will be asked if the nominator(s) wish to remain anonymous. If selected, the nominator name(s) will not be publicly displayed in the Registry in association with the tree.

#### Nickname

You can enter the nickname or local name of the tree.

### 2. Location information

Precise location information is extremely valuable for re-locating a tree for measurement and verification purposes. It also allows other interested individuals to find and admire the tree. If a tree is located in a sensitive area, on private land or a site with access restrictions, the exact location can be withheld. This means the latitude and longitude co-ordinates will not be displayed in the Registry and the tree will not appear on the location map (Google Maps). The need to withhold exact location information can be indicated in the tree ownership section of the Nomination Form.

#### Latitude and longitude co-ordinates\*

Latitude and longitude co-ordinates are stored in the Registry in decimal degrees. A GPS unit can be set to display decimal degrees, or an on-line conversion tool can be used. For example, The Engineering Toolbox site provides a [latitude and longitude](#) utility to convert from degrees, minutes, and seconds to decimal degrees. The Engineering Toolbox site also provides a [UTM to latitude and longitude](#) conversion utility (make note of the UTM zone as it is needed for the conversion).

#### Datum

A datum is a set of reference points on the Earth's surface used to define a horizontal coordinate system such as latitude and longitude, or a vertical system such as elevation/sea depth. Depending on the datum used (NAD27, WGS84, [NAD 83](#)), the coordinates for a specific point on the earth can vary significantly. Check the settings on your GPS unit to see what datum is being used. Paper maps and charts will also indicate the datum used.

#### Location

Location can be the local name of a nearby area (e.g. a picnic or rest-stop), man-made feature (e.g. airport or dam), or geographic feature (e.g. a lake, river, valley or mountain).

## Nearest town

Nearest town, city or village is selected from a drop-down menu. All dropdown menus in the Registry are “smart” menus lists. They can be scrolled through or automatically filtered based on your text entry.

## 3. Ownership information

### Ownership categories and details

Ownership is broken down into several categories that are presented in a dropdown menu list. After you select a category you will have the opportunity to add more specific information if it is available to you. The categories, with some examples, are described below.

Federal land - The tree is located on federally owned land.

Specifics: Canadian Forces Base Esquimalt

Provincial land - The tree is on crown or provincial land.

Tree Farm Licence - The tree is located on land with a Tree Farm Licence.

Specifics: Tree Farm Licence #

Woodlot License - The tree is located on land with a Woodlot Licence.

Specifics: Woodlot Licence #

Parks and Reserves - The tree is located in a park (National, Provincial, Regional, District, City, Ecological Reserve, Reserve, Preserve, Heritage Site etc.).

Specifics:

National Park - e.g. "Kootenay NP"

Provincial Park - e.g. "Cathedral PP"

Regional Park - e.g. "Belcarra RP"

Ecological Reserve - e.g. "Chilliwack River ER"

Heritage Park - e.g. "Stein Valley Nlaka'pamux HP"

Reserve - e.g. "McGillivray Creek Game Reserve"

Preserve - e.g. "Cowichan Garry Oak Preserve"

Recreational Site - e.g. "Pine Point Rec Site"

Municipal/city land - The tree is located on municipal or city land that is not designated as a park. For example, it is on city land along a boulevard or roadway. Describe the location in your access notes.

Watersheds - The tree is located in a designated watershed.

Specifics: Capilano Watershed

Private land - The tree is located on land owned by a private citizen. For example, the tree is located on someone's farm, acreage, backyard, etc.

Institution or corporation - The tree is located on land owned, occupied or leased by a large company, institution, or corporation.

Specifics: UBC Vancouver campus

First Nations Reserve - The tree is located on First Nations Land or a First Nation Reserve.

Specifics: Penticton IR

Other – The tree or landowner does not fit in any of the above categories.

Unknown - The tree or landowner information is unknown.

### **Ownership notes**

Use the notes section if you are not sure which category to pick or have some other ownership related information you would like us to know.

### **Owner contact information**

Any personal or contact information for land owners or land managers, administrators, or license or tenure holders is kept confidential.

### **Access restrictions and request to withhold exact locations**

In the on-line nomination form you will be asked if the tree or land owner was contacted about the release of the exact tree location. This is where you can indicate the need to withhold exact location information and specify access restrictions. Landowners can request that we withhold the exact location of the tree. In this case that latitude and longitude co-ordinates will not be publicly displayed. Landowners can also indicate that public access to the tree is restricted. In this case the tree access notes you provide us will not be publicly displayed.

## **4. Tree measurements**

All measurements must be made following the measurements guidelines outlined in this field package. Measurements can be made in metric or imperial units. Record the date the measurements were taken and make note of the height that circumference was measured at. In the Measurement Notes field, provide a description of the techniques/equipment used and any measurement difficulties encountered. These notes will not be publicly displayed in the Registry.

The only required measurement on the nomination form is tree circumference as it is the easiest to measure. If you take the measurements yourself, the nomination will be accepted but the tree will not be publicly displayed in the Registry until the measurements have been verified. This means the tree will have to be re-visited at a later date by a registered verifier.

Alternatively, you can arrange to have a qualified individual or professional come with you to verify the tree measurements and information. If you choose this option, provide the verifier with a copy of the entire field package beforehand. If you have difficulties obtaining or determining location or ownership information, or writing your tree or access notes, try asking your verifier for assistance. They may have access to resources and equipment (such as a GPS unit) unavailable or difficult for you to obtain. Have them review the information recorded on your field nomination form. Record the name, qualifications and personal contact information of the verifier. Let the verifier know that their personal contact information will be kept confidential. If there are additional verifiers present, record their names. Ask the verifier(s) if they wish to remain anonymous and not have their name(s) revealed.

## **5. Tree, site and access notes**

### **Tree and site notes**

It is helpful if you submit a written description of the tree and site it is growing on. Describe of any notable physical characteristics of the tree, such as a fire scar, insect or other damage, a pronounced lean, forked top, dead top, tree health or evidence of wildlife use such as nesting birds, etc. that are of interest and will help others identify the tree. Let us know if the tree has interesting story or is of cultural significance.

### **Access notes**

When you provide written "access notes", please start your driving instructions from the nearest town. Where appropriate, please provide detailed hiking instructions including trail name, condition, approximate distance etc. If it is helpful or necessary, consider drawing or scanning a map that can be used to locate the tree. You can upload up to 3 "access maps" at the time of nomination. You can submit your maps in jpg, png, gif, or bmp formats. If a tree is

located in a sensitive area or on land with access restrictions, the access notes you provide us will not be publicly displayed. The need to withhold information can be indicated in the tree ownership section of the Nomination Form.

## 6. Digital image submissions

We encourage you take photographs of the tree. In separate photos, try to capture the tree in profile, the base of the tree, with and without a scale reference (e.g. a person), the tree canopy, any noteworthy features, and the ecosystem or forest it is growing in. We ask that you also include a photo of a person measuring trunk circumference showing the place and height at which the measurement was taken.

Digital images will be automatically reduced in size to 1024 by 1024 pixels. A file size greater than 2MB is unnecessary and will only increase the upload time. You can submit your images in jpg, png, gif, or bmp formats.

For each photo you will need to include: photographer/image owner's first and last name, email address (kept confidential), photo date and a photo description (optional).

Before submitting a photograph you must obtain permission from the image owner and consent from all people captured in the photograph. By uploading an image to the Registry you are acknowledging and agreeing to the following terms and copyright notice:

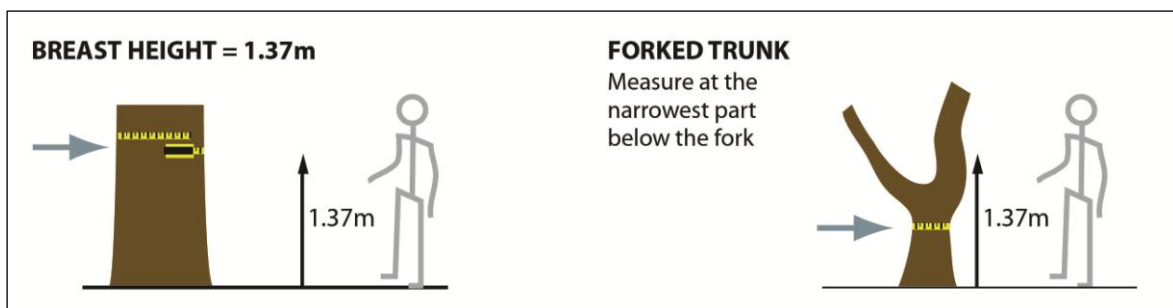
1. The image copyright remains with the photographer/owner of the image.
2. The BC BigTree Registry is allowed to use and display the image in the BC BigTree Registry, on the BC BigTree Website, and in their publications.
3. You understand that the personal information you provide is being collected pursuant to section 26 of the Freedom of Information and Protection of Privacy Act, R.S.B.C. 1996, c. 165. The image owner's or copyright holder's name will be publicly displayed in connection with the appearance of this image. The image owner's or copyright holder's name and the image could be stored, accessed or disclosed outside of Canada. This situation would apply if social media is used to promote or advertise the BC BigTree Registry and its activities. For example, the image and the image owner's or copyright holder's name could appear on a Facebook page or a Twitter account or feed showcasing the trees in the BC BigTree Registry.
4. If you are not the image owner or copyright holder it is your responsibility to obtain their permission to upload the image for use on the BC BigTree Registry and BC BigTree Website. You must also obtain their consent to having their name and the image being stored, accessed or disclosed outside of Canada.
5. If the photo includes anyone else, you hereby certify that you have obtained the permission of that person to appear in the photo, and for you to post the photo on-line generally, or in the BC BigTree Registry and BC BigTree Website, in particular.
6. The BC BigTree Registry and BC BigTree Website can not control or block the theft or download of an image displayed on a public access website.

## Measurement guidelines

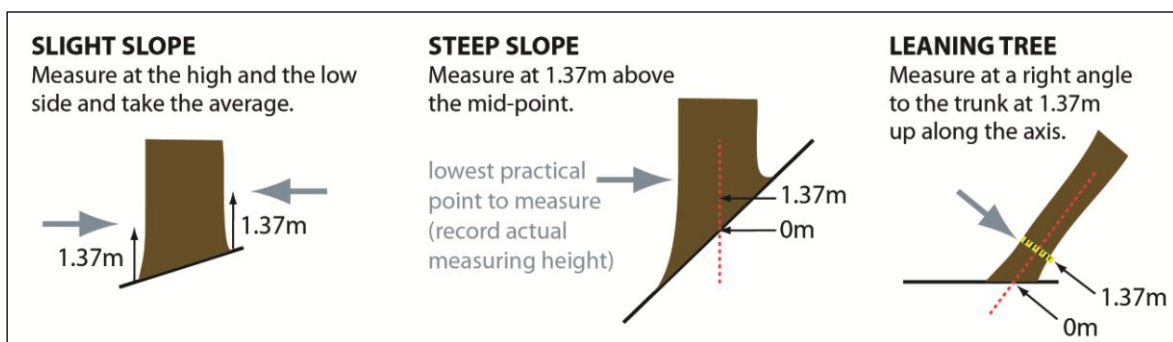
The measurement guidelines described here follow those set by American Forests, which are used in their National Big Tree Program and in most of the state-wide programs in the USA (see our [“Links”](#) page on the BC BigTree Website).

### Circumference

1. Circumference is measured at breast height (1.37 m or 4.5 feet above ground level or the germination point). If a burl or obstruction makes this location unrepresentative, measure at the most suitable point and make note of the actual measurement height. If your measuring tape is too stiff or too short, you can use a string or rope, but make sure it is made of non-stretch material.
2. If the tree forks at or below 1.37 m, record circumference at the narrowest place below the lowest fork. Make note of the actual measurement height. If this puts the measurement location on the ground, the trees should be considered separate individuals.



3. If the tree is on a slope, measure circumference at 1.37m up the trunk on both the high and the low side of the slope. Record the average of these two measurements. If the tree is on a steep slope, take one measurement. This measurement should be taken at 1.37m up from the midpoint of the trunk (the estimated germination point of the tree). If the slope is extreme, you may need to measure circumference higher up. Always make note of the measurement height.
4. If the tree is leaning, circumference measurements should be taken at 1.37m up from the axis of the tree base, following the lean of the trunk. Circumference must be measured at a right angle to the trunk, otherwise circumference will be overestimated.



## Height

### Equipment needed

You only need three pieces of equipment to properly measure a tree: a measuring tape, an inclinometer to measure angles and a calculator (with cosine and tangent functions). If purchasing an inclinometer (Abney level, clinometer, etc.) is beyond your budget, or you can't borrow one, there are mobile phone apps that allow you to use a smartphone as an inclinometer. Here are two possible options: [Smart Measure](#) and [iHandy Carpenter](#). See Gabriel Hemery's helpful [instructions](#) on using iHandy Carpenter to measure tree height.



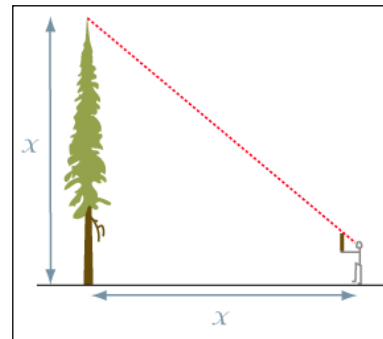
Photo source: <http://gabrielhemery.com>

Today, foresters use a Hypsometer – an all in one tool that measures distance, angles and even calculates height for you. This tool hastens the measurement process, but it is not necessary.

### For fun !

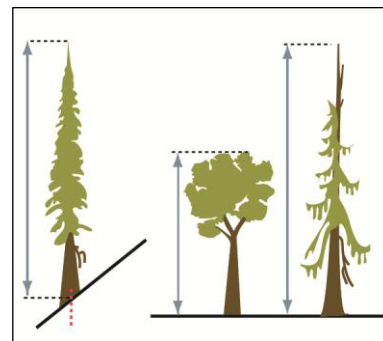
#### *The stick method - how they built the pyramids!*

This old but simple method only works on level ground. It just requires a stick and a distance measuring tape. The stick must be the same length as your arm or grasped at a point where the length of the stick above your hand equals that of your arm. The stick is held pointing straight up, at 90 degrees to your outstretched, straight arm. Carefully walk backwards until the top of the tree lines up with the top of your stick. Mark where your feet are. The distance between your feet and the tree is roughly equivalent to the height of the tree. You might find it interesting to compare your results using this simple method with the standard methods described below.



### How to measure height

Height is the hardest measurement to take accurately, especially for larger trees. Measurements become more reliable the greater the distance you are from the tree (the distance you are away from the tree must be greater than the total tree height). In dense forests it can be challenging to get a clear view of the tree top. The slope of the ground can also make measurement difficult. Trees that are leaning significantly should be measured with the lean to the right or left, not with the lean toward or away from you. In challenging forest situations we recommend making more than one attempt to measure height. If possible try and re-measure from a different view point, and always double check your measurements.

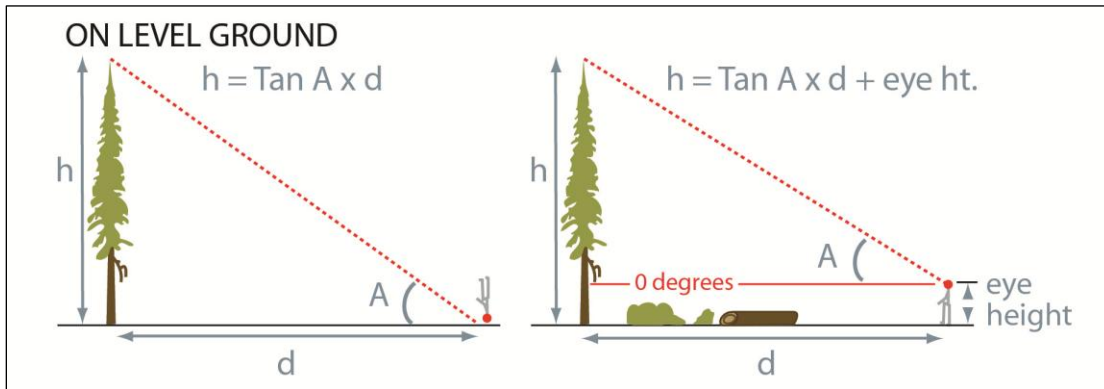




## The math used in height calculations

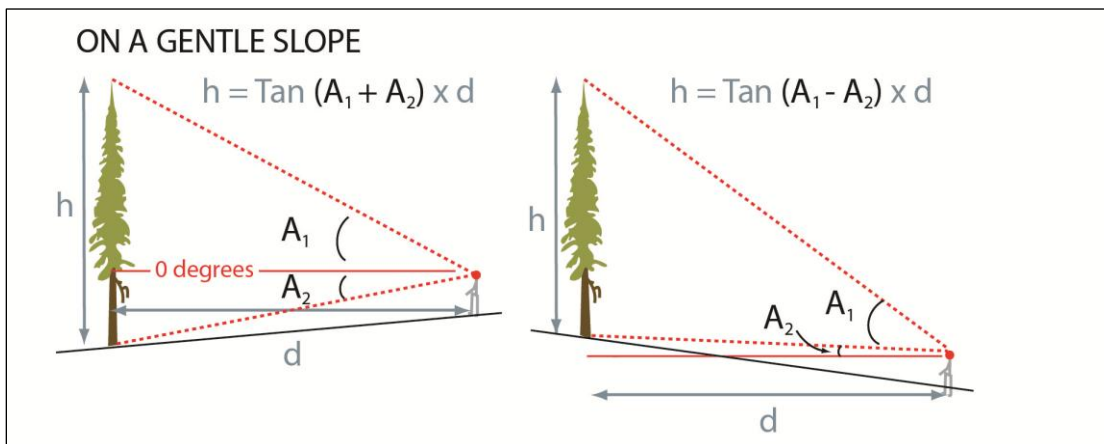
### Working on level ground

Calculating tree height requires the use of basic trigonometry:  $h = \text{Tan } A \times d$ , where  $h$  is the tree height,  $d$  is the distance from tree, and  $A$  is the angle to the top of the tree. Since your measurements will be made at eye level, you need to know your eye height (height of your eye above the ground). The equation then becomes  $h = \text{Tan } A \times d + \text{eye height}$ .



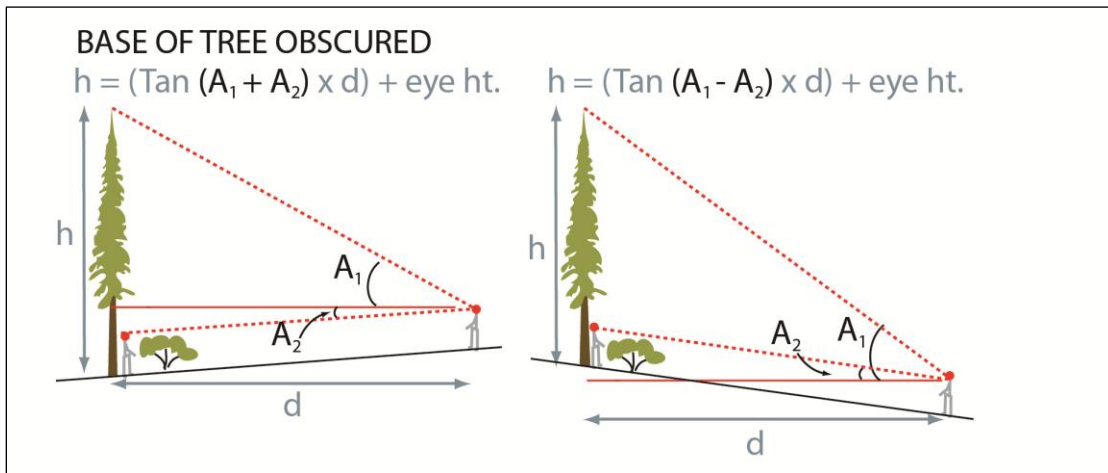
### Working on moderately sloped terrain

If the only option available to you is to stand either up or down slope of the tree, and the gradient is such that the base of the tree is above or below eye level, additional angles need to be measured. In addition to tree top angle, you need to measure the angle to the tree base. These angles are either subtracted or added depending on whether you are above (added) or below (subtracted) the tree.



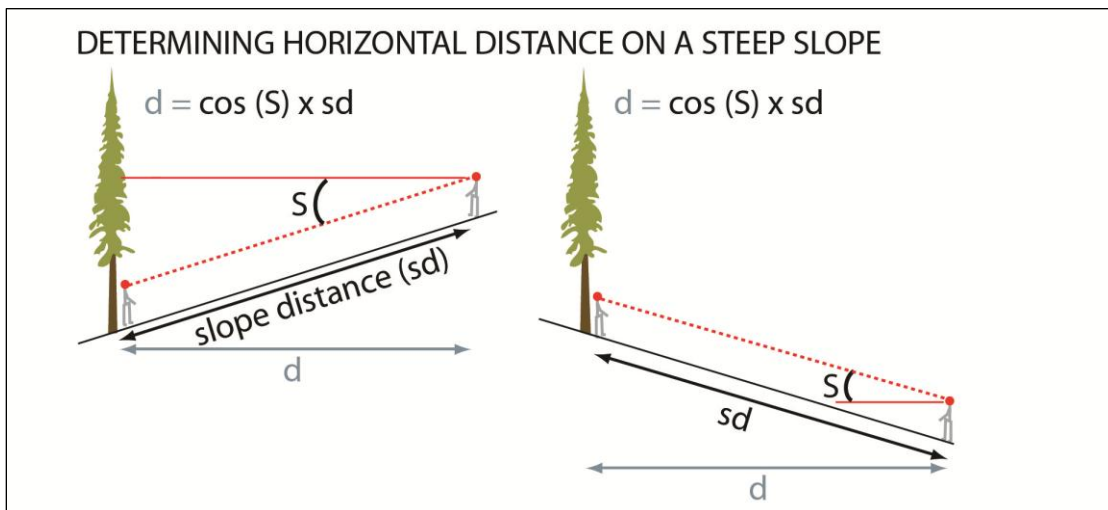
*Tree base is obscured or hidden from view*

Often obstacles such as shrubs, rocks, or fallen trees can obscure the tree base from view. In these situations you can measure the angles from a known height above the ground. The easiest method is to mark your eye height on the tree trunk and measure the angle to this mark. Your eye height is then added to the total tree height.



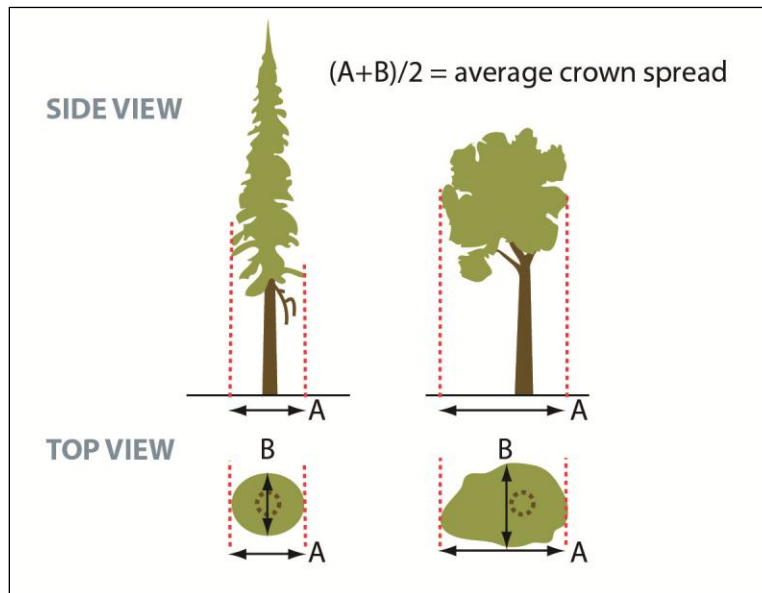
*Working on steep terrain*

On very steep terrain it is almost impossible to accurately determine your horizontal distance from the tree. In situations where the ground is sloped (up or down) more than 6 degrees (10% slope) you will need to measure slope distance. Once you measure slope angle and slope distance, horizontal distance can be calculated.



## Crown spread

Many trees have an irregular shaped crown. To account for this, crown spread is measured from branchtip to branchtip in two directions and then averaged. The first measure is taken where the crown is the widest. The second is taken at 90 degrees to the first, again where the crown is widest.



## Measurement verification

Tree measurements should be made following the measurement guidelines. Approval to display your nomination in the BC BigTree Registry hinges on whether your measurements have been verified. Tree measurement verification can be done by a B.C. Registered Professional Forester, Registered Professional Biologist, Forestry Technician, Timber Cruiser, Registered Land Surveyor, or a person experienced at measuring trees. You can find these individuals at a local office for: (a) Ministry of Forests, Lands and Natural Resources Operations; (b) Timber industry; (c) Ministry of Environment; or (d) universities or colleges. If you need further help in locating someone to measure your tree, contact the Association of B.C. Professional Foresters at (604) 687-8027. If you arranged to have your tree verified, you will be asked to provide the name and contact information of the verifier. All personal contact information will be kept confidential, and verifiers can even request to remain anonymous.

If you can not arrange to have a qualified individual accompany you, submit your measurements of circumference, and we will try and arrange to have a registered verifier visit the tree.

## Re-measuring a tree already in the Registry

Many of the trees in the Registry have not been re-measured or re-visited in over 10 years. A lot can happen in 10 years, so we ask that you collect the same information as you would for a new nomination. To submit a re-measurement, login to the BC BigTree Registry using your nominator ID. Find the tree you re-measured by entering the Tree ID# in the search box. Expand the record for that tree and you will see a button named "add a new measurement record". The re-measurement form is identical to the nomination form except the co-nominators are called co-measurers. So if you are submitting the re-measurement with others, enter their names as co-measurers. Again, you can take the measurements yourself or bring a qualified individual along with you to verify the measurements.

# Printable field nomination form

\*Required fields; Information in the grey shaded areas is not publicly displayed in the Registry.

Principal Nominator:  Common/ scientific name *:  Tree nickname:  Do the nominators wish to remain anonymous? ____ yes ____ no	<i>Note: record co-nominators first and last name</i>  Co-nom 1:  Co-nom 2:  Co-nom 3:				
<i>Note: use decimal degrees, e.g. 51.123456 N, -127.123456 W</i>  Latitude* (N):  Longitude* (W):  Elevation: _____ units _____	Location:   Nearest town:				
<table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"><b>Land Ownership</b></td> <td style="width: 50%;"><b>Land ownership name/details/specifics</b></td> </tr> </table> <input type="checkbox"/> Federal land : _____ <input type="checkbox"/> Provincial land : _____ <input type="checkbox"/> Tree Farm License, Lic. #: _____ <input type="checkbox"/> Woodlot License, Lic. #: _____ <input type="checkbox"/> Parks and Reserves: _____ <input type="checkbox"/> Municipal/city land, details: _____ <input type="checkbox"/> Watershed: _____ <input type="checkbox"/> Private land <input type="checkbox"/> Institution or corporation: _____ <input type="checkbox"/> First Nations Reserve: _____ <input type="checkbox"/> Other, details: _____ <input type="checkbox"/> Unknown	<b>Land Ownership</b>	<b>Land ownership name/details/specifics</b>	<table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"><b>Private land or land with access restrictions</b></td> </tr> </table> Was the landowner contacted about the release of the exact location? ____ yes ____ no  Does the landowner want the exact location withheld from the public? ____ yes ____ no  Is public access restricted? ____ yes ____ no  <div style="background-color: #cccccc; padding: 5px;"> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"><b>Land/tree owner, manager, administrator, license or tenure holder contact information.</b></td> </tr> </table>                     Name:                        Address:                        Phone:                       Email:                 </div>	<b>Private land or land with access restrictions</b>	<b>Land/tree owner, manager, administrator, license or tenure holder contact information.</b>
<b>Land Ownership</b>	<b>Land ownership name/details/specifics</b>				
<b>Private land or land with access restrictions</b>					
<b>Land/tree owner, manager, administrator, license or tenure holder contact information.</b>					
<b>Notes on land ownership:</b>          					

<p><b>Verifier Information</b></p> <p>Name: _____</p> <p>Qualifications/ job title: _____</p> <p>Address: _____</p> <p>Phone: _____</p> <p>Email: _____</p> <p><b>Names of co-verifiers if present</b></p> <p>Co-ver 1: _____</p> <p>Co-ver 2: _____</p> <p>Co-ver 3: _____</p> <p>Do the verifiers wish to remain anonymous? <input type="checkbox"/> yes <input type="checkbox"/> no</p>	<p><b>Measurement</b></p> <p>Date of measurement: _____</p> <p>Total height : _____ units _____</p> <p>Circumference *: _____ units _____</p> <p>Circ. measurement height*: _____ units _____</p> <p>Crown spread (average): _____ units _____</p> <p><b>Measurement notes:</b></p> <p>_____</p>
<p><b>Remarks on tree condition and health, tree characteristics and notable features (burls, forked stems, broken tops, wildlife use etc) and the surrounding ecosystem and site conditions (slope, aspect):</b></p> <p>_____</p>	
<p><b>Written access notes and instructions (driving and hiking) to locate the tree. Start from the nearest town.</b></p> <p>_____</p>	
<p><b>Notice and Consent:</b></p> <p>The personal information (name, address, email etc.) that you provide about the Landowner, or Verifier is being collected to document record sized trees and may be used by us to contact them regarding the big tree information and related matters. In providing this information, you are consenting to its use in this manner.</p>	

**Digital image submissions**

1. File name: Date taken: Description:	Photographer: Photographer email:
2. File name: Date taken: Description:	Photographer: Photographer email:
3. File name: Date taken: Description:	Photographer: Photographer email:
4. File name: Date taken: Description:	Photographer: Photographer email:
5. File name: Date taken: Description:	Photographer: Photographer email:

**Notice and Consent:**

The personal contact information (email) that you provide about the Photographer is being collected to document record sized trees and may be used by us to contact them. In providing this information, you are consenting to its use in this manner. If you have any question about the collection or use of this information, you may contact Andy MacKinnon, 250-952-4432, EMAIL: [Andy.Mackinnon@gov.bc.ca](mailto:Andy.Mackinnon@gov.bc.ca)