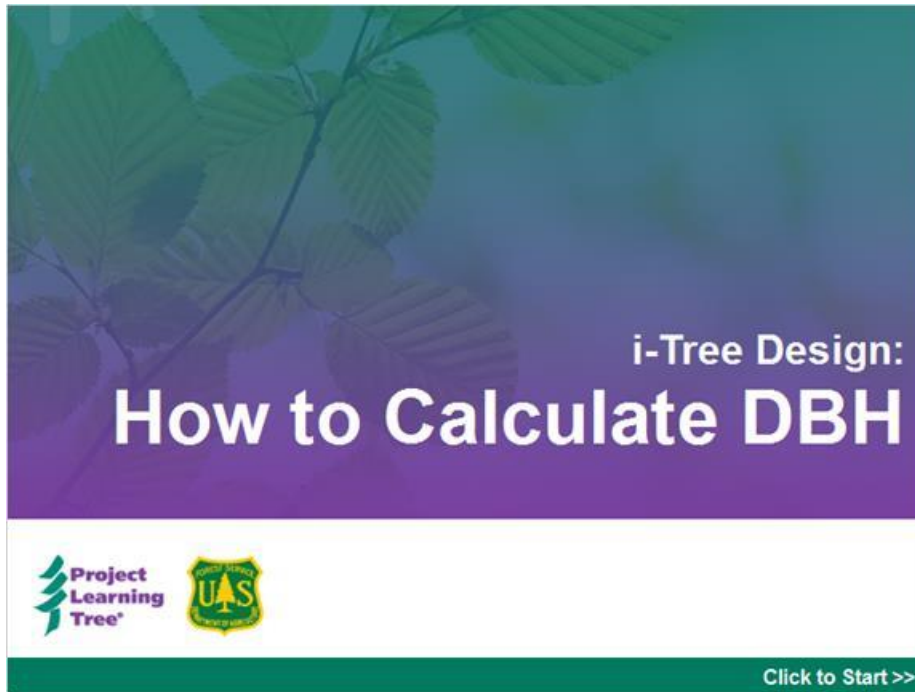


i-Tree Design: How to Calculate DBH

1. Title Screen

1.1 Title Screen



Narration:

[music]

i-Tree Design: How to Calculate DBH

2. Introduction

2.1 Welcome!



Narration:

Trees provide us with food, shade from the sun, and products like paper, lumber, and fuel. They clean our air and water and provide homes for a variety of animals. To fully understand the value of a tree and the many benefits it offers over its lifetime, foresters and other natural resource professionals need to monitor tree growth. With some basic information about its species and size, we can estimate the value of a tree and the benefits it offers. Then we can compare its benefits with those offered by other trees. Foresters use a tree's diameter at breast height, or DBH, as a standard measure. You will need to measure DBH in order to successfully input tree information in i-Tree Design, a free web-based tool provided by the U.S. Forest Service that calculates the environmental benefits provided by trees.

i-Tree Design: How to Calculate DBH

2.2 Welcome! 2

The screenshot shows a video player interface with a sidebar on the left containing navigation links: Introduction, Calculating DBH, Measuring Atypical Trees, and Conclusion. The main content area features a 'Welcome!' title in purple, followed by the text 'Discover how to measure and calculate DBH!'. Below this, there are two columns of images. The left column is labeled 'Typical Trees' and shows a large, mature tree with a thick trunk. The right column is labeled 'Atypical Trees' and shows a smaller, more irregularly shaped tree. An orange arrow points downwards in the bottom right corner of the video frame.

Narration:

In this interactive how-to video, you will discover how to measure and calculate DBH for a variety of tree types, including trees that are typical and that are not typical for their species. Ready to get started? Select **Next** to continue.

i-Tree Design: How to Calculate DBH

2.3 Orientation

The screenshot shows an interactive orientation screen titled "Orientation" in purple. On the left is a vertical navigation menu with four items: "Introduction", "Calculating DBH", "Measuring Atypical Trees", and "Conclusion". The "Calculating DBH" item is highlighted in a darker purple. The main content area features a "Welcome!" message and a central image of a tree with orange fruit. A text box next to the tree reads: "Compare tree benefits by measuring Diameter at Breast Height (DBH)". Below the tree are icons for a tree, a "UAS" logo, and a squirrel. The screen includes several purple circular markers with question marks: one on the left side of the main content, three in the top right corner, and two at the bottom. At the bottom right, there are navigation buttons labeled "PREV" and "NEXT". Below the screenshot, the text "Select each marker to learn more." is displayed in green.

Narration:

Before you continue, be sure to review the features available to you in this video by selecting each marker. When you're ready, select **Next** to continue.

i-Tree Design: How to Calculate DBH

5. Calculating DBH

5.1 Calculating DBH

Calculating DBH

Circumference = 41 inches (104.14 cm)
Pi = 3.14
Diameter = $41/3.14$

Diameter = 13.1 inches (33.17 cm)

Learn About Measuring Tools

Narration:

To measure a tree's DBH, first locate a tree in your community. With a ruler or measuring tape, measure from the ground to a point on the tree trunk 4 1/2 feet from the ground. This height is considered "breast height." At this height, measure around the tree trunk to get its circumference.

To calculate the tree's diameter, divide the circumference by Pi, which is approximately 3.14. In the example shown, this tree has a circumference of 41 inches and a diameter, or DBH, of 13.1 inches.

i-Tree Design: How to Calculate DBH

Measuring Tools (Slide Layer)

Introduction



Calculating DBH

Measuring Atypical Trees


Conclusion

How do you measure a tree's diameter?

Option 1:
Place a tape measure around the tree's trunk.



Option 2:
Place a string around the tree's trunk, and measure the string with a ruler.



4.5'

X

Learn About Measuring Tools

i-Tree Design: How to Calculate DBH

3. Measuring Atypical Trees

3.1 Measuring Atypical Trees

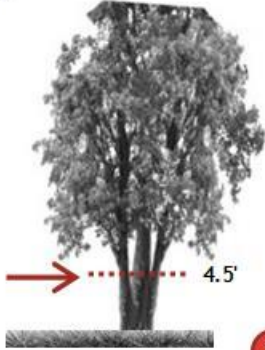
The screenshot shows the i-Tree software interface. On the left is a vertical navigation menu with four items: 'Introduction', 'Calculating DBH', 'Measuring Atypical Trees', and 'Conclusion'. The 'Measuring Atypical Trees' item is highlighted in purple. The main content area is titled 'Measuring Atypical Trees' in purple text. It features three rows, each with a small image of a tree on the left and a larger, semi-transparent image of the same tree on the right. The first row shows a 'Multiple-Stemmed Tree'. The second row shows a 'Sloped or Angled Tree'. The third row shows a 'Split Trunk Tree'. At the bottom of the main content area, there is a green text prompt: 'Select each atypical tree type to learn more.'

Narration:

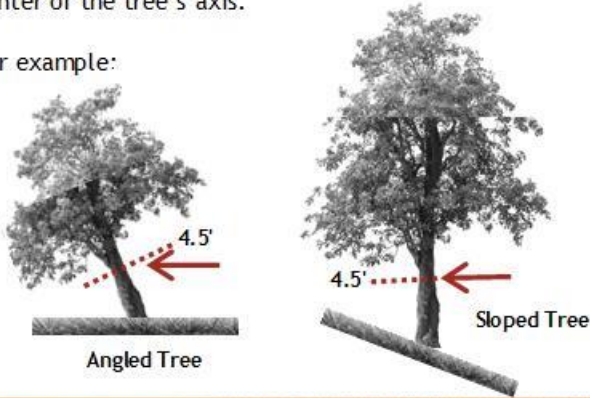
Not all tree species are the same, and sometimes it can be difficult to measure a tree's DBH. For example, a tree may have multiple stems, may be situated on a slope, or may have a split trunk. Select each atypical tree type to discover how to measure DBH.

i-Tree Design: How to Calculate DBH

Multiple-Stemmed Tree (Slide Layer)

Introduction	<h3>Measuring Atypical Trees</h3>
Calculating DBH	
Measuring Atypical Trees	<h4>Multiple-Stemmed Tree</h4> <p>A multiple-stemmed tree has two or more trunks that diverge from the main trunk above the ground.</p> <p>To measure DBH:</p> <ol style="list-style-type: none">1. Measure the DBH of each trunk.2. Identify the largest trunk.3. Add the DBH of the largest trunk and half the DBH of each additional trunk.
Conclusion	 <p>The diagram shows a tree with two main trunks. A red arrow points to a horizontal dotted line that spans the width of the two trunks, labeled '4.5'. A red 'X' in a circle is in the bottom right corner of the diagram area.</p>

Sloped or Angled Tree (Slide Layer)

Introduction	<h3>Measuring Atypical Trees</h3>
Calculating DBH	
Measuring Atypical Trees	<h4>Sloped or Angled Tree</h4> <p>A sloped or angled tree is measured at right angle along the center of the tree's axis.</p> <p>For example:</p>
Conclusion	 <p>The diagrams show two trees. The first is labeled 'Angled Tree' and has a red arrow pointing to a horizontal dotted line perpendicular to its trunk, labeled '4.5'. The second is labeled 'Sloped Tree' and has a red arrow pointing to a horizontal dotted line perpendicular to its trunk, labeled '4.5'. A red 'X' in a circle is in the bottom right corner of the diagram area.</p>

i-Tree Design: How to Calculate DBH

Split Trunk Tree (Slide Layer)

Introduction

Calculating DBH

Measuring Atypical Trees


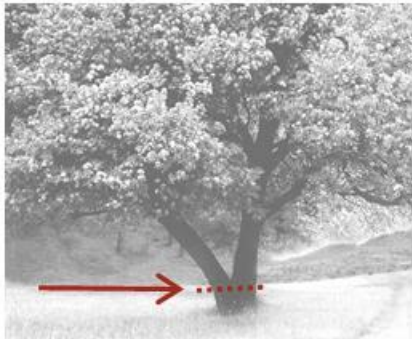
Conclusion

Measuring Atypical Trees

Split Trunk Tree

A split trunk tree has two trunks below 4.5' (breast height). Measure just below the bump where the tree splits.

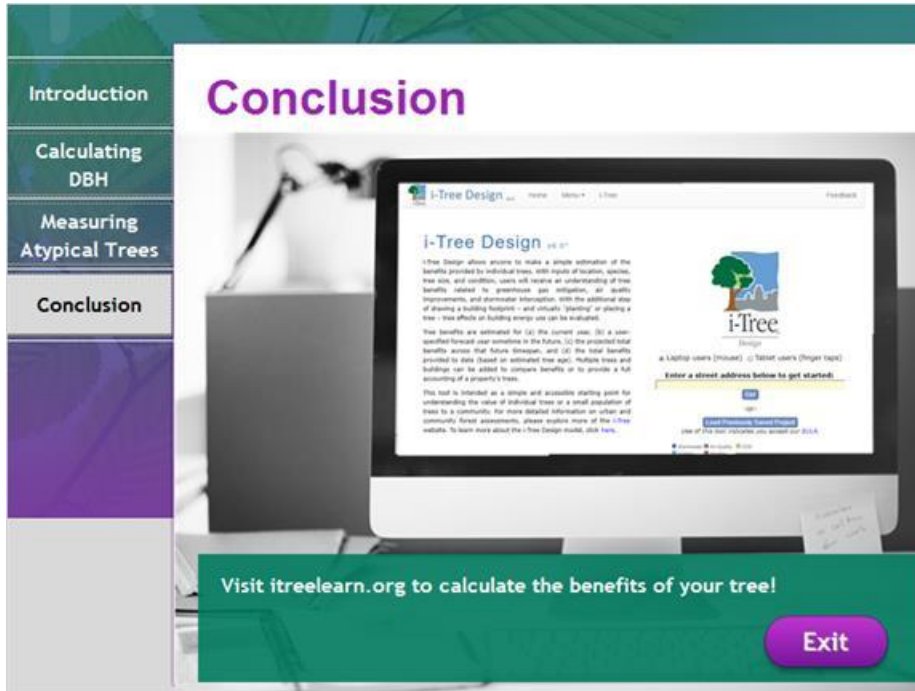
For example:



i-Tree Design: How to Calculate DBH

4. Conclusion

4.1 Conclusion



Narration:

You can use DBH to calculate the benefits of your tree using i-Tree Design, which is a web-based tool available at itreelearn.org.

Ready to get started? Select **Exit** to leave this interactive video and begin measuring a tree in your community!