

# FOREST CONDITION ASSESSMENT



**Instructions:** Conduct a basic assessment of your forest land by answering the following questions. Suggestions to help you address specific management issues are listed directly under each section. If you identify management issues that may require professional assistance, refer to the last page of this Forest Condition assessment for a list of resources.

With informed and appropriate management, you can maintain a sustainable, healthy, and productive forest. Forests can be managed for a single use or for multiple uses at the same time. Typical uses include wildlife habitat, recreation, livestock grazing, and/or timber production. To help manage your forested land, you need to decide which uses are important to you, and where on your property you want these uses to occur. You likely have a primary use planned for your forest which will guide your overall management activities. This worksheet will help you ensure that the vegetation and ecosystems on your forest land serve the land uses you have identified. It will also help minimize unintended consequences from improper management.

A healthy sustainable forest with minimal damage from insects and disease (such as mountain pine beetle or mistletoe) will include, but is not limited to, diverse wildlife populations, native understory plants, and conditions that reflect natural succession. The age, distribution, and number of trees per acre on your property will differ depending upon the forest type, slope, aspect, elevation, soil type, precipitation, temperature, tree species, and your land use objectives.

**Site:** \_\_\_\_\_

**Date:** \_\_\_\_\_

## 1. Identify the tree species on your forest land.

Select all that are present and determine the approximate percentage of each species:

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|---|--|
| <input type="checkbox"/> Douglas fir            | <input type="checkbox"/> Gamble oak            |
| <input type="checkbox"/> Colorado blue spruce   | <input type="checkbox"/> Narrowleaf cottonwood |
| <input type="checkbox"/> Ponderosa pine         | <input type="checkbox"/> Plains cottonwood     |
| <input type="checkbox"/> Lodgepole pine         | <input type="checkbox"/> Quaking aspen         |
| <input type="checkbox"/> White fir              | <input type="checkbox"/> Bristlecone pine      |
| <input type="checkbox"/> Engelman spruce        | <input type="checkbox"/> Limber pine           |
| <input type="checkbox"/> Sub-alpine fir         | <input type="checkbox"/> White fir             |
| <input type="checkbox"/> Rocky Mountain juniper |  |
| <input type="checkbox"/> Pinon pine             |  |



There are many references to help you identify the tree species present in Colorado. A good place to start is Colorado State Forest Service website

<http://csfs.colostate.edu/pages/major-tree-species.html>



Colorado State University Extension and U.S. Department of Agriculture programs are available to all without discrimination. Colorado State University Extension, U.S. Department of Agriculture and Colorado counties cooperating.

## 2. Individual Tree and Forest Health Evaluation

Eliminating conditions that contribute to making trees unhealthy is important. Record any indications of possible problems by answering the questions below. For any YES answer, provide descriptions in the space provided.

No  Yes Do you see evidence of disease? Are there dead or dying branches in the canopy of a tree and/or discolored leaves or needles?

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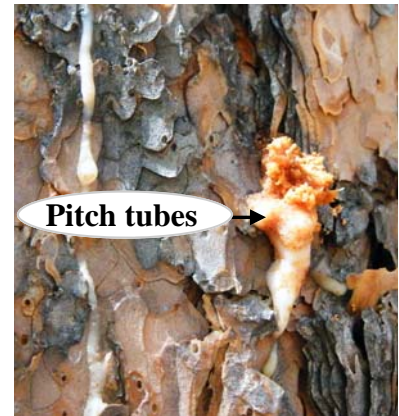
No  Yes Do you see evidence of insect attack? This may include signs of whitish/pinkish colored pitch tubes on the bark, brown sawdust at the base of the tree, dead sections of a tree canopy, and/or large amounts of green needles on the ground.

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No  Yes In the tree canopy, are there thick masses of very dense foliage (witches brooms), or orange, yellow, or brownish colored growth on limbs?

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No  Yes Are there many dead standing trees or many dead trees lying on the ground?

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No  Yes Do a majority of the trees have forked tops, dead tops with new leaders (dominant upright stems) growing, or dead tops with no new leader?

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If any of the above raises a concern for you, contact your local forester with Natural Resources Conservation Service (NRCS), Colorado State Forest Service, Colorado State University Extension, or a private consulting forester.

### 3. Forest Stand Inventory

Do you know the density of your tree stand (the number of trees per acre)?

No Yes

Do you know the average diameter of the tree in the forest stand?

No Yes



If you answered NO to one or both of the questions above, you may want to inventory your forest stand. There are several ways to conduct an inventory, but the simplest is to establish a “fixed size plot” as described in the Forest Stand Inventory table below.

#### Forest Stand Inventory

*The data you collect in the forest land inventory will help a professional forester answer your questions about forest management strategies.*

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|--|--|
| <p><b>1. Establish a fixed plot.</b> A fixed plot can be any size, but should be large enough to be representative of the entire stand. Plots can be square, rectangular, or round. Round plots are the easiest to lay out. To do this, establish a center point and measure the radius out to the plot edge. Depending upon the lot size (1/100 acre, 1/50 acre, 1/10 acre, etc) the radius measurement will differ. A tenth-acre (1/10) plot makes converting to an acre easy, just multiply by 10. The radius of a 1/10 acre plot is 37.2 feet.</p> | <p><b>Plot size:</b></p>   |
| <p><b>2. Count the number of trees within the plotted area.</b> Count only the trees that are greater than 4 feet in height, and separate by species.</p>  | <p><b>Number of trees:</b></p>   |
| <p><b>3. Compute the number of trees per acre.</b></p>   | <p><b>Trees per acre:</b> (If you set a 1/10 acre fixed plot, then multiply the total number of trees by 10.)</p>  |
| <p><b>4. Record the average tree diameter.</b> Measure the diameter of only the trees that are taller than 4.5 feet <u>and</u> have a diameter of 3 inches or more. Measure the diameter of these trees at 4.5 feet above the ground.</p>  | <p><b>Average tree diameter:</b> For each species of tree found in your forest stands, take the sum of all diameters measured divided by number of trees measured.</p> |
| <p><b>5. Are there tree seedlings (trees less than 4 feet in height) on the ground in your fixed plot?</b></p>   | <p><input type="checkbox"/>No <input type="checkbox"/>Yes If yes, How many?</p>  |

#### 4. Wildfire Risk and Mitigation

Fire has played a critical role in the creation and maintenance of Colorado's forests. Forest fires have the potential to destroy dense forests, homes, communities, and infrastructure. Water quality and quantity issues can also result from high severity fires. Although wildfires are a fact of life in Colorado, the severity of a potential fire can be managed.

**Is wildfire a concern on your forest land?**

No Yes

If you answered YES, consider possible measures to reduce the concern:

- Reduce fuel quantity on the property.
- Thin overstocked or high density stands.
- Prune lower branches on the trees.
- Reduce fuel material on the forest floor.
- Establish permanent fuel or firebreaks.

#### 5. Will you have livestock graze in the forest?

No Yes



If you answered YES, you should also inventory the understory vegetation to determine the types and amounts of plants present. Contact an NRCS or CSU Extension rangeland management specialist.

#### The Next Steps for Better Forest Management:

Review your answers to the questions above and identify where you can make improvements to the health of your forest land. If you would like additional information or assistance to help you further evaluate, inventory, or plan management strategies for your forest land, consider working with one of the entities listed below:

- Colorado State Forest Service <http://csfs.colostate.edu/>
- Natural Resources Conservation Service (NRCS) <http://www.co.nrcs.usda.gov/>
- Colorado State University Extension <http://www.ext.colostate.edu/>
- Professional consulting forester

Developed by Jennifer Cook 2009



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