

USDA Forest Service National Sawyer Training: Developing Thinking Sawyers



Student Guide: Prework

**USDA Forest Service National Sawyer Training:
Developing Thinking Sawyers**
Module 2.2: Chain Saw Brushing, Limbing, and Bucking

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Module 2.2: Brushing, Limbing, and Bucking

Overview

This module explains techniques for brushing, limbing, and bucking using a chain saw. The instructor will present the concepts in the classroom, followed by demonstrations. You will then practice these techniques in the field under controlled and supervised conditions.

Prework Topics

- The sawyer/swamper team
- Brushing, limbing, and bucking

Objectives

When you complete the full module during training, you will be able to:

- Describe brushing plans and techniques
- Describe methods for removing a spring pole
- Describe limbing plans and techniques
- Describe bucking plans and techniques

The Sawyer/Swamper Team

Each year, some swampers receive lacerations to the hands, arms, or legs by working too close to a running chain saw. Chain saw cuts are not simple cuts like those caused by a knife, they are horrible wounds that shred flesh and can quickly remove muscles, tendons, and bone. The sawyer and the swamper have a shared responsibility for maintaining each other's safety and cutting area control (figure 2.2.1).

The sawyer may need to operate the chain saw near the swamper. This will present unique safety considerations. The sawyer and swamper must be aware of the cutting area. The cutting area is the zone where the sawyer can cut the swamper with a saw, represented by a 360-degree radius around a sawyer at a distance equivalent to the sawyer's arm length plus the length of the tool.

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Figure 2.2.1—A sawyer/swamper team.

What is a Swamper?

Brushing, limbing, and bucking can generate large quantities of cut material that must be moved. One or more people work with a sawyer to help remove (dragging, throwing, etc.) the material. These people are commonly referred to as “swampers.” Sawyers and swampers working together are referred to as a “saw team.”

Safety

Ways for mitigating safety concerns include:

- Communication
- Awareness
- Personal protective equipment (PPE)

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Role of the Sawyer

- Discuss the operation with the swamper.
- Maintain awareness of the location and proximity of the swamper(s).
- Communicate when it is clear for the swamper to remove the cut material.
- Cut material to a size that facilitates removal.
- Ensure cutting area control.

Role of the Swamper

- Discuss the operation with the sawyer.
- Always follow the directions of the sawyer.
- Remain in clear view of the sawyer.
- Don't approach unless the sawyer indicates that you can.
- Never push or pull material while the sawyer is cutting it.
- Always stay out of the sawyer's strike zone.
- Wait for the "all clear."
- Help to identify hazards, maintain awareness, and assist with cutting area control.
- Remove cut material.

Brushing, Limbing, and Bucking

Brushing is severing small-diameter stems. Often you will find multiple small-diameter stems, such as shrubs or regeneration (materials smaller than 5 inches in diameter), growing together or in clusters, and brushing is the most effective way of removing them.

Limbing is severing limbs from the main stem (bole) of a tree. You may use limbing when the tree is standing vertically or lying on the ground. The tree may be anchored and secure or may be unanchored and susceptible to movement. Removing limbs from a tree that is unanchored may cause the tree to roll or move.

Bucking is sawing longer logs or limbs into shorter lengths. The lengths you cut will depend on the end use or task at hand.

You must understand binds to safely and effectively buck logs or limbs.

Binds

It is not a question of if, but when and where, your saw will get stuck during a bucking operation. Landforms, stumps, blowdown, and other obstacles that prevent a log from lying flat cause binds. A log with a bind has areas of tension and compression.

The **tension area** is the portion of the log where the wood fibers stretch apart. The chain saw kerf in this portion of the log opens as you make the cut. The **compression area** is the portion of the log where the wood fibers push together. The kerf in this portion of the log closes as you make the cut.

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It is critical to identify binds before creating a cut plan because the types of binds determine the bucking techniques and procedures you will use.

Types of Binds

There are four types of binds: top, bottom, side, and end. Logs normally have a combination of two or more binds.

In a **top bind**, the tension is on the bottom of the log and the compression/bind is on the top (figure 2.2.2).

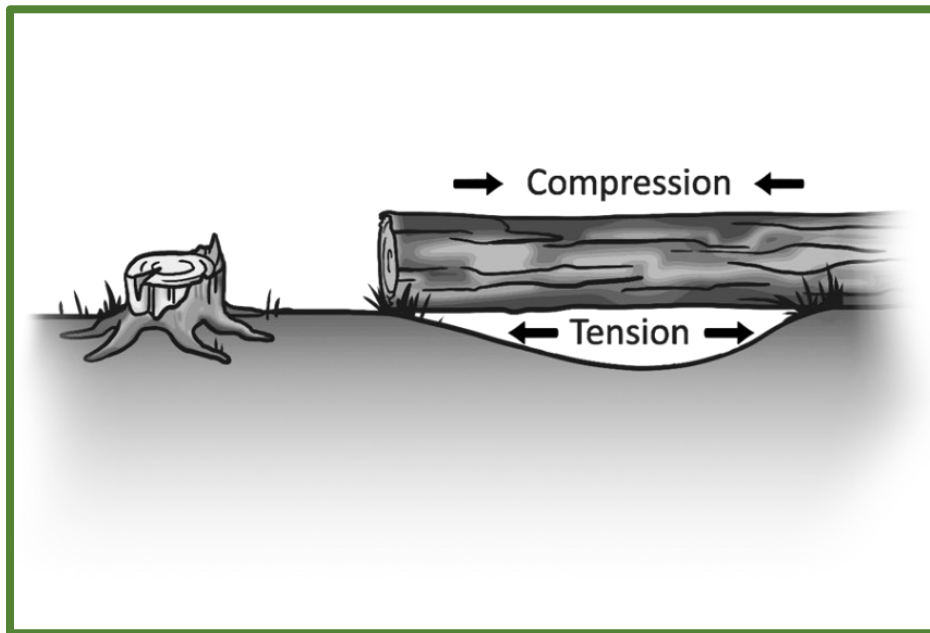


Figure 2.2.2—A top bind.

In a **bottom bind**, the tension is on the top of the log and compression is on the bottom (figure 2.2.3).

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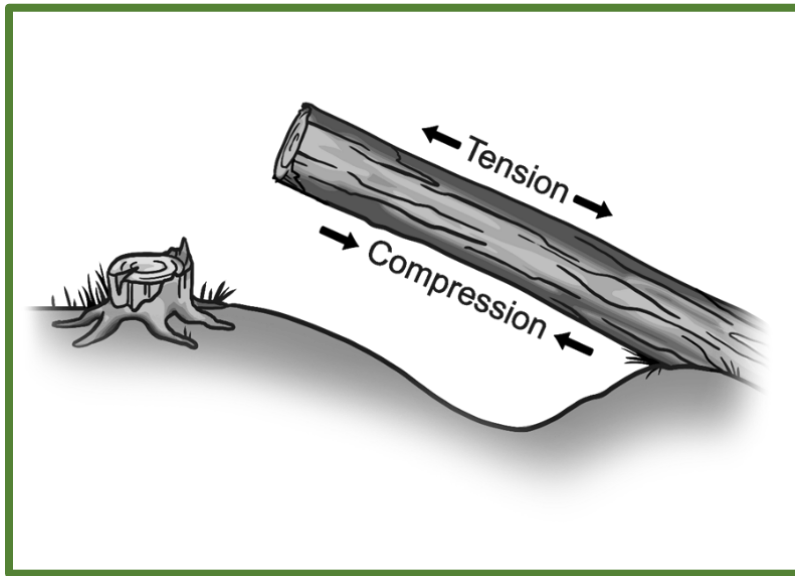


Figure 2.2.3—A bottom bind.

In a **side bind**, pressure is exerted sideways on the log (figure 2.2.4). This is often a dangerous situation. A severed side-bound log has tremendous potential to move fast and with great force toward the tension side of the log. It is very important to cut side-bound logs from the safe (good) side of the log.

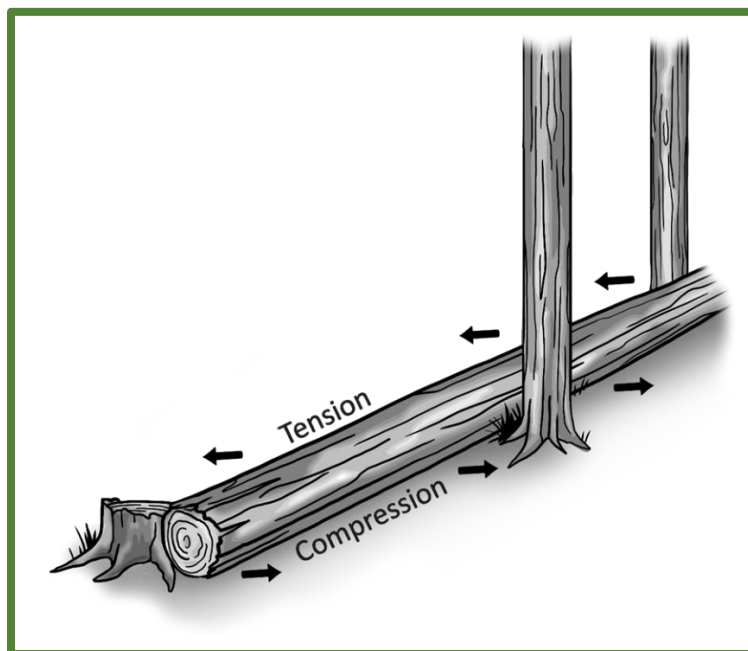


Figure 2.2.4—A side bind.

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In an **end bind**, weight compresses the entire cross-section of the log (figure 2.2.5). There is potential here for the kerf to close with any cut you select. Wedges are imperative. Always be aware that the high side of the log could move or roll as you make the cut. If the log does not have a clear good side, consider bucking with a slight angle cut to create a “good side” where the top section cannot roll.

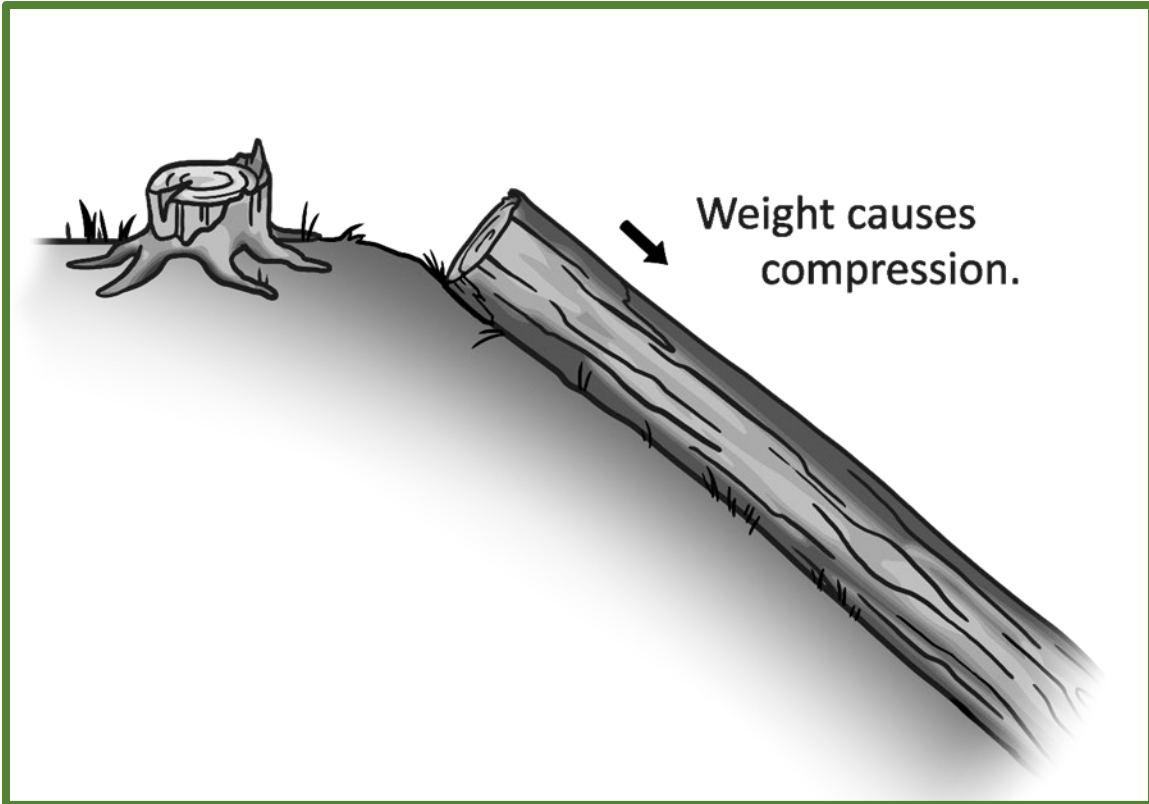


Figure 2.2.5—An end bind.

Summary

In this prework packet, you learned about chain saw techniques for brushing, limbing, and bucking. This knowledge will help you to learn the material presented in module 2.2 of the “Developing Thinking Sawyers” course.

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