

CHAPTER 4

Identifying Actions to Improve Aspen Health

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Figure 18. Where conifers threaten aspen, management actions may be needed to promote aspen suckering and free up aspen for growth. (Photo Darin Stringer)

In Chapter 3, we described how to assess the health of your aspen. In this chapter, you will learn how to evaluate the need for actions and appropriate treatments to improve the condition of your grove. Many aspen stands in Oregon require immediate action to restore health and vigor (Figure 18). The Aspen Management Options Flowchart (Figure 19, page 25) will

guide you through this process and direct you to additional information to plan enhancement work. Start in the top left cell and answer each yes/no question to arrive at a recommended action. The key on pages 26–31 will guide you through the flowchart. If actions are recommended, go to the indicated page in Chapter 5 for additional guidance to design treatments.

TIPS FOR SUCCESSFUL EVALUATION OF TREATMENT NEED

- Time your assessment so you can effectively evaluate patterns and type of browse and understory plants. Fall is often a good time to evaluate browse. If possible, visit the grove during different times of the year.
- An aspen grove may require a range of treatments in different areas. Take the time to consider where to apply various needed actions.
- Detail desired treatments on the FULL or RAPID Assessment form map and describe in the “Needed management actions” box (page 15 or page 20).
- Have a resource professional, knowledgeable neighbor, or just another set of eyes to assist with the evaluation.

Aspen Management Options Flowchart

Start here:

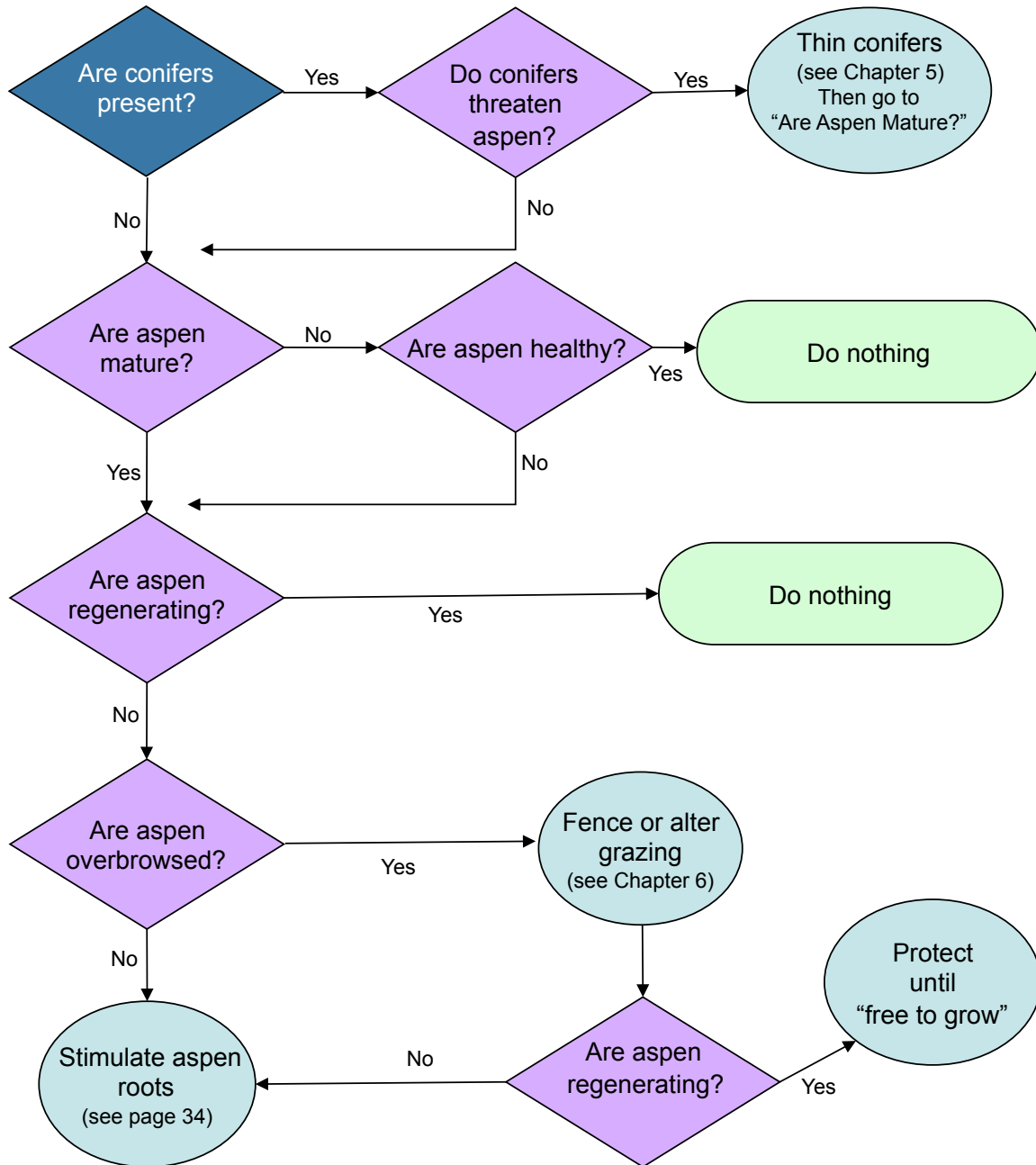


Figure 19. Aspen Management Options Flowchart. Use this chart to identify actions needed to enhance the aspen grove. Record these actions under “Needed management actions” on the RAPID Assessment form or on page 2 of the FULL Assessment form. See the key on pages 26–31. (Source: Modified from Mueggler 1989)

Key to Aspen Management Options Flowchart

Are conifers present?

If conifers occur in and/or around your aspen, answer “yes.”

Do conifers threaten aspen?

The answer depends mainly on the conifer species, density, and size. If your aspen is encroached by junipers at any density, answer “yes.” Juniper threaten the health of aspen in a number of ways:

- By shading aspen
- Through release of chemical compounds into the soil that may suppress growth of other plants
- By using large amounts of water that otherwise would be available to aspen and other desirable vegetation
- By shading understory plants, thus reducing plant diversity and grazing potential

While aspen do best in pure stands, a few scattered conifers are tolerable. Some old aspen groves have widely spaced, old-growth ponderosa pine stumps, indicating the two species can coexist. Ponderosa pine lets more light through its crown than do Douglas-fir and grand fir. If ponderosa pine cover does not exceed 10 percent, the grove is probably not immediately threatened. In a dense mature aspen grove, this proportion of conifers might represent five to seven 16-inch-dbh trees per acre (dbh, or diameter at breast height, is tree diameter at 4.5 feet).

While the impact of overtopping and shading by dense lodgepole and ponderosa pine, Douglas-fir, and grand fir is obvious, smaller conifers should also be viewed as a threat if density exceeds a few trees per acre. Seedling, sapling, and pole-size conifers shade understory aspen and other vegetation and take moisture otherwise available to the grove. It is easier to remove small conifers before they grow through the canopy. Early removal also reduces damage to aspen during falling.

Figures 20 and 21 show two typical scenarios where aspen are threatened by

conifers. Condition classes refer to the Aspen Condition Classification Chart in Chapter 3 (page 23). Figure 22 (page 27) shows aspen stands encroached by conifers.

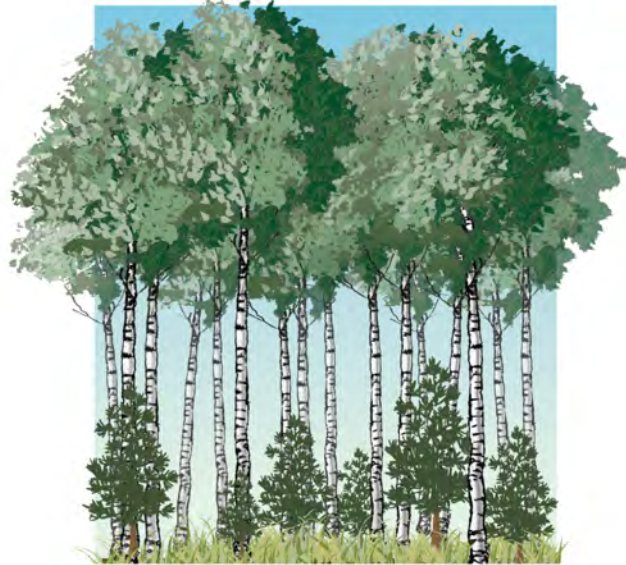


Figure 20. Aspen Condition Class 1-D—Healthy overstory, conifer regeneration without aspen regeneration. (Illustration: Gretchen Bracher)



Figure 21. Aspen Condition Class 4-D—Conifer encroachment of overstory, conifer regeneration without aspen regeneration. (Illustration: Gretchen Bracher)

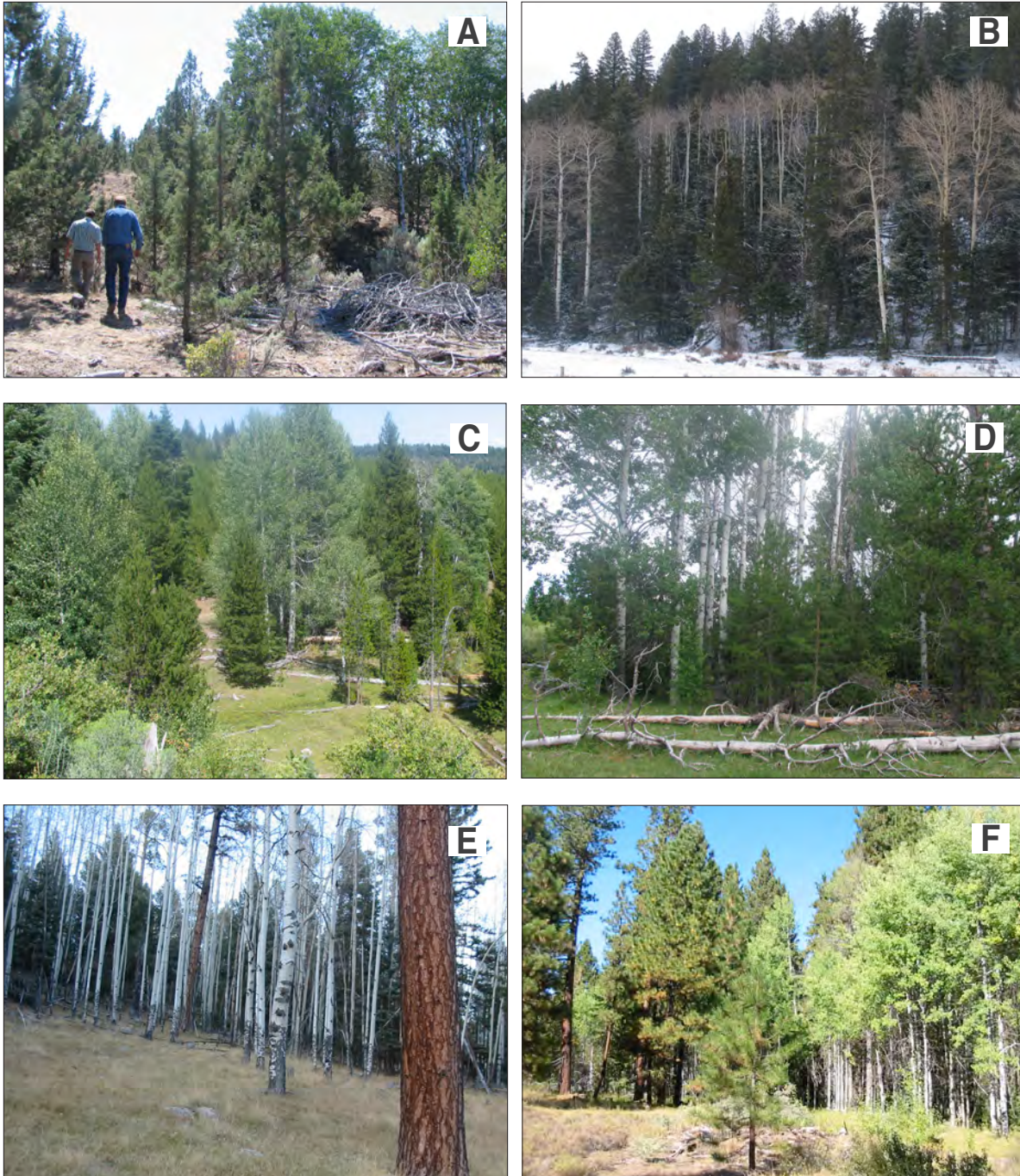


Figure 22. Do conifers threaten aspen? The answer is “yes” in plates A–D. Various conifers are heavily encroaching on aspen in Plates A (juniper), Plates B and C (mixed conifers), and Plate D (lodgepole pine). In these plates, conifers in both the understory and overstory threaten aspen. Plate E has a few widely scattered ponderosa pine that do not threaten the aspen. Plate F has a few pine saplings and clumps of more mature ponderosa pine, but aspen have room to grow and expand. (Photos: Darin Stringer)

Are aspen mature?

Compare the size and condition of your aspen to the photos below. Mature aspen (Figure 23) often have sparse leaf cover and thick, dark, furrowed bark at the base, an indicator of heart rot (conks). Snags and dead

fallen trees are indicators of mature and declining aspen. In some extremely decadent groves (old, with failing health), there are no live remnants of the overstory. In this case, snags and large downed aspen indicate recent overstory decline.



Figure 23. Are aspen mature? The answer is “yes” in all plates. Indicators of maturity include large live, declining, and dead aspen (Plates A–C), rough and furrowed bark (Plate B), and downed and dead aspen (Plates B–D). (Photos: Darin Stringer)

Are aspen healthy?

Healthy younger groves are usually densely spaced with vigorous aspen (typically less than 10' x 10' average tree spacing). If aspen density

is low (greater than 30' x 30' average spacing), or if most trees look stunted, are sparsely covered with leaves, or have other signs of decline, answer “no.” See Figure 24.



Figure 24. Are aspen healthy? The answer is “yes” in Plates A and C. Aspen in these plates are dense and have full crowns (branches with leaves covering at least 30 percent of total height). Plate C also has two distinct age classes of aspen. Plate B aspen have full crowns, but tree stocking is very sparse, and suckering is absent. The aspen in Plate D have sparse crowns, a sign of poor vigor. (Photos: Darin Stringer)

Are aspen regenerating?

Groves with successful aspen regeneration have abundant new suckers. Aspen are either large enough to withstand animal browse and

damage or are not being utilized excessively. Regenerating aspen are under the canopy of mature declining trees or in openings around the outer edge of the grove. See Figure 25.

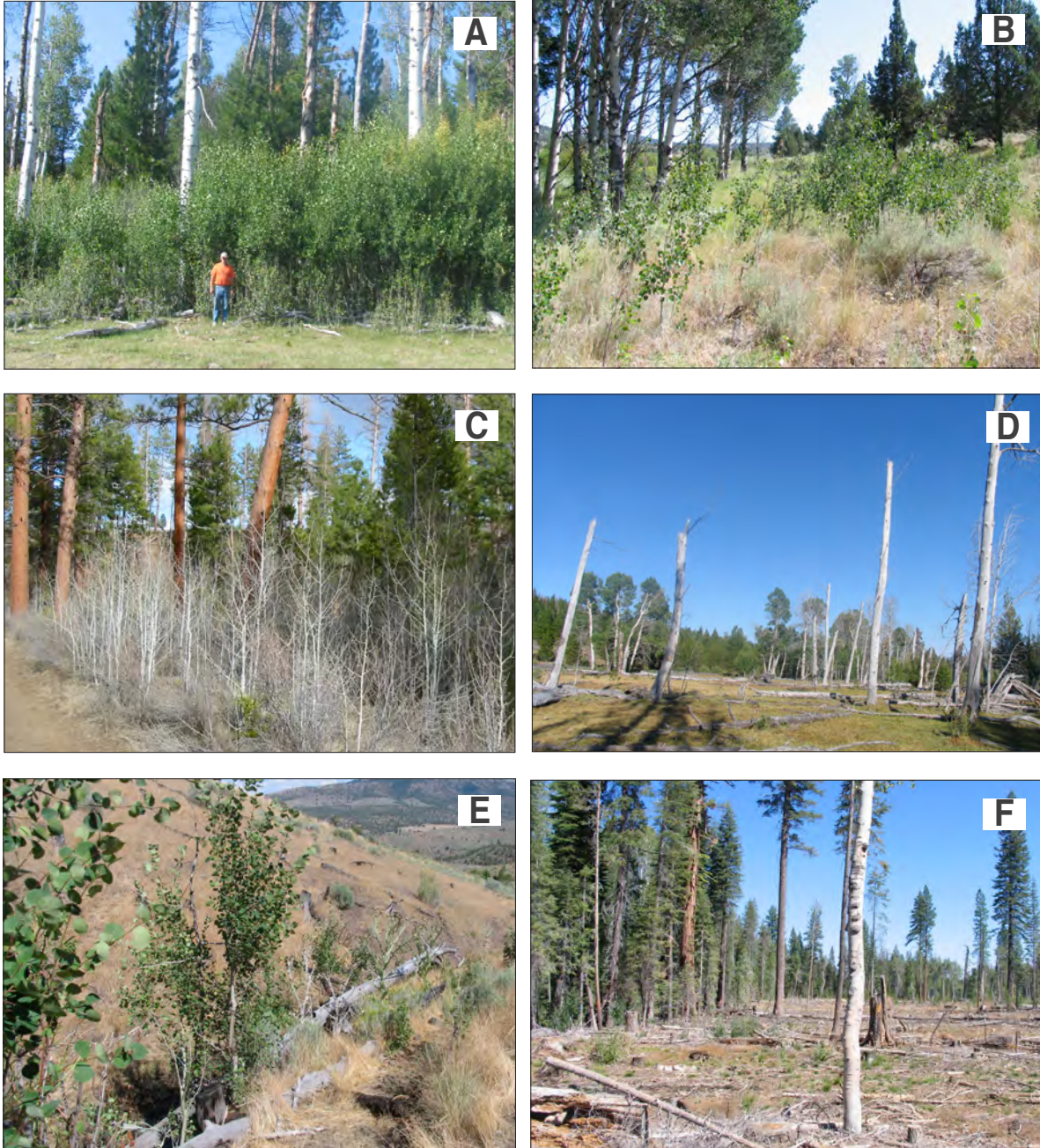


Figure 25. Are aspen regenerating successfully? The answer is “yes” in Plates A, B, and C. Although the overstory in Plate A is declining, aspen regeneration is dense and “free to grow” (large enough to resist browse). Suckering in Plate B is moderate, but stems are only lightly browsed. The aspen suckers in Plate C are dense and largely unimpacted by browse. Aspen in Plates D–F have not successfully regenerated. New suckering in the highly decadent grove in Plate D is almost nonexistent. Aspen suckers in Plate E are healthy and vigorous, but tree stocking is very sparse. Conifers were removed to stimulate aspen in Plate F, but suckering is sparse. (Photos: Darin Stringer)

Are aspen overbrowsed?

Overbrowsed aspen cannot grow in height because the new growth is eaten repeatedly. Heavily browsed aspen are easy to identify (Figure 26). The terminal leader (top of the main stem, where height growth occurs) and side branches have been repeatedly clipped and are resprouting. Often, leaves are found only below the dead stems and branches. Young suckers are often flat-topped at a uniform height. Heavily browsed aspen often show

signs of damage from antler rubbing and trampling. Lightly or moderately browsed aspen are able to grow, but their shape and rate of growth may be altered.

Aspen with a history of overbrowsing followed by decreased use often have a clump of dead stems; a lower branch has become the leader and is growing vertically as the tree top. These aspen would not be classified as overbrowsed if they are currently gaining height and are not being browsed.

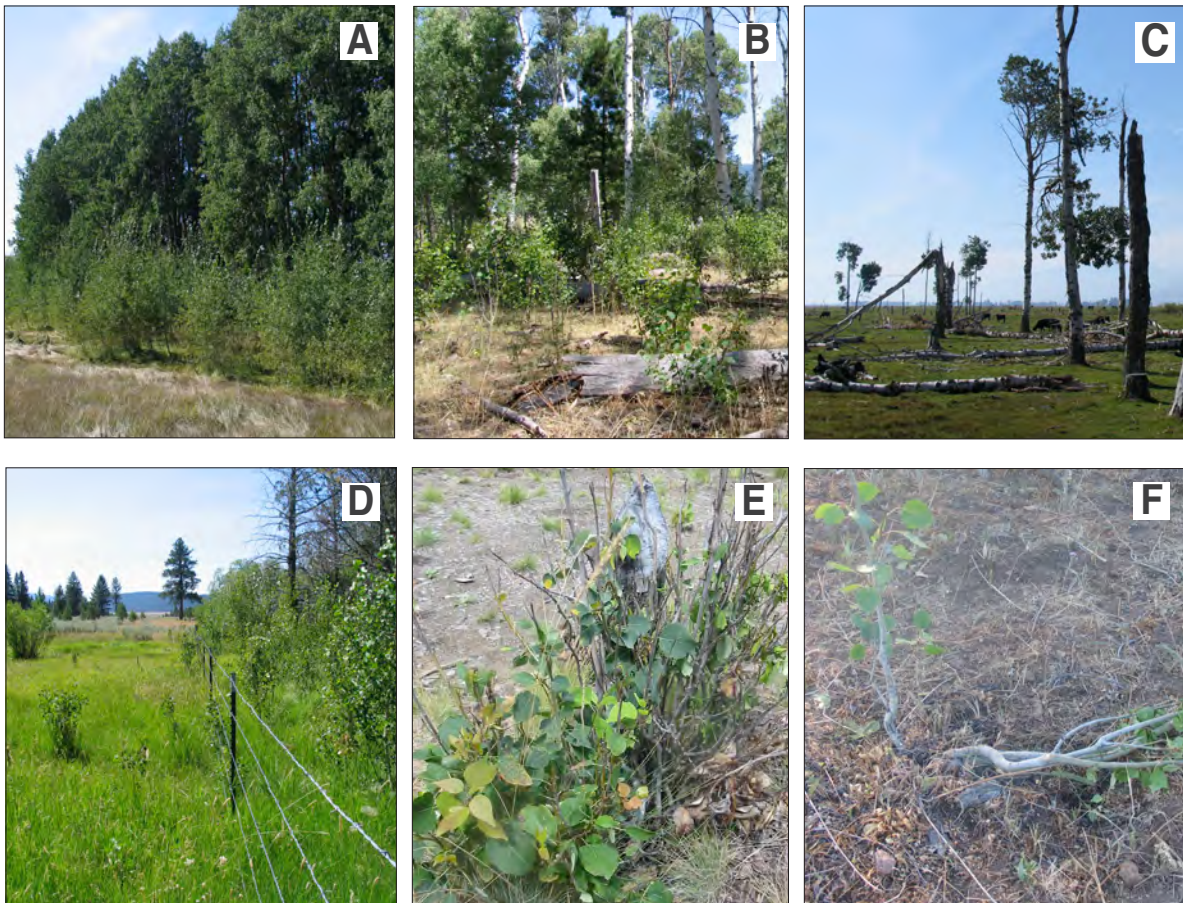


Figure 26. Are aspen overbrowsed? Aspen in Plate A have very light or no browse, as indicated by full-crowned suckers, rapid height growth, and uneven heights of trees. The aspen in Plate B are being browsed, as evidenced by the uniform height of suckers. (Growth is not occurring above snow level.) If aspen are being maintained in shrub form and cannot grow, the site is overbrowsed. Plate C shows severe overbrowsing. This aspen grove has endured sustained heavy browsing, and suckering has slowed. In Plate D, overbrowsing has prevented successful suckering of aspen on the left side of the fence. The main stem in Plate E was cut by a beaver, and new suckers have been severely browsed. Plate F shows severe damage by trampling and should be considered overbrowsed. (Photos: Darin Stringer)