

Indicator 2.13.

Annual Harvest of Wood Products by Volume and as a Percentage of Net Growth or Sustained Yield

What is the indicator and why is it important?

This indicator compares net growth with wood harvest (removals) for products on timber land. This comparison is a frequently used method of assessing whether or not wood harvesting is reducing the total volume of trees on forest available for wood production. Growth is the net annual increase in the volume of growing stock between inventories after accounting for effects of mortality, but before accounting for the effects of harvest. Removals are a measure of the average annual volume of growing stock trees harvested between inventories. Timber land is assumed to be the subset of forest land on which some level of wood harvesting is potentially allowed. So long as growth (net of mortality) exceeds removals, the volume of trees on timber land is considered sustainable. This measure, however, conveys no information about quality, biodiversity, other attributes of ecology, or management objectives, and it should be considered in conjunction with other indicators as part of an overall analysis of objectives for forest ecosystem sustainability.

What does the indicator show?

Growth has exceeded removals on U.S. timber lands for several decades (fig. 13-1), although the area of timber land has remained relatively stable. The result has been a substantial increase in the volume of growing stock on U.S. timber lands. In the past decade, growth continued to exceed removals for both publicly and privately owned timber lands in the East (North and South Regions) and West (Rocky Mountain, Pacific Coast and Alaska Regions). Trends in growth on timber land since 1952 are attributable to several factors. In general, positive growth trends reflect regrowth and maturation of forests on lands that had been harvested before 1952. Investments in fire protection, landowner education, and silviculture are also reflected in the trends. Changes in harvest patterns in the 1990s resulted in growth and removals shifts by ownership and region. Historically, most harvesting occurred on private timber lands in the East and recent data show a further shift of removals from public timber land in the West to private timber land in the East as policies to reduce harvesting on public lands in the West were implemented. Thus, growth has been exceeding removals by a wider margin in the West while the gap has

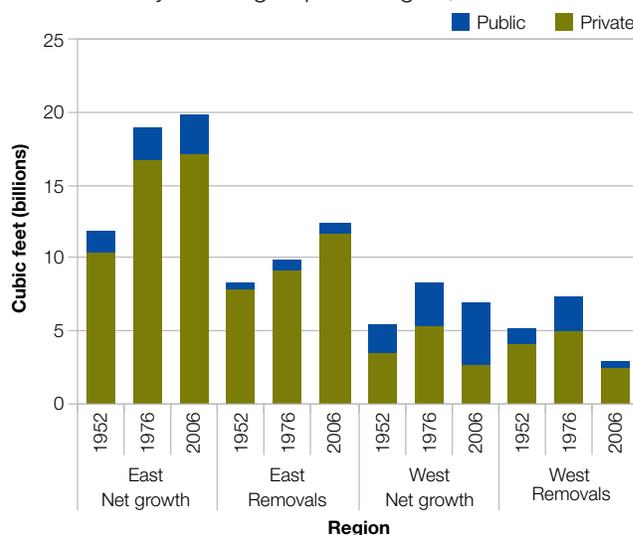
been decreasing in the East. Interpreting growth trend data in the West, particularly on public land, can be complicated by the reductions in harvesting and set asides of large areas of public timber land into reserves since the mid-1970s, thus, apparent declines may be an artifact of this situation.

Although this situation is significant, recent major planting of conifers in the South are rapidly becoming of commercial size and are expected to improve the situation in that region. Current growth measures in the South may not fully reflect anticipated growth on these planted forests. Currently, 91 percent of U.S. wood output is produced on private lands.

Since 1952, overall conifer volume has increased 23 percent and broadleaf volume has increased 118 percent. The lower percentage for conifers is reflective of higher demand for wood products from these species. Growth exceeding removals in all regions for both conifers and broadleaves is reflective of this trend (figures 13-2 and 13-3).

Based on site productivity data measured during field inventories, an estimate can be made of the productive potential of U.S. forests and how they relate to the current situation (fig. 13-4). This

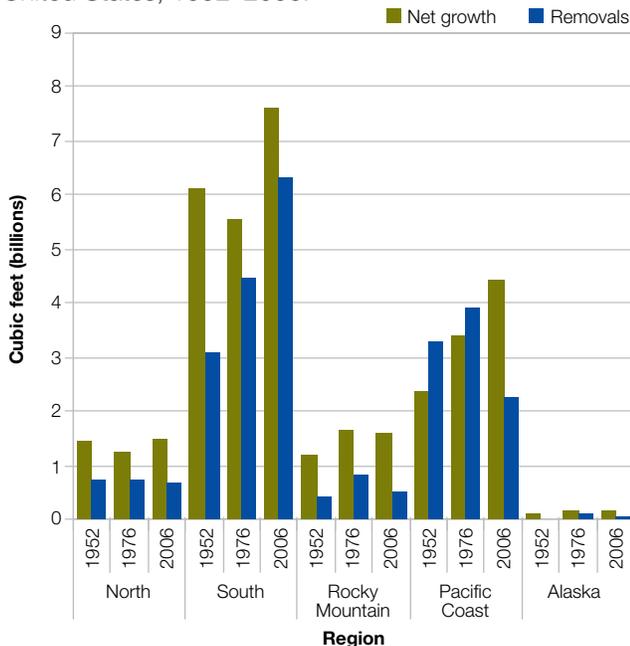
Figure 13-1. Growth and removals of growing stock on timber land by owner group and region, 1952–2006.



Source: USDA Forest Service, Forest Inventory and Analysis

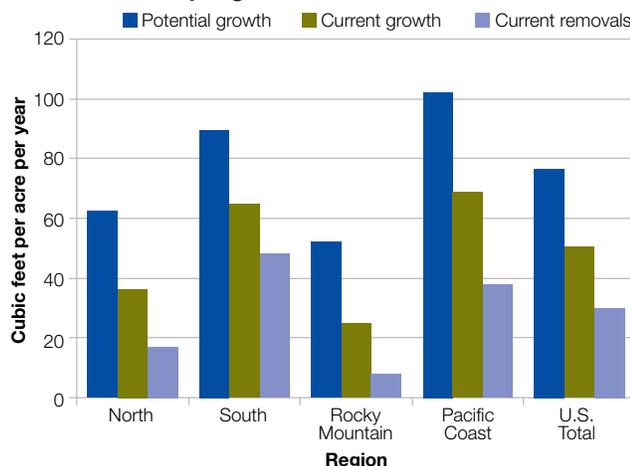
measure provides and estimate of the productive capacity of forests based on maximum growth at the culmination of mean annual increment. Overall, U.S. timber lands are growing at 51 cubic feet per acre per year, as opposed to a potential of 77 cubic feet. Thus, current growth is 66 percent of its estimated maximum potential. A clear capacity exists to sustain present levels of timber harvest from a pure wood volume standpoint, even at current growth rates. Many reasons exist, however, as to why the potential growth may not be achieved. The main reason is that the diverse objectives of the many different owners of U.S. timber lands may not have the maximization of wood fiber production as their primary objective.

Figure 13-2. Net growth and removals of conifers in the United States, 1952–2006.



Source: USDA Forest Service, Forest Inventory and Analysis

Figure 13-4. Potential and current growth and removals on timber land by region, 2006.



Source: USDA Forest Service, Forest Inventory and Analysis

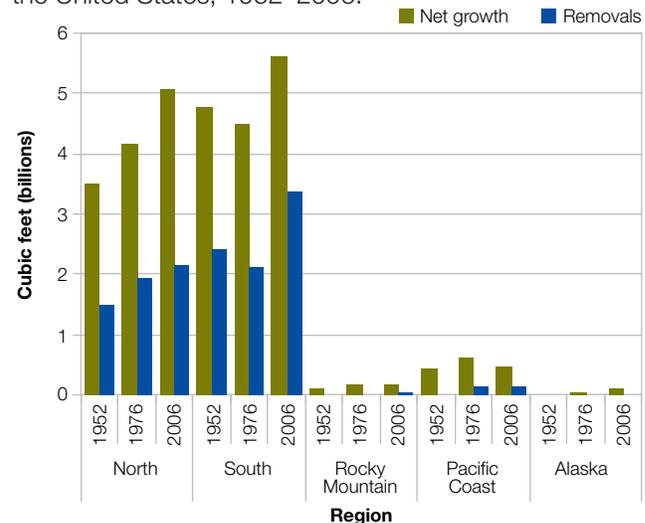
Saw and veneer logs and pulp wood are the dominant primary wood products from U.S. timber lands, comprising 94 percent of all wood removals, up from 75 percent in 1953 (fig. 13-5).

Timber land is concentrated on private lands in the East and public lands in the West. Recent studies indicate that 58 percent of noncorporate private owners have harvested wood on their land. Recent large divestitures of forest land by private corporate landowners, particularly forest industries, have left the future viability of these lands for wood production less clear.

What has changed since 2003?

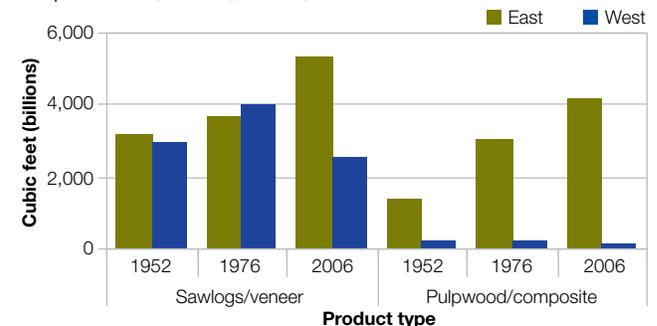
Growth continues to exceed removals on U.S. timber lands, as it has for more than 50 years. Overall, domestic removals of growing stock have declined from 15.8 to 15.5 billion cubic feet since 2003. This decline is also reflected in the statistic that conifers and broadleaf removals were 75 and 58 percent of growth respectively in 2003, and currently these values are 65 and 49 percent respectively. Demand has not subsided, and imports continue to rise to meet U.S. wood needs (Indicators 6.28, 6.30, and 6.32).

Figure 13-3. Net growth and removals of broadleaves in the United States, 1952–2006.



Source: USDA Forest Service, Forest Inventory and Analysis

Figure 13-5. Removals of growing stock for major forest products, 1952, 1976, and 2006.



Source: USDA Forest Service, Forest Inventory and Analysis