Increased Clearcutting for Woodchip Production in Tennessee: Statistics, Effects and Trends

Summary of Contents

In 1989, about 2.7 million tons of timber were cut in Tennessee to make woodchips for pulp and paper. Hardwoods comprised about 1.1 million tons of this total. This resulted in overharvesting in 17 counties statewide.

By 1996, the cutting of hardwoods for chips tripled to 3.3 million tons, due to increased demand from existing mills and from twelve new log export facilities. Total removals for woodchip production reached 5.2 million tons.

In 1997—*after* the date of the most recent data used within this report—three new high-capacity chipmills were located in Tennessee, or were sourcing logs from Tennessee, and are expected to keep forest consumption growing at a high rate. Overharvesting will increase.

Projecting a modest growth rate of only half that of recent years, about 6 million acres of trees *(half of all Tennessee's forest land)* will be needed by the year 2016. This level of clearcutting will doubtless have drastic effects on the hardwood industry. Long-term effects on the health and productivity of Tennessee's forests are unknown.

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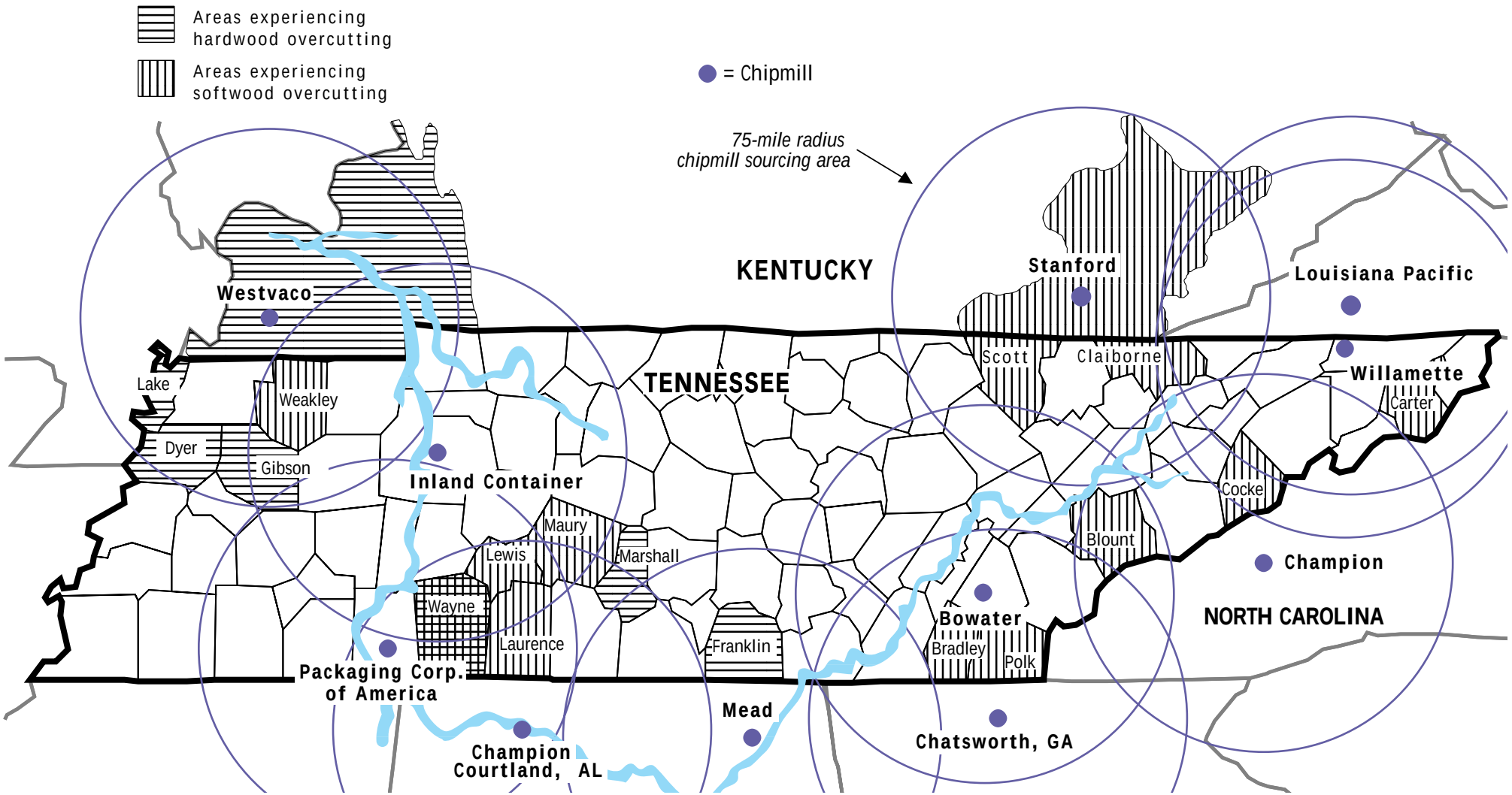
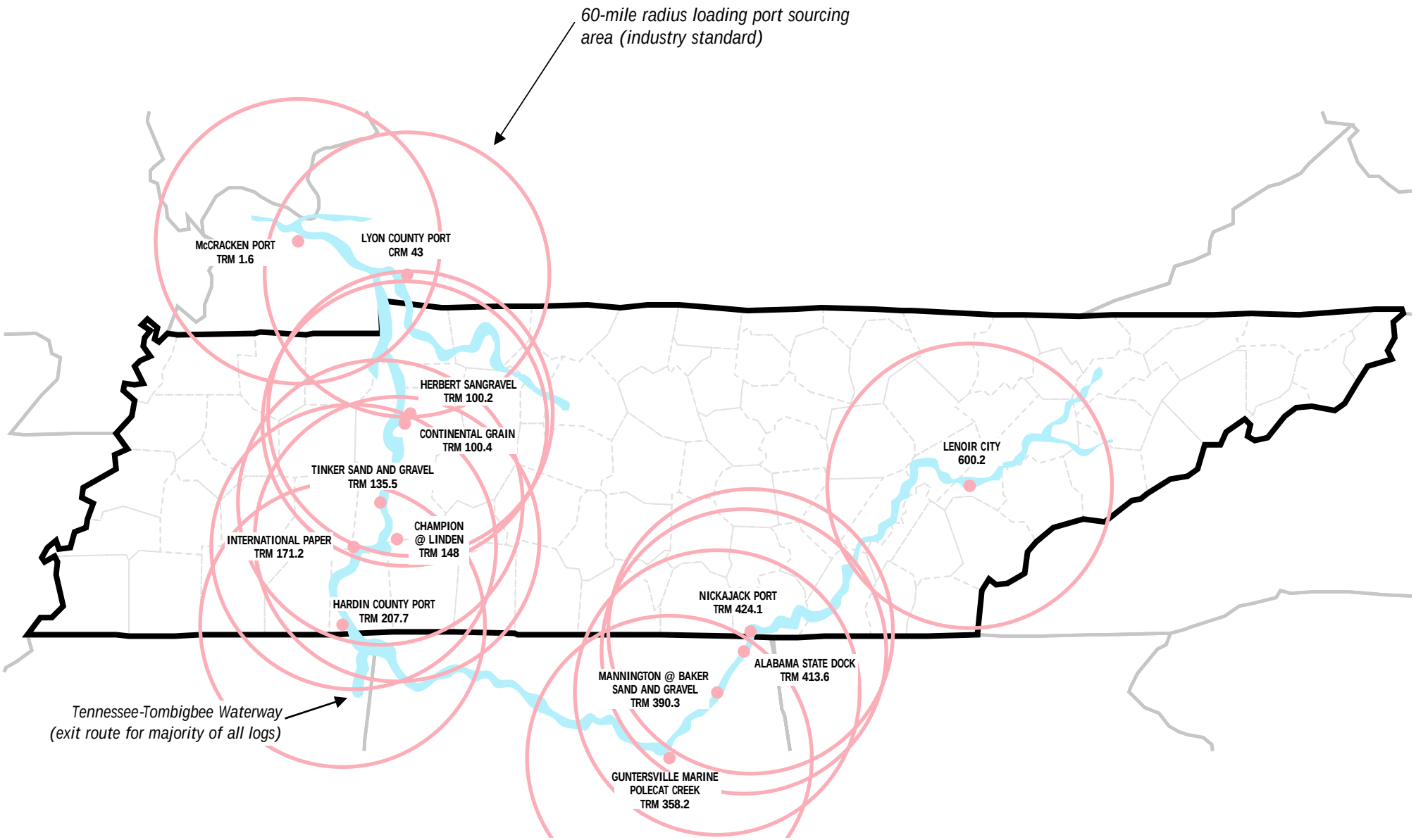
1989

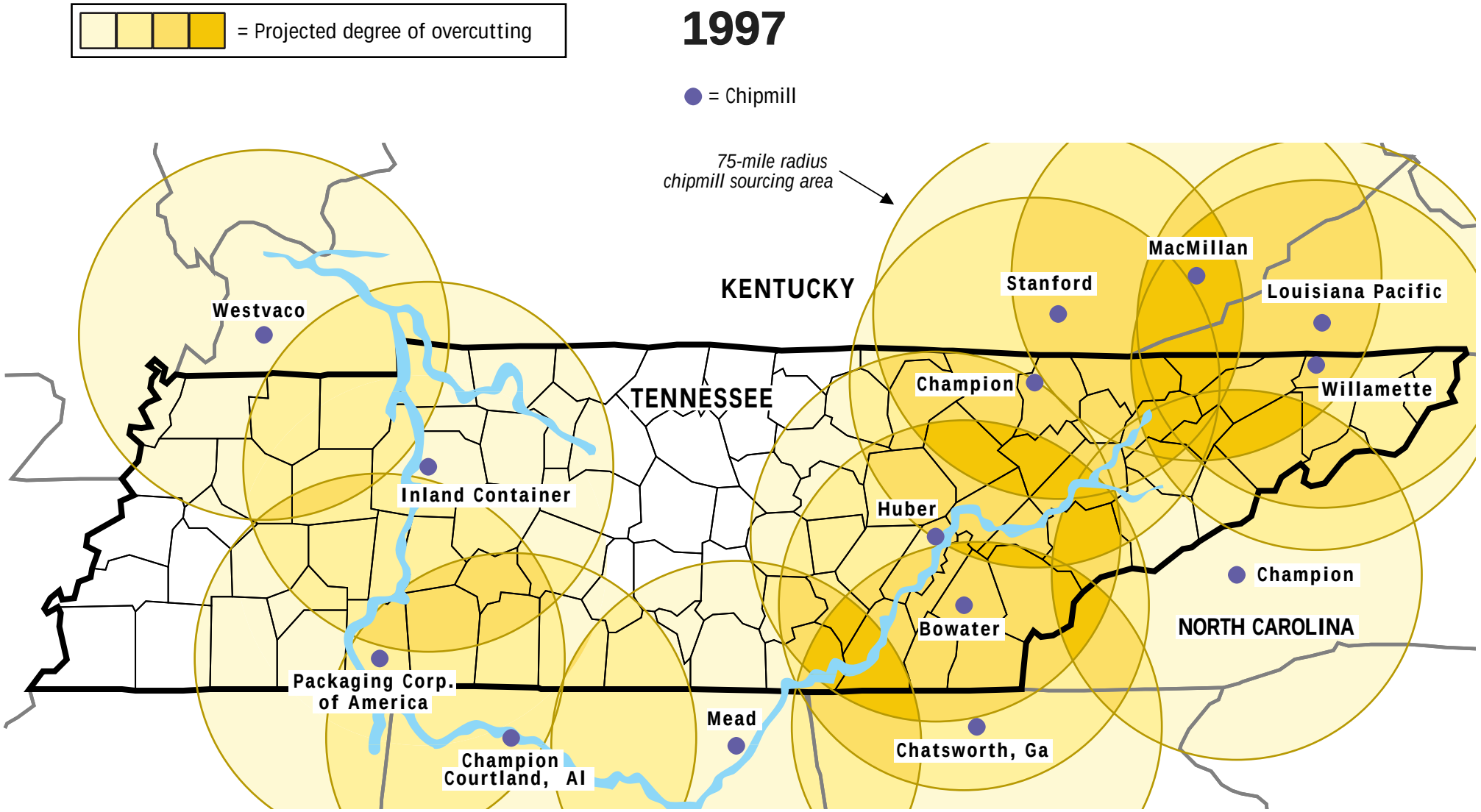


Each dot and circle represents a woodchip consuming facility and its sourcing area. According to figures from the Tennessee Division of Forestry's most recent forest survey (1989), seventeen counties in Tennessee and two large regions in southern Kentucky were experiencing overcutting (the amount of timber cut exceeds growth) at that time. Total timber harvested for chip production was approximately 2.7 million tons (source: United States Forest Service, Southeast Station, Asheville, NC).

WHOLE-LOG LOADING PORTS AND SOURCING AREAS (•)



Each dot (and surrounding circle) represents a log-loading port (and its sourcing area) which buys and ships whole logs down the Tenn-Tom Waterway to be chipped by mills in Alabama and Mississippi. Most of these chips are then shipped to Japan through the port of Mobile, AL. Each facility consumes between 100,000 and 200,000 tons of trees per year.



Chip facilities on this map each consume between .3 and 1.5 million tons of woodchips annually. Darkened areas are projected zones of overcutting. Lighter shaded areas are threatened by excessive timber cutting. Total timber harvested in Tennessee for chip production is 5.2 million tons (source: United States Forest Service, Southeast Station, Asheville, NC, 1996).

Appendix: Tennessee Forest Statistics and Projections

I. Roundwood (Logs) Cut for Pulp in Tennessee

(all statistics from USFS, Southern Research Station)

1989: 601,000 cords softwood + 397,000 cords hardwood = **2.7 million green tons**

1996: 682,000 cords softwood + 834,000 cords hardwood + 350,000 cords hardwood (log loading ports) = **5.2 million green tons***

This is a 93% increase in total consumption (about 11% yearly) in 7 years.

Increase from 1989–1996 Softwoods (cords): 601,000 to 682,000 a 13% increase, or about 1.5% yearly;

Increase from 1989–1996 Hardwoods (tons): 1.1 million tons to 3.3 million tons (2.3 million tons plus 1 million tons from whole log ports) — an increase of 200% or an average 18% increase yearly.

** USFS figure for 1996 is 4.2 million tons. Tony Johnson, author of this report states that this does NOT take into account another estimated 1 million tons of logs cut in Tennessee and shipped out of the state from 12 whole log ports (see map 3) for chipping.*

Summary: 1996 total timber cutting in Tennessee for wood chips—5.2 million tons—has almost doubled since 1989. Most of this increase is in hardwood—cutting of hardwood timber for chips has TRIPLED in these seven years.

II. The Impact of Timber Cutting on Tennessee's Forest Land

The following projections show the number of Tennessee's forest acres that will be impacted by pulpwood harvesting for the near future under two different growth assumptions: a "zero-growth" scenario, where 1996 production levels are maintained for the next 20 years and a more realistic—yet conservative—assumption of sustained growth, computing harvesting based on an annual growth rate of 9%. (This is an increase of only **one-half** of the actual 18% yearly growth that occurred between 1989 and 1996. Although the assumption of zero growth is not feasible, the numbers provide a useful baseline, a "snapshot" at current cutting levels.)

Acreage Needed to Maintain Production at 1996 Levels:

Hardwoods: 3,300,000 tons/40 tons per acre = 82,000 acres per year

In 20 years, we would need about 1.64 million acres of hardwood forest clearcut to supply chips for the market.

Softwoods: 1,248,000 tons = estimated yield from 16,000 acres of plantation *(Using Bowater figures of 78 tons per acre for plantations)*

Estimated yield from older pine stands (not yet converted to plantations) at 40 tons per acre (plus sawlogs) on an estimated 16,000 acres = 640,000 tons.

About 32,000 clearcut acres produces a year's (1996) supply of softwood for pulp. In the next 20 years we would need 640,000 total acres of pine in a clearcut rotation to maintain this level.

➲ 2.3 million acres = total acreage needed to maintain 1996 production level

Acreage Needed to Support an annual Growth Rate of 9% in Hardwood Consumption:

Hardwood consumption grew at the rate of 18% per year in the past seven years. Global demand for hardwood chips is increasing, and supplies of high-quality hardwood chips are not plentiful in most other parts of the world. Our region's existing chipmills aren't even operating at full capacity, and new mills are coming on line. So long as the Tennessee Division of Forestry recommends clearcutting as the preferred option for harvesting hardwoods, clearcutting hardwoods for chips will doubtless continue to increase dramatically. Even the modest growth rate of 9% over the next twenty years would result in total acreage of hardwood forest in clearcut rotation of almost 5 million acres in 20 years (2016).

Softwoods: Softwood (pine) harvesting for pulp increased slightly from 1989 to 1996. As older, natural pine stands are cut, some will be converted to plantations, which—in the short term, at least—produce more tons per acre. For the softwood harvest to increase by 60–100% in the next 15 to 20 years, it will require some increase in annual acreage, up to 1 million total acres of pine in clearcut rotation.

➲ 6 million acres = total acreage needed by 2016, presuming modest growth rate

Summary: Six million acres of Tennessee's forested land—13 million acres total* could be clearcut in the next 20 years. Not only would it change our landscape dramatically, but the effects on local environments and on the hardwood lumber industry would be disastrous. Our forest has limits, and the sooner we take this seriously, the better we will be able to take appropriate action.

* *In actuality, net forested land available for harvest is about 11 million acres when you exclude steep land, protected land, stream sides, land owned by those who refuse to harvest their land, land in close proximity to developed land, and land that is extremely unproductive.*

Appendix: Q & A

How many acres of forest land is available for harvesting in Tennessee?

The USFS says there is 13,602,500 acres of forest land in Tennessee. When steep land, protected land, stream sides, land owned by those who refuse to harvest their land, land in close proximity to developed land, and land that is so unproductive that it should not be harvested is deducted from this total, there is, at the most, 11,000,000 acres of forest land available for harvesting in Tennessee.

How important are Tennessee's forests to the economy of the state?

Tennessee has consistently ranked number 2 or 3 in the nation for hardwood lumber production. Approximately 50,000 people are employed in the wood-using industries in Tennessee with a payroll of about $800,000,000. We estimate that there are now 11 chipmills in Tennessee, 7 of which are high capacity mills (produce 400,000 - 1,500,000 tons of chips per year). There are at least 8 more high capacity mills in neighboring states that source from Tennessee. The 11 mills in Tennessee employ fewer than 100 workers.

How much forestland has been clearcut in Tennessee to supply chipmills in the last 7 years (1989–1996)?

In 1989, 2.7 million tons or about 57,000 acres of trees (60% softwood) were harvested for chip production. In 1996, with no increase in the number of mills in the state but with the addition of one high-capacity mill in Hazard, Kentucky and 12 whole-log loading ports on the Tennessee River, harvest for chip production increased to 4.2 million tons or 112,000 acres, 60% of which was hardwood trees.

How much forestland will have to be cut in the next 20 years to supply chipmills?

Since 1996, two high-capacity mills have been built in East Tennessee; Champion's Caryville mill and Huber's mill in Spring City. These two mills alone add over 1 million tons to consumption with the potential to add about 2 million tons. Assuming that pulpwood harvesting continues to grow at even 1/2 the yearly rate of increase (9% hardwoods and .08% softwoods) seen between 1989 and 1996, **6 million acres**—more than 1/2 of Tennessee's total available forest—will be in clearcut rotation by the year 2017.

If the proliferation of chipmills is not regulated and a limit put on their construction and production, Tennessee stands to lose a major portion of its valuable hardwood economy.