

NTFPs from Trees: Nontimber Forest Products that Support our Society and Economy

SLIPPERY ELM

Product: Medicine

Plant part used: Inner bark



Slippery elm (*Ulmus rubra* Muhl.) is a medium-sized tree that thrives in moist, rich soils of flood plains. The native range covers most of the Eastern United States, from southwest Maine to northern Florida and central Texas to eastern North Dakota (shown in green on the map below). A riparian tree, slippery elm is found in high concentrations on Forest Inventory and Analysis (FIA) plots near major rivers such as the Mississippi and Ohio. It has single and double serrated leaves with sandpaper-textured undersides as compared to American elm (*Ulmus americana*) and is associated with a variety of hardwood trees, including American elm, sugar maple (*Acer saccharum*), eastern cottonwood (*Populus deltoides*), and American sycamore (*Platanus occidentalis*).



Key Points

- A large amount of slippery elm bark is harvested every year for medicine to address sore throats and skin abrasions.
- Data, although dated, indicate an increase in bark harvest since 2001.
- Estimated tree mortality exceeded growth over the 2 decades evaluated, and although the magnitude of the difference is not concerning, the trend suggests potential long-term challenges.
- Silvicultural and utilization research could generate knowledge needed to ensure sustainable harvesting of this important medicinal forest product.

Nontimber Uses

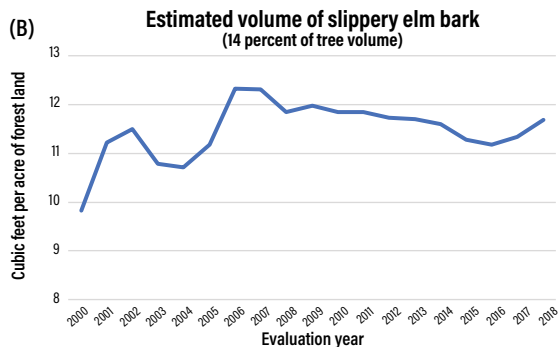
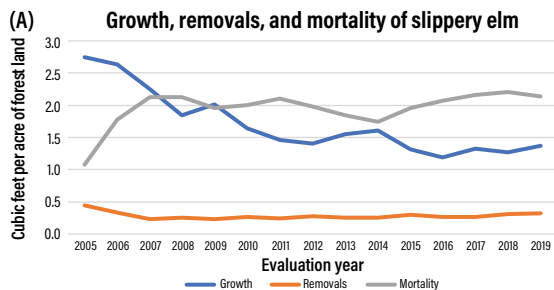
- Traditional healers valued slippery elm for its many medicinal uses as an eye wash and for treating abrasions, inflammation, gastrointestinal issues, burns, and more. Modern uses are based on this traditional knowledge.
- The bark of slippery elm is stripped from the stem and "rossed," a process that separates the inner bark from the corky outer bark. The inner bark is then dried and ground to be used as an ingredient or formed into tablets, lozenges, and other soothing agents.
- Slippery elm bark is commonly used to treat sore throats and skin abrasions, as it produces a mucilaginous substance that soothes irritations.
- Limited clinical research indicates a demulcent containing slippery elm as an active ingredient is an effective and safe treatment for sore throat pain.

Markets

- Slippery elm has been a major part of the herbal medicine industry for over a century and remains one of the preferred medicinal forest products.
- Slippery elm is one of two dozen wild-harvested medicinal forest products that are tracked by the American Herbal Products Association.
- Survey data indicate a significant increase in wild-harvested dried bark from about 10,000 pounds in 1999 to over 225,000 pounds in 2003. Demand continues for large volumes of the bark.
- Comparing two 5-year periods (2001–2005 and 2006–2010), the average annual harvest increased by >65 percent.

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Status^a

- Slippery elm was found in FIA plots across 33 States, with the highest concentration of trees per acre of forest land in Florida, followed by Delaware and Georgia.
- There were, on average, 12 cubic feet of slippery elm bark per acre of forest land, across all States.
- North Carolina, New York, and Kansas exhibited the most growth over the examination period 2002–2017.
- Estimated mortality exceeded mean annual growth in all but one year since 2007 (see chart [A]).
- FIA data reveal a positive trend in slippery elm bark volume from 2000–2018, yet a decline in bark volume of about 5 percent since 2006 (see chart [B]).

^aEstimates are based on observations of at least one specimen of the species in an inventory plot (representing about 6,000 acres of forest land). They are not based on all forest land for the State.

Management and Implications

- Although there is a dearth of documentation on managing slippery elm bark production and harvest, there is a large body of knowledge on the silviculture of other trees harvested and managed for bark (e.g., cinnamon [*Cinnamomum verum*], cork [*Quercus suber*]).
- At the State level of analysis, there is evidence of decline, albeit insignificant. Major negative impacts may be evident at finer resolutions, such as FIA unit (~1 million acres), county, or national forest. Public forests that have slippery elm populations are under pressure from the harvest of the bark.
- Although mortality has exceeded growth in most years over the last 2 decades, the long-term sustainability of the species may not be of imminent concern, but the trend is disturbing.
- Bark harvesting may be a factor in slippery elm decline and warrants silvicultural analysis that leads to science-based management prescriptions.
- The bark volume and value data are dated and lack consistency, which makes accurate estimates challenging. Improved and systematic reporting would support informed management decisions.

References

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The U.S. Department of Agriculture Forest Service **Forest Inventory and Analysis (FIA)** program tracks growth, mortality, and removals of forest trees and more. For additional information: <https://www.fia.fs.fed.us/>

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