Harvest of plenty

The US grows more hardwood timber each year than is used for both domestic and export markets. However, some problems do exist. Philip Araman and John Tansey of the USDA Forest Services outline ways the US and its customers can make the most of America's timber resources.

Select red and white oaks, hard maple, black walnut, black cherry, the ashes and yellow birch are the most popular US hardwood species in both the export and domestic markets. Select oaks make up over 60% of US hardwood lumber exports, while the other species mentioned make up nearly half of the remaining amount.

As US hardwood exports are centred around this group of species, which also have strong domestic markets, several questions arise that need answers if purchasers are to be assured of continued adequate supplies. Can the US continue to supply both domestic and export markets? Can US exports increase? Are US resources being depleted? What hardwood resources does the US have, and what is the current availability of US sawtimber?

Hardwoods are dominant on 52% of US timberland. Most of the hardwood timber is in eastern forests. Farmers and other private owners control 75% of hardwood timber resources, while 14% is publicly owned, and 11% controlled by the forestry industry.

The total volume of sawtimber size material in the US in 1987 was 797.7 billion board feet. Sawtimber size hardwood is distributed fairly evenly between the north (42%) and the south (47%), while western states con-

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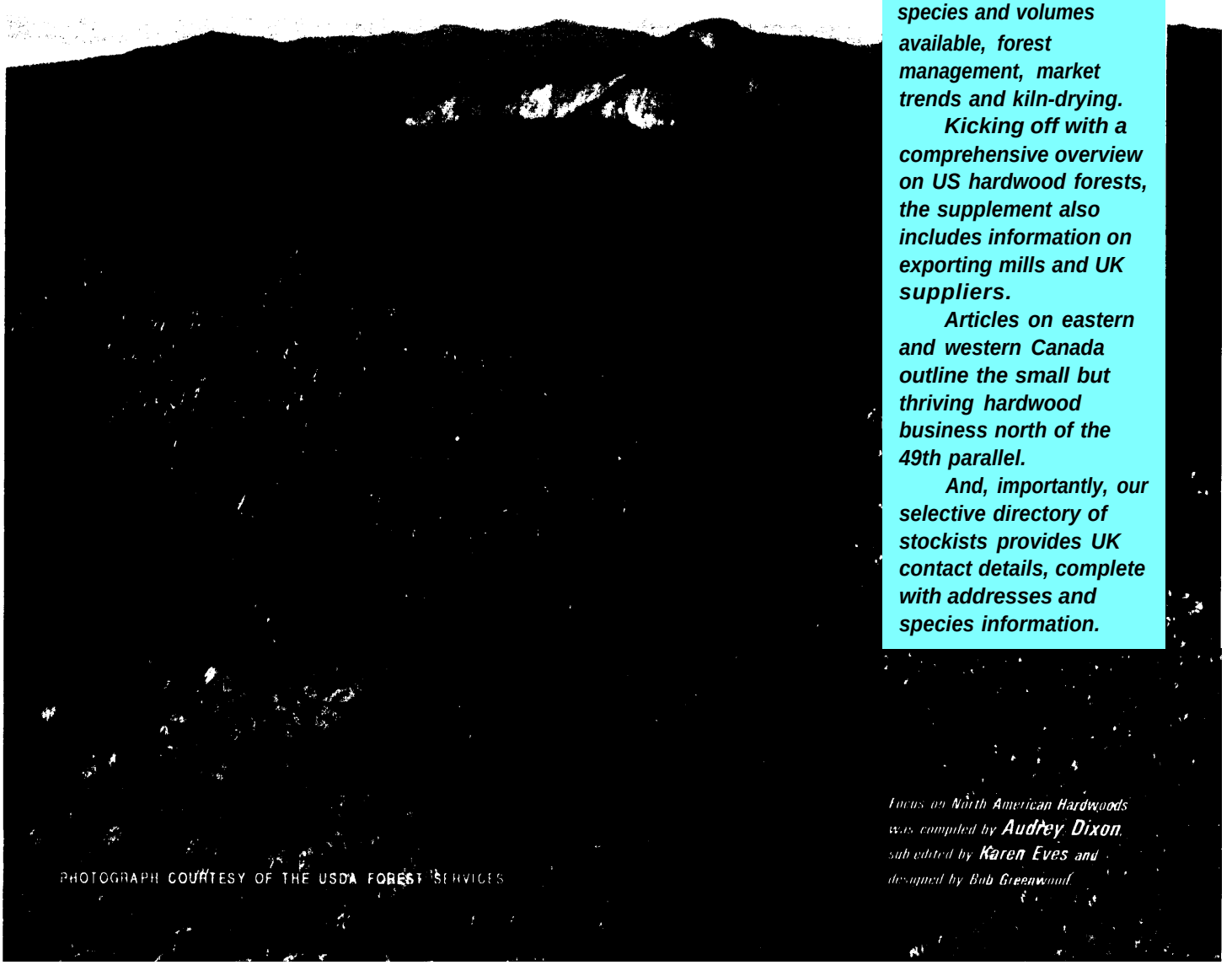

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Trends in furniture fashion, consumer concerns about tropical hardwood usage and a concerted marketing drive by the American hardwood industry have each played their part in increasing the popularity of temperate hardwood in Europe in recent years.

This special TTJ supplement takes the reader on a trip through the hardwood producing regions of the US and Canada, looking at the species and volumes available, forest management, market trends and kiln-drying.

Kicking off with a comprehensive overview on US hardwood forests, the supplement also includes information on exporting mills and UK suppliers.

Articles on eastern and western Canada outline the small but thriving hardwood business north of the 49th parallel.

And, importantly, our selective directory of stockists provides UK contact details, complete with addresses and species information.

Focus on North American Hardwoods was compiled by Audrey Dixon, sub edited by Karen Eves and designed by Bob Greenwood.

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trol about 10%.

Small diameter sawlogs (11-14.9in in diameter) make up 48% of standing sawtimber. These logs are primarily sawn into lumber and pallet or mine material. Larger diameter trees make up 52% of the standing sawtimber resource and are mainly used for sawlogs and veneer logs.

The most important species

Select sawtimber species were 28%, or 226 billion board feet, of the 1987 estimated hardwood sawtimber inventories. Of that total, 60% were select oaks, 18% hard maple, 11% ashes, 2% walnut, 5% cherry and 4% yellow birch.

The volume of select species is increasing slightly faster than the average for all commercial hardwood sawtimber inventories. The magnitude of select oaks increases may be slowing due to heavier demands recently. Furthermore, annual inventory increases of all hardwood species may lessen because of a reduction in the gap between hardwood growth and removals.

The US has many additional species that will be more important in the future, such as yellow poplar, soft maple, the gums, hickory and cottonwood. There are sufficient quantities of these species to support increased harvests.

US hardwood lumber is separated by grades, determined using National Hardwood Lumber Association (NHLA) rules. In general, top grade FAS&Sel (first-and-seconds and select) lumber goes to purchasers of clear or almost clear lumber. It is used in moulding millwork, and is also exported. Medium grade lumber, graded lC (No. 1 common) and 2C (no. 2 common) goes to dimension, furniture, cabinet, flooring, and other manufacturers. Material in the below 2C grade area is used as sleepers, mine timbers, pallet parts and flooring.

Estimated output of sawn lumber by lumber grade, based on the quality distribution of our standing sawtimber for the eastern US, is 12% in top grade (FAS&Sel), 50% in the lC/2C grades, and 38% in the below 2C grades. Actual lumber grade distribution at sawmills is higher because many of the small diameter and low-grade trees are not harvested for sawmilling.

The limited top grade lumber is in great demand. The lC/2C lumber, which can account for about half of a sawmiller's total production, must have adequate and profitable outlets. Much of this material could be defected and converted to clear export rough and/or finished dimension stock or parts.

Select red and white oaks make up only 17% of the US sawtimber inventory. This proportion could increase to around 40% if non-select oaks were included. Oak users not needing the rigid standards of the select oaks should explore some 'non-select' oaks. They are included in some present export shipments.

Demand for ash, red alder and black walnut also exceeds current supplies. Black cherry demand, however, is proportional to potential supply.

Under-used species are yellow poplar, hard maple, soft maple, beech, yellow birch, hickory, and a group called 'other species', which includes sweetgum, tupelo, blackgum, cottonwood and aspen.

Availability

Availability is dynamic. It depends upon changes in technology, economics and public opinion. Each US region has its own constraints, but we focus here on the south-east.

Not least among factors that may limit availability are landowner attitudes towards the management and harvest of timber.

Administrative policy on the harvesting and removal of commercial wood products from public lands can also limit availability, especially on National Forest lands.

Economic constraints have considerable impact on timber availability. Stumpage costs aside, timber harvesting may be impractical because of the expense of building roads to remote stands, the low volume of desired species per acre, or an abundance of low-grade, poor-quality timber.

Environmental constraints are also a limiting factor. Management practices may prevent timber harvesting in areas bordering streams or where other hydro-logical functions would be altered. Hardwood standing on steep or moderate slopes with shallow, fragile soil may also be unavailable for harvest if conventional logging methods are used.

In the coastal plain, soil saturation during the rainy season effectively limits harvesting operations for a portion of the year. And in the agricultural region of Piedmont a lot of timberland is in strips, stringers and bands, reducing the available hardwood sawtimber volume by almost 15%.

Extremely steep slopes m the mountainous regions also cause problems. Even where machinery can be used effectively, erosion and site degradation can occur with improper harvesting. This means that 40% of mountain timber cannot be cut, although the problem could be helped by employing systems for harvesting timber on steep slopes in an environmentally sound manner.

Hardwood sawtimber volume for the entire south-east totals almost 190 billion board feet. After discounting, only 74.4 billion board feet remains in available timber. Demand for timber products and specific species, available harvesting techniques and equipment, and land-use policy can all change rapidly, influencing availability.

The future

The US has abundant quantities of hardwood timber resources. Demand for and removal of this timber have been far below the annual growth rate. The eastern US has large quantities of select species, and these resources are increasing. By the year 2000, US sawtimber inventories of select species could increase to a greater percentage of our hardwood resources.

It would appear, then, that the US has and will continue to have the resources necessary to supply domestic markets; to be a major player in the world hardwood market for log, lumber, and veneer products; and to increase exports of further processed hardwood products.

We have discussed the availability of US hardwood resources using the south-east as an example. We estimate that around 39% of hardwood sawtimber is available for harvesting at this time, although many factors could change this availability picture.

About 50% of standing sawtimber is medium-quality material. Not much more than 12% would be in the top grades for export and domestic markets. The vitality of the markets for the medium-quality material dictates the overall economic performance of a sawmill and is, therefore, very important. Improvements in present and potential markets and the development of new uses for this quality range of material, such as value-added export, need to be permanent goals.

Opportunities for using other species are also great. Some, such as yellow poplar, are being used more in the US, and by export customers. Substitution and use of other species, such as soft maple, hickory, and the non-select oaks could be significantly increased.

Efforts are being made to respond to rising demand and environmental concerns by improving management techniques; by trying to get the most out of each tree bested; and by enhancing market opportunities for low-grade trees and non-select species.

Volumes of hardwood sawtimber on timberlands of the US by species and region, 1987

Species	Region North	Region South	West	All regions	Percentage change 1977-1987
	(Billion board feet, international ¼in rule)				
Select red oaks	39.8	23.7		63.5	
Select white oaks	31.5	40.1		71.6	
Other red oaks	30.7	78.9		109.6	
Other white oaks	13.8	33.3		47.1	
(All oaks)	(115.8)	(166.2)	18.6	(310.4)	(+35)
Hickory	12.7	27.9	–	40.6	+22
Yellow birch	8.6	0.1	–	8.7	+11
Hard maple	38.4	2.9	–	41.3	+38
Soft maple	34.5	13.3	–	47.8	+66
Beech	14.2	7.0	–	21.2	+23
Sweetgum	1.6	38.0	–	39.6	+22
Tupelo and blackgum	1.2	29.7	–	30.9	+14
Ash	16.1	10.0	–	26.1	+43
Basswood	10.1	1.6	–	11.7	+42
Yellow poplar	12.6	40.3	–	52.9	+54
Cottonwood and aspen	29.5	3.1	19.6	52.2	+46
Black walnut	2.5	1.0	–	3.5	+60
Black cherry	11.2	0.3	–	11.5	+75
Red alder	–	–	26.5	26.5	+18
Other species	29.5	25.6	17.4	72.5	+11
All species	**338.5**	**377.0**	**82.2**	**797.7**	**+33**

Information supplied by Waddell et al, 1989 and Bones, 1987.

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