

GENERAL SUMMARY - MASSACHUSETTS STATE FORESTS, 1981

One may wonder what the discovery of gold at Sutter's Mill or the Civil War might have to do with Massachusetts state forests. If we can take a historian's perspective we find that the state forests are a product of the events surrounding the growth of a young nation and that these events had a profound effect on the present condition of the forests.

It is believed that in the early 1800's Massachusetts was only about 1/3rd forested and this forest probably occurred only on the poorest of soils. It was a period in which one's everyday world was much smaller than our own. Outside the metropolitan areas subsistence farming was the livelihood pursued by most families. With the exception of the fertile river valleys the soils were not well suited to agriculture and, no doubt, after decades of farming the soil became more difficult to work. The promise of riches, of gold nuggets awaiting discovery, and Horace Greeley's urging was enough to cause many to abandon their rocky farms and head for the California gold fields.

A decade later, many of those that remained were swept up in the war between the states. Nearly every able-bodied man took up arms, donned Union blue and set out to keep the nation together. Many did not return. In their absence farms fell into disrepair. The miles of stone walls so laboriously built by the early settlers that had been basking in the sunlight for so many years began to experience the coolness of the forest as it reclaimed the land. As the forest returned, the stage was being set for the heaviest commercial exploitation of the region's forest resources it would ever experience. These thousands of acres of "old-field" white pine began to reach maturity as the region's industries expanded to meet the needs of the growing nation. The opening of the Panama Canal and improved railroads expanded the marketplace

from New England to the rest of the nation, if not the world. This commerce needed containers in which to ship goods - the forests provided them. In 1908, at the peak of this period of exploitation, Massachusetts' sawmills produced almost 400 million board feet of lumber; today, production is just over half of that.

During the 1890's, as Massachusetts' second forest succumbed to the saw, public concern for the fate of both the Commonwealth's and the Nation's forest resources began to grow. The next 20 years saw the creation of the National Forest System, the National Park System and the Adirondack Preserve in the State of New York. That period in Massachusetts saw the establishment of the Trustees of Reservations and the Massachusetts Forest and Park Association and the acquisition by the public of several significant large tracts of land, namely Mt. Greylock, Middlesex Fells and the Blue Hills Reservations, as well as substantial acreages of metropolitan parks in the Boston area.

In 1908, the legislature created the Office of State Forester. A State Forest Commission was created and in 1915 the first State Forest, the Otter River in Winchendon and Templeton was purchased. Since that time the system has grown to its present size of about 235,000 acres. While the original purpose of their establishment was to provide timber, society has changed and now looks to the forests for other benefits as well. It provides water, in some cases for human consumption. It provides habitat for wildlife. It provides a "greenbelt" in some of the highly developed sections of the Commonwealth, and majestic mountain scenery in the Berkshires. Probably the most conspicuous use is that of a place to recreate - a place to hike, swim, camp, picnic, hunt, fish, snowmobile and pursue a myriad of other diversions so necessary for human welfare.

While it is said that time heals all wounds, the healing of the forest

is a slow process at best, at least in terms of the scale of time we deal with on a daily basis. While, on the surface, the wounds appear to be healed - they in fact are not.

Probably the most serious problem we now have is the fact that from the standpoint of commercial usage many of our trees are growing on sites to which they are ill-suited. This is because little or no care was taken to match the species to the site when the parent stand was harvested. A great deal of the acreage in eastern Massachusetts now supports low quality, slow growing oak where majestic white pine once grew. Some of our Berkshire forests support stands with a predominance of disease-ridden beech and red maple rather than a healthy mix of northern hardwoods that are so valuable.

Most of the trees that remained standing at the time of acquisition were left standing only because they were either too crooked, rotten or limby to be salable by their owners - some of these trees are still with us and are taking up valuable growing space. A close look at the distribution of tree quality across the state brings home this point. Only 6.9% of the board foot volume occurs as grade one (the best) trees. A bit of caution in interpreting these figures is in order here since grade is a function of both defect and size. Obviously, many of these trees are low grade only due to small size, but large defective trees contain the largest volume in this class.

Most of the State Forests are now "middle-aged". As a matter of fact, since most of the acreage was acquired at one time in a heavily cut or burned over condition we have a preponderance of 60 to 70 year-old stands. This presents managers with a problem since these stands will reach maturity at about the same time and create a "boom or bust" situation then and in subsequent harvests unless measures are taken to correct this situation. The problems associated with this imbalance of age classes can only be solved if

new, large-scale markets for low quality hardwoods such as wood energy are developed. Without these markets the Division is at the mercy of the saw-timber industry which can utilize only the better trees and the domestic fuelwood market which is as yet unorganized and of little help especially in western Massachusetts where 3/4ths of our volume occurs.

While the liquidation value of the State Forests has increased substantially in the past decade it should be noted that most of this value occurs in relatively small, immature trees that are earning high rates of return and will not be ready for harvest for several decades.

One might ask what implications this data has for the management of the State Forests in the foreseeable future? While it is dangerous to simplify this complex situation we offer the following:

- 1) Future harvests should concentrate on intermediate cuts (thinning, improvement cuts, etc.) to remove low quality trees from overstocked stands on the better sites. The material removed would be either low quality sawlogs or fuelwood if organized markets materialize.
- 2) Reproduction cuts should be concentrated in high risk, sparsely stocked or low quality stands. Again, these are dependent upon markets we do not now have, but these operations are extremely important as far as the Division attaining any semblance of sustained yield in the distant future. Few of the stands held by the Division are mature because of age or size, hence the recommendation that efforts be concentrated elsewhere.

While these strategies will not result in a great amount of revenues in the short run they will certainly more than pay for the cost of management, and, if done in the proper fashion, will increase the growth of our residual growing stock, improve wildlife habitat, upgrade the forest's transportation system and still make a significant contribution to the Commonwealth's General Fund. The real payoff lies in the future - if we can bring to bear the same

amount of patience those that created the system had nearly 70 years ago, we will arrive there in good shape.

Table. General Summary, C.F.I. - 1981

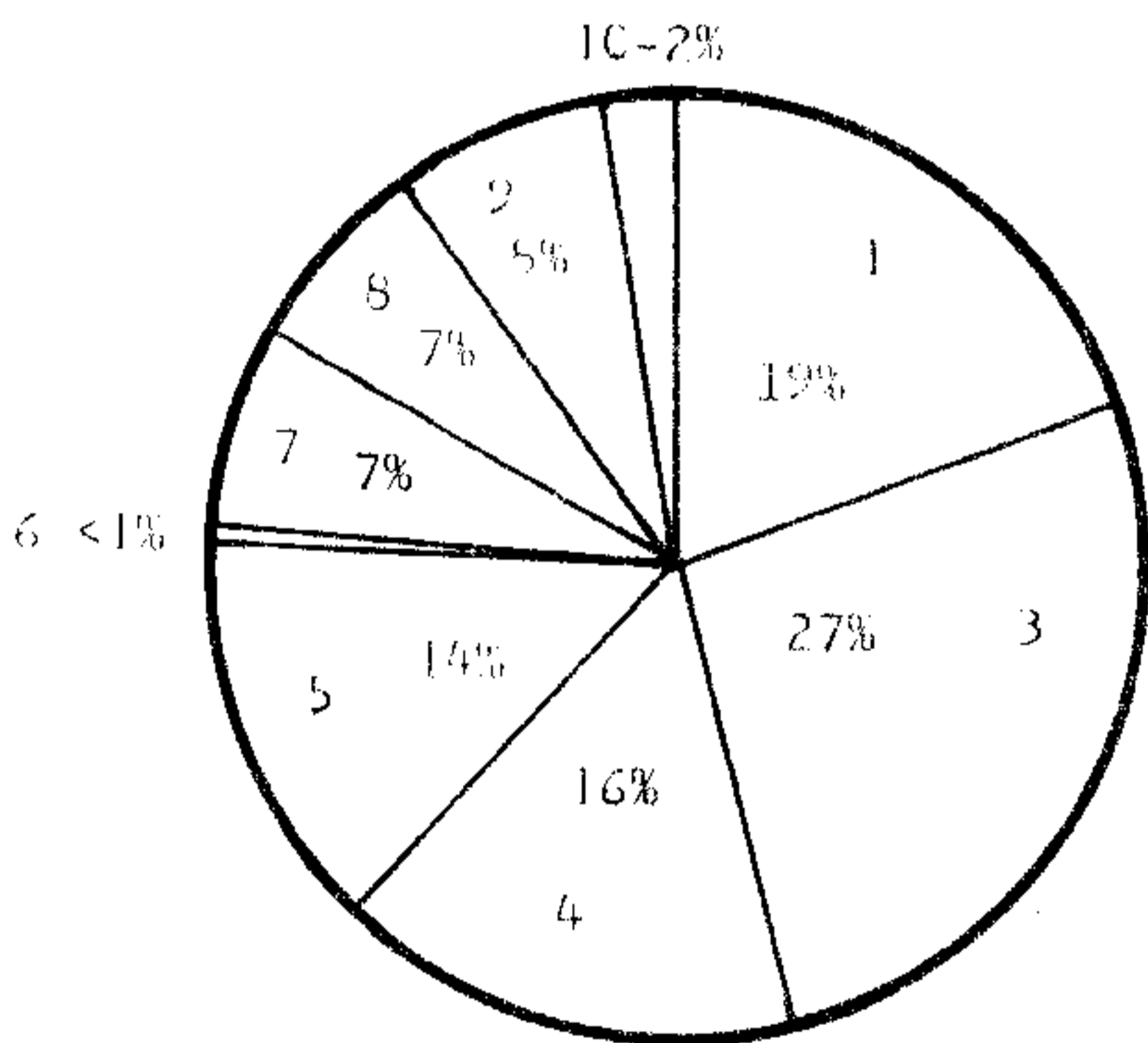
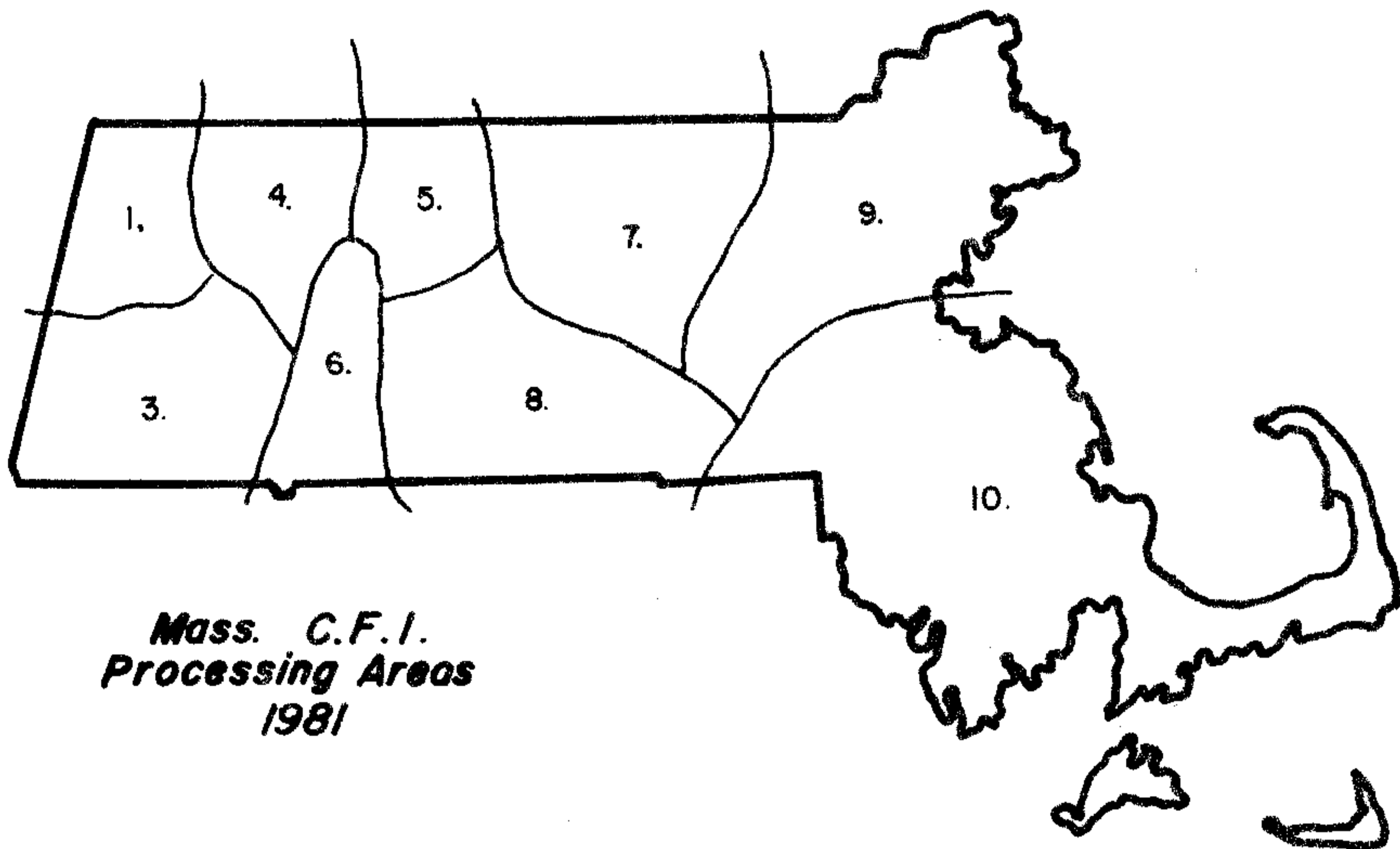
	Totals 1971	Totals 1981
1. Forest Area (acres)	193,120	191,934
2. Board Foot Volume (mbf)	783,932	1,117,394
3. Cubic Foot Volume (ccf)	1,882,212	3,641,648
4. Value (m dollars)	30,999	63,210
5. Growth (mbf/year)	39,174	42,306
6. Growth (ccf/year)	55,148.6	135,623.3
7. Mortality (ccf/year)	16,171.9	19,560.9
8. Ingrowth (ccf/year)	10,844.8	15,317.3
9. Value Growth (\$/year)	1,549,163	2,362,568

m = thousands

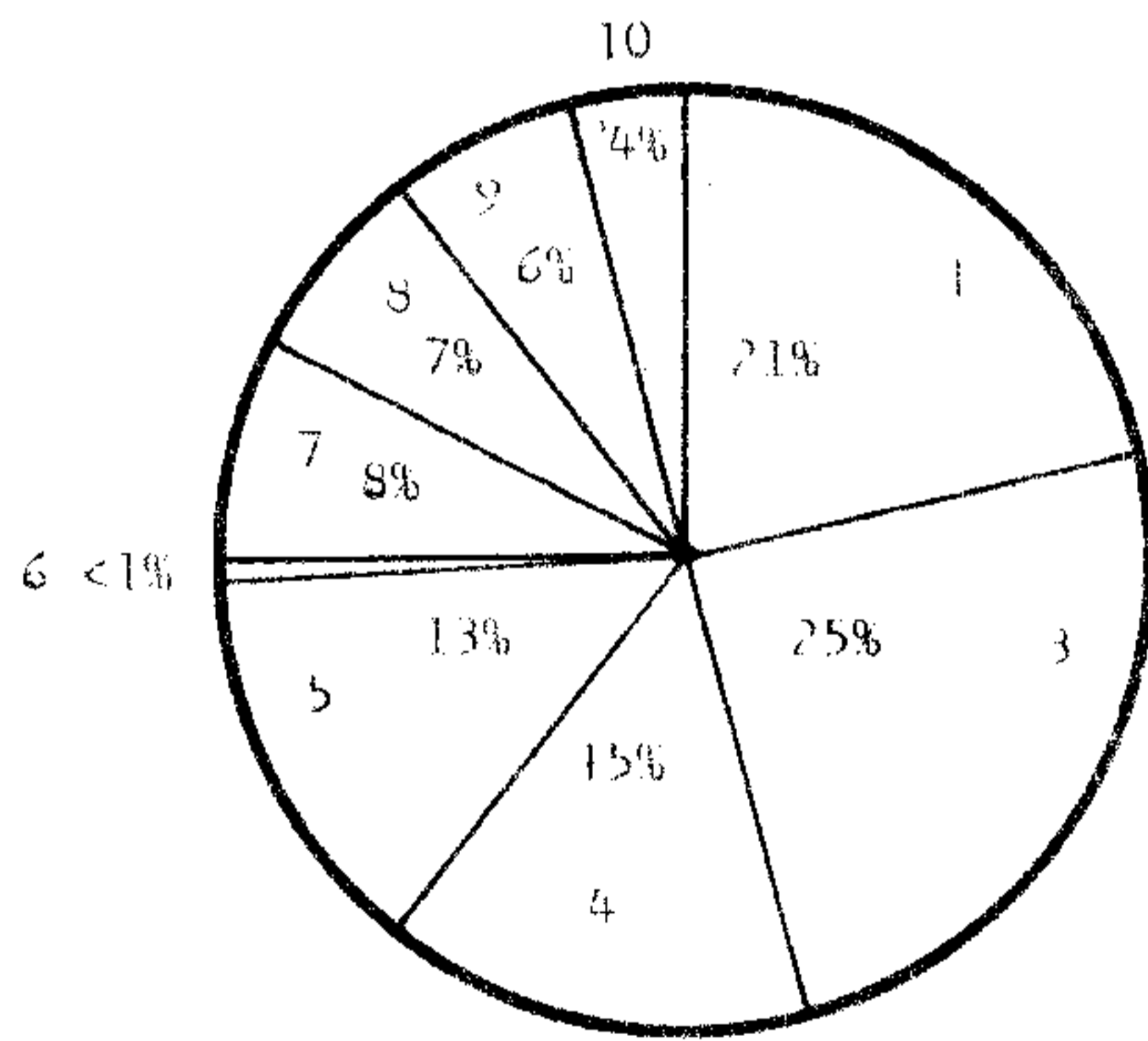
c = hundreds

	Per Acre 1971	Per Acre 1981	% Change 1971 Base
2. Board Foot Volume	4,059	5,822	+ 43
3. Cubic Foot Volume	975	1,897	+ 95
4. Value Dollars	160.52	329.33	+105
5. Growth Board Feet/Acre/Year	203	220	+ 8
6. Growth Cubic Feet/Acre/Year	28.6	70.7	+147
7. Mortality Cubic Feet/Acre/Year	8	10	+ 25
8. Ingrowth Cubic Feet/Acre/Year	6	8	+ 33
9. Value Growth \$/Acre/Year	8.02	12.31	+ 53

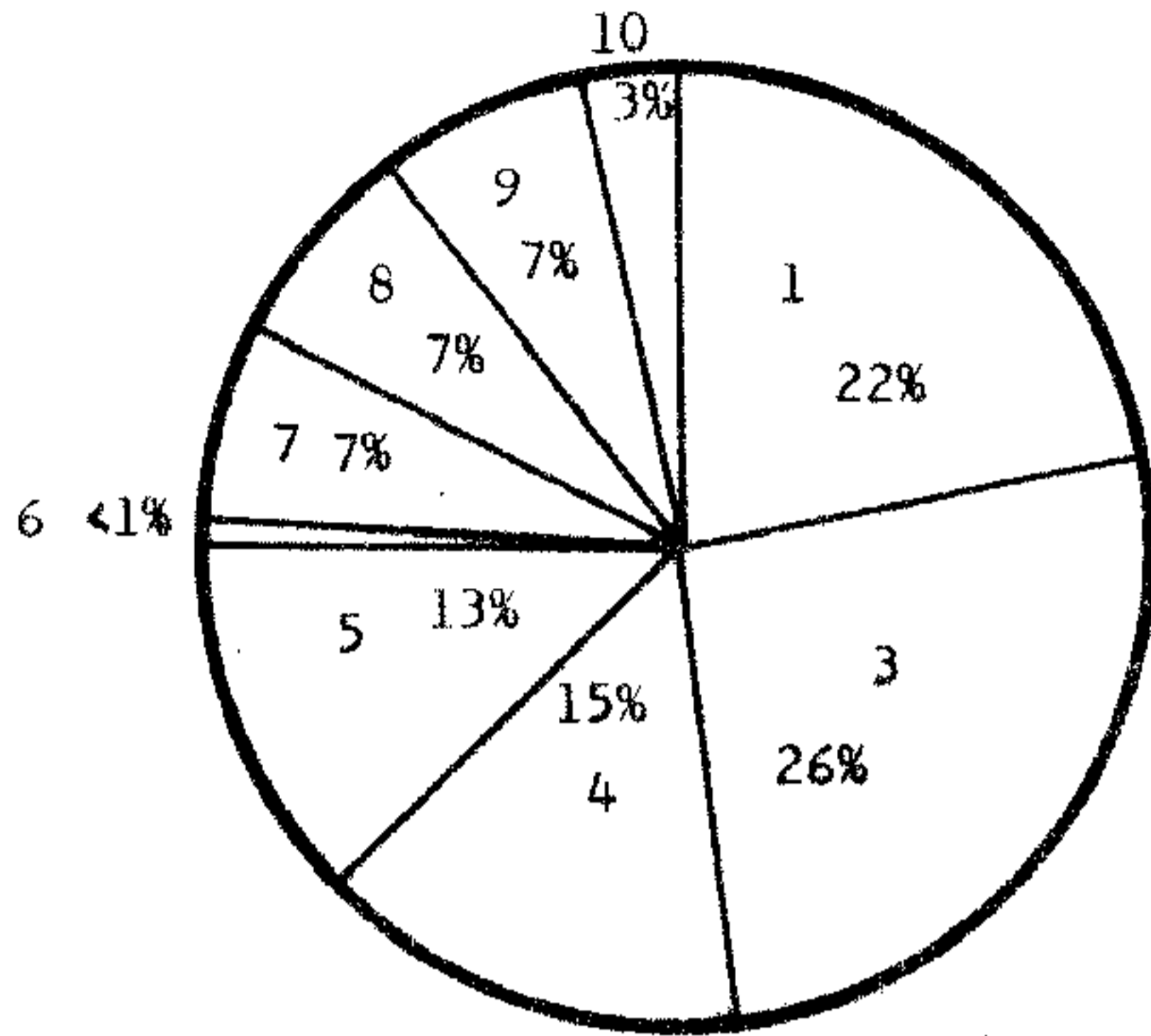
Source - 1359 CFI plots



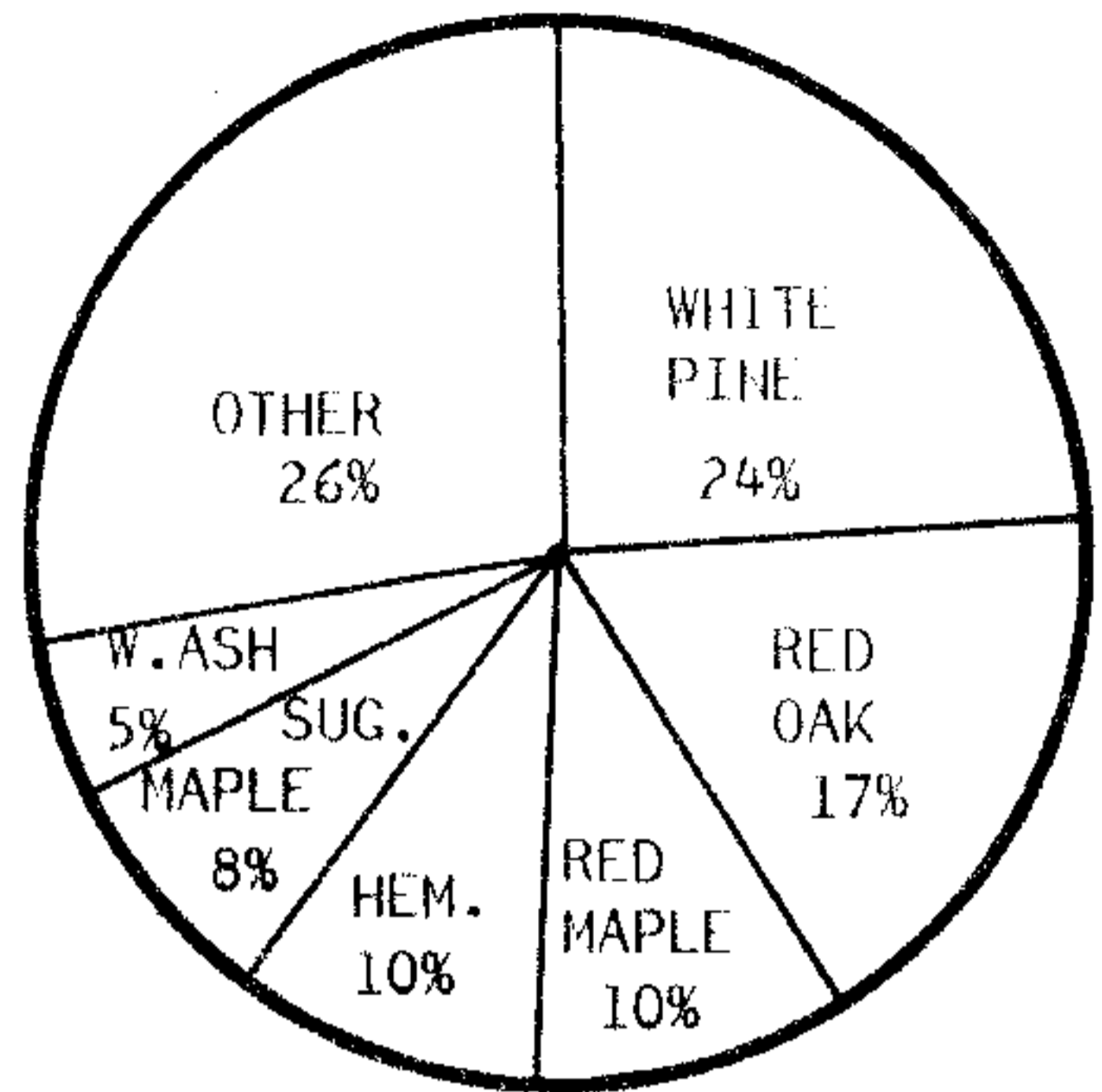
% OF TOTAL VOLUME IN M.B.F. BY PROCESSING AREA



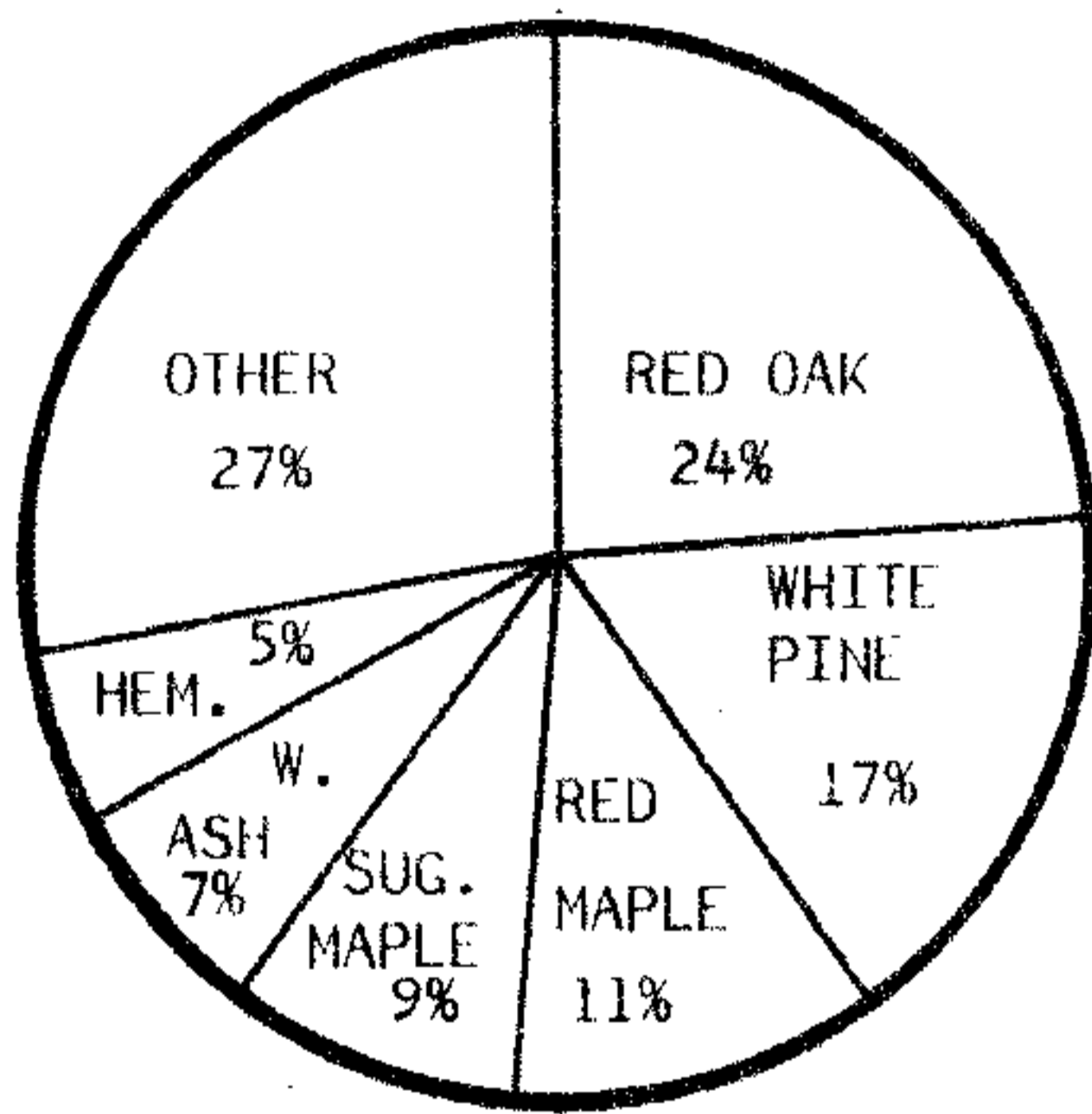
% OF TOTAL VOLUME IN C.C.F. BY PROCESSING AREA



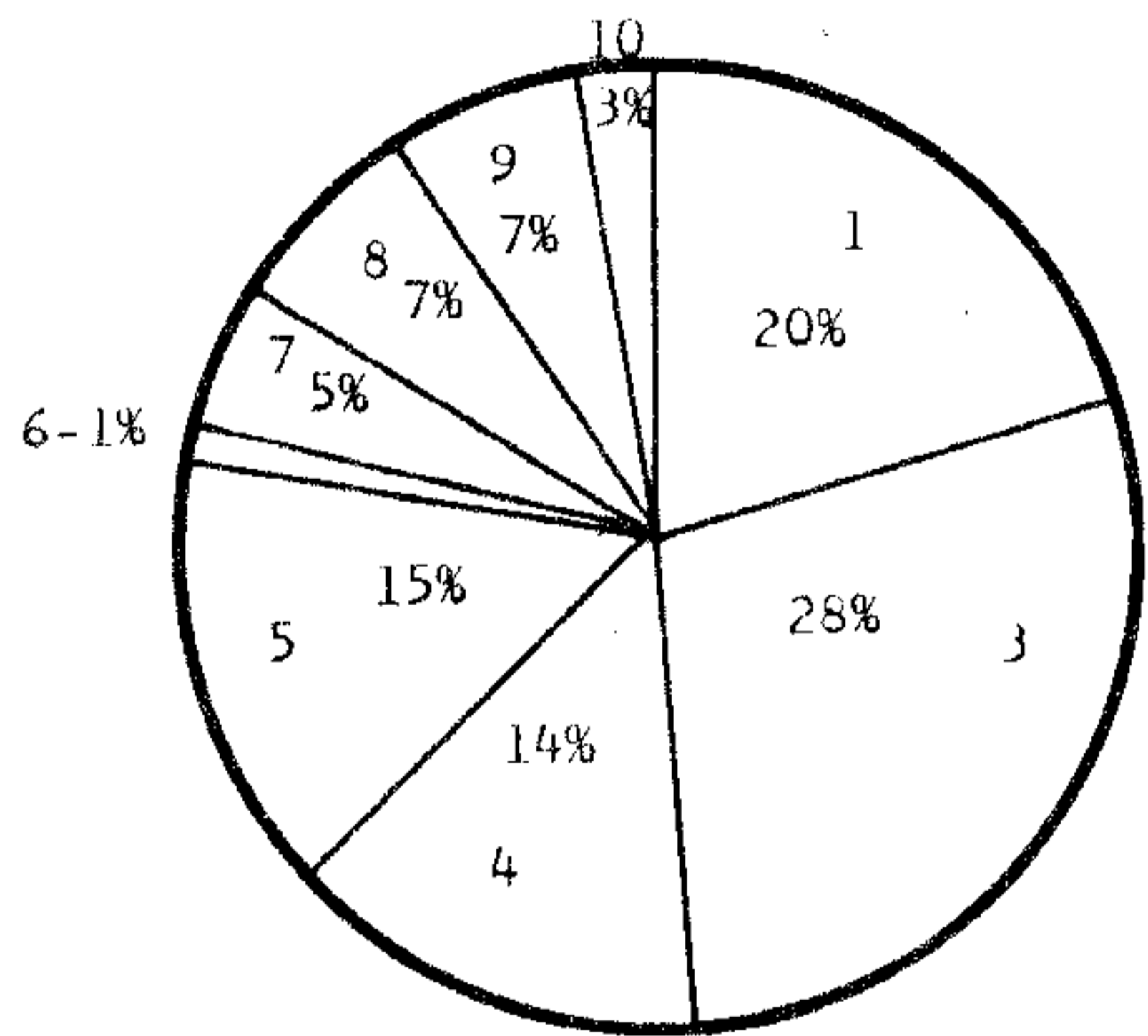
% OF TOTAL DOLLAR VALUE BY PROCESSING AREA



% OF TOTAL BOARD FOOT VOLUME BY SPECIES STATEWIDE



% OF TOTAL VALUE BY SPECIES STATEWIDE



% OF TOTAL VALUE GROWTH BY PROCESSING AREA

**Generalized Age Class Distribution  
Massachusetts D.E.M. Forest Lands  
1981**

