

HARVESTING TIMBER CROPS

BY A. E. WACKERMAN

Professor of Forest Utilization

School of Forestry

Duke University

FIRST EDITION

McGRAW-HILL BOOK COMPANY, INC.

NEW YORK TORONTO LONDON 1949

PREFACE

This text has been written to describe and discuss the principles involved in correctly harvesting timber crops, with special emphasis on the aspects related to forestry. Many phases of the actual operations concerned in harvesting are of an engineering nature, such as the construction of roads, railroads, bridges, and camp structures, and specifications for mechanical tools and machines such as power saws, tractors, and cable skidders. While these subjects are covered, detailed consideration of those items that relate particularly to engineering operations is omitted. Rather, the forestry aspects of harvesting are emphasized to assist foresters in obtaining a thorough understanding of this undertaking, which is so important in forestry.

Presentation of specific costs of various operations in the several forested regions of the United States has been purposely avoided because of the rapid fluctuations of costs and returns, even in one locality. Changing economic conditions, variable topography, ground conditions, weather, and the accessibility of the timber being harvested prevent standardizing costs. Likewise, detailed descriptions of tractors, cable skidders, power saws, trucks, railroad rolling stock, and other harvesting equipment have been omitted because of the rapidity with which new models appear on the market.

Although such material, concerning costs and descriptions of equipment, is not given in this text, it is the author's opinion that much of it should be presented to forestry students in class or as reference reading by instructors in the subject. The necessary data can be obtained from current literature in technical and trade journals and from bulletins that are published from time to time by trade associations, educational institutions, and public agencies. Catalogues issued at frequent intervals by equipment manufacturers offer an excellent and authentic source of factual data concerning current models of tools and machines used in harvesting.

All such material is readily available and it is assumed that instructors in harvesting would prefer to present such data, kept currently up to date, rather than have it included in a text, where it would soon become obsolete. The principles of harvesting remain the same, however, regardless of the changes occurring in methods of performing the various harvesting steps. Thus, all skidding by mobile power units is similar whether the actual work is performed by animals or Diesel-powered tractors.

CONTENTS

PREFACE.....	vii
INTRODUCTION: A TRIBUTE TO AMERICAN LOGGERS.....	xi

PART ONE

CONSIDERATIONS PRELIMINARY TO ACTUAL HARVESTING

1. TIMBER CROPS—THE GOAL OF FORESTRY.....	3
2. THE DEVELOPMENT OF FOREST INDUSTRIES IN AMERICA.....	13
3. THE ORIGINS OF MODERN TIMBER-HARVESTING METHODS.....	30
4. PLANNING THE TIMBER HARVEST.....	40
5. WOODS LABOR.....	53

PART TWO

PREPARATION OF TREES FOR REMOVAL FROM THE FOREST

6. SELECTION OF TREES TO CUT.....	79
7. THE FELLING OPERATION.....	93
8. BUCKING FELLED TREES.....	121
9. HEWING, RIVING, AND PEELING.....	143
10. TOOLS USED IN FELLING, BUCKING, AND PROCESSING TREES.....	157

PART THREE

MOVEMENT OF PRODUCTS FROM THE FOREST

11. BUNCHING PRODUCTS IN THE FOREST.....	181
12. SKIDDING FOREST PRODUCTS.....	190
13. LOADING FOREST PRODUCTS.....	238
14. TRANSPORTATION OF PRODUCTS FROM THE FOREST.....	272

PART FOUR

ORGANIZATION AND CONTROL OF HARVESTING OPERATIONS

15. MEASUREMENT OF FOREST PRODUCTS.....	319
16. ORGANIZATION OF HARVESTING OPERATIONS.....	333
17. COSTS AND RECORDS.....	349
18. REGIONAL HARVESTING PRACTICES.....	367

SELECTED REFERENCES.....	431
--------------------------	-----

INDEX.....	433
------------	-----