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ABSTRACT

This collection of annotated entries is designed to direct interested readers to literature sources dealing with the role of the social sciences in the field of forestry. The collection is organized by sections dealing with the topic from general to specific. Sections include: Social Science Applied to Forestry at Large: Applied to Forestry's Productive Agents: Applied to Forest Production: Applied to Manufacturing: and Applied to Marketing, Trade, Demand for Forest Output. Each section contains numerous subsections. (RE)

SOCIAL SCIENCES in FORESTRY

A CURRENT SELECTED BIBLIOGRAPHY

NO. 50 OCTOBER, 1979

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SOCIAL SCIENCES IN FORESTRY

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Editor's note:

Several changes have been made in the bibliography with this issue. The recreation section has had some minor adjustments and a notation system that indicates which subjects have no entries in this issue has been devised and is explained at the beginning of the subject-matter classification scheme. Perhaps the most useful addition is the author index which is found after the usual index at the back of the publication.

SOCIAL SCIENCES IN FORESTRY

Subject-Matter Classification Scheme

Note: This outline is regarded as working for the most part from the general to the specific. Material covering two or more sections of this outline is classified in the most general of these sections. Material which is classifiable in any of two or more sections is classified in the most specific of these sections. Asterisks mark those subjects which are not represented in this issue.

I SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE

A General principles, scope, content, method

B History, status, prospects of forestry in an area, society in an area (This section includes material on forest resources alone, as opposed to that on consumer or intermediate resources alone, for which see appropriate later sections.)
- 1 General
- 2 United States, Canada
- 3 Other north-temperate nations
- 4 South-temperate nations
- 5 Nations in lower latitudes

C Law, politics, policy, plan, program, and their administration

D Other influences
- 1 Taxation
  - a General
  - b Property, general and special; severance; lieu payment
  - *c Income, inheritance, other
- *2 Valuation (See IIIA5i)
- *3 Insurance
- *4 Social interest, value system, custom, folklore, culture
- *5 Characteristics of the individual
- *6 Public relations, other

E Research (For research on specific topics, see those topics.)

F Professional and subprofessional affairs, education, employment of foresters

G Social and economic development (See also IB)

H Environmental concern

II APPLIED TO FORESTRY'S PRODUCTIVE AGENTS
(See also the individual operation or type of output in III, IV, V.)

A Labor (Some material on labor will be found in IF, IV.)
1 General, employment, demand
2 Supply, union
3 Wage, cost, hours, productivity, technology, training, return, benefit
4 Working condition, turnover, absenteeism, safety, insurance
*5 Characteristics of the worker

B Owner, ownership, manager, entrepreneur, holding (See also IC, IIC3.)
*1 General
2 Public
*a General
b Federal, central
c Regional, local
3 Private
a General
*b Industrial
c Nonindustrial

C Land
1 Context of supply, requirement, etc.
2 Description, use trend and status, interpreted description
3 Management, use prospect and plan, planning, marketing, tenure
*4 Research method

D Capital
1 General, investment, interest, finance
(For investment in forest production, see IIIE; for that in manufacturing, see IVA4.)
*2 Credit

III APPLIED TO FOREST PRODUCTION (See also IIB,C.)

A Production including nontimber commodities and services
1 General, supply, multipurpose management
2 Christmas trees, greens
*3 Range and livestock
4 Naval stores, maple product
5 Recreation
a General
b Research
c Decision
d Demand, consumer, market
e Parks and wilderness area
f Interpretation
g Aesthetic values
h Consumer activities such as driving, walking, camping, etc.
i Valuation

III APPLIED TO FOREST PRODUCTION (continued)

A Production including nontimber commodities and services (continued)
6 Water, soil, watershed management, shelterbelts
7 Wildlife, hunting, fishing
8 Urban forestry

B Production chiefly of timber
1 General, supply
2 Soil, site, site improvement
3 Tree regeneration and improvement
*4 Intermediate cutting, pruning, stand improvement
5 Harvest cutting, rotation, cutting cycle, stocking, regulation, allowable cut
(For harvesting treated as engineering, see IVB.)

C Roads, other forest-management transportation
(For transportation in harvesting, see IVB4; in manufacturing and marketing, see VD.)

D Damage and protection
1 From fire
2 Prescribed burning
*3 From insects
4 From other agencies
(For water damage and soil erosion, see IIIA6.)

E Decision making, planning, investment, accounting, inventorying
(For investment in general, see IID1.)

IV APPLIED TO MANUFACTURING
(For material on forestry in general, including forest land resources, see IB.)
A The industry in general
1 Status and trend
a General
b United States, Canada
c Other north-temperate nations
d South-temperate nations
e Nations in lower latitudes
*2 Directory
(Includes those covering specific branches of industry.)
*3 History
4 Decision making, planning, investment, accounting, inventorying
(For a specific branch of industry, see that branch, "Operation of firm"; for investment in general, see IID1.)

B Timber-harvesting industry
(Includes roundwood in general; for specific types, see IVC, "raw material." For harvesting as silviculture, see IIIB4, 5.)
1 Status and trend
2 Operation of firm

IV APPLIED TO MANUFACTURING (continued)
B Timber-harvesting industry
3 Utilization of the stand or tree
(For utilization of a specific product, see the branch of industry in question.)
a General
*b Logging residue and its disposal
4 Transportation (Skidding, yarding, loading, hauling to mill. For transportation in forest management, see IIIC; in manufacturing and marketing, see VD.)

C Wood-using industry
1 Lumber, allied product, pallet
a Industry status and trend
*b Production, consumption, stocks, other statistics
(For sawtimber, see IB, IVB; for sawlogs, see IVC1d.)
c Operation of firm
d Raw material
2 Pulp, paper, board
a Industry status and trend
*b Operation of firm
c Raw material
*d By-products
3 Veneer, plywood, panel
a Industry status and trend
*b Operation of firm
*c Raw material
4 Bark, chips, other residue
(See also IVB3 and the industry branch in question, "Operation of firm.")
*5 Pole, piling, post, mine timber
*6 Railway tie
7 Furniture
8 Charcoal, fuelwood, other combustibles; energy
9 Particleboard, hardboard, fibreboard
10 Construction
*11 Other wood-using industry

D Other forest industry
*1 Decorative product
2 Naval stores
*3 Maple product
4 Other

V APPLIED TO MARKETING, TRADE, DEMAND FOR FOREST OUTPUT
(For marketing and demand for productive agents, see II.)

A Demand (See also IF.)
1 General; history of consumption; consumption-production relationships
2 Consumption or production prospect, goal, requirement, prediction

V APPLIED TO MARKETING, TRADE, DEMAND FOR FOREST OUTPUT (cont.)

A Demand

2 (For material on short-term requirement, see the industry in question in IV, "Industry status and trend.")

3 Consumer and his preference
(For material on specific forest resources, see also IIIA,B.)

B Market, marketing, trade, export, import

1 General

*2 Futures, hedging

3 Stumpage, log

4 Lumber, plywood, allied products

5 Pulp, paper, board

a Product

*b Raw material

*6 Other wood products

7 Christmas trees, greens

*8 Other type of output (See also IIC3.)

C Price, value

1 General

2 Stumpage, log

*3 Other type of output

*4 Price reporting

*D Transportation (Includes transportation in manufacturing.)
(For transportation in forest management, see IIIC; in harvesting, see IVB4.)

I SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE

A DUERR, WILLIAM A., DENNIS E. TEEGUARDEN, NEILS B. CHRISTIANSEN, and SAM GUTTENBERG. Forest Resource Management: Decision-Making Principles and Cases. Philadelphia: W. B. Saunders, 1979.

A text and reference book, the work of 35 authors representing forestry schools, agencies, and business concerns and related walks of activity. The work results from a 13-year North American project to improve foresters' education. The book's aim is to strengthen the forest-manager subject, central as it is in the professional curriculum, by such means as (1) focusing upon integrated forestry, the creation and use of values ranging from scenery to wood; (2) viewing management, not as a set of rules, but as sets of resource alternatives for planning and decision; (3) demonstrating how modern quantitative methods of generating information can fortify judgment in choosing among resource alternatives. The subject matter is presented in five parts, the first four emphasizing principles, the fifth comprising cases. The parts are intended for use separately or together in the study of a variety of specific forestry subjects such as policy, economics, quantitative methods, technology, introduction to forestry, and forest management in a capstone sense and in the study of aspects of the more general subject that might be termed natural-resource conservation.

A PALOVIC, J., ed. Bibliography of the Faculty of Forestry, College of Forestry and Wood Processing in Zvolen, 1971-1976. Czechoslovakia, 1977. In English, Slovak, German and Russian.

The third in a series of bibliographies of publications by one of the two main faculties of the college including unpublished theses and temporary university manuals for teaching purposes. This faculty covers logging but not wood science. English translations are given for all titles. References are arranged by department with author and bilingual keyword indexes. Earlier editions appeared in 1967 and 1971.

A VERNELL, LESLIE J. "Forests for People." Quarterly Journal of Forestry, 73, No. 2 (1979), 82-86.

Impressions of the Eighth World Forestry Congress, held in Jakarta in October, 1978.

A WHITBY, M. C., and K. G. WILLIS. Rural Resource Development: An Economic Approach. London: Methuen, 1978.

The scope of the book has been narrowed in this second edition and more use is made of economic analysis as a structural theme. Includes chapters on: the questions of recreation and amenity; economic aspects of resource and environmental conservation.

I SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE

A ZACHAR, D., ed. Forest as a Component of the Living Environment. Proc. of a Conference on Forest Functions in the Creation and Protection of the Human Environment. 26-28 Sept. 1973. Czechoslovakia: VEDA, 1977. In Slovak, Russian, and English.

Forty-five papers grouped in three parts: Importance of forests in the landscape; Evaluation and territorial planning of the forests from the viewpoint of their environmental benefits; and Management of forests according to their prevailing functions.

B1 JULLANDER, I., and L. STOCKMAN. "World Wood Resources and Physical Flows of Wood and Wood Products." The Life Cycle of Wood: an OECD/CSTP Study. Stockholm: National Swedish Board for Technical Development, 1978.

Forest and wood resources; production and consumption of wood products. Papers presented:
PERSSON, R. "World Forest Resources."
PERSSON, R. "Production and Consumption of Wood: a Comparison."

B1 OPENSHAW, KEITH. "Threats to Forests: How big are they and what size the solution?" World Wood, July 1979. p.5.

The text of an intervention offered at the World Forestry Congress in Jakarta October 26, 1978, concerning forest resources.

B1 TEASDALE, AUDREY. "Seqoiandendron giganteum the Very God of the Woods." Arboriculture Journal, 3, No. 6 (1979), 433-436.

History of the Seqoiadendron giganteum including the social effects of the logging and tourism industries on these trees in California and their growth in England.

B2 BANDROWSKI, S. S. End Use of Canadian Wood Products: a Study of Utilization and Economic Impact of Wood Processing. Ontario: Environment Canada, 1978.

Traces the flows of wood products from their primary state as unharvested trees to their disappearance points, either as material inputs for further production or as finished products destined for final consumption. Emphasis is placed on detection and analysis of significant trends in the relative distribution of wood products between various domestic industrial uses and exports.

B2 BARNARD, JOSEPH E., and TERESA M. BOWERS. A Preview of Kentucky's Forest Resources. USDA Forest Service Research Note NE-234, 1977.

I SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE

Forty-eight percent of the total land area of Kentucky is forest. Total volume of growing stock is 11.4 billion cubic feet, and the sawtimber component is 27.6 billion board feet.

B2 BECKER, VINCE, ed. 1978 Minnesota Science, Special Forestry Issue. Agricultural Exp. Sta., Univ. of Minnesota, 1978.

Includes the following papers:
ROSE, DIETMAR, and ALAN EK. "Managing our Forest Resources."
SINCLAIR, STEVEN, ROBERT ERICKSON, and JAMES BOWYER. "Utilizing low grade Hardwoods."
BROOKS, KENNETH N., and JOHN C. CLAUSEN. "Water, Forests, and Research: a Minnesota Partnership."
KAUFERT, FRANK. "Wood Products for Farm Structures."
ALM, ALVIN, CARL MOHN, and EDWIN WHITE. "Intensive Forest Management Insures Future Wood Supply."
GERTJEJANSEN, ROLAND, and JOHN HAYGREEN. "Potential for Particleboard Production."
MERRIAM, LAWRENCE, JR., TIMOTHY KNOPP, VILIS KURMIS, and HENRY HANSEN. "Forests for Recreation."
ELLEFSON, PAUL. "County Forest Lands: Our Rip Van Winkle."

B2 BEHLEN, DOROTHY. "Are We Running Out of Forests?" American Forests, 85, No. 7 (1979), 12-15.

B2 BOYCE, STEPHEN G., and HERBERT A. KNIGHT. "Regeneration for the Third Forest." Forest Farmer, 38, No. 9 (1979), 12-14.

Industry's rate of forest regeneration is climbing, but nonindustrial owners do not perceive investments to replant pines are in their best interests.

B2 BRAATHE, PEDER, HILMAR HOLMEN, and AARNE NYYSSÖNEN. "Forestry Potential in Interior Alaska." North American Forest Lands at Latitudes North of 60 Degrees. pp. 299-312. 1977.

B2 FARLEY, ALBERT L. Atlas of British Columbia: People, Environment, and Resource Use. University of British Columbia Press, 1979.

Forestry, sawmills, and pulp and paper mills.

B2 FELT, DOROTHY G., and MICHAEL K. BARRETT. Forest Area and Timber Resource Statistics for the Bozeman Working Circle, Montana, 1976. USDA Forest Service Research Note, INT-258, 1979.

Land area, commercial timberland area, timber inventory, and growth and mortality data based on Renewable Resources Evaluation standards.

I SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE

B2 KINGSLEY, NEAL P., and DOUGLAS S. POWELL. The Forest Resources of Kentucky. USDA Forest Service Resource Bulletin, NE-54, 1978.

Includes a discussion of the outlook for timber supplies through 2004, forest-management opportunities in the state, and status and importance of the nontimber forest resources.

B2 KNIGHT, HERBERT A., and J. B. HILMON. "The Hardwood Timber Supply Situation in the Eastern United States." Presented at Hardwood Research Council's Sixth Annual Hardwood Symposium. North Carolina, May 5, 1978.

B2 MITCHELL, GEORGE. "Forest Management and Harvesting in West Virginia." Northern Logger and Timber Processor, 27, No. 12 (1979), 12-13.

Synopsis of a variety of management techniques and harvesting methods currently used in West Virginia.

B2 MONTEITH, D. B. "New York Forestry in the 70's." Northern Logger and Timber Processor, 27, No. 11 (1979), 12-14.

B2 PORTERFIELD, RICHARD L., THOMAS R. TERFEHR, and JAMES E. MOAK. Forestry and the Mississippi Economy. Miss. Agricultural and Forestry Experiment Station Bulletin, 869. 1978.

B2 RAKESTRAW, LAWRENCE. "Forest History in Alaska: Four Approaches to Two Forest Ecosystems." Journal of Forest History, 23, No. 2 (1979), 60-71.

The boreal forest of the interior and the coastal rain forest are examined via four points of view: economic colonialism, regional planning, biography, and comparative frontiers.

B2 SINTON, JOHN W. "The Phoenix of the Pines." Environmental Review, 4 (1977), 17-24.

A history of the New Jersey Pine Barrens.

B2 WALDRON, ROSS, and PAT LOGAN, eds. Forestry Report, Importance of Forestry in Manitoba. Edmonton: Northern Forest Research Centre. 1979.

Forest management, logging, silviculture, forest protection, forest products industries, recreational use.

B2 WILKINS, AUSTIN H. Ten Million Acres of Timber: Forest Production in the Maine Forestry District (1909-1972). Woolwich: TBW Books, 1978.

I SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE

B2 ZOBEL, BRUCE J. "The Southeast Timber Supply: How Will it be Affected by Changing Forestry in South America, Canada, and the Northeast?" Southern Journal of Applied Forestry, 3, No. 2 (1979), 37-42.

The southern pine region will remain a major supplier of timber and even increase its share of the world market in the immediate future.

B3 BOULDING, RUSSELL. "Forestry in Iceland." American Forests, 85, No. 7 (1979), 38-41, 49, 51-52.

B3 FOOD AND AGRICULTURAL ORGANIZATION OF THE UNITED NATIONS. Country Profile No. 1: Greece. Geneva Joint ECE/FAO Agriculture and timber div., 1978. In English and French.

Information document on Greece including: Forest production; forest product marketing; Data on forest ownership and land use; Forest management; Species composition and growing stock by diameter, class and species; Production capacity of wood based panel industry and pulp and paper industry; Supply and demand, balance and trade value in forest products.

B3 KROTH, WERNER, HANS D. LOEFFLER, RICHARD PLOCHMANN, and J. E. RAEDER-ROITZSCH. Forestry Problems and their Implications for the Environment in the Member States of the E. C.: Results and Recommendations. Commission of the European Communities, Information on Agriculture No. 25, 1979. In German, English and French.

The report includes the summary results and recommendations of the following problem areas analyzed (detailed surveys being published in volumes 31-34, so far in German only): Access by the public to forests and their use for recreation; Position, development, and problems of mechanization of stand establishment and timber harvesting and their implications for the environment; State aid for the financing of forestry measures in forests not owned by the state; Systems of forest taxation and the liability of private forest holdings.

B3 MACIVER, I. F. "Forestry in Scotland." Forestry, 52, No. 1 (1979), 91-100.

B3 MARSZALEK, T. "Forestry in Poland." Forstarchiv, 49, No. 11 (1978), 224-229. In German.

A general view, under the following headings: Present condition of the forests; Harvesting methods; Technology and mechanization; Integration of forestry and the timber industry; Administrative organization; Employment problems; Research and development; and Intensification of forest management.

I SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE

B3 MECHANIZATION CONFERENCE OF THE NORWEGIAN FORESTERS' ASSOCIATION. Tidsskrift for Skogbruk, 86,No.2 (1978), 63-134. In Norwegian.

Conference chiefly concerned with economic and social problems. In addition to background papers on Norwegian, Swedish, and Danish forestry today and its economic development to the year 2000, it included:

DAEHLEN, K. "Chief Aims in Norwegian forestry: Reality or Wishful Thinking?"

VESTAD, O. "The New Law on Working Conditions. Its Practical Effect on Forestry."

LUNNAN, A. "Rationalization and Mechanization in Forestry: Consequences for Employment and Rural Communities."

BERG, K. "The Forest as a Place of Employment Today and in the Future."

KAURIN, T. "The Activities of Forest-Owner Associates: Alternatives or Competition to Self-Employment?"

B3 MEETING OF THE GERMAN FORESTRY ASSOCIATION. Forstarchiv, 49, No. 9 (1978), 165-185. In German.

Full texts or summaries are given of the following papers:

KLOSE, F. "Taking Stock of the European Community's Coordinated Forest Policy from the German Point of View."

HUMMEL, F. C. "Forestry in the European Community."

STEINLIN, H. "The Role of Forestry in Developing Countries."

HACHENBERG, F. "Taking Care of Private Forests as Part of Agricultural Policy."

B3 MELEKHOV, I. S. "History of Silviculture and the Progress of Forestry." Lesnoe Khozyaistvo, 4 (1978), 25-31. In Russian.

General account of the history of silviculture in Europe, with special reference to the contribution made by developments in Russia in the 18th and 19th centuries, and in the USSR after the revolution. Practical relevance of studies of forest history is discussed, and fields for future research are identified.

B3 PENISTAN, M. J., and J. R. LANG BROWN. "Copse and Spinney." Quarterly Journal of Forestry, 73, No. 2 (1979), 73-82.

The importance of small woods in lowland England. Means of establishment and maintenance are recommended.

B3 SCHNEIDER, M. "Development Opportunities for Austrian Agriculture and Forestry within the Framework of the Whole Economy." Förderungsdienst, 26, No. 6 (1978), 145-149. In German.

B3 TRANTER, R. B. The Future of Upland Britain. Reading: Centre for Agricultural Strategy, no date.

I SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE

The proceedings of a multi-disciplinary symposium. Contains 54 papers on: Agriculture, Recreation, Rural industry, Water resources, Power generation, Physical properties, Social economic and political policies.

B3 UK, SECTOR WORKING PARTY, PAPER AND BOARD INDUSTRY. Home Grown Timber. Information Sheet, No. 1 (1978).

A brief description of the working party's proposals to increase the supply of home-grown timber, make private growing more attractive in the UK, improve liaison between growers and users, encourage the EEC to develop an effective forestry policy, and prevent devolution from affecting coordination of UK forestry policy.

B3 UUSITALO, M., ed. Yearbook of Forest Statistics 1977-1978. Official Statistics of Finland XVII, A: 10 (1979).

Statistical data on Finnish forestry. The operational statistics of the National Board of Forestry for 1977 are published as a separate section at the end of the yearbook.

B4 "FORESTRY IN VALDIVIA PROVINCE (CHILE)." Bosque, 2, No. 1 (1977), 45-59. In Spanish.

Statistical data are given for the province on: present and potential forms of land use; the utilization potential of forest land (area of production and protection forest); the area of forest by vegetation types; the estimated volume of sawtimber by forest types; the area of Pinus radiata plantations and volume of P. radiata timber; and the distribution of forest land between communes and private owners and, for private ownership, between properties of different sizes and between types of exploitation (agricultural, mixed, and forestry).

B4 LATORRE ALONSO, J. "The Present Situation of Forest Inventory in Chile: a Critical Analysis with Recommendations for Development." Boletín Ténico, Facultad de Ciencias Forestales, Universidad de Chile; Santiago, No. 49 (undated). In Spanish.

B4 REILLY, J. J. The Utilization of the Southern Pines. Technical Paper, Dept. of Forestry, Queensland, No. 5 (1978).

Use of southern pines in the USA is described in relation to plantations, harvesting systems and the industries concerned with sawmilling, pulp and paper, plywood, hard and soft fibreboard, particleboard and round timbers, and possibilities for utilization of these species (mainly P. elliottii) in Queensland.

I SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE

B5 CARBONNIER, LOUIS, and GÖRAN LÖNNER. "Aracruz: Forestry Creates a Business - How Foresters Aim for Profitability." World Wood, 20, No. 6 (1979), 24-26.

The Aracruz mill in Brazil is the largest single-line pulp mill in the world.

B5 CHOWDHARY, R. L. "The Need for Rejuvenation of the Forestry Sector." The Indian Forester, 105, No. 3 (1979), 191-198.

Social and economic worth of forestry resources is grossly understated in national income estimates because of lack of data on output. There is a chronic shortage of wood and other forest products in India which makes it necessary to review forest planning strategies and prepare a comprehensive land use plan for all the areas yielding forest products and services.

B5 DAHMS, H. G. African Export Timbers. Stuttgart: DRW-Verlag Weinbrenner, 1978. 2nd ed. In German.

Background of forestry and the timber trade in Africa; detailed information on 120 species: botanical names and synonyms; trade names; African units of measurement, with conversion factors; grading systems for commercial products; and yield from timber imported into W. Germany.

B5 ECKHOLM, ERIK. Planting for the Future: Forestry for Human Needs. Worldwatch Paper 26, 1979.

Forestry in the third world has been neglected.

B5 MEICHERCZYK, R. "Functions and Activities of the W. German Association for Technical Cooperation (GTZ) in Technical Cooperation with Third-world Countries in Forestry and the Wood Industry." Forstarchiv, 49, No. 8 (1978), 145-149. In German.

Address given at a symposium on Problems of World Forestry, held in the forestry dept. of Hamburg University, 26 June 1978. The GTZ was founded in 1975, with the status of a limited company, and distinct from the Ministry of Economic Cooperation, which deals with the political and economic aspects of overseas aid. Brief examples are given of past and present projects in Asia, South and Central America, and Africa.

B5 ONWELUZO, B. S. K. "Forestry in Nigeria." Journal of Forestry, 77, No. 7 (1979), 433-453.

Nigeria has a forest resource that can contribute substantially to its national economy. Programs are being expanded and intensified in line with current regional plans. Professional leadership is rapidly being developed, and dependable infrastructure is being built.

I SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE

B5 PAO-CHANG KUO. "Forestry in the Philippines." Quarterly Journal of Chinese Forestry, 12, No. 1 (1979), 7-15.

The resources, management, research and education of the Philippines forest are described based on personal experience in the Philippines.

B5 VEBLEN, THOMAS T. "Guatemalan Conifers." Unasylva, 29 No. 118 (no date), 25-30.

Guatemala is one of the few tropical highland regions in which conifers are well represented. Preservation of this gene pool is essential for future afforestation of much of the world's tropical highlands.

C BROOKS, HEIDI TOPP. "Reserved Water Rights and Our National Forests." Natural Resources Journal, 19, No. 2 (1979), 433-437.

National forests have reserved water rights only for the purposes of furnishing a continuous supply of timber and for securing favorable water flows.

C CARBIENER, R. "Forests or Just Trees?" Naturopa, 31 (1978), 10-13.

European forests are considered as an economic, natural, and cultural resource. National forest policies should aim at preserving their diversity by: (a) giving priority to creating a network of reserves enjoying total protection, and (b) by keeping suburban forests in a natural and diversified state and thus giving priority to social objectives.

C EDMONTON SERIOUS ABOUT REFORESTATION. British Columbia Lumberman, 62, No. 1 (1978), 49.

Brief popular account of the application of forest policy in Alberta. Four large companies hold "forest management agreements" under which they must carry out extensive reforestation work. Smaller companies work on "timber quotas" and must either replant after harvesting or have the forest service do it for them on payment.

C FERREIRA, R. J. F. "Planning Forest Policy, and the Coordination of Planning by the IBDF." Brasil Florestal, 8, No. 32 (1977), 44-58. In Portuguese.

System for planning forest policy in Brazil is outlined, functions of the various bodies involved are explained, and the coordinating role of the Instituto Brasileiro do Desenvolviment Florestal (IBDF) is described.

I SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE

C FORESTRY IMPERATIVES FOR CANADA: A PROPOSAL FOR FOREST POLICY IN CANADA. Prepared for the Canadian Council of Resource and Environment Ministers. May, 1979.

C GUNDELACH, FINN. Forestry Policy in the European Community. Brussels: Commission of the European Communities, 1978. In German, French, and English.

Proposals and recommendations concerning the objectives and principles of a forestry policy in the EEC.

C LAZARČEK, MICHAL. "New Law-Instructions in Forestry." Lesnicky Casopis, 25, No. 1 (1979), 55-64. In Czech with English Abstract.

Concerns protection, management and utilization of the forest from the regulations affecting forest soil to the principles involved in development of forest functions.

C LAZOS ARCHIRICA, R. "Forestry Activities for the Development of Local Communities in the Republic of Mexico." Ciencia Forestal, 3, No. 11 (1978), 51-55. In Spanish.

The main objectives of a rural development policy designed to promote forestry and forest industry in the interests of the rural population are listed, and the role of government departments in general, and the forest service in particular, in achieving these objectives is outlined. Importance of research and education is stressed.

C NIKOLAENKO, V. T. "The Main Functions, Structure and Optimum Size of Forestry Enterprises." Lesnoe Khozyaĭstvo, 5 (1978), 16-19. In Russian.

A diagram is given of the forest enterprise structure proposed for areas with intensive multiple-use forestry in Russia. Such enterprises should carry out all the operations on their territory and should therefore incorporate the forest districts (responsible for silviculture); an industrial log depot with facilities for conversion of low grade wood and waste; a logging department; a transport unit with servicing and repair workshop; a nursery with seed extraction and seed storage facilities; at least one chemical fire-fighting station; and a road-building section.

C PAGE, TALBOT. Conservation and Economic Efficiency an Approach to Materials Policy. Baltimore: Johns Hopkins Univ. Press, 1977.

Specifically about the management of our material resources: timber, minerals, oil, renewable, partially renewable, non-renewable.

I SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE

C PARRENO, O. "Difference between the Former and the Present Method of Controlling Forest Development." Argentina Forestal, 36, No. 319 (1978), 5-6. In Spanish.

Changes in the method of subsidizing afforestation in Argentina introduced by recent legislation are described, and the essential features and relative merits of the old and new systems are compared.

C SCHMITHHUESEN, F. An Annotated Bibliography on Forestry Institutions and Education in the French-speaking Countries in Africa, Rome: FAO, Forestry Dept. 1978. In French.

Annotated references to documents relating to forest policy, legislation, administration, manpower planning, education and training.

C SHEN-HSIAO LIU. "A Study on the Solution of Basic Problems of Taiwan Forestry." Quarterly Journal of Chinese Forestry, 12, No. 1 (1979), 1-5. In Chinese.

Forest policy and law in Taiwan should be revised and administration at higher levels should be enhanced in order to solve basic problems of Taiwan forestry.

C SMITH, ANDREA L. "The Forest Service, NEPA, and Clear Cutting." Natural Resources Journal, 19, No. 2 (1979), 423-432.

The Forest Service must comply with the National Environmental Policy Act (NEPA). The 1976 National Forest Management Act does not conflict with NEPA.

C THUNBERG, J. An Annotated Bibliography of Forestry Institutions and Education in the English-speaking Countries in Africa, Rome: FAO, Forestry Dept., 1978.

Annotated references to documents relating to forest policy, legislation, administration, manpower planning, education and training.

C U. S. OFFICE OF THE FEDERAL REGISTER. Code of Federal Regulations 36: Parks, Forests, and Public Property. U.S.G.P.O. GS 4.108:36/978. (1978).

Special edition of the Federal Register containing a codification of documents of general applicability and future effect . . . with ancillaries. Revised annually as of July 1.

C ZUNDEL, R. "The Development of Forest Administration in the German States During the Past 150 Years." Allgemeine

I SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE

Forst- und Jagdzeitung, 150, No. 1 (1979), 9-22. In German with abstracts in English and French.

A chronological record, since 1815, of the development in each of the states forming the German Federal Republic.

D1a FORD, HAROLD E. "Tax Policy Will Determine Future of Nation's Forests." Forest Farmer, 38, No. 9 (1979), 18, 26-27.

D1a HOWARD, W. G. Estimates of Taxes, Fees, and Royalties Paid by the B. C. Forest Industry and Employees: 1971-1975. Pacific Forest Research Centre, 1978.

Estimates of the tax, fee, and royalty burden imposed by the federal and provincial governments on the British Columbia forest industry and employees are presented for the years 1971 through 1975.

D1a REED, LES. "Forest Management Expenditures in Canada Compared to Taxes Generated by the Forest Sector." Pulp and Paper Canada, 80, No. 5 (1979), 27-30.

Five and one half cents of every dollar governments get from the forest industry goes back into silviculture.

D1b BAUMGARTNER, DAVID C., and RONALD I. BEAZLEY. Taxation of Forest and Associated Land in Illinois. USDA Forest Service Research Paper NC-165, 1979.

Analyzes the operation and impact of the property tax on forest and associated land in Illinois and evaluates the potential of adjustments in the tax as an incentive to better management of forest and associated land.

E BERGSTEN, G. "Cooperation Between Scandinavian Institutions on Research and Development in the Field of Forest Technology." Dansk Skovforenings Tidsskrift, 63, No. 4 (1978), 292-301. In Danish with an English abstract.

Describes the history, aims , administration and financing of cooperation between the research organizations of Denmark, Finland, Norway, and Sweden.

E HARLEY, J. L. "Forestry Education and Research." Unasylva, 29, No. 118 (no date), 10-11.

The researcher needs contact with the broad main stream of scientific thinking, as well as with problems and solutions in the forest.

I SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE

E INTERNATIONAL UNION OF FORESTRY RESEARCH ORGANIZATIONS. Management of Forestry Research for Results. Proc. of the third meeting of the subject group S6.06, held at High Wycombe, Bucks, UK, Sept. 5-9 1977. USA: IUFRO, 1978. In English and French.

Includes the following:

BOUVAREL, P. "Multidisciplinary Forestry Research: Different Views."
BRUNET, R. "Attempts to Coordinate Wood Research in France."
HARRIS, R. W. "Changing Concepts in Research Management."
JOHNSTON, D. R. "The Application of Research Results in Forestry."
KENNEDY, R. W. "The 8 R's of Project Evaluation."
KERESZTESI, B. "Some Questions of Research Organization in the Hungarian Forest Research Institute."
KUUSELA, K. "Evaluations in Selecting and Controlling a Research Project and Estimating the Applicability of its Results."
LAWRENCE, W. H. "Dialogue: a Flexible System for Evaluating Forestry Research."
REUNALA, A. "Choosing the Objectives of Forestry Research."
SCHARFETTER, H. "A System for Controlling Research; and the Role of the National Timber Research Institute (Pretoria) in the Forest Products Industry."
SKAWRAN, R. F. "Selection of Scientists in a Research Organization."
SULLIVAN, J. D., and P. MOHAI. "Thoughts on Basic Research in Forestry."
TWISS, B. C. "Managing Technological Innovation." (Summary only).
WILHELMSEN, G. "Management Training of Research Staff."

F COUNTRYMAN, DAVID W., and GEORGE W. THOMSON. "Using Real Problems to Teach Integrated Forest Management." Journal of Forestry, 77, No. 6 (1979), 361.

Practical problems solicited from practicing foresters and others throughout Iowa have been brought into the classroom at Iowa State University to provide quasi-professional experience within the forestry curriculum.

F FOOD AND AGRICULTURAL ORGANIZATION OF THE UNITED NATIONS. Report on the FAO/SIDA Seminar on Action-oriented Follow-up of 1974 Forestry Education Planning Course, Los Banos, Philippines, 26-30, June 1978. Rome: FAO, Forest Resources Div. 1978.

Planning of forestry education systems and training courses at university and technical education levels in Burma, Philippines, Indonesia, Malaysia, Sri Lanka, and Thailand. Proposals for professional, technical, and vocational training courses; improvement of training facilities and teaching methods to meet present and future manpower requirements; establishment of a training center at Los Banos.

I SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE

F GEMMER, THOMAS V. "Forestry Curricula Today." Journal of Forestry, 77, No. 7 (1979), 414-417.

A review of the curricula of the accredited and affiliated forestry schools in the U. S. reveals a change in trends reported in 1969. Increased requirements in social sciences and humanities, management of nontimber aspects, and business has reversed, as has the trend toward reduction of traditional forestry courses.

F JUSLIN, H. "Continuing Education Needs of Professionals in Forestry." Folia Forestalia, Institutum Forestale Fenniae, No. 278 (1977). In Finnish with English abstract.

Results are given from a survey of the opinions of qualified forest workers (foremen, technicians, and graduates) and their employers.

F SNIZEK, WILLIAM E., DONALD J. SHOEMAKER, and CLIFTON D. BRYANT. "Job Satisfaction and Perceived Bureaucratization in Recreational Delivery Organizations: a Comparison of Federal and State Park and Forest Rangers." Leisure Sciences, 1 No. 2 (1978), 147-161.

While park rangers expressed significantly higher levels of job satisfaction than forest rangers, no significant difference was found between state and federal rangers.

F WYCOFF, RUNORE. "The White Mountains in their Classroom." American Forests, 85, No. 7 (1979), 16-19, 57-58.

Practical experience for students of resource management is provided in the White Mountain National Forest of New Hampshire.

G FOOD AND AGRICULTURAL ORGANIZATION OF THE UNITED NATIONS. Forestry for Local Community Development. Rome: FAO Forestry Paper 7. FAO Forest Dept. with assistance of the Swedish International Development Authority, 1978.

G STUMBO, DONALD A. "Choosing Forest Products Industries for Community Development Planning." Forest Products Journal, 29 No. 7 (1979), 16-22.

Rural communities and forested regions are often closely related and the forest sector, in many communities, becomes a focal point for potential development. A new approach to improve the planning procedure is linear programming. Such programming was tested on Appomattox County, Virginia.

G WESTOBY, JACK C. "Forest Industries for Socio-economic Development." The Commonwealth Forestry Review, 58, No. 2 (1979), 107-116.

I SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE

Guest speaker's address. Session for Industrial Development, Eighth World Forestry Congress, Jakarta, Indonesia, 1978.

H BENJAMIN, JOHN C., GEORGE H. MOELLER, and DOUGLAS A. MORRISON. "Measuring Environmental Attitudes of Elementary School Students." Children, Nature, and the Urban Environment: Symp. proc. USDA Forest Service General Technical Report, NE-30, 1977.

Exposure to environmental education fosters favorable environmental attitudes; socioeconomic background and exposure to environmental education do not influence attitudes toward familiar, nonwater natural elements; urban students from low socioeconomic neighborhoods are unfamiliar with natural processes involving water resources; attitudes most easily transferred identify man as a contributor to environmental problems; and attitudes most difficult to transfer deal with ecological processes.

H HELLIWELL, D. R. "Forestry's Long-term Environmental Role." The Future of Upland Britain. Vol. 1 (R. B. Tranter, ed.) CAS Paper, University of Reading, (1978), 108-113.

Long-term value of forestry for timber production, wildlife conservation, recreation, and, possibly, influencing the climate.

H MOREAU, B. "The Morvan Regional Conservation Area Park." Documentation Agriculture, No. 104, p. 4, No. 17 (no date) In French.

This doctoral dissertation assesses the effect of eight years as a controlled area: to reconcile the economic development (tourism and leisure sports) with the protection of the natural environment.

H NIESSLEIN, E.,N. KNAUER, and R. ZUNDEL. "Agriculture and Forestry: Exploiting or Creating the Environment." (3 papers) Innere Kolonisation, 27 No. 3 (1978), 90-96.

Introduction by E. Niesslein. N. Knauer discusses conflicts between economic and ecological requirements affecting agriculture. R. Zundel discusses those affecting forestry: functions and impact of agriculture, economic and ecological models, aims of development of the countryside from an agricultural and ecological point of view, leaving land fallow as a partial solution to ecological problems, possible development of farming which does not harm the environment, importance of agriculture and forestry in maintaining the environment.

I SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE

H RICHARDSON, S. D. "Tropical Forestry: Hard Decisions Ahead." Pulp and Paper International, 20 No. 10 (1978), 53-55. In English with French, German, and Spanish abstracts.

Caution is urged in planning multispecies wood chipping operations in tropical-rain forests, and four resolutions are proposed: (1) countries and international agencies should monitor oceanographic, riverine, and biological effects of existing wood chip harvesting operations in mangrove areas, large-scale harvesting to be postponed until such effects are better understood; (2) tropical rain-forest countries should make comprehensive site evaluations prior to granting chip-harvesting concessions, and limit such concessions to areas where continuity of a productive cover can be guaranteed; (3) the legitimate interests of peoples whose livelihoods depend on continued vegetative cover should be protected; and (4) chip-harvesting concessions should be limited to ongoing logging operations on lands which may subsequently be converted to nonforest uses.

II APPLIED TO FORESTRY'S PRODUCTIVE AGENTS

A1 BOSTRÖM, C. "Manpower Balance: One of the Problems of Mechanization." Ekonomi, Forskningsstiftelsen Skogsarbeten, 4 (1977), In Swedish.

A simple computer model is presented for the most favorable deployment of men and equipment between silviculture and logging.

A1 SPIERINGS, C. M. J. Present and Future Employment Opportunities in Horticulture: Report of a Research Project on the Supply and Demand for Labor in Forestry, Nature Reserves, and Plantations. Landbouw-Economisch Instituut, No. 2.118 (1978). In Dutch.

A forecast is made of the number of new employment opportunities to be created and the number becoming available through present employees retiring or changing careers. The demand for employment is analyzed in terms of the numbers of students leaving agricultural education institutions and the number of people likely to move into this sector from a different one.

A2 FOWLER, GEORGE D. "Unions in the Woods? Will it be Unions or Cooperatives?" The Northern Logger and Timber Processor, 28, No. 2 (1979), 6-8, 40-41.

A3 AGER, B. "The Organization of Work in Highly Mechanized Logging." Sveriges Skogsvårdsförbunds Tidskrift, 76, No. 1/2 (1978), 103-177. In Swedish.

A model for designing and analyzing work organization assuming that enrichment of work, alternating work, and reliefs will improve safety, job satisfaction and productivity.

A3 ANDERSSON, STIG. "Operational Efficiency in Swedish Forestry." Pulp and Paper Canada, 80, No. 5 (1979), 54-56, 58, 61, 63.

Mechanization hasn't solved productivity problems because of changing social attitudes and new laws.

A3 FRYKMAN, B. and J. SWARTSTROM. "Adapting Methods to Persons with Working Handicaps." Sveriges Skogsvårdsförbunds Tidskrift, 76, No. 1/2 (1978), 103-177. In Swedish.

A3 PATRICK, KEN L. "Individualized Training Program at CFI Mill Gains Divisional Status." Pulp and Paper, 53, No. 6 (1979), 99-101.

Individualized training units use information modules for self-paced, plateau learning; system allows for employee background, educational differences.

II APPLIED TO FORESTRY'S PRODUCTIVE AGENTS

A3 STEVENS, JOE B. The Oregon Wood Products Labor Force: Job Rationing and Worker Adaptations in a Declining Industry. Dept. of Agriculture and Resource Economics, Oregon State University, Special Report 529 (1978).

A 45 percent decline in wood products employment, caused by capital substitution and declining private timber supplies, has been forecast for Oregon by the year 2000. This report looks at the distributional consequences of the employment decline and the consistency of worker adaptations to labor market signals.

A3 SERBINOV, D. I. "Two-shift Logging." Lesnaya Promyshlennost, (1978), 9, 13-14. In Russian.

An account of first-hand experience in two-shift logging since 1976 in the Ukhta region of N. Russia. Details are given of output and earnings. Indications are that two-shift working has substantial advantages over single-shift.

A3 SUNDSTRÖM-FRISK, C. "New Wages System in the Forests: Consequences for the Organization of Work." Sveriges Skogsvårdsförbunds Tidskrift, 76 (1978), 103-177. In Swedish.

More fixed wages have meant less opposition to change.

A3 TOMANIC, S., V. HITREC, and V. VONDRA. System for Determining Working Time for Cutting and Primary Conversion of Wood. University Zagreb, Yugoslavia, 1978. In Serbo-Croation with an English summary.

A work-study manual presenting a system of equations giving working times for felling, etc., in terms of d.b.h., ht., and other variables. Main features are described in the 12-page summary in English.

A3 UK, FURNITURE AND TIMBER INDUSTRY TRAINING BOARD. Education for our Industries. High Wycombe, Bucks, 1978.

Describes existing training programs in the UK and offers some recommendations for improvement.

A3 WATSON, LAURIE. "Unique Mill Training Program Greatly Improves Production." Canadian Forest Industries, 99, No. 5 (1979), 16-17, 19.

A competency-based training program implemented at Simpson Timber's sawmill operation near Blue Ridge, Alberta, has helped the company achieve a 22 percent improvement in output.

II APPLIED TO FORESTRY'S PRODUCTIVE AGENTS

A3 WIPPERMANN, H. J. "Methodical Work Design in Forestry Operations, Using Pruning as an Example." Forstarchiv, 49, No. 12 (1978), 262-264. In German.

Step-by-step guide to the application of work study methods to pruning operations in order to optimize efficiency. Summarized in a flow diagram.

A4 AXELSSON, S. Å. "Health Hazards of Operators of Forest Machines." Sveriges Skogsvårdsfördbunds Tidskrift, 76 (1978), 9-46. In Swedish.

A4 BOSTRAND, L. "Factors Experienced as Unpleasant or Troublesome by Forest Machine Operators." Sveriges Skogsvårdsfördbunds Tidskrift, 76 (1978), 9-46. In Swedish.

Noise, vibrations, temperature, posture, and various stress factors such as piece work and responsibility.

A4 _____. "Shift Work in the Forest." Sveriges Skogsvårdsfördbunds Tidskrift, 76 (1978), 103-177. In Swedish.

A4 ERIKSON, G. "The Problem of the Working Environment in Small-scale Private Forestry." Sveriges Skogsvårdsfördbunds Tidskrift, 76 (1978), 79-101. In Swedish.

Chiefly on accidents and accident prevention.

A4 _____. "Safety Programs and Health Surveys in Farm Forestry." Tidsskrift for Skogbruk, 85, No. 3 (1977), 265-371. In Swedish and Norwegian.

Based on the literature, ergonomic studies and questionnaires.

A4 FRYKMAN, B. "Foremen: Their Working Conditions and Changed Role." Sveriges Skogsvårdfördbunds Tidskrift, 76 (1978), 103-177. In Swedish.

A4 GUSTAFSSON, L., and R. GARDH. "Accidents of Working Forest Owners: Types of Accidents, Causes, Duration of Incapacity, etc." Ekonomi, Forskningsstiftelsen Skogsarbeten, No. 13 (1977). In Swedish.

Accident hazard of self-employed foresters was at least as great as that of employed forest workers.

A4 _____. "Accidents of Working Forest Owners: Training, Experience, Equipment, etc." Ekonomi, Forskningsstiftelsen Skogsarbeten, No. 8 (1977). In Swedish.

II APPLIED TO FORESTRY'S PRODUCTIVE AGENTS

A study of health insurance records for self-employed, whole-time to part-time forest workers. Little protective clothing was used; workers tended to work alone and often used antiquated equipment.

A4 MÄKINEN, RAINE. Wood Dust as an Industrial Hygiene Problem, a Literature Review. Työterveyslaitos, katsauksia, 23 (1978). In Finnish with an English summary.

A4 MARKLUND, B. "Accident Risks on Forest Machines." Sveriges Skogsvårdsfördbunds Tidskrift, 76 (1978), 9-46. In Swedish.

Includes risks during repair and maintenance.

A4 NILSSON, M. "Training and Advisory Work in the Private Forestry Sector." Sveriges Skogsvårdsfördbunds Tidskrift, 76 (1978), 79-101. In Swedish.

Chiefly on accidents.

A4 PETTERSSON, B. "How to Improve Safety During Felling." Tidsskrift for Skogbruk, 85, No. 3 (1977), 265-371. In Swedish and Norwegian.

A4 _____. "Various Methods to Improve Safety in Logging." Sveriges Skogsvårdsfördbund Tidskrift, 76 (1978), 51-78. In Swedish.

A4 RILEY, ROBERT G. "Paper Machine Injuries: How they Happen and How to Prevent Them." Pulp and Paper, 53, No. 9 (1979), 117-119.

Study of 39 serious injuries on paper machines shows most are avoidable through preventive maintenance, safe work procedures, and good management.

A4 "STRESSES OF FOREST WORK." Waldarbeit, 29, No. 1 (1977), 1-18. In German.

A special feature on health and safety aspects of forestry with particular reference to Switzerland. Contains the following papers:
BUCHBERGER, J. "Cardiovascular Stress in Forestry Work."
_____. "Occupational Medical Findings from Finland."
BUTORA, V. "The Recording of Accidents Must Be Improved."
RIGLING, L. "Work Safety in Swiss State Forests."

A4 SUNDSTRÖM-FRISK, C. "Factors Affecting Risk Taking in Working Behavior." Sveriges Skogsvårdsfördbunds Tidskrift, 76 (1978), 51-78. In Swedish.

II APPLIED TO FORESTRY'S PRODUCTIVE AGENTS

With some statistical evidence supporting results of surveys on the accident-reducing effect of changing from piece rates to monthly wages.

A4 VIK, T., J. ATTESTOG, and E. HAARR. "Safety During Skidding and Transport with Tractor and Winch." Tidsskrift for Skogbruk, 85, No. 3 (1977), 265-371. In Swedish and Norwegian.

B2b FOOD AND AGRICULTURAL ORGANIZATION OF THE UNITED NATIONS. Report of the Fourth Session of the Committee on Forestry. Rome: FAO, 1978. In Arabic, Chinese, English, Spanish, and French.

Review of forestry field programs and FAO's program of work for the forestry sector. Recommendations for investment, agrisilviculture, small-scale forestry industry, coordination and implementation of programs in forest trees production for community development, promotion of forest products marketing, and forestry training.

B2b MACLEOD, J. C. Canada's International Role in Forestry. Information report DPC-X-6, 1978.

Origin, structure and objectives are described of more than 30 international organizations concerned with forestry and forest allied industries. Canada's relations with these organizations through bilateral and multilateral agreements are outlined.

B2c DUNN, B. A., and E. M. HOLLADAY. A History of Forestry at Clemson University. Technical Paper, Dept. of Forestry, Clemson University, 1977.

With special reference to the Clemson Land-Use Area, a 35,000-acre tract of marginal land in upper S. Carolina.

B2c GAGNE, GERALD, and JEAN-CLAUDE MERCIER. "Quebec Ties Silviculture Planning to Local Needs and 'Management Units.'" Pulp and Paper Canada, 80, No. 4 (1979), 46-47, 49.

Quebec's approach to public forest management planning makes it possible for the ministry to appraise, for each management unit, the usefulness of silviculture, to associate it with specific objectives, and to ensure stable financing.

B2c TWENTY-FIVE YEARS OF FOREST ADMINISTRATION IN BADEN-WURTTEMBERG. Allgemeine Forstzeitschrift, 32, No. 37 (1977), 907-932. In German.

II APPLIED TO FORESTRY'S PRODUCTIVE AGENTS

Contains the following papers:

EHRLENSPIEL, G. "From Logging Accounts to Net Value: a Review of the Development of Data Processing in the State Forest Administration."

EISENKOLB, R. "Developments in Timber Sales in the State Forests in the Last 25 Years."

KALBLE, F. "Aims and Problems in Game Management."

KALL, T. VON DER. "The Role of Advisory Boards in Decision-Making."

MOOSMAYER, H. U. "Twenty-five Years of Evaluating Site Maps in Terms of Yield."

OTT, W. "Twenty-five Years of Centralized Regional Forest Administration."

SCHÄFER, H. "Developments in the Economic Performance of the State Forestry Enterprise."

STOLL, P., and H. P. EBERT. "Further Education."

WEIGER, F. "The Devlopment of Timber Harvesting in the State Forest Enterprise."

B3a HACHENBERG, F. "Support for Private Forestry as a Part of Structure Plans for the Rural Economy." Forst- und Holzwirt, 33, No. 21 (1978), 484-489. In German.

Summarizes data on the ownership structure of forests in Rheinland-Pfalz and the size distribution of communal and private forests, and discusses related subjects.

B3a ROMANET, P. DE. "Forest in the Family Inheritance." Foret Privee, No. 116 (1977). In French.

Investment in (French) production forest may be of two types, purchase of shares in a forestry company or, as sole or part owner, of a forest which must be managed. Factors affecting the investment are discussed: tax, security, inheritance, choice of location, management requirements, and probable returns.

B3a SCOTT, ROY V. "American Railroads and the Promotion of Forestry." Journal of Forest History, 23, No. 2 (1979), 72-81.

After 1900 major carriers established offices responsible for colonization, agricultural development, and industrial promotion. Several railroads instituted forestry programs, and some employed professionally trained foresters to direct these activities.

B3c BASILIS, G. "Afforestation on Private Lands with Financial Support from the Owners." Forestal, 2, No. 8 (1978), 22-24. In Spanish.

II APPLIED TO FORESTRY'S PRODUCTIVE AGENTS

Under Forest Service supervision, a small labor force, paid for by the owners, is replanting private land in the Aguas Blancas (Dominican Republic) mountain catchment, where forest cover has been destroyed by fire, indiscriminant felling, etc.

B3c CLAWSON, MARION. The Economics of U. S. Nonindustrial Private Forests. Washington, D.C., Resources for the Future, Research Paper R-14.2282-3, 1979.

Provides a wealth of statistical and other information and an analytical base for a better understanding of the non-industrial private forests of the United States.

B3c CROWE, SYLVIA. "The Value of Small Woodlands to Landscape and Society." Parks, 4, No. 1 (1979), 5-7.

Reasons for promoting small forested ares in densely populated countries: (1) the amelioration of climate, (2) the conservation of dwindling stocks of wildlife, both plant and animal, (3) the visual quality of the landscape.

B3c HOLMES, W. D., and J. A. STOWE. Economic Surveys of Private Forestry. Costs of Operations in Scotland for Forest Year 1977. Dept. of Forestry, University of Aberdeen, 1979.

B3c _____. Economic Surveys of Private Forestry Income and Expenditures in Scotland During the Period 1961 to 1977. Dept. of Forestry, University of Aberdeen, 1979.

B3c LINNARD, W. "A Forester's Manual of the Thirteenth Century." Quarterly Journal of Forestry, 73, No. 2 (1979), 95-99.

A description and translation of some cost accounts and the tabula (manual) of the Forester of Beaulieu Abbey for the year 1269-70.

B3c MILLS, THOMAS J., and DARIA CAIN. Timber Yield and Financial Return Performance of the 1974 Forestry Incentives Program. USDA Forest Service Research Paper. RM-204, 1978.

B3c MOBILIZING TIMBER HARVESTING BACKLOGS AND RESERVES IN SMALL PRIVATE FORESTS AS A PROBLEM OF FORESTRY AND FOREST INDUSTRY. Conference held at the Institute for Forest Policy and Forest Management. Forschungsberichte der Forstlichen Forschungsanstalt München, No. 39. 1978. In German.

Six papers showing the social, ergonomical, and economical situation of small woodland owners and the consequences for wood supply as seen from forestry and forest industry.

II APPLIED TO FORESTRY'S PRODUCTIVE AGENTS

B3c SEYMOUR, WILLIAM. "The Problems of the Landowner in Private Forestry." Arboricultural Journal, 3, No. 6 (1979), 446-451.

Continuity of ownership, government fiscal policy, planning control problems, and new agricultural methods are all factors affecting the private forestry problems of landowners in England.

B3c VILLEMIN, M. "The Simple Coppice called 'Bois Fouillies' in Champagney (Haute-Saone)." Revue Forestiere Francaise, 30, No. 2 (1978), 144-152. In French.

Historical study of multiple land tenure in shared plots (without internal boundaries) over 662 ha of simple coppice of oak formerly felled every 13 years for tanbark and firewood. After several attempts at rationalization the area was bought by the commune in 1953 when more than 25,000 shares were involved. The area is now coppice with standards and conversion to conifers is planned.

C1 MANNING, E. W., and S. S. EDDY. The Agricultural Land Reserves of British Columbia: an Impact Analysis. Land Use in Canada Series No. 13. En73-1/13. 1978.

The "Land Use in Canada" series is designed to address major land use issues and problems in Canada. The papers, produced by and for the Lands Directorate of Environment Canada, examine the causes and consequences of major land problems and land use trends throughout Canada and the role of various government programs in effecting solutions. Incorporating the earlier series entitled, "Land Use Programs in Canada" which reviewed the land use programs of Canada's 10 provinces, the series examines activities affecting the use of Canada's land from a national perspective.

C2 KOHL, M. "The Changing Cultivated Landscape in the Upper Lahn-Dill District. Changes from Haubergswirtschaft and Agriculture to New Forms of Land Use in Modern Regional Development." Giessener Geographische Schriften, Geographisches Institut der Justus Liebig-Universitat Giessen, No. 45, 1978. In English, German, and French.

The evolution of the landscape in the cooperatively owned lowland forest areas of the northern Dill region in Hesse is analyzed. By the end of the 19th century a close interrelation had been established between the Haubergswirtschaft (a system of forestry involving multifunctional use of the land for forestry, grazing, charcoal burning, and cultivation of grain and tan bark), agriculture, forestry, business and the beginnings of industrialization in the Dill region. The interrelation had a formative

influence on the landscape well into the 20th century. Light is thrown on the stages of landscape development since the beginning of the 19th century and the present structure of the area is described in order to formulate future development trends.

C2 MANNING, ROBERT E., and LEWIS W. MONCRIEF. "Land Use Analysis through Matrix Modeling: Theory and Application." Journal of Environmental Management, 9, No. 1 (1979), 33-40.

A model was devised and then tested for its application to a specific problem area, the shifting of land to recreation and amenity uses in an urbanizing region. The modeling procedure was found to be useful in organizing and analyzing the many diverse aspects of the problem, and, from the analysis, six distinct problems were identified.

C2 WOHLWILL, JOACHIM F. "A Psychologist Looks at Land Use." Environmental Review, 3, No. 1 (1978), 34-48.

Psychologists who wish to deal with an environmental issue such as land use must view that problem in a broad context and relate it to concepts, research, and methods in the diverse fields that impinge on this area. It will necessitate new structural arrangements for research in this field, and for the training of researchers who will be better able than their predecessors to think and work along such trans-disciplinary lines.

C3 BENE, J. G., H. W. BEALL, and A. COTE. Trees, Food and People: Land Management in the Tropics. International Development Research Centre: Publication No. IDRC-084e, 1977.

Monograph on forestry development in the tropics, its ecological implications and the need for improved forest management and land utilization, including: forest ecosystems; sequential cultivation systems of growing trees and food crops; reafforestation; exploitability of forest resources; forest production; agri-silviculture; research needs; and the establishment of an International Council for Research in Agroforestry.

C3 GILG, A. W. Countryside Planning, the First Three Decades: 1945-76. Newton Abbot: David and Charles, 1978.

Agriculture, land-use planning, forestry, water, recreation, and conservation and estate management.

C3 PROBERT, G., and C. HAMERSLEY. "Countryside Management in Gwent." Planner, 65, No. 1 (1979), 10-13.

The experience of Gwent County Council is used to illustrate how public authorities can play a role in countryside

management by coordinating and implementing strategic policies over extensive areas of land in multiple ownership. One problem concerns the over-use of scenic areas and the steps taken to preserve these vulnerable areas.

D1 RIIHINEN, PÄIVIÖ. "Economics of Forestry Investments." Erip. Metsä ja Puu, 2 (1978), 4-7. In Finnish with brief English summary.

III APPLIED TO FOREST PRODUCTION

A1 BERNETTI, G. "Forest Management in Nature Reserves and Parks." Montanaro d'Italia - Monti e Boschi, 29, No. 2 (1978), 61-66. In Italian and English.

General trends in forest management planning in Italy are reviewed in relation to the decline in emphasis on estimates of volume and yield and the corresponding increase in interest in silvicultural, pathological and hydrological aspects of management, in tourism, and in conservation of the flora and fauna.

A1 JULLANDER, I., and L. STOCKMAN. "Trends in Forest Land Uses and Forest Area Development." The Life Cycle of Wood: an OECD/CSTP Study. Stockholm: National Swedish Board for Technical Development, 1978.

Multipurpose uses of forest land are discussed and the following papers presented on the subject:
ENGSÅS, J. "Multi-purpose Use of Forests."
GRIEDER, E. P. "The Different Uses of Forests."
PERSSON, R. "Trends in Forest Area."

A1 LEWIS, CLIFFORD E. Principles and Status of Integrated Management from the Range Viewpoint. University of Florida Resources Report, 4:26-34, 1977.

Good opportunities exist in the South for simultaneously producing wood, wildlife, and cattle.

A2 SULLIVAN, ROBERT J. "Christmas Trees and the Federal Income Tax." American Christmas Tree Journal, 23, No. 3 (1979), 15-24.

An explanation of tax advantages for Christmas tree growers.

A4 HUYLER, NEIL K., and LAWRENCE D. GARRETT. A Cost Analysis: Processing Maple Syrup Products. USDA Forest Service Research Paper, NE-430, 1979.

A5a ANTSUKEVICH, O. N. "Method of Economic Evaluation of the Recreation Functions of Forests." Lesnoe Khozyaistvo, No. 5 (1978), 13-16. In Russian.

An econometric model for giving the annual recreation function (benefit) in rubles/ha is proposed.

A5a DEYAK, T. A., and V. K. SMITH. "Congestion and Participation in Outdoor Recreation: a Household Production Function Approach." Journal of Environmental Economics and Management, 5, No. 1 (1978), 63-80.

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A5a GRATZER, MIKLOS A., JAMES E. SUTHERLAND, and ROBERT T. THROSSELL. Recreation in the Poconos: Images and Perceptions. Syracuse Univ. and New York College of Environmental Sci. and Forestry, unnumbered bulletin, 1978.

A5a GROOME, D. "Countryside Recreation Management Training and How it Features on Undergraduate and Postgraduate Planning Courses." Recreation and Agriculture, Proc. from conf. at University of Salford, Bolton, UK. (1978), 35-40.

A short paper highlighting the types of training at present available is followed by a lengthy discussion of the kind of training needed and who should provide it.

A5a KALAORA, B. Use and Perception of Peri-urban Forests: Objects of Social Appropriation. Station de Recherches sur la Foret et l'Environment, Centre de Recherches Forestieres d'Orleans. (1976). In French.

Rejects the conventional methods of categorizing people who use forest for recreation. The example of Fontainbleau forest in France demonstrates how over the past 15 years forest recreation has become an elitist form of leisure.

A5a _____. Tourism in Forest Areas: the Origin and Development of a Form of Urban Recreation. Universite des Lettres et Sciences Humaines, 1978. In French.

Discusses the development of the concept of the forest as a leisure facility, using the example of Fontainebleau Forest in France, and analyzes it from a sociological point of view. The conventional justification of forest recreation is that it serves as a panacea or antidote to the stresses of modern urbanized life. It is argued here, however, that is is in fact based on prestige and social conformism, and serves to reinforce many traditional values (such as family life) which are threatened by modern life. Recreational planning for forests reinforces social inequalities rather than reduces them.

A5a KALAORA, B., and V. PELOSSE. "Forests Used for Recreation: a Valuable Facility. The Example of Fontainbleau Forest." Revue Herodote, 7 (1977), 92-129. In French.

A5a TANDY, C. "Forestry and Recreation." Landscape Design, No. 124 (1978), 11-12.

The history and present forest recreation policies of the UK Forestry Commission are reviewed.

III APPLIED TO FOREST PRODUCTION

A5a UK, COUNTRYSIDE RECREATION RESEARCH ADVISORY GROUP. Proc. Countryside for All? A Review of the Use People Make of the Countryside for Recreation. Countryside Commission Publication No. CCP 117, 1978.

Contains the following papers:
BERMAN, E. "Creating Opportunities for Townspeople: the City Farm and Countryside Provision."
DOWER, M. "The Promise: for Whom Have We Aimed to Provide, and How Was It to Be Achieved?"
FITTON, A. M. H. "The Reality: for Whom Are We Actually Providing?"
HILL, M. "Future Prospects for Work and Leisure."
MATTHIJSSE, L. "The Opportunities Which Have Been Created in Holland: a Case Study."
SHOARD, M. "Access: Can Present Opportunities Be Widened?"
SIDAWAY, R. M., and F. B. O'CONNOR. "Recreation Pressures in the Countryside."
STRELITZ, Z. "The City-dweller and the Countryside."

A5b JOHNSON, RANDY. "Observational Research on the Social Side of Backcountry Use." Appalachia, Dec. 1978, 138-145.

After observing the behavior of backpacking parties in the White Mountains, the author concludes that combining tent platform sites with the option of dispersal would increase tolerable wilderness use levels, facilitate privacy/sociability, and forestall a waning of support for wilderness preservation among hikers and forest managers

A5c BRAYANT, J. "The Countryside Commission's Black Mountains Pony Trekking Experiment in Brecons National Park." Supplement, Countryside Recreation Management Association, Spring (1978), 8-10.

A three year experimental project set up to test methods of solving the problems caused by the growth of riding and to seek ways of alleviating bridleway surface and gate closure difficulties and to suggest how similar problems might be avoided elsewhere. The work evolved under two broad headings: field engineering and management.

A5c GUILLAUMON, J. R., E. POLL, and J. M. SINGY. "Analysis of Nature Trails." Boletim Técnico, Instituto Florestal, São Paulo, No. 25 (1977). In Portuguese with French abstract.

The nature-trail concept is considered almost entirely in relation to European, and particularly Swiss, literature, and to practical experience in Switzerland.

III APPLIED TO FOREST PRODUCTION

A5c HILL, M., and M. SHECTER. "Multiple Objectives in Outdoor Recreation Planning." Journal of Leisure Research, 10, No. 2 (1978), 127-140.

This paper develops quantitative indices measuring the extent of good achievement for several objectives. These include efficiency benefits and indices of distributional equity, choice and nature preservation. A weighted objectives function is then assembled, composed of several of these indices. Finally, the multiple objective evaluation procedure is applied to the solution of a specific problem in the allocation of outdoor recreation services.

A5c HORNBY, D. A Planning Guide to Hiking Trails. Town and Regional Planning Commission. Natal Town and Regional Planning Report No. 36 (1977).

Concerns the planning of a national hiking way through South Africa from the Limpopo in the north to Cape Town in the south. Deals with: trail planning, design and construction of trails, building needs, and trail administration.

A5c LEVINE, RALPH L., and EDWARD E. LANGENAU, JR. "Attitudes towards Clearcutting and Their Relationships to the Patterning and Diversity of Forest Recreation Activities." Forest Science, 25, No. 2 (1979), 317-327.

A total of 12,990 acres of state land was clearcut on an experimental basis in Roscommon County, Michigan. The greater the diversity of recreational interests, the more people agree with the clearcutting on state lands. Diversity is also discussed with respect to key use and multiple use philosophies of land management.

A5c MANNING, ROBERT E. "Strategies for Managing Recreational Use of National Parks." Parks, 4, No. 1 (1979), 13-15.

A5c MCQUAID-COOK, J. "Effects of Hikers and Horses on Mountain Trails." Journal of Environmental Management, 6, No. 3 (1978), 209-212.

A5c MORE, THOMAS A., and GREGORY J. BUHYOFF. Managing Recreation Areas for Quality User Experiences: a Theoretical Framework. USDA Forest Service Research Paper, NE-432, 1979.

The production of opportunities for high-quality visitor experiences is a basic goal of recreation management. Recreation quality can be interpreted using concepts from psychological field theory to relate emotion to the strength of motivation. Applications to on-site management for recreation quality and use regulation are suggested.

III APPLIED TO FOREST PRODUCTION

A5c PAPÁNEK, FRANTIŠEK. "Establishment of Day Visitor Use in Forests." Lesnicky Časopis, 25, No. 1 (1979), 31-40. In Czech with English abstract.

A statistical method for estimating the volume and fluctuations of tourist visits to the forest.

A5c PETERSON, GEORGE L., and DAVID W. LIME. "People and Their Behavior: a Challenge for Recreation Management." Journal of Forestry, 77, No. 6 (1979), 343-346.

Management of people in forest recreation areas should be based on analysis of behavioral systems that may be producing undesirable effects, on careful consideration of managerial objectives, and on close examination of possible courses of action.

A5c QUINTAO, A. T. B. "Local Planning and Areas of Development (in National Parks)." Brasil Florestal, 8, No. 32 (1977), 6-13. In Portuguese.

Lecture given at a course on administration and management of national parks, held at Brasilia, 14-29 Oct. 1977. Problems of providing essential minimum of development (roads, footpaths, simple buildings, etc.) are discussed in the context of Brazilian conditions and the forest landscape of Brazil.

A5c SCHUBACH, K. "Hikers and Foresters: Friends or Foes?" Forstarchiv, 49, No. 9 (1978), 177-180. In German.

A5c SHECHTER, MORDECHAI, and ROBERT C. LUCAS. Simulation of Recreational Use for Park and Wilderness Management. Baltimore: Johns Hopkins Univ. Press, 1978.

The results of a large-scale testing of a wilderness simulation model that charts the travel behavior of visitors to California's Desolation Wilderness, one of the most densely used areas in the National Wilderness System.

A5c UK, COUNTRYSIDE COMMISSION. Self-Guided Trails. Cheltenham, 1978.

Five main types of trails exist in the UK: nature, forest, farm, town trails and trails within ancient monuments. A survey showed that visitors using trails include people of great variety in terms of age, circumstances, and occupation and that they varied greatly in their reaction to the interpretive content of trails. It is suggested that more thought should be given to whom the trails serve if they are to attract more interest and be a source of enjoyment.

III APPLIED TO FOREST PRODUCTION

A5c ZHURIN, I. K. "Social Aspects of Regulating the Recreation Load in Forests around the City of Leningrad." Lesnoe Khozyaistvo, No. 6 (1978), 50-54. In Russian.

A5d TYRE, GARY L., and CHRYSTOS D. SIDERELIS. "Instant-count Sampling: a Technique for Estimating Recreation Use in Municipal Settings." Leisure Sciences, 2, No. 2 (1979), 173-179.

Users were counted instantaneously on the areas at randomly selected times. Estimates of use and standard errors were achieved with a minimum of sampling time required.

A5d YOUNG, CYRUS W., and RICHARD V. SMITH. "Aggregated and Disaggregated Outdoor Recreation Participation Models." Leisure Sciences, 2, No. 2 (1979), 143-154.

A comparison of aggregated (county level) and disaggregated (household level) outdoor recreation participation models. Summary of strengths and weaknesses of the two types of models is made. Disaggregated participation models appear to have the greatest potential for future refinement.

A5e BEVINS, M. I., and D. P. WILCOX. National Market Analysis: Developed Camping and Related Activities. Burlington: Vermont Agriultural Exp. Station, 1977.

A5e BULTENA, GORDON L., and DONALD R. FIELD. "Visitors to National Parks: a Test of the Elitism Arguement." Leisure Sciences, 1, No. 4 (1978), 395-409.

This study tested for relationships between several status characteristics and the national park visitation of residents of the Pacific coastal region. Results show that charges of elitism in national park going are overdrawn, and that perhaps there has been a substantial democratization of social-class access to national parks during this century.

A5e GORIO, S. "Papua New Guinea Involves its People in National Park Development." Parks, 3, No. 2 (1978), 12-14.

Establishing national parks presents unusual problems due to a complex land tenure system. Ultimately the people decide on the establishment of a park.

A5e GRABER, LINDA H. Wilderness as Sacred Space. Washington, D.C.: Association of American Geographers, 1976.

An analysis of attitudes toward wilderness and its preservation culminating in the characterization of the wilderness preservation movement as a belief system and a political program.

III APPLIED TO FOREST PRODUCTION

A5e JAMES, T. D. W., D. W. SMITH, E. E. MACKINTOSH, M. K. HOFFMAN, and P. MONTI. "Effects of Camping Recreation on Soil, Jack Pine, and Understory Vegetation in a Northwestern Ontario Park." Forest Science, 25, No. 2 (1979), 333-349.

Intense recreational use in campsites in Rushing River Provincial Park destroyed surface organic horizons resulting in soil compaction and decreased infiltration rates.

A5e KERLEY, C. R. "Estimating Direct Regional Employment in Export Base Recreation: the Great Smokey Mountain National Park." Touristic Analysis Review No. 12 (1977).

Presents a simple framework for measuring and projecting the direct regional impacts of recreation activity associated with a national park including a potential (gravity) analysis of visitor interaction and a regression model that relates county level retail service activity to population and income growth in a multi-regional attractiveness area.

A5e LEONARD, R. E., H. E. ECHELBERGER, and M. SCHNITZER. Use Characteristics of the Great Gulf Wilderness. USDA Forest Service Research Paper, NE-428, 1978.

Three use characteristics were studied in the Great Gulf Wilderness of the White Mountain National Forest in 1976: (1) use quantity; (2) use distribution; (3) overnight use patterns. Data was acquired with the use of pressure-plate counters, use permits, and site observations.

A5e SMITH, P. E. "A Value Analysis of Wilderness." Search, 8, No. 9 (1977), 311-317.

A definition of wilderness is given followed by a checklist of the types of values which may be provided by such areas. Some elements of planning and design of wilderness are indicated.

A5e STANKEY, GEORGE H. "Use Rationing in Two Southern California Wildernesses." Journal of Forestry, 77, No. 6 (1979), 347-349.

A majority of applicants supported visitor quotas in two wildernesses on the San Bernardino National Forest in southern California.

A5f LEE, ROBERT G. "Alone with Others: the Paradox of Privacy in Wilderness." Leisure Sciences, 1,No. 1 (1977), 3-19.

III APPLIED TO FOREST PRODUCTION

A5f Attitudinal studies of wilderness visitors have indicated that people seek opportunities to limit interaction with other visitors so as to achieve privacy and solitude. This interpretation was evaluated by comparing measures of visitor attitudes and social behavior in the backcountry of Yosemite National Park. Findings suggest that subjective responses of visitors measured by questionnaires and interviews are often of debatable validity.

A5f MAGILL, ARTHUR W. "The Challenge of Interpretation in Urban Forestry." The Interpreter, 9, No. 4 (1977-78), 7-9.

The forester who has been taught to interpret forest wilderness values to outdoors enthusiasts has difficulty when asked to interpret urban forests to city dwellers.

A5f NASH, R. Wilderness Management: a Contradiction in Terms? University of Idaho Wilderness Research Center, 1978.

The second Wilderness Resource Distinguished Lecture, delivered at the University of Idaho Wilderness Research Center on April 18, 1978. A policy of minimum (but not zero) management is required to preserve wilderness values.

A5f SELTO, F. H. Information and Decision Model Evaluation for Wilderness Management. Dissertation Abstracts International, A. (1978) 39, No. 2. 1678. Univ. of Washington, 1977.

Several key policy and state variables are identified, measured and expressed in successively less complete mathematical programming models.

A5f TAYLOR, RAY. "Countryside Interpretation: How to Do It and Why." The Planner, 65, No. 1 (1979), 16-18.

Explains how British foresters have adapted American interpretive procedures.

A5f USA, CALIFORNIA DEPT. OF PARKS AND RECREATION. Park Interpreters Guide. Sacramento, 1978.

Gives advice on conducting campfire and other interpretive programs and on leading hikes and tours. A special section on interpreting to children and physically and mentally handicapped park visitors is included.

A5f WAGAR, J. ALAN. "Why Interpretation? Meeting the Challenge." Journal of Interpretation, 3 , No. 1 (1978), 6-10.

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Environmental interpretation is readily justified as (1) enhancing human experiences and therefore contributing to sustained production of resource benefits, and (2) helping people understand resource management alternatives, thereby contributing to responsible citizenship.

A5g BUHYOFF, GREGORY J., W. A. LEUSCHNER, and J. D. WELLMAN. "Southern Pine Beetle Infestation Affects Esthetic Values of Forest Landscapes." Southern Journal of Applied Forestry, 3, No. 2 (1979), 48-49.

Conclusions show that early infestations of SPB, where damage is less than ten percent of the visible forest area, have the greatest esthetic impact. Management recommendations are made based on these responses.

A5g _____. "Aesthetic Impacts of Southern Pine Beetle Damage." Journal of Environmental Management, 8, No. 3 (1979), 261-267.

Aesthetic impacts of southern pine beetle damage (SPB) were studied using a paired-comparisons method to determine the preferences of subjects differing in their socialization to forest management. Using rank correlation methods, it was found that preference for forested landscapes diminishes with increases in SPB damage. The effect is pronounced for knowledgable subjects, while naive subjects may actually prefer landscapes with orange-brown stages of damage.

A5g BUHYOFF, GREGORY J., and JOHN D. WELLMAN. "Seasonality Bias in Landscape Preference Research." Leisure Sciences, 2, No. 2 (1979), 181-190.

If the photographs in a given test include scenes taken in different seasons of the year, expressed preferences may be biased toward one or another season, depending on the time of year in which the test is made.

A5g DALZELL, L. Environmental Aesthetics, Preferences and Assessments: a Selected Bibliography. Exchange Bibliography, Council of Planning Librarians, No. 1488. 1978.

References are arranged under the following headings: (1) Environmental aesthetics; (2) Environmental preferences; (3) Environmental assessments and evaluations; (4) Methodological problems and biases in response elicitation.

A5g DANIEL, T. C., L. M. ANDERSON, H. W. SCHROEDER, and L. WHEELER. "Mapping the Scenic Beauty of Forest Landscapes." Leisure Sciences, 1, No. 1 (1977), 35-52.

III APPLIED TO FOREST PRODUCTION

A method for developing maps of the scenic beauty of forests is described and applied to a Ponderosa pine forest in Arizona. Data concerning the reliability and validity of the procedure are presented. The relationship between the scenic beauty map and maps of physical forest features was investigated.

A5g PETERKEN, G. F. "Nature Conservation and Visual Amenity in British Woodlands." Arboricultural Journal, 3, No. 2 (1977), 96-99.

Visual amenity and nature conservation both act as restraints on the main objective of forestry policy i.e., to grow utilisable timber as economically as possible.

A5g WETZSTEIN, M. E., and R. D. GREEN. "Use of Principal Component Attractiveness Indexes in Recreation in Demand Functions." Western Journal of Agricultural Economics, 3 (1978), 11-21.

The method of principal components is used to construct attractiveness indexes for existing and proposed wilderness areas in California. Rankings of areas based on this procedure are compared with those based on size and the subjective attractiveness index developed by the Forest Service. The derived indexes are then used to develop alternative opportunities variables that appear as explanatory variables in outdoor recreation demand functions. Results indicate that substantially better explanatory capacity can be achieved over alternative measures by including a competitive factor in the demand functions. The paper concludes by considering the substitution effects of introducing new wilderness areas into the system.

A5h MOESSMER, REINHARD, and ULRICH AMMER. "Horseback Riding in Forests Close to Cities: a Model Planning in the Forstenrieder Park, Munich." Forschungsberichte der Forstlichen Forschungsanstalt, No. 35,(1977).

Planning of trails for horseback riding to separate recreational activities in forests close to cities; size of a trail network; technical requirements and costs of an improved network shown in an example.

A5i KROTH, WERNER, and GUENTER GLEISSNER. "Contributions of Bavarian Forest Enterprises for Improvement of Recreational and Protective Functions of Forests. Forschungsberichte der Forstlichen Forschungsanstalt München, No. 40,(1978).

Results of a sample inquiry in public and private forests to cover expenses and diminished returns of timber production made to improve the social functions of forests. It is shown that forest owners voluntarily contribute a considerable share to general public benefit even in times of bad returns.

III APPLIED TO FOREST PRODUCTION

A6 CORBETT, E. S. "Recreation." Water Resources at the Forest-urban Interface. USDA Forest Service Pinchot Inst. Environ. For. Res., PA-2 (1977), 17-22.

Impacts of recreation-associated use on water quality citing cases involving use of municipal watersheds. Policy implications and research needs are outlined.

A6 LOCKMANN, RONALD F. "Forests and Watershed in the Environmental Philosophy of Theodore P. Lukens." Journal of Forest History, 23, No. 2 (1979), 82-91.

Lukens' efforts to understand and promote protection of watersheds as insurance for metropolitan advancement in the late nineteenth century.

A6 PATRIC, JAMES H. "Can Forest Land Produce Wood, Recreation, and High Quality Water Too?" The Northern Logger and Timber Processor, 27, No. 12 (1979), 6-7, 36-37.

Describes land management and water production on Elk Lick Run in West Virginia, a heavily used, effective municipal watershed.

A6 VEKSHEGONOV, V. YA. "Increased Attention to Shelterbelt Forestry." Lesnoe Khozyaistvo, No. 6 (1978), 31-35. In Russian.

General review of experience in the southern regions of the USSR, especially in the dry steppes of the S. Ukraine, on the establishment, management and benefits of agricultural shelterbelts. Data on grain yields in unprotected areas and in areas protected by shelterbelts, and the overall cash benefits of shelterbelts are calculated.

A7 EVERETT, RODNEY D. "The Monetary Value of the Recreational Benefits of Wildlife." Journal of Environmental Management, 8, No. 3 (1979), 203-213.

A questionnaire survey was carried out from March, 1975 to March, 1976 in the Dalby Forest Area, UK. Data for day visitors was used in a "Clawson Method" of analysis to place an economic value on recreation in the area of around 98,000 pounds for the year.

A7 EVERETT, RODNEY D. "Varying Interest in Wildlife with Different Characteristics of Countryside Visitors." Environmental Conservation, 6, No. 1 (1979), 33-43.

A year-long study was conducted at the Dalby Forest Area, UK, concerning visitors' interest in wildlife. General trends and practical application of the results are discussed with regard to the general management of the area and the development of an increased interest in wildlife.

III APPLIED TO FOREST PRODUCTION

A7 MILLER, J. R. "A Simple Economic Model of Endangered Species Preservation in the U.S." Journal of Environmental Economics and Management, 5, No. 3 (1978), 292-300.

A7 MORE, THOMAS A. The Demand for Nonconsumptive Wildlife Uses: a Review of the Literature. USDA Forest Service General Technical Report, NE-52, 1979.

The demand for nonconsumptive wildlife, based on surveys of the attitudes, preferences, participation, and expenditures for related activities.

A7 SPEER, JULIUS. "Forests and Game." Natur und Umweltschutz in der Bundesrepublik Deutschland, (1978), 542-550.

A7 WEAVER, JANNA K., and HENRY S. MOSBY. "Influence of Hunting Regulations on Virginia Wild Turkey Populations." The Journal of Wildlife Management, 43, No. 1 (1979), 128-135.

A7 YOUNG, DAVID. "Managing Truman Lands for Wildlife." Missouri Conservationist, 40, No. 8 (1979), 14-15.

Truman reservoir, now under construction, will provide wildlife land from rough rocky timber to fertile bottomland fields for a large variety of species.

A8 ANDRESEN, JOHN W. "Urban Forestry and Its Influence in Human Settlements. Part 2. Urban Forestry Futures." Arboricultural Journal, 3, No. 6 (1979), 425-433.

Yields to human settlements from the world's urban forests in the forms of aesthetic values, environmental benefits and utilitarian products are significant enough to warrant the creation of a distinct forestry discipline that will master the intricacies of urban forest management. However, more effort of a socio-economic nature will be required to convince urban people and their leaders how to optimise the benefits provided by the urban forest.

A8 COLE, DANA W. "Oakland Urban Forestry Experiment: a Cooperative Approach." Journal of Forestry, 77, No. 7 (1979), 417-419.

California's pilot program in inner city urban forestry demonstrates that citizen participation is essential to the success of tree planting and environmental education. Support of government, and increasingly business, is also vital.

A8 KALMBACH, KEVIN L., and J. JAMES KIELBASO. "Resident Attitudes Toward Selected Characteristics of Street Tree Plantings." Journal of Arboriculture, 5, No. 6 (1979), 124-129.

III APPLIED TO FOREST PRODUCTION

A survey of social attitudes toward selected characteristics of street tree plantings in five midwestern cities indicates that trees are aesthetically desirable in urban settings and that street trees over twenty-five feet tall are aesthetically preferable to smaller trees.

A8 KUEN-MING WU. Observation and Analysis of Visitor Behavior in Recreation Area. Master's Thesis, Dept. of Forestry, National Taiwan University, 1979.

Using unstructured, non-participant, observation methods; visitors' motivation, ecological patterns, correlations between activities and day time, activities and user characteristics in three urban recreation areas were observed and analyzed.

A8 THAYER, ROBERT L., JOSEPH D. FRIDGEN, DANIEL W. LEGER, and BRIAN G. ATWOOD. "Predicting Use Intensity in Urban Open Space." Journal of Environmental Management, 9, No. 1 (1979), 15-26.

Describes the generation and testing of equations to predict relative use intensity patterns of four different use modes on a section of greenbelt in Davis, California.

B1 ARMSON, K. A., and W. J. JOHNSTON. "Intensive Forest Management: Industry, Government Trade Views." Pulp and Paper Canada, 80, No. 6 (1979), 94-97.

B1 BLATCHFORD, O. N., ed. Forestry Practice. A Summary of Methods of Establishing, Maintaining and Harvesting Forest Crops with Advice on Planning and Other Management Considerations for Owners, Agents and Foresters. UK: Forestry Commission Bulletin No. 14, revised ed. 1978.

B1 BROWN, W. H. Timber. Hove: Priory Press, 1977.

A general account of timber through the ages: its production, processing and marketing, and uses of timber and wood products.

B1 DUTROW, GEORGE F. " A Study of Economic Management Opportunities to Increase Timber Supplies in the Southeast United States, Some Preliminary and Tentative Results." FOREM, School of Forestry and Environmental Studies, Duke Univ. (1978), 5-9.

Numerous opportunities exist for increasing regional timber supplies, and these opportunities span a broad array of owners and sites. Investments in existing stands can be highly rewarding at relatively low cost; plantations promise highest yield increments but greatest drains on available capital.

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B2 DAVIES, E. J. M. "High Input Prospects." Scottish Forestry,33, No. 2, (1979), 120-132.

Describes positive results from fertilizing plantations since 1972 and argues for a simple tree farming silviculture involving high inputs of fertilizer.

B3 MACKIE, JOHN. "The Further Development of Afforestation in South-West Scotland." Scottish Forestry, 33, No. 2 (1979), 137-141.

B3 MURPHY, HARRY E. "Key to Reforestation: the Profit Incentive." Forest Farmer, 38, No. 9 (1979), 11-12.

B3 VUOKILA, YRJÖ. "More, Larger Diameter, Higher-quality Timber. Finland Looks after and Develops Its Forests." Finnish Paper and Timber, 1 (1979), 5-11. In English.

B5 CRAIG, GEORGE A. "USFS Tries Economic Analysis in Planning Timber Sale Levels." Forest Industries, 106, No. 9 (1979), 30-31.

Using net worth and social benefit evaluations, planners have placed dollar values on management alternatives.

B5 KLEMPERER, W. DAVID. "On the Theory of Optimal Forest Harvesting Regulations." Journal of Environmental Management, 9, No. 1 (1979), 1-13.

Using marginal analysis in a welfare economics framework, this study examines the theory of designing socially optimal regulations to reduce negative side-effects from timber harvesting. The analysis distinguishes between mutually exclusive and additive harvest practices and examines the implications of applying different liability rules in determining optimal harvesting regulations. Conditions of single benefit output and joint production are considered. Additional research is suggested to narrow the rift between the theory discussed and actual regulatory practice.

B5 NGUYEN, D. "Environmental Services and the Optimum Rotation Problem in Forest Management." Journal of Environmental Management, 8, No. 2 (1979), 127-136.

The model shows it is always optimal to harvest the forest, and, the optimum harvesting age must be somewhere on the rising portion of the growth curve. In the presence of environmental values, an analysis based on the economist's criteria would not necessarily result in a much shorter cutting age compared to the forester's optimum. The adoption of a selective-logging system instead of clear-cutting technique is the central idea.

III APPLIED TO FOREST PRODUCTION

B5 OLSON, JEFFREY T., and ALLEN L. LUNDGREN. Converting Partially-stocked Aspen Stands to Fully-stocked Stands in the Lake States: an Economic Analysis. USDA Forest Service General Technical Report, NC-47, 1978.

B5 RANKIN, K. N. "E. F. S. (Early Final-Crop Selection): a New Approach to Forestry." Quarterly Journal of Forestry, 73, No. 1 (1979), 31-35.

The poor return gained from growing pulpwood as a crop and the high prices given for top quality saw-timber emphasize the importance of managing plantations for the maximum and quickest production of high-priced saw logs in the UK.

C GARDNER, R. B. Cost, Performance and Esthetic Impacts of an Experimental Forest Road in Montana. USDA Forest Service Research Paper, No. INT-203, 1978.

A single-lane, 14 ft. wide road with 3 ft. ditch was constructed to serve a skyline harvesting system, with design criteria aimed at limiting visual and physical effects on the environment. Estimated cost of the road was $85,745., compared to $88,965. for a conventional forest road. Hauling costs were estimated to be $2.35/thousand bd. ft. higher than for a double-lane road. Aesthetic effects of the road were considerably better than for older forest roads in the area.

C GUNDERMANN, EGON. "A Critical Examination of Impacts Caused by Forest Road constructing in Alpine Areas, a Delphi-study." Forschungsberichte der Forstlichen Forschungsanstalt, München, No. 41 (1978). In German with English and French summaries.

Gives a conception for an integral critical examination of alternative forest road construction projects in the high mountains by means of asking experts with different points of view in a two-round Delphi study.

C PATERSON, W. G. "Forest Roads in an Era of Energy Conservation." Pulp and Paper Canada, 79, No. 10 (1978), 53-56.

The ICES-ROADS computer program, developed at the Massachsetts Institute of Technology, optimizes vehicle fuel consumption by evaluating forest road design.

D1 BONNICKSEN, T. M., and R. G. LEE. "Persistence of a Fire Exclusion Policy in Southern California: a Biosocial Interpretation." Journal of Environmental Mangement, 8, No. 3 (1979), 277-293.

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Failure to eliminate large and destructive wildfires results in continually increasing losses, which in turn stimulate increasing appropriation of funds for fire exclusion. Increased expenditure does not reduce either values at risk or areas burned, with the result that losses continue to rise. The cybernetic interpretation portrays the persistence of the fire exclusion policy as a property of a complex system of relationships instead of as a result from biases of individual decision-makers.

D1 FERNANDEZ, D. J. "Why Do Our Forests Get Burnt?" Forestal, 1, No. 5 (1977), 15-16. In Spanish.

Frequency and severity of forest fires in the Dominican Cordillera Central and Sierra de Bahoruco are attributable to the activities of hunters and other local inhabitants, the inflammable nature of the vegetation (principally pine forest) and the length of the dry season.

D1 FLATMAN, GEORGE T., and THEODORE G. STOREY. Decision Techniques for Evaluating Fire Plans Using FOCUS Simulation. USDA Forest Service Research Note, PSW-338, 1979.

Describes and illustrates how the cost-plus-loss and benefit/cost methods, in conjunction with FOCUS (Fire Operational Characteristics Using Simulation), can help to quantify the evaluation of a variety of fire planning decisions.

D1 FOLKMAN, WILLIAM S. Urban Users of Wildland Areas as Forest Fire Risks. USDA Forest Service Research Paper, PSW-137, 1979.

D1 HUNT, JOHN CLARK. "The Lookout: a Passing Tradition." American Forests, 85, No. 5 (1979), 10-15.

The history of the forest lookout stations.

D1 USDA FOREST SERVICE. Evaluation of Fire Management Activities on the National Forests. Policy Analysis Staff Report, 1977.

D1 VAN WAGNER, C. E. "The Economic Impact of Individual Fires on the Whole Forest." The Forestry Chronicle, 55, No. 2 (1979), 47-50.

A method is presented whereby the economic impact of a forest fire can be calculated, not just on the burned stand alone, but on the entire area under management.

D2 GEMMER, THOMAS V. "Fire Management: Getting It Together." American Forest, 85, No. 6 (1979), 49.

Rather than aiming solely at stopping fires immediately, fire

managers must now take into account related biological, ecological, physical, socio-economic, and technological factors.

D2 GOLDAMMER, J. G. "Controlled Burning in Forest Protection: a Preliminary Trial in the Breisach Forest District, with an Introduction to the Principles and Objectives." Allgemeine Forst und Jagdzeitung, 150, No. 2 (1979), 41-44. In German with English and French abstracts.

Results of controlled burning of a 0.25-ha plot of 14 yr. old Pinus sylvestris on the upper Rhine (W. Germany) in March 1977. Problems of organization and legal aspects of controlled burning are discussed.

D2 WAGLE, R. F., and THOMAS W. EAKLE. "A Controlled Burn Reduces the Impact of a Subsequent Wildfire in a Ponderosa Pine Vegetation Type." Forest Science, 25, No. 1 (1979), 123-129.

A controlled burn one year prior to the advent of wildfire effectively reduced the impact of a subsequent wildfire on a ponderosa pine forest overstory, the surface vegetation, and the organic layers of the soil characteristic of an adjacent area on the same slope and in the same vegetation type not control burned.

D2 ZUMBO, JIM. "Making Wildfire Work for Us." American Forest, 85, No. 6 (1979), 46-48, 50-52, 54.

Land management objectives can be better met and the quality of forests and rangelands can be better protected by redirection of fire organizations and personnel to assess and utilize wildfire.

D4 BRODIE, DOUGLAS, HUGH C. BLACK, EDWARD J. DIMOCK II, JAMES EVANS, CHIANG KAO, and JAMES A. ROCHELLE. Animal Damage to Coniferous Plantations in Oregon and Washington. Part II. an Economic Evaluation. Oregon State Univ., School of Forestry, Research Bulletin No. 26, 1979.

Statistical models were developed and applied to field data collected in Oregon and Washington. The hypothesis that survival and height differ between stands exposed to and protected from animal damage was tested. Results of that analysis provide guidelines for protecting public and private forest plantations from animal damage.

D4 KING, D. R., R. L. BAILEY, and P. W. WALSTON. "Predicting Cattle Damage in First-year Loblolly Pine Plantations." Journal of Range Management, 31, No.3 (1978), 234-235.

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D4 PROSSINAGG, H. "Windthrow Disaster in the Catchment Protection Forests." Allgemeine Forstzeitung, 89 (1978), 346-348. In German.

Description of the damage caused by westerly gales in Jan. 1976 to the Rax-Schneeberg catchment protection forests near Vienna, Austria, and of the measures taken to recover and sell windthrown trees and reforest the damaged areas.

E BETTERS, D. R., and J. L. RUDINGH. "Suitability Analysis and Wildland Classification: an Approach." Journal of Environmental Management, 7, No. 1 (1978), 59-72.

An approach to constructing suitability indices for various uses while considering criteria important to evaluating use possibilities. A multivariate statistical technique is then utilized to develop a hierarchical suitability classification. This classification offers a tool for analyzing the sensitivity of use suitability to level of classification.

E CONNAUGHTON, KENT P., and WILLIAM MCKILLOP. "Estimation 'Small Area' Multipliers for the Wood Processing Sector: an Econometric Approach." Forest Science, 25, No. 1 (1979), 7-20.

The primary objective of the study was to develop estimates of multipliers which could be used to gauge the effect on local employment and income of changing levels of National Forest timber harvests in northern California.

E GODMAN, R. M. "Hardwood Sawtimber Quality and Value Growth." Proc: Economic Forum on Forest Land Ownership, Management and Investment. Soc. of American Foresters, (1978), 148-154.

E JAATINEN, ESKO. "Materials and Energy Accounting and the Finnish Forest and Timber Economy." Erip. Metsäntutkimuslaitoksen julkaisuja, 95, No. 3 (1978). In English with Finnish summary.

E LEE, Y. J., D. HUNT, and T. G. HONER. Yukon RRAMS: an Information Retrieval System for Renewable Resource and Management Statistics. Report No. BC-X-185, 1978.

This system, designed for use by various levels of decision-makers in the field of forestry and environmental management, allows for easy modification and addition of resource data input. It is capable of interactively retrieving, displaying and tabulating available resource data for a given location.

E "MEETINGS OF (LOCAL) FORESTRY ASSOCIATIONS (IN SOUTHERN W. GERMANY) IN 1977." Allgemeine Forstzeitschrift, 32 (1977), 823-844. In German.

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A selection of papers of regional interest (taken from meetings in Bavaria and Baden-Wurttemberg) with special reference to amenity planning and silviculture:

REHFUESS, K. E. "Silviculture in an Environment-conscious age: Reflections of an Ecologist."

HARTMANN, H. "Planning Forest Functions: Policy Implications for the Forest Owner."

HORNDASCH, M. "Silviculture from the Point of View of the Recreational Function of Forests."

E MERZENICH, JAMES P. Classifying Forest Land Based upon Its Timber Management Investment Potential: a Case Study of the Lolo National Forest. Montana Forest and Conservation Experiment Station Bulletin No. 42, 1979.

Using the Lolo National Forest and concentrating exclusively on economic factors, this study finds that species mixture and slope significantly affect land expectation values and must be considered with productivity when identifying timber production lands.

E NYYSSÖNEN, AARNE. "Forest Management in Finland." North American Forest Lands at Latitudes North of 60 Degrees. (1977), 55-63.

E OLIVARES, B. "Simulation Models and Their Use in Forest Management." Bosque, 2, No. 1 (1977), 32-40. In Spanish with English and German abstracts.

Simulation models have not been used hitherto as aids to decision-making in forest management in Chile. An initial attempt is made to describe simulation modeling techniques and evaluate the use of different types of models for forest management purposes. An example is given of a model for regulating fellings, based on data from a hypothetical timber company, that could be used in the management of private forests in Chile.

E OLSON, JEFFREY T., ALLEN L. LUNDGREN, and DIETMAR ROSE. Equations for Estimating Stand Establishment, Release, and Thinning Costs in the Lake States. USDA Forest Service Research Paper, NC-163, 1978.

E PETRI, H. "Further Development of Forest Management as an Alternative to the National Forest Inventory." Forstarchiv, 49, No. 12 (1978). 241-244. In German with English summary.

Using Rheinland/Pfalz as an example, it is argued that estimates of W. Germany's potential timber production could

be obtained from forest management data (including data from permanent plots) for individual states, without the need for costly federal forest inventories. Lack of sufficient data on private forests is pointed out.

E THOR, EDWARD C., and JAMES L. CREIGHTON. Mystic Mountain: an Educational Alternative Futures Wildland Planning Game. USDA Forest Service General Technical Report, PSW-30, 1978.

The Mystic Mountain game teaches several important concepts from alternative futures planning, concepts that could be adapted to a wide variety of planning processes.

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A1a REVIEW 1979 EUROPE. "Low Prices Keep Industry Strapped." World Wood, 20, No. 7 (1979), 15-26.

A1b BONES, J. T., and J. K. SHERWOOD. Pennsylvania Timber Industries: a Periodic Assessment of Timber Output. USDA Forest Service Research Bulletin, NE-59, 1979.

Statistics on industrial timber production and receipts, and production and disposition of the manufacturing residues. Comparisons are made with the most recent previous survey, and trends in industrial wood output are noted.

A1b BRODIE, JOHN E., and JEAN NOLLEY. Maryland's Primary Wood Industry: a Utilization Summary and Directory. MD Forest Service in cooperation with USDA Forest Service, Northeast For. Exp. Stn., 1978.

A1b CLEMENTE, RICARDO. Wood Products Industries in the Texas Economy. School of Forestry, Stephen F. Austin State University, 1979.

A1b ELLEFSON, P. V., and MICHAEL E. CHOPP. Systematic Analysis of the Economic Structure of the Wood-based Industry. Univ. of Minnesota, 1978.

A1c JULLANDER, I., and L. STOCKMAN. "Conservation of Forest Products." The Life Cycle of Wood: an OECD/CSTP Study. Stockholm: National Swedish Board for Technical Development. 1978.

Developments are discussed which enable the wood raw material to be used more effectively. The following papers were presented on the subject:

ERICSSON, B. "Uses of Solid Wood with Special Reference to Scandinavia."

HARTLER, N. "Factors Affecting Wood Consumption in Pulp and Paper Production."

KARLSSON, L. "Availability of Waste Fibres."

LARSSON, L. O. "Wood Consumption Versus Product Quality in Paper."

THUNELL, B. "Developments in Wood Technology."

A1c _____. "Forest Products." The Life Cycle of Wood: an OECD/CSTP Study. Stockholm: National Swedish Board for Technical Development, 1978.

Technical developments and research concerning forest products are discussed. The following papers are presented on the subject:

CASSELBRANT, S. "Wood Consumption Versus Product Quality in Wood-based Panels."

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KRINGSTAD, K., and U. WESTERMARK. "Chemicals from Wood."
NORRSTRÖM, H., and B. STRÖMBERG. "Environmental Influence: a Discussion of Pollutants from Forest Product Mills."
OLAUSON, L. "Energy Consumption."
SAKAMA, R. "Capital Requirements."
STORSTRÖM, H. "Auxiliary Raw Materials."
THUNNELL, B. "Environmental Problems in Wood Technology."

A1c UK, FIBRE BUILDING BOARD DEVELOPMENT ORGANIZATION. "Fidor Conference Report." Timber Trades Journal, 1978.

Thirteen articles are presented including:
HEUGHAN, D. M. "What the Furniture Industry Requires."
RAYNHAM, E. A. "Market Developments in 1979."

A1d WYMOND, A. P. "Wood Products in the Future." Appita, 32, No. 3 (1978), 167-172.

The first of a series of papers presented at a one day conference arranged by the Tasmanian Local Section (of Appita) in August 1977. The history is discussed of the wood products industry from 1940.

A1e MEXICO, DEPARTAMENTO DE ECONOMIA FORESTAL, DIRECCION GENERAL DE INVESTIGACION Y CAPACITACION FORESTALES. "National Consumption of Forest Products (in Mexico)." Ciencia Forestal, 3, No. 11 (1978), 41-50. In Spanish.

Tabulated statistical data are given showing the consumption, production, import and export of forest products by Mexico in 1971-1976. The main trends during the period are discussed.

A1e REVIEW 1979 AFRICA. "Restructuring for Home Needs." World Wood, 20, No. 7 (1979), 65-72.

A4 VASILOU, GEORGE, "Production Costs Determined in Standard Cost System." Wood and Wood Products, 84, No. 8 (1979), 45-47.

This system required about nine months to develop and install and achieved its primary objective of providing a realistic basis for pricing and created the engineering data base that would serve as the starting point for several cost reduction and managerial control projects.

B1 PRACNA, J. "Logging and Timber Transport in the Amazon Region." Silvaecultura Tropica et Subtropica, No. 6 (1978), 6, 79-89. In Spanish.

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B2 BAIRD, D. R. "Tropical Logging Investment, Part III: Minimize, Measure Investment Risk." World Wood, 18, No. 5 (1977), 18-20.

Methods of assessing the feasibility of tropical logging operations are presented and details are given of sensitivity analysis and risk analysis.

B2 HOST, J., and J. SCHLIETER. Low-cost Harvesting Systems for Intensive Utilization in Small-stem Lodgepole Pine Stands. USDA Forest Service Research Paper, INT-201, 1978.

Skidding production, product volume removed and residue volume per acre, and operating costs were compared for three skidding methods in an overmature Pinus contorta stand in Montana.

B2 SCHOTTE, L. "What Research and Development Can Do for Logging." Pulp and Paper Canada, 80, No.4 (1979), 92-94, 96, 99.

Swedish experience stresses cooperative projects from all areas of industry. A long-term perspective is key.

B3a FOOD AND AGRICULTURAL ORGANIZATION OF THE UNITED NATIONS. World Directory of Institutions Concerned with Residues of Agriculture, Fisheries, Forestry, and Related Industries. FAO Agricultural Services Bulletin No. 21, 1978.

Lists over 1,000 institutions in 120 countries involved in the study of the use of residues. Provides names, addresses, scope of interest, and foreign languages used. In English, French and Spanish.

B3a _____. Bibliography of Residues of Agriculture, Fisheries, Forestry and Related Industries. FAO Agricultural Services Bulletin No. 35, 1978. In Eng., French and Spanish.

In three parts: by raw material (cereals, fibers, etc.); by end uses (food, fuel, etc.); and by institutional aspects, both legal and socio-economic. Also lists service centers for information and reference materials.

B3a KING, K. F. S. "The Utilization of Low-quality Tropical Timber." Unasylva, 29, No. 118 (no date), 18-24.

Recommends that silviculturists not eliminate species that are now considered unsalable with the view that by the end of this century the species now considered weeds, and the malformed trees now considered undesirable, will be utilized, in a world of shrinking resources.

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B3a KINGSLEY, NEAL P. "How Important Is Timber Production to Small Owners?" Forest Farmer, 38, No. 8 (1979), 8-9, 14-15.

Survey examines landowners' attitudes and motivations as they affect harvesting.

B3a TSAI-YUNG CHEN. "Studies on the Integrated Utilization of China-fir Thinning Operations." Quarterly Journal of Chinese Forestry, 12, No. 1 (1979), 65-86. In Chinese.

Properties of particleboard made from thinning operations in a China fir stand were investigated. From a technological standpoint, manufacture of particleboard from thinning operations provides no problem but is not economical at present.

B4 JOHANSSON, I., and B. LIDBERG. "Logging on Compacted Snow." Ekonomi Forskningsstiftelsen Skogsarbeten, No. 11 (1977). In Swedish.

A comparative study of working time and work strain when felling and conversion of Pinus sylvestris from mixed stands was carried out with and without preparatory packing of deep snow. The saving in time averaged twenty-seven percent and more than offset the cost of snow packing. The reduction of energy consumption was considerable.

B4 WATSON, LAURIE. "Building Your Roads in Advance Can Save Both Time and Money." Canadian Forest Industries, 99, No. 6, (1979), 17, 20.

C1a MULLER, R. A. "The Canadian Softwood Lumber Industry: Discussion." Canadian Journal of Forest Research, 9, No. 2 (1979), 295-296.

An economic model described by Glenn H. Manning is discussed and some improvements are suggested.

C1c ADAMS, EDWARD L., and DANIEL E. DUNMIRE. Solve II Users Manual: a Procedural Guide for a Sawmill Analysis. USDA Forest Service General Technical Report, NE-44, 1978.

For using the SOLVE II computerized technique to analyze hardwood sawmills. Includes: (1) analysis design, (2) data collection, (3) computer card preparation and use.

C1c DUKE, JOHN, and CLYDE HUFFSTUTLER. "Productivity in Sawmills Increases as Labor Declines Substantially." Monthly Labor Review, 4, (1977), 33-37.

Since 1958, sawmills have implemented a variety of technological innovations, allowing them to maintain output, while reducing the total work force by one-third.

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C1c KOENIGSHOF, GERALD A. Economic Feasibility of Manufacturing Comply Studs in the South. Cooperative research by USDA Forest Service and US Dept. of Housing and Urban Dev. Div. of Energy, Building Tech. and Standards, 1978.

One of a series of reports on the possibilities of producing house framing and structural panels with particleboard cores and veneer facings.

C1d CHRISTOPHERSEN, KJELL A., and JOHN P. HOWE. "High-value Paneling from Dead Western White Pine." Forest Products Journal, 29, No. 6 (1979), 40-45.

White pine killed by blister rust in northern Idaho is still valuable when used to manufacture specialty products such as interior paneling where defects in the wood are turned into assets.

C2a BAYLISS, MARTIN. "France at the Crossroads." Pulp and Paper International, 21, No. 7 (1979), 35-40, 58.

The French paper industry, reduced by a combination of factors to a state of near bankruptcy, must make some decisions.

C2a BIRCHMORE, M. J. "The Prospects for Wood Pulping Capacity in the UK and the Implications for Forest Policy." Forestry, 52, No. 1 (1979), 67-81.

A brief summary of the existing woodpulp industry in the UK is followed by an analysis of the main factors influencing the industry's future development. This is used to assess how the UK pulp industry is itself likely to develop and some suggestions are made about its future.

C2a EKLUND, RISTO. The Competitive Future of British Columbian Pulp and Paper Industry. Jaakko Pöyry and Co Oy (JP-publication No. 49. HO225-BA-41/G1977-12-15), 1977.

C2a GORDON-PULLAR, I. T., and DEREK CURRIE. "What the Small Mill Needs to Survive." Pulp and Paper International, 21, No. 5 (1979), 67-70.

Between 1973 and 1977 some 160 small paper or board mills shut down within the EEC, yet over 50 percent of the EEC's mills still produce less than 10,000 tons/yr. and qualify as small. The survival of these mills requires fresh approaches to operations management and marketing.

C2a HAAS, LEONARD. "South Korean Growth Continues Unabated." Pulp and Paper International, 21, No. 9 (1979), 25-29.

South Korea's paper industry tripled capacity in the 1960's and expects to double capacity again before 1983.

IV APPLIED TO MANUFACTURING

C2a HAAS, LEONARD, ed. "1979 Annual Review." Pulp and Paper International, 21, No, 8 (1979).

Latest production and trade data. Fifty national editors and pricipal correspondents are noted in this issue.

C2a HAAS, LEONARD, JOHN KALISH, and MARTIN BAYLISS. "Despite Slower Growth Rates, Rich Nations Continue to Outpace Poorer." World Review, special report. Pulp and Paper, 53, No. 9 (1979), 62-70.

C2a LOWE, KENNETH, ed. "Following Record Good Year of 1978, Industry Moved Ahead in 1979 with Cautious Optimism." Pulp and Paper, 53, No. 7 (1979), 15-24.

1979 North American Profile: United States.

C2a "PULPWOOD ANNUAL 1978." Forest Industries, 105, No.7 (1978).

C2a REVIEW 1979. "Latin America, Major New Pulp Mills on Stream." World Wood, 20, No. 7 (1979), 37-44.

C2a REVIEW 1979. "Oceania, Another Tough Term for Industry." World Wood, 20, No. 7 (1979), 77-80.

C2a SHAW, CHARLES L., Canadian ed. "Paper Industry Recorded High Levels of Sales, Earnings and Production in 1978." Pulp and Paper, 53, No. 7 (1979),43-48.

1979 North America Profile: Canada. Resurgence in markets is accompanied by announcements of mill modernizations and expansions, but no new mills are planned; government concern and involvement continue.

C2c EKLUND, R., and K. RAMÖ. New Sources of Supply of Market Pulp from the Non-Traditional Supply Areas. Jaakko Pöyry and Co Oy, (JP-publication No. 57. K0250-5/G 1977-11-03), 1977.

C2c HAAS, LEONARD. "Japan: Efficiency in Wastepaper Collection." Pulp and Paper International, 21, No.6 (1979), 46-48, 54.

The Paper Recycling Promotion Center since 1974 has been working to improve the rate of collection in Japan. Families and offices are educated to sorting and collecting paper, and an efficient network of collectors feeds 600 dealers which supply the paper companies. With a recovery rate now of 43 percent the objective is to reach 50 percent.

C2c NEVEL, ROBERT L., JR. Northeastern Pulpwood, 1977: an Annual Assessment of Regional Timber Output. USDA Forest Service Bulletin, NE-60, 1979.

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C2c REEVES, HEATH. "Shining Future Seen for Hardwood Pulps." Pulp and Paper International, 21, No. 9 (1979),33-36, 51.

Hardwoods represent about two-thirds of the world's total growing stock and can provide a highly competitive pulp for many grades of paper.

C3a FOOD AND AGRICULTURAL ORGANIZATION OF THE UNITED NATIONS. Medium-Term Survey of the Wood-based Panels Sector. Geneva: Joint ECE/FAO Agriculture and Timber Div., 1978. In English and French.

Survey of medium term trends in consumption and supply of particle board, plywood, fibreboard and veneer sheets including a survey of production capacity and raw material consumption by country.

C3a _____. Report of the Fifth Session of the FAO Committee on Wood-based Panel Products. Rome: FAO, 1977. In English Spanish and French.

World survey of production capacity of wood-based panels; outlook for production, consumption, trade and processing of plywoods, fibreboards, and particleboards; economic analysis of small-scale mills in developing countries; proposed training for mechanization of forest industries.

C3a KÄRKKÄINEN, MATTI. "Empirical Results on Birch Veneer Yield." Folia Forestalia, 368, (1978). In Finnish with English summary.

C3a PASTOR, M. DEL C. "A Review of the Portuguese Wood-based Panel Industry." Boletim, Instituto dos Produtos Florestais, Madeiras e Derivados. (1978), 20-78, 47-50. In Portuguese with English and French abstracts.

Board production statistics are given.

C4 BERLYN, ROBIN, JAMES HUTCHINSON, and ROBERT GOODING. " Method for Upgrading Chips from Full Trees." Pulp and Paper Canada, 80, No. 8 (1979), 56-60.

A patented process ready for mill use that can provide a new source of fiber for the pulp and paper industry.

C4 MALONEY, T. M. "Wastes: How Much, Where, and How to Use Them in Forests and Forest Industries." World Wood. (1979), 20-21.

Condensation of a World Forestry Congress presentation on

what has been learned in the US about waste management and how it could be applied in forestry and the forest industries elsewhere.

C7 FITTS, JOHN. "A Synergistic Approach to Quality Control." Wood and Wood Products, 84, No. 5 (1979), 23-25.

Steelcase, Inc., a contract manufacturer, has achieved one of the finest quality control programs in the casegoods industry by actively involving everyone in the plant in monitoring quality.

C7 GAGER, RUSS. "Sixty-six Inspectors Another Route to Quality Control." Wood and Wood Products, 84, No. 5 (1979), 27-28.

By streamlining its quality control program in 1973, Drexel Heritage Furnishings, Inc. reduced its return and allowance rate by seventy-five percent.

C8 ANTTILA, RISTO. "Chips for Heating." Työtehoseuran metsätiedotus. 1978. In Finnish with English summary.

C8 ARNOLD, J. E. M. "Wood Energy and Rural Communities." Natural Resources Forum, 3, No. 3 (1979), 229-252.

Woodfuels (firewood and charcoal) comprise the predominant source of energy for rural populations in developing countries, and are likely to continue to do so. Increasing depletion of locally available wood supplies can lead to reductions in energy available for cooking and heating, increasing diversion of agricultural residues to fuel use. and deterioration of physical environments dependent on tree cover. Attention must be paid to means of alleviating demand for woodfuels in the short term by using existing supplies more efficiently, as well as to increasing their supply over the longer term.

C8 BLACKMAN, TED. "Crude Oil from Wood Chips?" Test Plant Shows It's Possible." World Wood, 20, No. 5 (1979), 50-51.

Possible but not probable in the near future as test plant consumes more energy than it produces.

C8 BONES, JAMES T. "Residues for Energy in New England." Northern Logger, 25, No. 12 (1977), 20-22, 34.

The wood products industry has a unique potential to generate its own fuel. Progress toward energy self-sufficiency will require major research and capital investment.

C8 DE BEIJER, J. R. "How Biomass Harvesting as Part of Logging Can Yield Highly Competitive Fuel Source." World Wood, 20, No. 6, (1979), 27-29.

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A summary of the potential for forests to provide convenient forms of fuel and an examination of the viability of biomass when its harvesting is combined with commercial logging.

C8 ELLIS, E. R., and R. A. SHELDEN. "Wood and Electric Power in Maine: a Forecasting Model." Journal of Environmental Management, 8, No. 1 (1979), 43-53.

A computer simulation model comprising the various industries that use wood, including a hypothetical wood-based electric power industry and the forest itself, is presented. Emphasis is placed upon the potential availability of wood for multiple use, the price changes for wood resulting from such use, and the future costs of generating electric power from wood given those price changes.

C8 FEGE, ANNE S., ROBERT E. INMAN, and DAVID J. SALO. "Energy Farms for the Future." Journal of Forestry, 77, No.6, (1979), 358-361.

Silvicultural energy farms may provide wood for energy at competitive prices in the future.

C8 MATTSSON, J. E., and E. SUNDSTEDT. "Logging Residue as Fuelwood in Forest Farmers' Houses." Rapporter och Uppsatser, Intitutionen för Skogsteknik, No. 121 (1977), In Swedish with English abstract.

Conversion costs are high for home-produced fuelwood; however, the value of this labor is exempt from taxation under a new Swedish law. Logging residue and other unsalable forest produce has become a profitable alternative to fuel oil. Methods of logging, chipping, storage and drying and the merits of different types of burners are discussed.

C8 OPENSHAW, KEITH. "Woodfuel: a Time for Re-assessment." Natural Resources Forum, 3, No. 1 (1978), 35-51.

In terms of total energy requirements woodfuel is the third most important fuel after oil and coal, but the primary fuel in terms of number of actual consumers. Future consumption pattern is estimated for the developing and developed countries and it is anticipated that total woodfuel consumption may increase by about two percent per year at least until the year 2000. Total demand is likely to double by the turn of the century. Therefore, plantations, especially of fuelwood, will have to be established if the growing stock is not to be depleted and if an energy crisis in developing countries is to be averted.

IV APPLIED TO MANUFACTURING

C8 PATZAK, W., and H. SCHULZ. "Importance and Future of Wood as a Source of Energy with Particular Reference to the Wood Industry." Holz als Roh und Werkstoff, 36, No. 3 (1978), 89-99. In German with English abstract.

A survey of the economic and practical aspects of the use of wood as fuel.

C8 SKYUM, J. "Shelterbelts: an Alternative Source of Energy?" Hedeselskabets Tidsskrift, 100, No. 1 (1979), 14-17. In Danish.

A comprehensive investigation into the utilization for energy production of unused biological resources in Denmark included a study by the Institute of Forest Technology of the potential energy value of wood from shelterbelts in the Ringkøbing district.

C8 "WOOD AS AN ENERGY SOURCE IN THE CANTON OF GRISONS." Bundnerwald, 32, No. 1 (1979), 5-14. In German.

A special feature on the production and use of firewood. Contains the following papers:
BROSI, P. "How Much Burnable Wood do the Forests of Grisons Produce ?"
RAGAZ, C. "The Significance of Fuelwood as a Source of Energy."
BAVIER, G. "Wood and Energy."

C9 BLACKMAN, TED. "US Twenty Million Dollar Particleboard Plant Will Be Mexico's Largest." World Wood, 20, No. 5 (1979), 39.

C10 REVIEW 1979 NORTH AMERICA. "Housing Keeps Markets Super Buoyant." World Wood, 20, No. 7 (1979), 31-33.

D2 ASSUMPCAO, R. M. V., and M. C. S. JORDAO. "The Naval Stores Industry in Brazil." Boletim do Instituto dos Produtos Florestais, Resinosos (1978) No. 23-78, 3-8. In Portuguese.

D4 BRANDT, H. "The World Market for Minor Spices. Part 1. General Trends of Development and World Market for Cinnamon Bark." Zeitschrift für Auslandische Landwirtschaft, 17, No.1 (1978), 7-20. In German with English abstract.

D4 DAIGAVIETIS, M. O., and V. YA DERUMA. "Production of Vitamin Flour from Tree Foliage." Lesnoe Khozyaistvo, No. 6 (1978), 60-61. In Russian.

D4 "EXPORTS OF RADIATA PINE MUSHROOMS INCREASING." Chilean Forestry News, 1, No. 2 (1978), 10.

D4 YAGODIN, V. I. "A Promising Technological Scheme for the Integrated Utilization of Tree Foliage." Lesnoe Khozyaïstvo, No. 7 (1978), 73-75. In Russian.

V APPLIED TO MARKETING, TRADE, DEMAND FOR FOREST OUTPUT

A1 BUONGIORNO, JOSEPH. "Income and Price Elasticities of Demand for Sawn Wood and Wood-based Panels: a Pooled Cross-section and Time-series Analysis." Canadian Journal of Forest Research, 9, No. 2 (1979), 141-148.

Full adjustment of demand to changing prices and income was shown to always take more than one year. Demand for fibreboard appeared to adjust most rapidly to changes in economic conditions; the demand for nonconiferous sawnwood adjusted most slowly.

A1 LAHIRI, K. L. Improvement of Crop Production, People's Democratic Republic of Yemen. Rome: FAO Forestry Dept., 1978.

Includes information on wood consumption and estimated demand of imported timber in Burma.

A2 EVANS, JOHN. "More Good Demand Seen for Publication Paper." Pulp and Paper International, 21, No. 6 (1979), 55-56.

Demand is high for magazine publication paper but many new special-interest magazines have never been tested by recession.

A3 CAMERON, D. A., and H. G. MCPHEE. Jack Pine as a Christmas Tree: a Consumer Preference Survey. Ontario: Canadian Forestry Service Report O-X-291, 1979.

Among over 2,000 people interviewed at Toronto's Royal Winter Fair, there was a significant three to one preference for Scots Pine over Jack Pine as Christmas tree.

B1 FOOD AND AGRICULTURAL ORGANIZATION OF THE UNITED NATIONS. Study on the Trade and Utilization of Tropical Hardwoods. Geneva: Joint ECE/FAO Agriculture and timber div., 1978.

Study of trends in imports of tropical hardwoods; their wood processing, consumption and end uses in construction, joinery and furniture for domestic purposes.

B1 KALLIO, EDWIN, and EDWARD DICKERHOOF. Business Data and Market Information Source Book. Madison: Forest Products Research Society, 1979.

Contains: (1) Guides to general sources of information; (2) US government statistics; (3) Other statistics, reports and analyses; (4) Directories; (5) Forest products reports and newsletters; (6) Price reports; (7) Periodicals; (8) Publications and bibliographies; (9) Computerized information retrieval systems.

V APPLIED TO MARKETING, TRADE, DEMAND FOR FOREST OUTPUT

B1 KROTH, WERNER. "European Timber Balance: Perspectives of the Development." Allg. Forstzeitschrift, 12 (1979), 269-276. In German.

B1 MARKET ORGANIZATIONS FOR WOOD AS A PROBLEM OF FORESTRY AND FOREST INDUSTRY. A conference held at the Institute for Forest Policy and Forest Management. Forschungsberichte der Forstlichen Forschungsanstalt, München No. 43, 1979.

Six papers discussing the effects of proposed market organizations within the European Community for wood and wood products as seen from the German forestry and forest products industry.

B1 OLLMANN, H. "The 1977 Wood Balance for the German Federal Republic." Forstarchiv, 49, No.10 (1978), 198-199. In German with English summary.

The foreign trade balance of wood (including wood products) in 1976 and 1977 and the total wood material balance for 1950-1977 are tabulated. Calculations based on value data show W. Germany to be in fourth place as an importing nation and in sixth place as an exporter.

B1 PINTO, M. J., and J. SOARES. "Hardwood Imports (to Europe)." Boletim do Instituto dos Produtos Florestais, Madeira e Derivados, No. 20-28, 17-40 (1978). In Portuguese with English and French abstracts.

B1 "THE RADIATA PINE MARKET." Chilean Forestry News, 1, No. 10 (1978), 2-5.

Statistical data are tabulated on the volume and value (in US $) of Chilean-grown Pinus radiata timber marketed at home and abroad during 1970-1977, and marketing trends are briefly discussed. The expansion of exports of logs to S. Korea and Japan and sawn timber to the Arab countries in the last two years is particularly marked.

B3 JOHNSON, RONALD N. "Oral Auction Versus Sealed Bids: an Empirical Investigation." Natural Resources Journal, 19, No. 2 (1979), 315-335.

Focuses on sales procedures used by the U.S. Forest Service.

B3 REVIEW 1979 ASIA. "Log Market Turns Bullish." World Wood, 20, No. 7 (1979), 49-60.

B3 WIENER, ALFRED A. "Sealed Bids or Oral Auctions: Which Yield Higher Prices?" Journal of Forestry, 77, No. 6 (1979), 353-356.

V APPLIED TO MARKETING, TRADE, DEMAND FOR FOREST OUTPUT

B4 LINDELL, GARY R. "World Softwood Lumber Trade: Patterns, Trends, and Prospects." Forest Products Journal, 29 No. 7 (1979), 43-48.

Over the past 10 years, US producers improved their position in international softwood lumber markets although Canada, the USSR, and Scandinavia remain the predominant exporters. The US is concurrently the fourth major exporter of softwood lumber and the major importer, taking about one-third of the total world imports. The other two major importing areas have been Europe (except Scandinavia) and Japan.

B5a EXCLUSIVE REVIEW 1979. "Marketing Trends for Major Grades of Paper, Paperboard, Board." Pulp and Paper, 53, No. 7 (1979), 25-34.

1979 North America Profile: Grade profiles - Newsprint, coated paper, uncoated printing/writing papers, tissue, packaging and industrial papers, linerboard, corrugating medium, recycled boxboard and paperboard, construction papers and board.

B7 KIDD, WILLIAM E., JR. "Calculating the Cost of a Marketable Tree." American Christmas Tree Journal, 23, No. 3 (1979), 37-41.

Defines and discusses the various costs of Christmas tree production both absolute and implicit; defines the costs that are relevant to pricing; presents a method for accumulating costs and works through an example.

C1 CUMMINGS, R. G., and R. N. JOHNSON. "Welfare Analysis of Long-term Forest Products Price Stabilization: Note." American Journal of Agricultural Economics, 60, No. 4 (1978), 689-90.

Calls attention to two biases implicit in the analytical framework of a paper in the same journal by Adams, Haynes and Darr, which examined alternatives to the US Forest Service's current timber policy of nondeclining even-flow harvest levels from national forests.

C1 FOOD AND AGRICULTURAL ORGANIZATION OF THE UNITED NATIONS. Long-term Price Trends for Forest Products in Selected European Countries. Geneva: Joint ECE/FAO Agriculture and timber div., 1978. In English and French.

Study of long-term trends of price indexes of timber and wood products compared with other non-wood competitive products in selected European countries.

V APPLIED TO MARKETING, TRADE, DEMAND FOR FOREST OUTPUT

C1 SAMPAIO, J. S. "On the Evolution of Prices of Some Forest Products in External Trade (1970-1977)." Boletim, Instituto dos Produtos Florestais, Cortiça, No. 472-78, 41-48 (1978). In Portuguese with English and French abstracts.

Price indices are tabulated for exported cork, wood and pulp products, as well as for non-forest products for comparison. Of the forest products, cork was the most important export followed by wood pulps then wood and wood products.

C2 LEHIKOINEN, T. "Stumpage Price Differences between Northern and Southern Finland." Folia Forestalia, Institutum Forestale Fenniae, No. 289 (1977). In Finnish with English abstract.

Data are presented in tables and graphs for conifer sawlogs, spruce pulpwood and pine pulpwood for 1955-1974. Differences between the two regions diminished during this period.

I N D E X

This index is best used in conjunction with the Subject Matter Classification Scheme at the front of this issue. For example, if the user enters the index at Administration, forest, he is referred to Section III of the bibliography, because to be more specific would require subdividing the topic essentially as the Classification Scheme does. The user's next step is to turn to the Scheme, where he finds that forest administration in general is IIIA1, administration pertaining to forest roads is IIIC, and so on.

AUTHOR INDEX