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ABSTRACT

Provided in this document is a bibliography of selected materials addressing the interface between forestry and the social sciences. Materials include articles appearing in United States and foreign professional journals, bibliographies, conference proceedings, and other types of publications. A subject-matter classification scheme, in outline format, is provided at the beginning of the document. Entries (numbered 3355-3564) are listed alphabetically by author according to the topics indicated in this scheme. Major topic areas include social science applied to: (1) forestry at large; (2) forestry's productive agents; (3) forest production; (4) manufacturing; and (5) to marketing, trade, and demand for forest output. Each entry includes citation number, author(s), title, source, year, number of pages, and a code related to specific sections in the subject-matter classification scheme. In addition, if the publication is not in English, the language used is indicated. Brief annotations are provided for most entries. An author index and subject index are also provided. It is recommended that the subject index be used in conjunction with the subject-matter classification scheme to locate specific citations. (JN)

NO. 61

SOCIAL SCIENCES in FORESTRY

A CURRENT SELECTED BIBLIOGRAPHY

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SOCIAL SCIENCES IN FORESTRY

A Current Selected Bibliography

No. 61 June 1983

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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 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 also 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 specifc 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 making, planning, policy, law
   *d. Demand, consumer, market
   e. Parks and wilderness areas
   *f. Interpretation
   g. Aesthetic values
   h. Consumer activities such as driving, walking, camping, etc.
   *i. Valuation
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; plantation
*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, 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
*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 materal

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. Furniture
*6. Particleboard, hardboard, fibreboard, flakeboard
*7. Construction
8. Charcoal, fuelwood, other combustibles; energy
9. Other wood-using industry (including pole, piling, post, mine timber, railway tie)

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. Consumption

1. General; history of consumption; consumption-production relationships
*2. Consumption or production prospect, goal, requirement, prediction (For material on short-term requirement, see the industry in question in IV, "Industry status and trend.")
*3. Consumer demand and preference
(For material on specific forest resources, see also IIIA,B)

B. Market, marketing, trade, export, import

1. General
*2. Futures, hedging
3. Stumpage, roundwood
4. Lumber, plywood, composition board
*5. Pulp, paper, paperboard

*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, roundwood
*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)

3355. 61 IA SHARMA L.C. Forest Economics Planning and Management. Dehra Dun, India; Bishen Singh Mahendra Pal Singh (1980), 348 pages. Cited in Forestry Abstracts, Vol. 43, No. 12. Textbook of forest economics for Indian students and professional foresters which is related almost entirely to India and describes the physical environment, the economics of forestry and forest industry and their roles in economic development, the economic history of Indian forests, forest products, labor problems in forestry, land use, transport, and management and planning.

3356. 61 IB2 BROWN G.G., VAN HOOSER D.D. Forest Area and Timber Resource Statistics for State and Private Lands in Western Montana Counties 1977. Available from: USDA Forest Service, Intermountain Forest and Range Experiment Station, Ogden, Utah 84401. 44 pages. The 16 western Montana counties contain 3.7 million acres of commercial timberland in state and private ownership. These acres support 5.9 billion cubic feet of growing stock and more than 21.1 billion board feet of sawtimber. In 1976, the inventory increased nearly 130 million cubic feet after deducting 28.7 million cubic feet of mortality and some 125.6 million cubic feet of removals. Additional information on total land area, commercial timberland area, timber inventory, growth, and mortality data based on USDA Forest Service Resources Evaluation standards are presented.

3357. 61 IB2 CASTONGUAY T.L. Timber Volume in North Dakota Counties, 1980. USDA Forest Service Research Note NC-288 (1982), 4 pages. The second forest inventory of North Dakota shows growing-stock volume reaching 207 million cubic feet in 1980. Hardwoods make up more than 99 percent of this total.

3358. 61 IB2 COST N.D., MCCLURE J.P. Multiresource Inventories -- Forest Biomass in Florida. USDA Forest Service Research Paper SE-235 (1982), 24 pages. Florida's 15.7 million acres of timberland support 864 million tons of forest biomass, or an average of 55.2 tons per acre. More than 38 percent of the biomass is in stands where wood could be harvested for energy in harmony with conventional forestry practices. Over the next 2 decades, about 14 million tons of forest biomass could be harvested annually without adversely affecting timber supplies.

3359. 61 IB2 KNIGHT H.A., MCCLURE J.P. Multiresource Inventories -- Forest Biomass in South Carolina. USDA Forest Service Research Paper SE-230 (1981), 27 pages. South Carolina's 12.5 million acres of timberland support 1,014 million tons of forest biomass, or an average of 81.1 tons per acre. Over the next decade, at least 16.7 million tons of forest biomass could be harvested annually without adversely affecting timber supplies.

3360. 61 IB2 LANGDON O.G., MCCLURE J.P., HOOK D.D., CROCKETT J.M., HUNT R. "Extent, Condition, Management, and Research Needs of Bottomland Hardwood - Cypress Forests in the Southeastern United States." In, Wetlands of Bottomland Hardwood Forests. New York: Elsevier Sci. Publ. Co. (1981), pages 71-85.

3361. 61 IB2 SHEFFIELD R.M., TANSEY J.B. Forest Statistics for Central Georgia, 1982. USDA Forest Service Resource Bulletin SE-65 (1982), 32 pages. Since the fourth inventory of the forest resources of central Georgia in 1972, the area of commercial forest land has declined by 301,000 acres, or by 4 percent. Commercial forests now occupy 7 million acres, or 67 percent of the land in these 49 counties. Nonindustrial private landowners control 71 percent of the commercial forest land. The inventory of softwood growing stock has declined by almost one percent, a result of sharp increases in softwood removals and mortality and a slowdown in softwood growth. Volume of hardwood growing stock increased by 15 percent. Net annual growth of softwood growing stock totaled 315 million cubic feet compared to annual softwood removals of 319 million cubic feet. Hardwood net growth totaled 190 million cubic feet, 66 percent more than annual hardwood removals.

3362. 61 IB2 VATASAN G.S. "Forestry in Hawaii." Klinkii, Vol. 2, No. 1 (1981), pages 33-42.

3363. 61 IB3 BAUER E. "Forests and Forestry in Spain." Allgemeine Forstzeitschrift, No. 27 (1981) In German, pages 633-701. Cited in Forestry Abstracts, Vol. 43, No. 12. Special issue containing 14 papers.

3364. 61 IB3 HOLOPAINEN V. Outlines of Finland's Forestry and Forest Policy. Helsinki, Finland (1981), 57 pages. Cited in Forestry Abstracts, Vol. 44, No. 1. Covers: the industrial revolution reaches Finnish forests, natural conditions for forestry, land-use policy, forest ownership, the role of legislation and promotional activities in timber production, recent problems and developments, forest taxation, national

parks and conservation areas, results of forest policy and its outlook, forestry administration, sectorial interests in forestry, forestry education, and forestry research.

3365. 61 IB3 HUGHES J.D., THIRGOOD J.V. "Deforestation in Ancient Greece and Rome: A Cause of Collapse." The Ecologist, Vol. 12, No. 5 (1982), pages 196-208. There is sufficient evidence to document several forms of environmental deterioration and to make a preliminary judgment that the ancients who described deforestation and erosion as a serious problem were correct. Although the extent of those problems is unclear, they undoubtedly contributed to the problems that led to the political and economic demise of the ancient world.

3366. 61 IB3 IIDA S. "Characteristics of Japanese Forestry in the Eighties and Progress of Nationalization of Forests." Forest Economy, Vol. 34, No. 8 (1981) In Japanese, pages 1-10. Review of the development of reforestation in Japan after World War II.

3367. 61 IB3A KEDING W. "Private Forests in Lower Saxony and Their Supervision." Holz-Zentralblatt, Vol. 106, No. 128 (1980) In German, pages 1908, 1910-1911. Cited in Forestry Abstracts, Vol. 44, No. 1. Describes: history of the organization of supervisory work which is administered jointly by the state agricultural and forestry authorities. Reasons are given for increasing the level of state financing and staff establishments.

3368. 61 IB3 KLEES M. "The Forests of West Berlin." Allgemeine Forstzeitschrift, No. 17 (1982) In German, pages 482-501. Cited in Forestry Abstracts, Vol. 43, No. 12. Special issue containing 5 papers covering: The importance of forest for the water supply of West Berlin; Development of Berlin forests based on inventories (1930-82); Recreation; The Berlin State Forest Law; Revegetation and reclamation.

3369. 61 IB3 LINNARD W. Welsh Woods and Forests: History and Utilization. Cardiff, UK; National Museum of Wales. (1982), 203 pages. Cited in Forestry Abstracts, Vol. 43, No. 12. A comprehensive account of the importance, utilization and management of Welsh woodlands from Neolithic colonization to the formation of the Forestry Commission in 1919.

3370. 61 IB3 MIEGROET M. "Forests and Forest Management in Belgium." Allgemeine Forstzeitschrift, No. 46 (1981) In German, pages 1216-1219. Cited in Forestry Abstracts, Vol. 43, No. 12.

3371. 61 IB3 OHGANE E. "The Trends and Problems of Forest Management after the War." Forest Economy, Vol. 34, No. 9 (1981) In Japanese, pages 1-7.

3372. 61 IB3 OUCHI Y. "On the Development of Tohno-Hinoki Production Area." Forest Economy, Vol. 34, No. 7 (1981) In Japanese, pages 20-25.

3373. 61 IB3 PUTKISTO K. "Forestry in the People's Republic of China and the Applicability of Finnish Forest Technology to the Chinese Conditions." Tiedonantoja, Helsingin Yeiopiston Metsateknologian Laitos, No. 43 (1982) In Finnish with English summary, 192 pages. Cited in Forestry Abstracts, Vol. 44, No. 3.

3374. 61 IB3 ROSS L. Forestry in China Today: Implications for the 1980s. Dept. Political Sci., Purdue Univ., West Lafayette, IN 47907, USA. (1981), 13 pages. Cited in Forestry Abstracts, Vol. 43, No. 12. Outlines China's forest resources and annual growth in relation to consumption and describes forest policy.

3375. 61 IB3 ROSS L. "Forestry in the People's Republic of China: Estimating the Gains and Losses." In, China Geographer, No. 11 (1981), pages 113-127. Cited in Forestry Abstracts, Vol. 44, No. 2.

3376. 61 IB3 SCHORER D. "Forests and Forestry in Bavarian Swabia." Allgemeine Forstzeitschrift, No. 39 (1981) In German, pages 989-1030. Cited in Forestry Abstracts, Vol. 43, No. 12. Special issue containing 14 papers presented at the meeting of the Bavarian Forestry Association in Augsburg on 14-16 Oct. 1981.

3377. 61 IB3 STAHEL J. "On Forests, Forestry, and the Forest Products Industry in Klosters (Canton Graubunden, Switzerland)." Forstarchiv, Vol. 52, No. 5 (1981) In German, pages 183-185. Cited in Forestry Abstracts, Vol. 43, No. 12. Economic trends since the 1950s, including increased recreational pressures and labor prices, have disturbed the previously balanced relationships between employment-seeking farmers, revenues to the communal economy from forestry, the local timber conversion industry, and tending of forests. The current situation is characterized by reduced

absolute and relative communal income from forestry, the disappearance of small local sawmills, stagnating prices for timber, loss of forest workers to other occupations, and increased sales of locally felled timber to middlemen for conversion by large sawmills in N. Italy.

3378. 61 IB3 TERSCH F. "Forestry from the Point of View of Economics." Allgemeine Forstzeitung, Vol. 93, No. 9 (1982) In German, pages 227, 229-232. Cited in Forestry Abstracts, Vol. 44, No. 2. A review of forestry in the Austrian economy as a whole including contribution to gross national product, price indexes for finished goods, earnings of workers, and income from farm forests; current status of forests; and economic conditions within forestry and the timber industry.

3379. 61 IB3 VOROBEV G.I., VORONIN I.V., YANUSHKO A.D., RUKOSUEV G.N. Economics of Forestry in the USSR. Moscow, USSR, Vysshaya Shhola (1980) In Russian, 336 pages. Cited in Forestry Abstracts, Vol. 44, No. 3. Textbook for university forestry students dealing with the forest sector as a part of the national economy. Chapter 5 deals with forest resources.

3380. 61 IB3 WEIDENBACH P. "Forests and Forestry in Northern Finland." Holz-Zentralblatt, Vol. 108, No. 60/61 (1982) In German, pages 897-898. Cited in Forestry Abstracts, Vol. 44, No. 1. A review of conditions in state forests north of the polar circle. Topics include: stocking, increment, timber transport, and activities of the N. Finland Regional Forest District.

3381. 61 IB3 "China Moves to Develop Forestry." Asian Timber, Vol. 1, No. 3 (1982), pages 24-25. Cited in TRADA Library Bulletin (July 1982). Timber Research and Development Association. Hughenden Valley, High Wycombe, Buckinghamshire, HP14 4ND, England.

3382. 61 IB4 DAY M.F. Australia's Forests: Their Role in Our Future. Canberra, Australia; Australian Academy of Science (1981), 123 pages. Cited in Forestry Abstracts, Vol. 43, No. 12. A collection of 6 papers presented at a meeting of the Science and Industry Forum of the Australian Academy of Science including: "World view and Australian perspective", "The use of forests", "Economic considerations of Australian forestry", "The environmental issues."

3383. 61 IB4 WALKER B.B. "Australian Forest Resources." Australian Forest Industries Jnl., Vol. 48, No. 7. (1982), pages 14-15. Cited in TRADA Library Bulletin (Nov. 1982). Timber Research and Development Association. Hughenden Valley, High Wycombe, Buckinghamshire, HP14 4ND, England.

3384. 61 IB5 ABO-HASSAN A.A. "Forest Resources in Saudi Arabia." Journal of Forestry, Vol. 81, No. 4 (1983), pages 239-241.

3385. 61 IB5 ENGLISH H.E., SCOTT A. Renewable Resources in the Pacific. Proceedings of the Twelfth Pacific Trade and Development Conference, Vancouver, Canada, 7-11 Sept. 1981. (1982), 293 pages. Development, management, use, and trade of renewable resources organized into: general studies, forestry case studies, fisheries case studies, renewable substitutes for fossil fuels, and policy issues.

3386. 61 IB5 HECHT S.B. Amazonia: Agriculture and Land Use Research. Proceedings of the International Conference Held at CIAT (Centro Internacional de Agricultura Tropical), Cali, Colombia, 16-18 April 1980. Available from Unipub. (1982), 428 pages. Economic growth and improved human welfare potential in agricultural and forestry development in the Amazonian Basin.

3387. 61 IB5 HUGUET L. "What Are We to Think of the 'Disappearance' of Tropical Forests?" Bois et Forets des Tropiques, No. 195, (1982) In French with English summary. pages 7-22. While the phenomenon of tropical forest destruction is not general and uniform throughout the world, it is certainly serious in some critical zones such as the Sahel, small overpopulated mountainous islands, and marginal or mountainous areas.

3388. 61 IB5 LOGVINOV I.V. "Forestry in the Central African Republic." Lesnoe Khozyaistvo, No. 8 (1981) In Russian, pages 72-74. Cited in Forestry Abstracts, Vol. 43, No. 12.

3389. 61 IB5 MOHD S.N. "Forestry in Malaysia." Journal of Forestry, Vol. 81, No. 3 (1983), pages 164-166, 187.

3390. 61 IB5 RAZALI A-K. "Current Status of Forests and Forest Industries of Peninsular Malaysia." Jnl. of the Inst. of Wood Sci., Vol. 9, No. 4, No. 52. (1982), pages 161-167. Cited in TRADA Library Bulletin (Jan. 1983). Timber Research and Development Association. Hughenden Valley, High Wycombe, Buckinghamshire, HP14 4ND, England.

3391. 61 IB5 SALCEDO S. Latin American Forestry. FAO, Rome Forestry Dept. (1982) In Spanish, 59 pages. Cited in FAO Documentation Current Bibliography 82/7-8.

3392. 61 IB5 Tropical and Subtropical Forests and Related Resources. FAO, Rome Forestry Dept. (1982) In Arabic, Chinese, English, Spanish and French. 6 pages. Cited in FAO Documentation Current Bibliography 82/7-8.

3393. 61 IC CLAUSER F. "Forest Policy between Theory and Practice." Montanaro d'Italia - Monti e Boschi, Vol. 32, No. 2/3 (1981) In Italian, pages 85-90. Cited in Forestry Abstracts, Vol. 43, No. 12. Critical review of forest policy in theory and practice according to B. Heeg in a series of papers written in the early 1970's in German.

3394. 61 IC CLAUSER F. "The Prospects of a Modern Scientific Approach to Forest Policy." Montanaro d'Italia - Monti e Boschi, Vol. 32, No. 4 (1981) In Italian with English summary, pages 75-82. Cited in Forestry Abstracts, Vol. 43, No. 12. A review of present trends in the theory of forest policy reveals an increasingly sociological approach.

3395. 61 IC COUVREUR S. "A Law that Needs to Be Revised: Protection Forests." Revue Forestiere Francaise, Vol. 34, No. 5 (1982) In French, pages 72-78.

3396. 61 IC ELLEFSON P.V. "Land-Use and Program Planning: Processes and Administration in Forestry." FAO/SIDA Consultation of Forest Administration for Development. Rome, Italy. 2-11 February 1983. FO: CFAD-83/8 (1983), 19 pages. Allocation of forest resources to various uses via systematic planning processes has become an increasingly important responsibility of public administrators in general and the forestry professionals who serve them. In large measure this is a direct reflection of growing demands for the outputs that forests are capable of producing. Competing interests for these outputs make it imperative that such allocations be efficient and that subsequent program unvestments lead to enhanced economic conditions and political stability.

3397. 61 IC FUKAO S. "Two Courses to Construct the Policy of Regional Forestry." Forest Economy, Vol. 34, No. 9 (1981) In Japanese, pages 8-17. The policy of regional forestry practiced now sacrifices middle and small scale forest owners. A cooperative policy is needed.

3398. 61 IC GUNDERMANN E. "Determination of Forested Areas - a Forest Policy Problem?" Forstarchiv, Vol. 52, No. 2 (1982) In German with English summary, pages 67-72. Cited in Forestry Abstracts, Vol. 43, No. 12.

3399. 61 IC HOSTELAND J.E. "Increased Forest Production with Limited Means." Norsk Skogbruk, Vol. 27, No. 10 (1981) In Norwegian, pages 4-6. Cited in Forestry Abstracts, Vol. 44, No. 2. Discusses a report 'Timber Production in Forestry' submitted to the Norwegian parliament in September 1981, which includes long term production forecasts for the country for the first time since 1951. The report evaluates five logging programs, four investment programs and the economic importance of forestry for the community and forest owners.

3400. 61 IC HUGHES H.R. "Ecosystem Conservation and Development in New Zealand." Resource Management and Optimization, Vol. 2, No. 2 (1982), pages 159-173. Objectives of the working group established to formulate a New Zealand Conservation Strategy. Priority actions for implementation are given. Covers: coastal and estuarine ecosystems, fish and shellfish resources, freshwater ecosystems, indigenous forests, indigenous biota, soil systems, and grazing lands.

3401. 61 IC MURASHIMA Y. "International Division of Labor and Wood Industry." Forest Economy, Vol. 34, No. 7 (1981) In Japanese, pages 1-8. In Japan, forestry is a relatively low production sector and is difficult to promote. Restriction on imported forestry goods and gains in the international market are necessary.

3402. 61 IC OBERMILLER F.W. "Economic Efficiency vs. Distributive Equity: the 'Sagebrush Rebellion.'" Western Journal of Agricultural Economics, Vol. 7, No. 2 (1982), pages 253-263. This paper interprets, from the economist's viewpoint, some of the causes of the "Sagebrush Rebellion," a contemporary land reform movement directed toward the Bureau of Land Management and its control of the public domain. Distributive equity concerns on the part of "Sagebrush Rebellion" supporters are identified, as are contributions of neoclassical welfare theory to the debate. Reflections of those social and theoretical concerns in federal legislation and agency policy and regulations are explored.

3403. 61 IC OTT W. "Relationships between Forestry Legislation and Forestry Organization in Southwest Germany since the 16th Century." Allgemeine Forstzeitschrift, No. 22 (1981) In German, pages 557-559. Cited in Forestry Abstracts, Vol. 43, No. 12. Legal reform in the early 16th century sanctioned the extention of the area of the responsibility of forestry authorities to non-state forests, but without the organizational changes required for the fulfillment of these functions. In the 18th century, forestry personnel were not in a position to alleviate the effects of widespread destruction of forests. Legal and organizational reforms in the 19th century led to increasing involvement of federal forestry authorities in the affairs of communal forests. In the 20th century, state forestry authorities have become increasingly involved in service functions (including economic matters) in forests of all ownership classes (including private forests).

3404. 61 IC PARRY B.T., VAUX H.J., DENNIS N. "Changing Conceptions of Sustained-yield Policy on the National Forests." Journal of Forestry, Vol. 81, No. 3 (1983), pages 150-154. Sustained-yield policy began to change in the 1920s, as the Forest Service realized that most national forests were dominated by old growth and did not fit the ideal of a fully regulated forest. Policy then focused on harvesting so as to quickly attain a regulated structure. In the 1930s, social concern prompted a policy directed at maintaining stable communities. Forest Service policy began to emphasize uniformity of harvests, despite the unregulated condition of the national forests. In 1973, in the midst of rising environmentalism and with a highly dependent timber industry, the Forest Service adopted its most restrictive view of sustained-yield: nondeclining harvest levels. This conception of sustained-yield was reflected in the National Forest Management Act of 1976. With continuing controversy over sustained-yield policy, and a lack of evidence that nondeclining even flow necessarily ensures either stable communities or forest resource protection, it is time to determine the next changes in sustained-yield policy.

3405. 61 IC PASTORE F. JR. "International Tropical Woods Accord." Brasil Florestal, Vol. 12, No. 51 (1982) In Portuguese with English summary. Pages 7-13. Under the Integrated Program for Commodities of the United Nations Conference on Trade and Development (UNCTAD), tropical timber producing and consuming countries are willing to sign an International Agreement on this product. This agreement does not

seek direct interference on the market as the setting of minimum prices or quota, however, it will lead to an international cooperation on four elements in the field of tropical timber: research and development; improvement of market intelligence; further and increased processing in producing countries; and reforestation and forest management.

3406. 61 IC PLOCHMANN R. "Where Does Forest Policy Stand Today, an Assessment." Forst wissenschaftliches Centralblatt, Vol. 101, No. 6 (1982) In German with an English abstract, pages 365-376.

3407. 61 IC RANDLE E.M. "The National Reserve System and Transferable Development Rights: Is the New Jersey Pinelands Plan an Unconstitutional 'Taking'?" Boston College Environmental Affairs Law Review, Vol. 10, No. 1 (1982), pages 183-241.

3408. 61 IC SHIMOTORI S. "The Trend of Farm-forestry under the Paddy-field Decrease Policy." Forest Economy, Vol. 34, No. 8 (1981) In Japanese, pages 11-16. Case study of the effect of the paddy-field decrease policy on farm-forestry.

3409. 61 IC TAYLOR G.F. "The Development of Forest Policy in India - the Forgotten Policy: Sir Herbert Howard's Post-War Policy of 1944." The Indian Forester, Vol. 108, No. 3 (1982), pages 196-201. The Post-War Forest Policy of 1944 which was never officially adopted, provides an indication of policy direction at the end of the colonial period. Historical context of this reformulation is examined and changes in policy direction are assessed. Deliberations of the Soil Conservation and Afforestation Sub-Committee of the National Planning Committee and the development of forest policy direction during the period under review are also covered.

3410. 61 IC VOLLMER U. "The Forests as a Factor in Land Use in Bolivia." Inst. Forestal Latinamericano No. 1/81 (1981) In Spanish with Spanish, English, and French summaries. pages 55-78. Cited in Bibliografia Forestal de Venezuela., Part I, in Spanish. IFLA: Instituto Forestal Latinoamericano, Apartado 36 Merida, Venezuela.

3411. 61 IC WASHIO R. "The Crisis of Forestry Structure, Forest Resources and Policy." Forest Economy, Vol. 34, No. 10 (1981) In Japanese, pages 1-11. Due to inconsistencies between forestry and other industries in Japan, forestry policy has been subordinated to the policies of other industries causing production losses.

3412. 61 IC YACHKASCHI A. "Historical Development of the Organization of Forestry and Conservation in Iran." Forstarchiv, Vol. 52, No. 1 (1981) In German, pages 26-28. Cited in Forestry Abstracts, Vol. 43, No. 12. Concludes that decentralization and increased numbers of trained personnel are required in government forestry and conservation programs.

3413. 61 IC YAMADA Y. "Critical View of Forestry Policy." Forest Economy, Vol. 34, No. 10 (1981) In Japanese, pages 12-17.

3414. 61 IC Regional Implications of a Development Strategy (Conservation, Utilization and Management) of Forest Resources (in Asia and the Pacific Region). FAO, Rome (1982) In Chinese, English and French, 13 pages. Cited in FAO Documentation Current Bibliography, 82/9-10.

3415. 61 ID1A SORENSEN K.W. "Taxation of Danish Forestry." Allgemeine Forstzeitschrift, Vol. 20 (1982) In German with English summary, pages 605-607. Cited in Forestry Abstracts, Vol. 43, No. 12. Value added, real property, income, and wealth taxes are discussed and the excessive tax burden on private forestry is noted.

3416. 61 ID1C MCGEE G.T., HANEY H.L. JR., SIEGEL W.C. "State Income Tax Implications for Nonindustrial Private Forestry in the South." Southern Journal of Applied Forestry, Vol. 6, No. 4 (1982), pages 206-211. To illustrate the impact of state taxes the 1981 tax liability for hypothetical private nonindustrial forest owners was computed with medium and high incomes as well as managed and unmanaged forest land. With forest management, the state portion of total tax ranged from 0-31 percent (medium income) and 0-19 (high income); with no forest management, the state portion ranged from 0-25 (medium) and 0-17 (high).

3417. 61 ID1C RAUCH A. "The Most Important Regulations Concerning Forestry Bookkeeping for Income Tax Purposes." Allgemeine Forstzeitschrift, Nos. 36, 37, 38. (1981) In German, pp. 928-930, 962-964, 987-988. Cited in Forestry Abstracts, Vol. 43, No. 1.

3418. 61 ID2 PAPANEK FR. "The Valuation of Forest Functions for the Benefit of Forest Management Planning." Forst- wissenschaftliches Centralblatt, Vol. 101, No. 6 (1982) In German with an English summary, pages 376-388.

3419. 61 ID4 POWER T.M. "Another Dimension of Community Stability: Local Quality of Life." Western Wildlands, Vol. 8, No. 4 (1983), pages 28-32. A false distinction between "economic" and "environmental" concerns has caused some serious confusion in assessment of timber harvesting plans.

3420. 61 ID4 SMITH B., WILSON P. "Attitudes to Growth and Development in New Zealand's Far North." New Zealand Journal of Forestry, Vol. 27, No. 1 (1982), pages 101-121. Attitudes and perceptions of residents of Mangonui Geographical County to the direction of local and regional development. Support for state forestry centered on its ability to create employment and use land productively, while farming was favored for its productive land use and because, traditionally, it has been good for the region and New Zealand.

3421. 61 ID4 WOROU L., VAN NAO T. "Orienting Forestry toward the Needs of People." Unasylva, Vol. 34, No. 136 (1982), pages 8-10.

3422. 61 IE KALINA M. "Joint Efforts Aimed at More Effective Utilization of Scientific and Research Findings in Forestry." Lesnictvi, Vol. 29, No. 1 (1983) In Czech, pages 1-12.

3423. 61 IE RAVINDRAN K., LALITHA BAI K.K. "Information Retrieval in Forestry." Indian Journal of Forestry, Vol. 5, No. 2 (1982), pages 124-130. Various documentary sources and computerized information retrieval systems and networks are described with typical examples. There is a high degree of backwardness in the organization and dissemination of information on forestry in the developing countries when compared to that of developed countries. Steps to improve this situation are suggested.

3424. 61 IE TIWARI K.M. "Research Needs of Social Forestry." The Indian Forester, Vol. 108, No. 3 (1982), pages 171-174. Future forests will generally be the small patches of tree lands being established under the Social Forestry programs along roads, canals, railway lines, community lands, homesteads, etc. These forests will be managed to meet the needs of the rural community by providing fuel, fodder, fruit and small timber. Research priorities related to this program are identified and assistance is requested from the IUFRO Congress.

3425. 61 IE "How Forests Should Be Studied in the Future." Silva Fennica, Vol. 16, No. 1 (1982) In Finnish with English summary, pages 43-76. Summary of a seminar on the research policy of the Society of

Forestry in Finland. The following points were considered especially important: (1) Improving contacts between forestry and other branches of science and increasing international exchange of ideas amd results. (2) Improving effectiveness of research work through sound planning. (3) Promoting and gaining benefit from diverse forms of research. (4) Arranging the further education of researchers in order to improve professional standards.

3426. 61 IF DE LAS SALAS G. "Comments on the Necessity of Qualifications of Forestry Professionals in the Tropics as Researchers." Inst. Forestal Latinoamericano No. 1/81. (1981) In Spanish with Spanish, English, and French summaries. pages 99-107.5.Cited in Bibliografia Forestal de Venezuela., Part I, in Spanish. IFLA: Instituto Forestal Latinoamericano, Apartado 36 Merida, Venezuela.

3427. 61 IF GOODWIN J.F., DUTHIE W. Certificates and Diploma Courses in Forestry (in Scotland, UK). FAO, Geneva. Joint ECE/FAO Agric. and Timber Div. (1982) In English and French. 3 pages. Cited in FAO Documentation Current Bibliography, 82/9-10.

3428. 61 IF HOLLAND M.M., CLAPHAM W.M., MACIEJOWSKI J.D. "Volunteer Success in Natural Resource Management at an Appalachian Mountain Club Camp in New Hampshire." In, Volunteers in the Backcountry, proceedings. University of New Hampshire, Durham, NH. (1982), pages 162-170.

3429. 61 IF VON GADOW K. "The Management of Information in Forestry." Several theoretical and practical aspects involving the gathering and use of information in forestry are discussed; in particular, sources of information, organization of information processes, and forestry information systems. Some emphasis is placed on methods of condensing information.

3430. 61 IF "Guiding Principles and Minimum Standards for Bachelor of Science in Forestry (in the Philippines)." Philippine Lumberman, Vol. 26, No. 2 (1980), pages 26-28, 30-31. Cited in Forestry Abstracts, Vol. 44, No. 3.

3431. 61 IG MAKIN K., SMITH B. "Forestry and Community." New Zealand Journal of Forestry, Vol. 27, No. 1 (1982), pages 122-129. This article is based on contributions to the forestry and communities workshops held at the 1981 Institute of Foresters conference. There was agreement about problems that face future development in rural regions.

Participants emphasized the need for better information transfer and fuller involvement of rural society in resource management decision-making.

3432. 61 IG "Developing Countries." Skogen No. 6/7 (1982) In Swedish, pages 10-35. Cited in Forestry Abstracts, Vol. 43, No. 12. Special issue containing articles on: Swedish aid to forestry in Laos; a commercial forest project in Guinea-Bissau; the FAO/SIDA 'Forestry for Local Community Development' project; Fuelwood as a cure for Kenya's energy crisis; Swedish aid to Forestry in Tanzania; CELLUCAM (a pulp-industry enterprise in Cameroon); Swedish aid to a communal forestry project in India; Destruction of forests in Himalayas; The Bai Bang paper industry project in Vietnam; Pine planting on the Fiji Islands; Tree planting in Nepal; and Tree-planting campaign in China.

3433. 61 IH OKALI D.U.U. "Africa: Research to Conserve the Environment." Unasylva, Vol. 34, No. 136 (1982), pages 2-7. Increased production of wood and food from the same piece of land in a stable agro-forestry system will relieve natural ecosystems of the pressure of exploitation and make it much easier to conserve them than is now the case.

3434. 61 IIA1 ELOVIRTA P. "Forest Labor Research in Finland." Scandinavian Forest Economics, No. 25 (1982), pages 4-13. Cited in Forestry Abstracts, Vol. 44, No. 3. A review of forest labor research since the beginning of the century. The appended bibliography includes studies on: general sociopolitical aspects, wages and working conditions, employment, health, housing, general forest labor policy, labor statistics, and labor market. Most papers are in Finnish, some with summaries in English or German.

3435. 61 IIA3 GOODWIN J.F. Inservice Training Systems for (UK) Forest Enterprises. FAO, Geneva. Joint ECE/FAO Agric. and Timber Div. (1982) In English and French, 3 pages. Cited in FAO Documentation Current Bibliography, 82/9-10.

3436. 61 IIA3 HEINRICH R. Logging of Mountain Forests. Report of a Training Course. FAO Forestry Papers. (1982), 299 pages. Cited in FAO Documentation Current Bibliography, 82/9-10.

3437. 61 IIA3 MERSICH E. The Principles and Practice of Training Course Design of Forest Workers in Hungary. FAO, Geneva. Joint ECE/FAO Agric. and Timber Div. (1982), 6 pages. Cited in FAO Documentation Current Bibliography, 82/9-10.

3438. 61 IIA3 STIER J.C. "Changes in the Technology of Harvesting Timber in the United States: Some Implications for Labor." Agricultural Systems, Vol. 9, No. 4 (1982), pages 255-266. Technological progress, primarily in the form of labor-saving mechanical harvesting equipment, has been responsible for the decline in labor's relative share of income. In this report, forestry is structurally similar to agriculture. From the standpoint of public policy, continued technical advancement in the form of mechanical harvesting equipment will displace additional workers and, for developing countries, could have undesirable consequences for trade balances and the functional distribution of income. Recent efforts to increase labor productivity using intermediate technologies could do much to mitigate the displacement of labor that accompanies the adoption of highly capital-intensive technologies.

3439. 61 IIA3 STIKVOORT A.J.M., BORSBOOM N.W.J. The Repercussion of Job Rotation and Job Enrichment on Forest Worker Selection and Training (in the Netherlands). FAO, Geneva. Joint ECE/FAO Agric. and Timber Div. (1982), 8 pages. Cited in FAO Documentation Current Bibliography, 82/9-10.

3440. 61 IIA3 VOORHOEVE A.G. Integrated Schemes of Training and Further Education for Workers and Supervisors (in the Netherlands). FAO, Geneva. Joint ECE/FAO Agric. and Timber Div. (1982), 4 pages. Cited in FAO Documentation Current Bibliography, 82/9-10.

3441. 61 IIA4 FRYKMAN B. "The Disabled Worker in Forestry." Unasylva, Vol. 34, No. 136. (1982), pages 11-14.

3442. 61 IIA4 KUMER P. "Social Conditions and Injuries of Tractor Drivers in Forestry." Gozdar Vestn Slov J For, Vol. 39, No. 7/8 (1981) In Slovenian, pages 335-342. Cited in Bibliography of Agriculture, Vol. 47, No. 1.

3443. 61 IIA4 PRIJATELJ A. "Injuries and Work Related Illnesses of Forest Workers." Gozdar Vestn Slov J For, Vol. 39, No, 7/8 (1981) In Slovenian, pages 318-326. Cited in Bibliography of Agriculture, Vol. 47, No. 1.

3444. 61 IIB2B CULHANE P.J. Public Lands Politics Interest Group Influence on the Forest Service and the Bureau of Land Management. Resources for the Future, Inc. Johns Hopkins University Press (1982), 398 pages.

3445. 61 IIB2B HAVELKA M. "The Improved System of Planned Management in the State Forests Enterprises in the CSR." Lesnictvi, Vol. 29, No. 1 (1983) In Czech with summaries in Russian, English, German and French. Pages 13-31. Planning principles, evaluation of qualitative parameters, implementation of the principles of the individual production and non-production activities of state forests, principles of cost accounting, material interest, organization and management, improvement of the information system and use of computers.

3446. 61 IIB2B JACKSON D.H., FLOWERS P.J. "The National Forests and Stabilization." Western Wildlands, Vol. 8, No. 4 (1983), pages 20-27. The belief that the national forests stabilize timber supplies is more an act of faith than one of fact.

3447. 61 IIB2B JAWETZ S.M. "The Public Trust Totem in Public Land Law: Ineffective and Undesirable Judicial Intervention." Ecology Law Quarterly, Vol. 10, No. 3 (1982), pages 455-495.

3448. 61 IIB2C EBERT W. "The Frankfurt Municipal Forest 150 Years Ago." Allgemeine Forstzeitschrift, No. 11 (1982) In German, pages 298-300. Cited in Forestry Abstracts, Vol. 43, No. 12. Historical review with emphasis on the early 19th century including: size of the forest; stocking/silviculture; administration; forest superintendents; yields; forest regulations; hunting; and recreation.

3449. 61 IIB2C JENDLY A. "State Forests of Chablais, Property of the Fribourg State (Switzerland)." Mitt Schweig Pappel Arbeitsgem, No. 32 (1981) In French, pages 10-12. Cited in Bibliography of Agriculture, Vol. 47, No. 1.

3450. 61 IIB2C KALHOFER E. "The Waldeck Forestry Partnership and the Development of Forestry in the Waldeck Region." Allgemeine Forstzeitschrift, No. 26 (1982) In German, pages 771-803. Cited in Forestry Abstracts, Vol. 43, No. 12. Special issue containing 13 papers dealing with forestry in the region of Hesse.

3451. 61 IIB3A BIRCH T.W., LEWIS D.G., KAISER H.F. The Private Forest-Land Owners of the United States. USDA Forest Service Resource Bull. WO-1 (1982), 64 pages. Report on a 1978 survey of private forest-land owners, based on 11,076 questionnaires. About 7.8 million ownership units hold 333 million acres of privately owned forest land in the United States. Regional and subregional breakdowns are included for form of ownership; owner's occupation,

age, sex, race, residence, and education; size class of ownership, etc. Nearly half of the private forest land is in ownerships of greater than 500 acres; it is owned by less than one percent of the ownership units. These data are needed for policymakers to evaluate programs and forest industry will use them to forecast timber availability.

3452. 61 IIB3A GASPERSIC F. "Future Forest Management Plans for Forests in the Private Sector (Slovenia, Yugoslavia)." Gozdar Vestn Slov J For, Vol. 39, No. 6 (1981) In Slovenian, pages 265-270. Cited in Bibliography of Agriculture, Vol. 47, No. 1.

3453. 61 IIB3A OTRIN Z. "Organization of Forest Management in the Private Ownership Sector." Gozdar Vestn Slov J For, Vol. 39, No. 4 (1981) In Slovenian, pages 172-183. Cited in Bibliography of Agriculture, Vol. 47, No. 1.

3454. 61 IIB3A POGACNIK J. "Normalization of Management in the Forests of the Private Sector in the Area of the Regional Forest Management Organization Kranj (Slovenia, Yugoslavia)." Gozdar Vestn Slov J For, Vol. 39, No. 6 (1981) In Slovenian, pages 271-276. Cited in Bibliography of Agriculture, Vol. 47, No. 1.

3455. 61 IIB3A VOLPINI C. "Woods in Private Ownership in Italy and in the E.E.C." Montanaro d'Italia - Monti e Boschi, Vol. 32, No. 2/3 (1981) In Italian, pages 99-103. Cited in Forestry Abstracts, Vol. 43, No. 12.

3456. 61 IIB3B CLEPHANE T.P., CARROLL J. "Timber Ownership Still Big Factor for Success in the Paper Industry." Pulp and Paper, Vol. 56, No. 11 (1982), pages 132-135. Survey of timber ownership, valuation, and self-sufficiency shows Weyco still leading in timber value, with IP next, followed by Georgia-Pacific.

3457. 61 IIB3C FISCHER B.C., HOLT H.A. Proceedings. Forest Inventory for Private Nonindustrial Woodlands. 1980 John S. Wright Forestry Conference. West Lafayette, Indiana; Purdue University. (1980), 94 pages. Cited in Forestry Abstracts, Vol. 44, No. 3.

3458. 61 IIB3C PHILLIPS D.R. "The Small Timber Resource in the South." In, Proceedings -- Harvesting Small Timber: Waste Not, Want Not. For. Prod. Res. Soc. pages 18-23. Twelve southern states contain 188.4 million acres of commercial forest land of which approximately 72 percent is owned by private nonindustrial landowners. Only 5.8 percent is in

National Forests. Projections of future demands show that softwoods will be in short supply by the year 2000, hardwood before the year 2030.

3459. 61 IIB3C RIIHINEN P. "Roundwood Market: A Source of Stagnation of the Forest Industries." Silva Fennica, Vol. 16, No. 4 (1982), pages 335-342. Certain trends in the sales behavior of private non-industrial forest owners suggest that forest industries will have to rely more on a raw material supply than on the allowable cut. This paper deals with several factors responsible for the change in sales behavior during the last 20-25 years. Certain forest policy measures conducive to increasing the forest owners' willingness to sell timber are suggested. Among the most promising seems to be an adjustment of the present area-based yield taxation so as to take into account the age class distribution of the growing stock.

3460. 61 IIB3C THRUPP A. "The Peasant View of Conservation." Ceres, Vol. 14, No. 4 (1981), pages 31-34. A Costa Rican study suggests that Campesinos are well aware of forest degradation; they lack only the means and incentives for action.

3461. 61 IIC3 HANNELIUS S. "Forest Real Estate Purchase Price Statistics as a Basis for Comparison Method in Real Estate Appraisal." Folia Forestalia, No. 530 (1982) In Finnish, pages 1-30. In the registration of forest real estate purchase prices there are certain validity problems that are due to errors in the register and statistics. The errors lead to underestimates of purchase prices, which are mainly used in the valuation comparison method. The forest real estate sold freely is less valuable, with respect to fertility, growing stock and its monetary value, than other forests in the same province.

3462. 61 IID1 KARKKAINEN M. "Note on the Calculations of the Internal Rate of Return." Silva Fennica, Vol. 16, No. 4 (1982) In Finnish with English summary, pages 373-375. New practical equations were developed for calculating the internal rate of return when there is one outlay and one return. The equations also show how the return changes as the ratio between the return and outlay changes. Examples elucidate the use of the equations.

3463. 61 IID1 LORRAIN-SMITH R. "Discount Rates and Time Horizons." Commonwealth Forestry Review, Vol. 61, No. 4 (1982), pages 277-283. Conventional discounting tables treat future events with decreasing significance until at some point they cease to have any consequence. When comparing

alternative uses for resources, it should be appreciated that unless distant significant events are included in the calculations, their relevance may be ignored, and faulty decisions may result.

3464. 61 IIIA1 ARP P.A., LAVIGNE D.R. "Planning with Goal Programming: a Case Study for Multiple-Use of Forested Land." The Forestry Chronicle, Vol. 58, No. 5 (1982), pages 225-232. Case study is provided to develop and demonstrate a general goal programming procedure for hierarchical multiple land-use planning of forested lands with variable planning horizons. Four land-use policies containing timber harvesting, dispersed recreation, developed recreation, hunting and wildlife management are considered for a parcel of land incorporating 11,070 ha. Goals for each type of land-use are analyzed in terms of land-use capability coefficients, various priority settings, and planning horizons spanning from 2 to 36 years. Multiple-use conflicts can be resolved by either changing priorities associated with conflicting uses, and (or) by extending planning horizons from short- to medium-term or long-term.

3465. 61 IIIA1 CORDELL H.K., SENTER H.F., RAGATZ R.L. "Potential Conflicts between Private Recreational Property Development and Forest Land Management in the South." In, Conference Proceedings, Southeastern Recreation Research Conference. Available from: Publication Editor, Southeast Forest Experiment Station, 200 Weaver Blvd. Asheville, NC 28804. (1982), pages 123-141. Recreational land development near forests may create conflicts between forest management practices and private homeowners' interests, with the most potential for conflict being in counties where both extensive forest acreages and second-home development are greatest. Lack of awareness or action at the forest manager level regarding long-term consequences of land conversion makes urgent the development of strategies to work with recreational land development to ensure continuation of beneficial and profitable forest management.

3466. 61 IIIA1 GARRETT L.D. "Interdisciplinary Research for Multiresource Forest Management: an Example." In, Enabling Interdisciplinary Research: Perspectives from Agriculture, Forestry, and Home Economics. Miscellaneous publication 19 Agric. Exp. Stn., Univ. of Minnesota (1982), pages 147-152. Interdisciplinary team approach has been critical to forest management in research planning and selection of study areas, developing multiresource inventory methodology, and in analyzing and interpreting research findings. This paper describes ECOSIM, an interdisciplinary integration of techniques for

predicting multiresource outputs from forests under alternative forest management practices and strategies. Benefits of the program include identifying, as well as evaluating, the complex trade-offs involved in both the individual and the combined impacts of changes in forest management.

3467. 61 IIIA1 GOSWAMI P.C. "Agro-Forestry - Practices and Prospects as a Combined Land-Use System." The Indian Forester, Vol. 108, No. 6 (1982), pages 385-396. Common agro-forestry practices of some humid tropical countries are described.

3468. 61 IIIA1 GRANDSTAFF T.B. "Shifting Cultivation." Ceres, Vol. 14, No. 4 (1981), pages 28-30.

3469. 61 IIIA1 KEUDELL W. "The Hessian Rhon Region: an Example of Harmonization between Landscape Management, Economic Activities, and Tourism." Allgemeine Forstzeitschrift, No. 48 (1981) In German, pages 1269-1303. Cited in Forestry Abstracts, Vol. 43, No. 12. Special issue containing 17 papers dealing with this region of the German highlands.

3470. 61 IIIA1 ZIEMER R.F., MUSSER W.N., WHITE F.C. "An Economic Analysis of Competing Land Uses: Outdoor Recreation and Agriculture." Journal of Leisure Research, Vol. 14, No. 4 (1982), pages 275-284. A case study of recent forestland to cropland conversion in Georgia indicates agricultural market values greatly exceeded nonmarket recreation land values. Forestalling the land use conversion could not have been justified on the basis of nonmarket recreation values alone.

3471. 61 IIIA3 COGGINS G.C., LINDEBERG-JOHNSON M. "The Law of Public Rangeland Management II: the Commons and the Taylor Act." Northwestern School of Law of Lewis and Clark College Environmental Law, Vol. 13, No. 1 (1982), pages 1-101.

3472. 61 IIIA5A CORDELL H.K., HENDEE J.C. Renewable Resources Recreation in the United States: Supply, Demand, and Critical Policy Issues. The American Forestry Association, 1319 18th St., NW, Washington, D.C. 20036 ($5.00). (1982), 88 pages. Historical and current supply and use of renewable recreation resources in the United States are examined to predict future trends.

3473. 61 IIIA5A SAUNDERS P.R. "Characteristics of Nondeveloped Forest Recreation from Multiresource Inventory Plots in South Carolina." In, Conference Proceedings, Southeastern Recreation Research Conference. Available from: Publication Editor,

Southeast Forest Experiment Station, 200 Weaver Blvd. Asheville, NC 28804. (1982), pages 13-26. Increased long range planning for optimal use of renewable and non-renewable resources led to the development of a multiresource inventory technique for recreation. Inventory results revealed specific characteristics of forest stands used for recreation of an undeveloped or dispersed nature by examining: (1) evidence of forest recreation use, (2) quantity and types of trails, (3) whether the land was posted, and (4) the effect of the presence of water on recreation. Applications of this method include regional planning, resource use characteristics, and resource supply.

3474. 61 IIIA5B ROSENTHAL D.H., WALDMAN D.A., DRIVER B.L. "Construct Validity of Instruments Measuring Recreationists' Preferences." Leisure Sciences, Vol. 5, No. 2 (1982), pages 89-108. The construct validity of eight psychometric scales designed to measure the experiences that recreationists desire was investigated. A multitrait-multimethod analysis was performed employing two Likert-style formats, fractionation scaling and paired comparisons. Construct validity of seven of eight scales studied was verified. Implications are made concerning the use of these instruments in order to provide information for recreation research and planning.

3475. 61 IIIA5C CLARK R.N. "Promises and Pitfalls of the ROS in Resource Management." Australian Parks and Recreation (May 1982), pages 9-13.

3476. 61 IIIA5C COLE D.N. "Controlling the Spread of Campsites at Popular Wilderness Destinations." Journal of Soil and Water Conservation, Vol. 37, No. 5 (1982), pages 291-295. To control negative ecological impact in wilderness areas, spread of sites may be limited by concentrating use on selected sites or by restricting campfires to selected sites.

3477. 61 IIIA5C SAUNDERS P.R. "Monitoring and Reporting Recreation Use: A Case Study." In, Conference Proceedings, Southeastern Recreation Research Conference. Available from: Publication Editor, Southeast Forest Experiment Station, 200 Weaver Blvd. Asheville, NC 28804. (1982), pages 143-163. Without accurate estimates of visitor use, it is difficult to develop long-range recreation plans and/or do meaningful budgeting. The proposed system recognized 20 developed and dispersed activities on the Arapaho and Roosevelt National Forests and the Pawnee National Grassland and includes one or more sampling procedures for each activity. Application of

this system across the forest will provide a uniform method of counting and reporting visitor use. The system is compatible with the Recreation Information Management System, the Recreation Opportunity Spectrum, and the management areas identified in the draft Forest Land Management Plan.

3478. 61 IIIA5E ENGLEMARK O. "Forest History of Muddus National Park, Northern Sweden." Wahlenbergia Scr Bot Umensia, Vol. 7 (1981), pages 33-38. Cited in Bibliography of Agriculture, Vol. 47, No. 1.

3479. 61 IIIA5E FRACTOR D.T. "Evaluating Alternative Methods for Rationing Wilderness Use." Journal of Leisure Research, Vol. 14, No. 4 (1982), pages 341-349. Rationing methods considered are: Price, random selection (lottery), queuing, and reservation. Using standard measurements of social benefit, price is found to be the superior rationing device. All rationing schemes extract a price, although not as obviously as a formal money price.

3480. 61 IIIA5E HUNT F.A. "Rare II and Nonwilderness Release: the Controversy Continues." Forem, Vol. 6, No. 1 School of Forestry and Environmental Studies Duke University (1982), pages 6-9.

3481. 61 IIIA5E WALSH R.G., GILLIAM L.O. "Benefits of Wilderness Expansion with Excess Demand for Indian Peaks." Western Journal of Agricultural Economics, Vol. 7, No. 1 (1982), pages 1-12. The contingent valuation approach was applied to the problem of estimating the recreation benefits from alleviating congestion at Indian Peaks wilderness area, Colorado. Results confirm the Cesario and Freeman proposals that under conditions of excess recreational demand for existing sites, enhanced opportunities to substitute newly designated sites by reducing congestion results in external benefits to the remaining peak day users who do not substitute, and should be added to the recreational use benefits of new sites.

3482. 61 IIIA5G BAMMEL G. "Rural-Urban Perceptions of 'Forest' and 'City'." In, Conference Proceedings, Southeastern Recreation Research Conference. Available from: Publication Editor, Southeast Forest Experiment Station, 200 Weaver Blvd. Asheville, NC 28804. (1982), pages 97-107. In general, rural residents viewed the forest as being significantly more predictable, active and exciting, while urban dwellers viewed the city as significantly better, richer, and more familiar. While both groups responded favorably toward the forest, the city often drew a neutral response.

3483. 61 IIIA5G LAWRENCE H.W. "Historic Change in Natural Landscapes: the Experimental View." Environmental Review, Vol. 6, No. 1 (1982), pages 15-36. The roles of the natural landscape in human life are diverse and pervasive. As the physical structure for human settlement, as the resource base for society, as the area for encounters with the world of nature, and as the setting for historic events, the natural landscape is important to most cultures at most times. Yet these roles have changed with historic changes in society, aesthetics, and technology. In addition the landscape itself is a constantly changing phenomenon. In order to understand the fluid but intense relationship between society and nature during historic transformations it is necessary to consider not social change alone, or landscape change alone, but landscape change in its human context. As Yi-Fu Tuan writes, "Place is a center of meaning constructed by experience." As that experience changes so does the center of meaning which defines place.

3484. 61 IIIA5G WRIGHT S.E. "Recent Amenity Tree and Shrub Planting in the Rural Landscape of England and Wales." Journal of Environmental Management, Vol. 16, No. 1 (1983), pages 17-34. Considerable losses of trees and shrubs from the rural landscapes of England and Wales caused by modern farming techniques, Dutch elm disease, and changes in land use have resulted in a government-supported amenity tree planting program which has been undertaken mainly by county councils and a few other land-managing agencies.

3485. 61 IIIA5H GRAMANN J.H. "Toward a Behavioral Theory of Crowding in Outdoor Recreation: An Evaluation and Synthesis of Research." Leisure Sciences, Vol. 5, No. 2 (1982), pages 109-126. Research on crowding in outdoor recreation is critically reviewed and formally integrated with that in social psychology, using a series of theoretical axioms, propositions, and theorems. A distinction is drawn between density as a physical construct and crowding as a psychological evaluation of density. Two theoretical traditions in social psychology, stimulus overload and social interference, are compared and related to crowding research in outdoor receation. Social "carrying capacity" studies in outdoor recreation are criticized for their failure to distinguish between density and crowding. The role of behavioral goals, objectionable behavior, and minimum physical spatial requirements in determining crowding perceptions is discussed.

3486. 61 IIIA6 BARACHETTE R. Management for Erosion Control of Nebhana Watershed, Tunisia. Economic Interest of Difficult Types of Forest and Range Management for Erosion Control. Tunisia, Ministry of Agric. (1980) In French, 63 pages. Cited in FAO Documentation Current Bibliography, 82/9-10.

3487. 61 IIIA6 VOUSARAS A. "Proposed Treatments on the Fir Forest Experimental Watersheds in Agios Nikolaos Karpenisi." Proceedings of Forest Research Institutes (Athens). Vol. VIII, No. 1 Forest Research Institute of the Ministry of Agriculture, Terma Alkmanos str., Athens 615 (1980) In Greek with English summary. Pages 33-55. General aims of forest hydrology research in the uneven age fir forests of two experimental watersheds are revised according to timber volume distribution, administration of applied research, and the needs of local people.

3488. 61 IIIB1 GRAINGER A. "Tighter Wood Supplies Predicted by Year 2000." World Wood, Vol. 24, No. 1 (1983), pages 12-14. Cited in TRADA Library Bulletin (Feb. 1983). Timber Research and Development Association. Hughenden Valley, High Wycombe, Buckinghamshire, HP14 4ND, England.

3489. 61 IIIB1 HALEY D., COONEY T.M. "Economic Timber Supply - Concepts, Ends and Means." The Forestry Chronicle, Vol. 58, No. 6 (1982), pages 258-262. Two economic concepts of timber supply are discussed: the neo-classical, or flow, concept and the recoverable-stock supply concept. Ways in which economic stock supply models can be used to improve managerial planning in forestry are described and alternative approaches to the estimation of timber stock supply schedules are examined in terms of their merits and disadvantages.

3490. 61 IIIB1 HELFAND G.E., EMERSON P.M. "Timber Supply, Community Stability and the Wilderness Scapegoat." Western Wildlands, Vol. 8, No. 4 (1983), pages 14-19. Wilderness areas cannot meet U.S. timber supply or job needs; it's time for the lands that can meet those needs to do so.

3491. 61 IIIB1 KNIGHT H.A. "Southern Timber Supplies in the 1980's." Presented at the fall meeting of the Southwestern Technical Division of the American Pulpwood Association in Memphis, Tennessee, Nov. 4, 1981. 19 pages.

3492. 61 IIIB3 FOSTER B.B. "Taxpayers Gain from Southern Pine Regeneration Programs." Southern Journal of Applied Forestry, Vol. 6, No. 4 (1982), pages 188-194. For every one hundred dollars of public

monies spent now to regenerate southern pine, society will benefit from a $3,800 reduction in the total price of the wood products it consumes in the year 2020, a compound rate of return that exceeds 10 percent after inflation.

3493. 61 IIIB3 MATTSON J.A., MIYATA E.S. A Time Study of Planting a Short-Rotation Intensively Cultured Plantation. USDA Forest Service Research Note NC-278 (1982), 4 pages. Time study of planting a 3 ha short-rotation intensively cultured plantation on a one by one meter spacing found a productivity of .52 ha per hour and planting cost of ninety seven dollars and eighty seven cents per ha.

3494. 61 IIIB3 NOCK H.P. "The Brazilian Afforestation Program." Forstarchiv, Vol. 52, No. 4 (1981) In German with English summary, pages 147-152. Cited in Forestry Abstracts, Vol. 43, No. 12. Analyses of: rates of forest destruction/afforestation; location of major afforestation projects; tree species used; and coordination between afforestation and the forest products industry in Amazonia.

3495. 61 IIIB5 JONES P.C., SHEN S-Y. A Framework for Evaluating the Economics of Short-Rotation Forestry Research and Development. ANL/CNSV-35 Available from National Technical Information Service (1982), 56 pages. Report is based on a consumer surplus approach to cost-benefit analysis, and presents a procedure for estimating supply curves for wood from short-rotation forestry. This model can be used to calculate optimal sustainable harvests from short-rotation forests.

3496. 61 IIIB5 MACCLEERY D. "Non-Declining Yield and Community Stability." Western Wildlands, Vol. 8, No. 4 (1983), pages 4-7. The sustained-yield harvesting policy has sometimes been distorted and misapplied.

3497. 61 IIIB5 SCHALLAU C. "Departure from What?" Western Wildlands, Vol. 8, No. 4 (1983), pages 8-13. How national forest harvesting policy has been fashioned to achieve community stability.

3498. 61 IIIC PESTAL E. Forest Road Construction (in Mountain Areas) between Economics and Protection of Nature. FAO Forestry Papers (1982), pages 15-18. Cited in FAO Documentation Current Bibliography, 82/9-10.

3499. 61 IIID1 DONOGHUE L.R. Classifying Wildfire Causes in the USDA Forest Service: Problems and Alternatives. USDA Forest Service Research Note NC-280 (1982), 5 pages. Discussion of problems associated with fire-cause data on USDA Forest Service wildfire reports, tracing historical development of wildfire-cause categories, and presenting pros and cons of retaining current wildfire-cause reporting systems or adopting new systems.

3500. 61 IIID3 GANSNER D.A., HERRICK O.W. Predicting the Rate of Change in Timber Value for Forest Stands Infested with Gypsy Moth. USDA Forest Service Research Note NE-311 (1982), 3 pages. Regression analysis is used to develop an equation for predicting the rate of change in timber value from easy-to-measure key characteristics of stand condition.

3501. 61 IIIE CIABATTI G. "Application in Forest Planning of Computer Techniques for Handling Data." Montanaro d'Italia - Monti e Boschi, Vol. 32, No. 2/3 (1981) In Italian with English summary. pages 91-96. Cited in Forestry Abstracts, Vol. 43, No. 12. Ways in which computer technology may be applied in forestry planning including the assembly, storage and output in many different forms of large amounts of data for general descriptive and mensurational purposes, preparation of inventories and detailed management plans.

3502. 61 IIIE CIMPERSEK M. "Planning in Forests with Special Objectives and Their Treatment (Yugoslavia)." Gozdar Vestn Slov J For, Vol. 39, No. 5 (1981) In Slovenian, pages 227-233. Cited in Bibliography of Agriculture, Vol. 47, No. 1.

3503. 61 IIIE HOTVEDT J.E. "Inflation and the Capital Budgeting Process." Southern Journal of Applied Forestry, Vol. 6, No. 4 (1982), pages 195-200. Cash flow analysis under conditions of inflation is discussed by addressing the analysis and application of general and real price changes in forestry investment decisions.

3504. 61 IIIE KUROKAWA Y. "Application of Risk Programming Method to Forest Planning." Jarq, Vol. 16, No. 1 (1982), pages 57-63. Forest management is always exposed to instability due to difficulties of forecasting natural factors affecting forest production, and of accurately estimating the effects of natural factors and market price into the future. This paper presents a basic method of forest planning which includes instability factors.

3505. 61 IIIE MOCHIDA H. "Review of the Forest Rent Theory." Forest Economy, Vol. 34, No. 7 (1981) In Japanese, pages 8-19. A criticism of the forest rent theory that groups forestry into two categories and is used extensively in Japan.

3506. 61 IIIE SHAFFER R.M.JR. "The Recurring Option Contract." Southern Journal of Applied Forestry, Vol. 6, No. 4 (1982), pages 211-215. Long-term timber management contracts can be an attractive option to nonindustrial private landowners and forest industry firms. Using a modified version of the Black-Scholes Option Pricing Model, an option premium is calculated for each year of the contract in which timber is sold. Through this premium, the firm retains control over the stumpage and the landowner is compensated for relinquishing the right to market his timber independently. The considerable flexibility of the contract permits adaptation to a variety of management objectives.

3507. 61 IVA1A GISLERUD O.G., WIBSTAD K. Integrated Forest Operations with Small Scale Industrial Activities including Energy Conversion; Case Studies Carried out in Colombia, Gambia, India, Norway, Senegal and Thailand. (1981), 172 pages. Cited in FAO Documentation Current Bibliography 82/7-8.

3508. 61 IVA1A KULP J.L. "The Wood Supply and Product Spectrum of the Future." Jnl. of the Inst. of Wood Sci., Vol. 9, No. 4 (1982), pages 150-154. Cited in TRADA Library Bulletin (Jan. 1983). Timber Research and Development Association. Hughenden Valley, High Wycombe, Buckinghamshire, HP14 4ND, England.

3509. 61 IVA1A .Appropriate Forest Industries (for development). FAO, Rome Forestry Dept. (1982) In Arabic, Chinese, English, Spanish and French. 8 pages. Cited in FAO Documentation Current Bibliography 82/7-8.

3510. 61 IVA1A Review of Long-term Trends and Prospects for the Forest and Forest Products Sector in Selected Countries Outside Europe (Canada, USA, Japan). FAO, Geneva ECE/FAO Agric. and Timber Div. (1981) In English and French. 44 pages. Cited in FAO Documentation Current Bibliography, 82/9-10.

3511. 61 IVA1B BLYTH J.E., ZOLLNER J., SMITH W.B. Michigan Saw log Production and Sawmill Industry, 1978. USDA Forest Service Research Note NC-276 (1982), 4 pages. Michigan's saw log production climbed to 563 million board feet in 1978 from 514 million board

feet in 1977. Eight percent was shipped to out of state mills. Michigan's 341 active sawmills received 525 million board feet of logs; only one percent came from other states.

3512. 61 IVA1B CARROLL M.R., MILNE G.R. "Evaluating Forest Industry Developments in Alberta Using Socioeconomic Impact Analysis." The Forestry Chronicle, Vol. 58, No. 6 (1982), pages 268-274. Several major economic impacts of future forest industry expansion in north-central Alberta are examined. Three mill types and two sites are selected. Six different alternatives are evaluated. Economic imports are classified either as social benefits or costs, and are estimated for both the construction and operational phases of each development option. Company expenditures within the region are linked to three benefits; increased regional employment, income and value added. Social costs are estimated for each option as the increased regional infrastructure costs associated with the expanded economic activity. Economic impact data are utilized by developing four ratios which directly compare social costs with selected social benefits. In this manner, the impact analysis model may offer an improvement to the method of examining forest resource development proposals in Alberta and elsewhere.

3513. 61 IVA1B JAMES L.M., HEINEN S.E., OLSON D.D., CHAPPELLE D.E. Timber Products Economy of Michigan. Research Report 446 Michigan State University Agric. Exp. Stn. East Lansing (1982), 24 pages. Results of part of a project to describe the timber-products economy in Michigan as of 1980, including: numbers of establishments and their regional location, timber output, employment, raw timber products value, and value added by wood-based manufacturing. The forest resource is appraised in terms of its ability to sustain existing wood-using industries and to permit expansion of such industries. The long-term outlook for wood-using industries in Michigan is appraised.

3514. 61 IVA1B WARD E.J. The Canadian Forest Based Industry. Review of Long-term Trends and Prospects for the Forest and Forest Products Sector in Selected Countries Outside Europe (Canada, USA, Japan). FAO, Geneva. Joint ECE/FAO Agric. and Timber Div. (1981) In English and French, pages 1-8. Cited in FAO Documentation Current Bibliography, 82/9-10.

3515. 61 IVA1C WANG.K. "China Expands Wood Products Industry." Asian Timber, Vol. 1, No. 4 (1982), pages 34-5,37. Cited in TRADA Library Bulletin (Aug. 1982). Timber Research and Development Association. Hughenden Valley, High Wycombe, Buckinghamshire, HP14 4ND, England.

3516. 61 IVA1C WEBSTER R.S. "The Hardwood Trade in the United Kingdom and Future Prospects." Timber Digest (Singapore). (1982), pages 7-11. Cited in TRADA Library Bulletin (Dec. 1982). Timber Research and Development Association. Hughenden Valley, High Wycombe, Buckinghamshire,, HP14 4ND, England.

3517. 61 IVA1C YAMADA H. "Current Situation and Future Outlook of Japan's Timber Industry." Timber Digest. (1982), pages 11-14. Cited in TRADA Library Bulletin (Nov. 1982). Timber Research and Development Association. Hughenden Valley, High Wycombe, Buckinghamshire, HP14 4ND, England.

3518. 61 IVA1C Basic Plan for Japan's Forest Resources. Review of Long-term Trends and Prospects for the Forest and Forest Products Sector in Selected Countries Outside Europe (Canada, USA, Japan). FAO, Geneva. Joint ECE/FAO Agric. and Timber Div. (1981) In English and French, pages 28-38. Cited in FAO Documentation Current Bibliography, 82/9-10.

3519. 61 IVA1E HARTWIG F., WIEBECKE C. "Forestry and the Forest Products Industry in Central America - with Special Reference to Honduras." Forstarchiv, Vol. 52, No. 2-3 (1981) In German, , pages 64-72, 97-102. Cited in Forestry Abstracts, Vol. 43, No. 12. The following subjects are discussed on a country-by-country basis: economic-geographic foundations; forest distribution; forest utilization; forestry policy and law; forestry administration; training of forestry personnel; research. Recommendations include: intensified training of forest workers and technologists; increased research in silviculture and work science. Caribbean countries constitute an important potential export market for Central American timber. Honduras is cited as the Central American country with the most clearly developed forestry policy.

3520. 61 IVA1E MAZEL A. Assessment of Forest Resources and Wood Processing Industries in Selected African Countries. Vienna, UNIDO: United Nations Industrial Development Organization (ID/WG.373/1) (1982), 71 pages. Cited in TRADA Library Bulletin (Aug. 1982). Timber Research Development Association. Hughenden Valley, High Wycombe, Buckinghamshire, HP14 4ND, England.

3521. 61 IVA1E THORPE E., BRISBOURNE R. Forestry Development Project Sarawak. FAO, Rome Forestry Dept. Working Paper 7 (1982), 60 pages. Cited in FAO Documentation Current Bibliography 82/7-8.

3522. 61 IVA1E Asian Forestry Products & Services 1982. Singapore, Eastern Publishing Associates Pte. Ltd. (1982), 256 pages. Cited in TRADA Library Bulletin (July 1982). Timber Research and Development Association. Hughenden Valley, High Wycombe, Buckinghamshire, HP14 4ND, England.

3523. 61 IVA4 ECKSTEIN L.W.JR. "Consideration of Organizational Structure and Design for Improved Efficiency in Southern Wood Departments." Southern Journal of Applied Forestry, Vol. 7, No. 1 (1983), pages 3-6. Analysis of organizational structure of wood departments within major industrial timber companies in the South and the influence such structure can have on department operations, such as communication, and personnel management.

3524. 61 IVA4 HOKANS R.H., STUART W.B. "Yard-to-Mill Woodflow Scheduling by Microcomputer." Southern Journal of Applied Forestry, Vol. 7, No. 1 (1983), pages 50-53. Scheduling yard-to-mill woodflows requires the regular attention of wood procurement managers. While the calculations are routine, they are sufficiently time consuming to preclude evaluation of more than a first-guess schedule. A computer program implemented on a microcomputer provides a cost-effective means of doing the calculations and choosing an operationally feasible least-cost solution to the scheduling problem.

3525. 61 IVB1 FRIEST P.L. "Direct Impact of Forest Harvesting in Northeastern Minnesota (Economic Aspects)." J Minn Acad Sci, Vol. 47, No. 1 (1981), pages 4-7. Cited in Bibliography of Agriculture, Vol. 47, No. 1.

3526. 61 IVB1 VATASAN G.S. "Consequences of Logging in Papua New Guinea." Klinkii, Vol. 2, No. 2 (1982), pages 83-92. Logging is likely to continue in the tropical rainforest, as the needs for land and for forest products can only be expected to rise. There are measures which should be taken to minimize or avoid forest destruction: (1) Improve monitoring of logging operations. (2) Establish plantations of fast growing valuable timber species. (3) Step up research in the rate of growth of the rainforest after selective logging as well as in the actual regeneration process after logging. (4) Assess regeneration and growth potential after clear felling of the rainforest on various sites. (5) Establish education and propaganda programs to make the population aware of the need of forests in perpetuity, both for timber production and environmental protection.

3527. 61 IVB2 COONEY T.M., HALEY D. "Determining Logging Costs for Long-Term Timber-Supply Projections: Estimation of Input Requirements by Phase of Logging." Canadian Journal of Forest Research, Vol. 12, No. 4 (1982), pages 772-779. For rational timber-supply analysis, a means of estimating economically recoverable timber stocks on a regional basis is required, plus an ability to forecast how these stocks will change over time in response to changes in technology, input costs, and timber prices.

3528. 61 IVB2 INCE P.J. "Economic Perspective on Harvesting and Physical Constraints on Utilizing Small, Dead Lodgepole Pine." Forest Products Journal, Vol. 32, No. 11/12 (1982), pages 61-66. Results indicated that (1) in harvesting, the cost of producing chips was lower and less variable than the cost of producing roundwood and chips. (2) Chips and roundwood have different and highly variable market prices over time. (3) Small, dead lodgepole is currently acceptable and used for a variety of products. (4) Energy inputs to harvesting are small. (5) The cost-to-energy-value ratio of delivered dead lodgepole chips is less than the price-to-energy-value ratio of oil and gas, but not less than that for coal.

3529. 61 IVC1C AIZENBERG A.I., MALYGIN L.N., PECHKROV G.P., FINK R.S. "For the Improvement of Sawmilling in Siberia and (Soviet) Far East (Management Aspects)." Derevoobrab Prom-st' (1981) In Russian, pages 20-22. Cited in Bibliography of Agriculture, Vol. 47, No. 1.

3530. 61 IVC2A ADAMS D.A. "Capacity Additions in 1983-85 Lower than Previously Expected." Pulp and Paper, Vol. 57, No. 2 (1983), pages 167-169. Growth to be most pronounced in printing and writing papers, while newsprint increase slows, and construction capacity falls sharply.

3531. 61 IVC2A ERONEN J. "Soviet Pulp and Paper Industry: Factors Explaining Its Areal Expansion." Silva Fennica, Vol. 16, No. 3 (1982), pages 267-285. Planners of the Soviet pulp and paper industry are constantly faced with the problem: which investment policy guarantees the best location structure? Should one invest in existing localities or expand to new areas, especially in heavily forested parts of Siberia? A location theory for the pulp and paper industry, based on three factors (markets, wood raw materials, relative costs) has been suggested by the Soviet authors Antonov and Trusova. In the present study this theory is, for the first time, given empirical contents and feasible areas for future

growth of the industry are tentatively determined. One of the main findings of the study is the detecting of considerable unutilized wood reserves in the European USSR. This supports those Soviet views advocating a European-oriented location in investment strategy for the industry, as market and cost factors are unfavorable to Siberian location.

3532. 61 IVC2A HUTCHINS C.C.JR. Southern Pulpwood Production, 1981. USDA Forest Service Resource Bulletin SE-66 (1982), 24 pages. Pulpwood production in the South was 54.3 million cords in 1981, a decline of less than 0.5 percent from 1980. Roundwood production was down 1 percent, while the use of byproducts was up 1 percent. Pulping capacity was 114,552 tons per day at 114 mills operating in the South in 1981, a 2 percent increase.

3533. 61 IVC2A MIES W. "Capital Shortfall Facing Industry as Spending Outstrips Cash Flow." Pulp and Paper, Vol. 57, No. 2 (1983), pages 65-67. Debt-laden paper firms using strategies such as asset redeployment, timber-based financing, joint ventures to finance future capital programs.

3534. 61 IVC2A MIES W., ALLAN D., IRONS P., ADAMS D. "Outlook '83." Pulp and Paper, Vol. 57, No. 1 (1983), pages 48-66. Moderate recovery seen lifting industry from deep slump caused by two recessions, excess capacity.

3535. 61 IVC2A POLLITZER S. "Capital Spending." Pulp and Paper, Vol. 57, No. 1 (1983), pages 79-86. Survey reflects lowered targets but reports $13.5 billion in planned spending in U.S./Canada, with 44 new paper/board machines, 67 major mill expansions.

3536. 61 IVC2A "PPI's Preview for 1983." Pulp and Paper International, Vol. 25, No. 1 (1983), pages 40-45, 55. PPI contributors in the major producing countries look ahead to what 1983 is likely to hold in store for the pulp and paper industry, as well as a review of 1982.

3537. 61 IVC2C BLYTH J.E., SMITH W.B. Pulpwood Production in the Lake States by County, 1981. USDA Forest Service Research Note NC-287 (1982), 4 pages. Lake states pulpwood production fell to 5.60 million cords in 1981. Pulpwood production is shown by county and species group in Michigan, Minnesota, and Wisconsin.

3538. 61 IVC3A "The Plywood Industry in Indonesia." Timber Digest (Singapore). (1982), pages 13-15. Cited in TRADA Library Bulletin (Aug. 1982). Timber Research and Development Association. Hughenden Valley, High Wycombe, Buckinghamshire, HP14 4ND, England.

3539. 61 IVC5 LUPPOLD W.G. The Effect of Changes in Lumber and Furniture Prices on Wood Furniture Manufacturers' Lumber Usage. USDA Forest Service Research Paper NE-514. (1983), 8 pages. Wood furniture manufacturers' demands for oak, maple, poplar, open-grain, close-grain, and all species of lumber were developed using cross-sectional time-series estimation techniques.

3540. 61 IVC8 BRANDT S.A., PEREIRA A.R., TEIXEIRA H.H.L. "Forecast Model for Charcoal Price." Brasil Florestal, Vol. 12, No. 51 (1982) In Portuguese with English summary: Pages 15-18. A price forecast model was fitted to time series data on charcoal prices, steel prices, current charcoal consumption and a trend variable. The price equation was fitted by OLS and the results are considered relatively good in terms of predictive power of the model.

3541. 61 IVC8 CATINOT R. "Utilization of Tropical Forests for Energy, with Perspective on the Present and Future Potential." Inst. Forestal Latinoamericano No. 1/81. (1981). In Spanish with Spanish, English, and French summaries. pages 109-135. Cited in Bibliografia Forestal de Venezuela., Part I, in Spanish. IFLA: Instituto Forestal Latinoamericano, Apartado 36 Merida, Venezuela.

3542. 61 IVC8 ENGALICHEV N., MATHUR V.K. "Wood Power, Its Promises and Problems." Energy Commum, Vol. 7, No. 2 (1981), pages 105-166. Cited in Bibliography of Agriculture, Vol. 47, No. 1.

3543. 61 IVC8 EVANS J.C.W. "Industry Makes Significant Gains in Energy Use During Past 10 Years." Pulp and Paper, Vol. 56, No. 11 (1982), pages 96-97. Fossil fuel purchased power consumption per unit of output declined by more than 30 percent from 1972-81, but cost as percent of sales price doubled.

3544. 61 IVC8 HARRIS R.A. "Market Potential for Wood Fuel - a Limiting Factor in Wood Energy Development." Forest Products Journal, Vol. 32, No. 11/12 (1982), pages 67-70. Six counties in Piedmont South Carolina were studied and the projected wood fuel demand determined. The total consumption of wood used as a fuel will be limited by demand rather than supply of the wood resource.

3545. 61 IVC8 JEONG J.Y. "Problems of the Fuelwood Forest in Korea." Forest Economy, Vol. 34, No. 3 (1981) In Japanese, pages 1-14. Presents the current consumption and production of woody fuel in Korea and proposes improvements for government policy concerning afforestation of fuelwood.

3546. 61 IVC8 MNZAVA E.M. "Fuelwood: the Private Energy Crisis for the Poor." Ceres, Vol. 14, No. 4 (1981), pages 35-39.

3547. 61 IVC8 NOACK D., FRUHWALD A. "Effects of the Energy and Raw Material Crisis on the Timber Resource." Allgemeine Forstzeitschrift, No. 36 (1981) In German, pages 913-920. Cited in Forestry Abstracts, Vol. 43, No. 12. General review of the world situation, with special reference to W. Germany. Topics include: current energy problems; fuelwood plantations; the necessity for continuing production of timber; world timber requirement forecasts; use of fuelwood in developing countries; timber in the total energy balance of the economy; use of forest residues as an energy source.

3548. 61 IVC8 RICHARDSON D. "Growing Wood for Energy in the South Pacific - Constraints and Opportunities." Klinkii, Vol. 2, No. 1 (1981), pages 20-32.

3549. 61 IVC9 PIRIE G.H. "Railway Plantations and Railway Sleepers in South Africa, 1910-1937." South African Forestry Journal, No. 122 (1982), pages 59-62. Plantations owned by the South African Railways in the period 1910-1937 were not an important source of timber for railway sleepers. Sleeper timber was imported and supplemented by purchases of mostly yellow-wood from the Knysna woodcutters. Railway plantations were run at a continual financial loss and all but four of the fifteen were sold in 1937.

3550. 61 VA1 SHERIF F. "Derived Demand of Factors of Production in the Pulp and Paper Industry." Forest Products Journal, Vol. 33, No. 1 (1983), pages 45-49. An econometric model is presented using the translog production function and the duality theory to derive a translog cost function, together with the derived demand equations for the Canadian pulp and paper industry. The model can be used for policy simulation and forecasting.

3551. 61 VB1 BECKER M. "Objectives of Timber Trade Policy. Problems of Empirical Research in Forest and Forest Products Policy." Forst-wissenscahftliches Centralblatt, Vol. 101, No. 5 (1982) In German with English summary, pages 303-311. Scientists must obtain better knowledge of the goals of agencies

and organizations active in timber trade policy. They will then be able to judge the adequacy of measures and to compare goals and effects of timber trade policy. To extend its information base, research in timber trade policy must interview people engaged in timber trade policy, evaluate official documents, and observe economic policy decision processes.

3552. 61 VB1 CRICHTON D.M., ELLIOTT G.K. Trends and Prospects for Marketing Poplar in Britain. Univ. College of North Wales. Dept. of Forestry and Wood Science. (1982), 84 pages. Cited in TRADA Library Bulletin (Aug. 1982). Timber Research and Development Association. Hughenden Valley, High Wycombe, Buckinghamshire, HP14 4ND, England.

3553. 61 VB1 GINNINGS J.M. "U.S. $6 Billion Year for Asian Wood Exports." Asian Timber, Vol. 1, No. 4 (1982), pages 18-19. Cited in TRADA Library Bulletin (Aug. 1982). Timber Research and Development Association. Hughenden Valley, High Wycombe, Buckinghamshire, HP14 4ND, England.

3554. 61 VB1 MITCHAM M.S.I. "Marketing Strategies for Industry." Database: Timber UK (1982), 28 pages. Cited in TRADA Library Bulletin (July 1982). Timber Research and Development Association. Hughenden Valley, High Wycombe, Buckinghamshire, HP14 4ND, England.

3555. 61 VB1 SHIELD E.D. "Future Market Demands for Australian Forest Products." Australian Forest Industries Jnl., Vol. 48, No. 7 (1982), pages 27,29-30. Cited in TRADA Library Bulletin (Nov. 1982). Timber Research and Development Association. Hughenden Valley, High Wycombe, Buckinghamshire, HP14 4ND, England.

3556. 61 VB1 Exports of Forest Products from Eastern to Western European Countries, 1970 to 1979. FAO, Geneva. Joint ECE/FAO Agric. and Timber Div. (1981) In English and French, 35 pages. Cited in FAO Documentation Current Bibliography, 82/9-10.

3557. 61 VB3 COENE A. DE Forestry Development Project Sarawak. Marketing Strategy for Hill Timber Species of Sarawak (1980-1990). FAO, Rome Forestry Dept. (1982), 39 pages. Cited in FAO Documentation Current Bibliography 82/7-8.

3558. 61 VB3 YOSHIZAWA T. "Timber Market and Organization in Hokkaido." Forest Economy, Vol. 34, No. 4 (1981) In Japanese, pages 4-12. Analysis of the timber market in Hokkaido, an underdeveloped market in a major timber production area.

3559. 61 VB4 MALLINSON T.S. "The European Market for Asian Plywood." Jnl. of the Inst. of Wood Science, Vol. 9, No. 3 Issue 51. (1982), pages 96-103. Cited in TRADA Library Bulletin (July 1982). Timber Research and Development Association. Hughenden Valley, High Wycombe, Buckinghamshire, HP14 4ND, England.

3560. 61 VC1 LOTHNER D.C., KALLIO E., DAVIS D.T. Minnesota and Wisconsin Forest Product Prices: A Historical Review 1950-1980. USDA Forest Service North Central Forest Exp. Stn. in cooperation with Arrowhead Regional Development Commission (1982), 114 pages. Summary of past trends in forest product prices in Minnesota from 1960 to 1980 and in Wisconsin from 1950 to 1980. High, low, and average price are given for stumpage by species, logs by species, and rough lumber by species. Current and real price trends are discussed for selected species and products.

3561. 61 VC2 HUTCHINS C.C.JR. Pulpwood Prices in the Southeast, 1981. USDA Forest Service Research Note SE-319. (1982), 3 pages. Expenditures for pulpwood continued to rise during 1981, but rate of growth was slower than in previous years. Monies expended totaled $1,185.7 million, an 8.3 percent increase over 1980. Softwood roundwood averaged $47.15 and hardwood $35.10 per standard cord, up 7.4 and 6.7 percent. Chip prices were $22.05 for softwood and $15.50 for hardwood per green ton, up 11.4 and 3.3 percent. Softwood sawdust was up 14.6 percent to $8.25 per green ton, but hardwood sawdust decreased 1.3 percent to $7.55.

3562. 61 VC2 KURIMURA T. "On the New Equation of Stumpage Price II." Forest Economy, Vol. 34, No. 11 (1981) In Japanese, pages 16-21.

3563. 61 VC2 KURIMURA T. "On the New Equation of Stumpage Price." Forest Economy, Vol. 34, No. 4 (1981) In Japanese, pages 13-23. Questions are raised concerning the parameter of payout period of capital in the new stumpage price equation.

3564. 61 VC2 SKOG K., RISBRUDT C. Trends in Economic Scarcity of U.S. Timber Commodities. USDA Forest Service Resource Bulletin FPL 11 (1982) 24 pages. Information on changes in real prices (prices deflated by general producer price index) of timber commodities as potential indicators of economic scarcity.

SUBJECT INDEX

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