

HOW GERMAN FORESTRY HAS CHANGED WITH PRESSURE FOR LAND USE

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Public Demand

German people travel. Stories of their annual summer holiday season migration are legendary among Europeans. Affluence resulting from the industrial revolution of the 1960s and 70's has turned this legend into a potential for environmental disaster. Sixty-five million persons live in West Germany in an area the size of California.

Recognizing this problem, the Federal Republic has coordinated the time for summer holidays in such a way that each of the eleven states has its own unique six week period. This six week period also begins one week earlier each year so as to eventually provide some June and some August vacations,

For those who have not experienced travel during the holidays, traffic is appalling. Last year over 20,000 were killed on West German highways

Targets for this annual exodus are primarily the North Sea, Bavaria, the Alps, home to Italy, Yugoslavia and Spain for hundreds of thousands of foreign laborers, and the Black Forest. In the Black Forest one can find healing spas, gambling, lakes, rivers, hills to climb, red deer, wild boar, peace and solitude. How the Black Forest got this way and, more important, how it continues to be this way is of vital interest to us **all**. Population problems exist in America too. And we can use any ideas available for helping us provide a quality environment for posterity.

Historical Development of Forestry

The doctrine of mercantilism spurred the development and expansion of iron mines and glass works during the 17th and 18th centuries in Baden and Wurttemberg. Logging to fuel the fires of these industries resulted in a serious timber shortage in the 18th century.

Foresters, who were administrators of the hunt, became cultivators of timber. In time leading foresters opened "master schools" where young men could study forestry and by the end of that century universities had added forestry professors to their faculty.

The 19th century saw the development of state forestry administration and such techniques for forest management as the area and volume allotment methods for determining allowable cut, the Faustmann formula for determining financial maturity, and age-class silviculture control,

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Today 37 percent of Baden-Wurttemberg's total land area, 1,326,000 hectares is forested. Approximately 462,000 ha or 35% is in private ownership; 540,000 ha or 41% is in community forests and 316,000 ha or 24% is state forests (3).

Sixty-five percent of this forest is conifers. Most abundant species are Norway spruce (*Picea abies* L.), silver fir (*Abies alba* L.), Scotch pine (*Pinus sylvestris* L.), and European larch (*Larix decidua* Mill.). European beech (*Fagus sylvatica* L.) is the most prevalent hardwood (4). History tells us that conifers made up only 30% of the forest cover in 1800 (5).

Forest Administration

The forest law of Baden-Wurttemberg provides that all forest landowners will tend their forest in a reasonable and proper way. Reasonable and proper is interpreted to mean, in such a way as to provide posterity with a viable forest resource. The Forest Administration in the Ministry for Nutrition, Agriculture and Environment is responsible for attaining that end,

Central offices for the Department of Forestry are located in Stuttgart. Principal duties of this office are to: (1) Represent the interest of forestry to the federal administration, legislature and other state ministries; (2) harmonize and coordinate regional activities; (3) design and evaluate laws, regulations and legislative proposals; (4) promote forestry through research and instruction.

Baden-Wurttemberg's forest administration is subdivided into four regional headquarters which are responsible for the training of forest workers, forest inventory and engineering and supervision of the 235 state forest district offices. Each district is administered by a professional forester and usually contains between 4000 and 6000 hectares (10 to 15 thousand acres) of forest land,

The district forester has considerable autonomy in the management and administration of his district. He is the primary source of information the Stuttgart office has concerning the needs of the people and the effectiveness of specific programs in meeting those needs.

The forest experiment station at Freiburg, four forestry training schools at Rottenburg, Karlsruhe, Itzelberg, and Hollhof, as well as the center for outdoor education at Hornberg, are administered by the state offices at Stuttgart.

Goals of a Modern Forest Enterprise

While the 5 billion D. M. forest products industry is important, increasing population, urbanization and affluence has caused growing pressures for forest recreation. Forest managers are also becoming more aware that the forests shelter ground-water supply; prevent erosion, rock fall and avalanches; serves as a haven from

noise and pollution, and provide a home for game. The Black Forest, particularly, is a non-replaceable part of the culture of every German.

Admittedly it is difficult to evaluate these externalities of forest management. However, Economics Professor K. W. Kapp of Basel University estimated the value of all forests in the Federal Republic at 70 billion D. M. More than 70% of this value, 53 billion D. M. was attributed to multiple use externalities (2),

Forestry accounts for only 0,4% of West Germany's 800,000,000 D. M. gross national product, down from 0,6% in 1960 (1). In 1960, profits on state forests were about 26 D. M. per cubic meter of wood cut. This declined to 13 D. M. in 1965 and 1.5 D. M. in 1971. Private and community ownerships showed a similar trend (3). High silvicultural and extractive costs with low comparative value are major factors for this decline.

Modern German forestry is quick to recognize this trend. Today a forest is not only considered a center for timber production but also a center for recreation and a major element in overall landscape management and design. Public forestry policy is to maximize all these benefits. Private forestry is also expected to provide for multiple use particularly where there is no substantial conflict with the economic success of the enterprise.

Planning to Attain Desirable Goals

There exists in each state of the Federal Republic a basic outline for overall state development and growth which serves as a basis for all state planning. Regional, county and local plans are coordinated in such a way so as to conform with plans of adjacent subdivisions and to yield a systematic approach to state development.

Strict and effective zoning regulations are an outgrowth of this planning. The state is divided into zones and each zone has assigned priorities of development. City area is restricted, areas for industrial expansion are designated. Companies building in designated areas receive modest subsidies from the state. There are restrictions on construction and land purchase. For example, planners anticipate that about 110,000 ha. of agricultural land will migrate to forestry in Baden Württemberg by 1985. Therefore forest land cannot be cleared for agriculture anywhere in the state.

Before any plan is effected it must receive the approval of all levels of government responsible for the husbanding of the resources available. Critics point out that months and years can go by before approval, is forthcoming from bureaucracy, but herein lies an advantage as well. The process of approval results in modification and compromise which usually improves the quality of the plan. As each agency approves the plan it becomes a party to it and no changes or exceptions can be made without the approval of all participating agencies. Once a plan

receives approval it becomes a way of life. Spot zoning and quick zoning changes by local authority is impossible. As a result the German landscape is not cluttered with examples of what can happen when city councils and county boards yield to pressure groups bent on short run dollar maximization.

Meeting the Needs

By 1980 , forest recreation facilities in the Black Forest will double at a total estimated cost of 200 million D. M . Hiking trails , shelters , game impoundments and facilities for children will be increased from 80 to 200 percent

(4) The most successful recreational facility is the sports trail. Introduced on an experimental basis in the early 1960's these consist of a series of exercise facilities spaced along a trail one to three kilometers in length, At a particular stop you might find a log to walk, facilities for sit-ups , a jump to negotiate, hand-over-hand and many other innovative exercises designed to stretch city muscles

Young enthusiasts run between stations . Older university professors use the trails on Mondays when no one else is around to smile at. their failures Courts have ruled that participants use these facilities at their own risk and that the landowner is not liable for injury.

The silviculture of the spruce-fir-pine type, which gives the name "black" forest has been modified to insure quality landscape and quality wood,

Clearcuts are rarely more than five hectares in area and are immediately replanted, Usually natural reproduction is provided for in a series of removal cuts

As the forest approaches rotation age , which can be from 80 to 170 years depending on site and species composition, a series of preparatory cuts is initiated, First, the basal area is reduced from about 160 square feet per acre to about 100. This permits only enough light for the successful establishment of silver fir. The stand must be fenced at this stage to keep deer out because silver fir is a highly desirable deer food

When the advanced fir reproduction is tall enough to tolerate browsing the basal area is reduced to about 60 square feet per acre Under this overstory Norway spruce can become established but the less valuable scotch pine is too intolerant to survive .

Finally, the overstory is removed except for one or two scotch pine seed trees per acre and the last voids in the new forest canopy are filled with fast growing scotch pine seedlings. Some beech, maple or oak are often planted particularly in clusters of pure spruce , Shallow lateral rooted Norway spruce is extremely susceptible to windthrow . The hardwoods protect spruce adequately

from the wind and act as soil building agents by returning nutrients through leaf fall, Douglas fir is also a popular species for supplemental planting because it grows rapidly and produces quality wood.

Rotation completed, the new forest contains a species mixture which is relatively disease and insect resistant, a preponderance of the most commercially valuable silver fir and Norway spruce and enough heterogeneity of size, color and composition to appear virgin to the untrained eye. A few seedtrees are left for a second generation to provide forest giants

Expensive? Yes, but the legislature of Baden-Wurttemberg continues to provide funds adequate to meet administration needs . In addition, the forestry administration continues to receive requests from the legislature to extend their expertise into new areas of citizen demand, Overall planning and landscape design is becoming more and more the responsibility of the forestry administration.

Conclusions

The problems of resolving the many conflicting demands made by the public and forest industries on a limited forest resource are not unique to the United States , The Federal Republic of Germany has the same problem, Although there are many institutional and cultural differences between these nations we cannot afford the luxury of ignorance of their programs for meeting these conflicting needs

Last year we extended an invitation to the students at every forestry school in the United States to join us at Hornberg , Not one single person materialized, In 1974 we plan to extend the invitation again as we extend the invitation to you today.

Foresters with experience in international travel and a knowledge of resource management in other countries will be qualified to make maximum contributions to the society of the twenty-first century. Today's college student will spend much of his life in that century, This is part of our program of education for that life at Stevens Point.

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