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**Lake States Forests:
A Sustainable and Appreciating
Regional Asset**

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INTRODUCTION

It is a great pleasure to return to Madison today and to take part in this seminar. Madison may be the nicest place that I have ever called home in the course of living in eight different states for varying periods. It seems possible I would still reside here had liking for the community been the sole criterion. But that would have prevented some kinds of professional experience that now seem helpful in carrying out a major regional analysis for the Lake States Forestry Alliance. In short, it's probably best to have wandered around a bit. But it's extremely nice to return.

It is my understanding that this seminar series is sponsored by the Roddis and Connor families, which are both strongly associated with forest products industries. Many of my observations might strike them as reasonably on target.

My basic philosophic orientation is grounded in a strong belief in the *positive power of the political state* to foster effective societal development. We as a country have more history of using the positive power of the political state than is sometimes recognized. An early example occurred during the presidential administration of Thomas Jefferson in the first decade of the 1800's. Under the leadership of Secretary of Treasury Albert Gallatin, the federal government built canals and post roads for the express purpose of bolstering the economies of what were then less developed portions of the nation (Malone 1974; Webster, *et al.* 1990). A much more recent example involved creation of the U.S. airplane manufacturing industry via a process of public/private cooperation and joint effort that would be recognized instantly by the Japanese Ministry for International Trade and Industry. It is interesting to note that this is one of our most internationally competitive and successful manufacturing industries.

We have heard almost nothing about the positive power of the political state at the national level during the last 25 years, but quite a bit at the state level in various parts of the country. One exception at the federal level was discussion of possible *industrial policy* during the presidential administration of Jimmy Carter (Graham 1992). That was a time—the late 1970's—when one after another U.S. industries were badly losing competitiveness. Our ordinary arrangements were visibly not doing the job. Some imaginative ideas were discussed, but came to very little when President Carter returned to Plains, Georgia, after one term. At this same time there were major efforts in many states to more purposefully foster societal development and these are dis-

cussed by several authors in generally well-regarded books; *e.g.*, Fosler (1988) and Osborne (1988). It is my impression that the former governor of Arkansas is making a determined effort to carry a sense of the positive power of the political state once again from the state level to the federal level.

Effective protection, management, and use of forest resources can be one arena in which that positive power of the political state can be brought to bear. Indeed, it can be argued that this has occurred in an important way in each of the three Lake States during the past 15 years. A major effort—termed the “governor's target industry program”—was undertaken to develop and diversify an extremely regression-prone Michigan economy while I was state forester. Several sectors were identified that had potential to grow substantially. Joint public/private efforts were then made—with some appreciable success—to foster their growth. Forest resources and industries were one of these targeted sectors. Similar efforts related to forest resources and industries have also been made in Wisconsin and Minnesota although the labels and terminology differ.

So much for the introduction. Three topics can usefully occupy our attention during the next several minutes. The first is the essential idea of sustainable development, particularly some central ideas being discussed at the international level. The second is application of sustainable development to forest resources in a pragmatic way and in several important dimensions. And the third is an examination of Lake States forests with a particular eye to their appreciating nature, and their importance in effective regional development. All these topics draw on materials prepared as parts of the Lake States regional forest resources assessment. The first two come quite directly from a discussion paper originally prepared as part of the regional resources assessment, and subsequently published in *The Forestry Chronicle*, the professional journal of the Canadian Institute of Forestry (Webster 1993).

SUSTAINABLE DEVELOPMENT: SOME CENTRAL IDEAS

Sustainable development has been discussed in a particularly encompassing and useful way by the Bruntland Commission (United Nations World Commission on Environment and Development 1987). The work of this commission chaired by Gro Harlem Bruntland, prime minister of Norway, provided major underpinning for the recent “earth summit” in Rio de Janeiro. This is one measure of the international dimensions of sustainable development. Another is the fact that work of the Bruntland Commission involved major discussions and hearings at fourteen locations worldwide in places as diverse as Sydney, Jakarta, Nairobi, and Rio de Janeiro, and also six Canadian cities.

The emphasis of the Bruntland Commission is on *meeting the needs of the present without impairing the future*. Human needs and resource base/natural environment were given equal emphasis. There was also emphasis on equity among human generations.

The Bruntland Commission strongly made the point that *both* economic development and environmental protection are needed, *not* one or the other. Indeed, they are mutually interdependent, with each providing an essential basis for the other.

Economic growth will eventually be inhibited, and effectively cut off, in any location with a *seriously* degraded natural environment. A first effect will be that peo-

ple who have a choice will, in significant numbers, choose to live and work somewhere else. A further effect eventually will be a lack of resources needed for a substantial level of economic activity.

Effective protection of environmental quality requires substantial and continuing societal prosperity. Simple ability to pay for relatively expensive environmental protection measures is one aspect of this essential point. A more penetrating aspect concerns poverty. Poverty understandably leads to short-term views—everyone does have to eat *today*, and at reasonably regular intervals. Short-term views can, in turn, lead to harsh treatment of resources and natural environment. Alleviation of poverty is the single most important step worldwide in alleviating harsh treatment of resources and natural environment. Interdependence between economic growth and environmental quality is mutual.

Indeed there may be reason to think that emphasis on both economic development and environmental protection *by themselves* is still too narrow—though a great improvement over *one or the other*. Let's think briefly in an unconstrained way about the range of things to be sustained or enhanced if we are literally to provide for present needs without impairing the future—indeed attempting to provide for a better future to the extent possible.

The following would seem to be a minimum list of things to be sustained if we are to meet needs of the present without impairing the future: society as a whole; sense of community (at several different level); capacity for innovation (in both a technical and an institutional senses); education and skills for an effective work force; developed physical infrastructure; effective governmental and political institutions; national, regional, state economies and associated employment; and productivity of the earth's resource base.

The two ends of the scale—society as a whole and productivity of the resource base—are in a particular order. They are in a particular order for reasons discussed fairly recently by Alston Chase, author of among other things *Playing God in Yellowstone: the Destruction of America's First National Park*. In a newspaper article just before Christmas a year ago, Chase reflected on what is relatively resilient, and what is fragile and difficult to restore once broken down (*The Detroit News* 12/24/92). His central point is that *civilization* is fragile, while *nature* is resilient. The latter theme is also echoed by Botkin and Talbot (1992) and MacCleery (1992). Chase selected his examples from the further end of current breakdowns of civilization (Bosnia and Somalia). But his central point is extremely important if we are truly serious about meeting human needs of the present without impairing the future.

Much the same point is made in a book recently reviewed in *The Economist*, a British international news magazine. Robert Putnam and associated authors (1992) discuss "Making Democracy Work: Civic Traditions in Modern Italy." At first glance, this seems to have little to do with resource management and sustainable development, but at a more penetrating level it says a great deal. The authors examine where in Italy regional government now works well, where it works at a mediocre level, and where it works poorly. Several conventional factors explain little of the variation in effectiveness. What does seem to offer some explanation is the fact that regional government "... works best in regions with high levels of 'civic community'—patterns of social cooperation based on tolerance, trust, and widespread norms of active citizen participation." The review goes on to observe that "... social capital is far harder to accu-

multate than physical capital." Biological capital could be interpreted to be an adjunct or aspect of physical capital.

A book reviewed recently in the *New York Times Book Review* appears to make essentially the same point in a way less tied to a particular location. The book is titled "The Problem of Order: What Unites and Divides Society." A highlighted sentence says that "... [the author] sees order as a fragile thing hard to achieve but easily lost." The reviewer further notes that division and sundering of societies by antagonistic cultural and ethnic identities are the most typical forms of social disorder in our own time.

All these examples seem to strengthen the point that a reasonably prosperous and just society must be sustained to have reasonable chance of sustaining any more specific and detailed things, including the environment.

APPLYING SUSTAINABLE DEVELOPMENT TO FOREST RESOURCES

These central ideas taken as a whole help to sort out how the idea of sustainable development can best be applied to forest resources. Several items are important in defining a consistent and useful approach to sustainable development of forest resources. Following are four that are particularly germane:

1. the objects, conditions and values that are to be sustained;
2. the range of forestry activities that contribute to sustainable development;
3. the geographic scale at which sustainable development can most usefully be applied; and
4. the relationship of sustainable development of forest resources to new technology, effectively applied research, and investment in resource management.

Objects, conditions, and values to be sustained can be defined in many different ways—indeed too many different ways, for the full range to result in much other than confusion. For example, one of the *simpler* published discussions of alternate definitions of sustainability lists *five* (Baskerville 1990). Other published discussions go further up the scale of complexity and multiple alternate definitions.

Fortunately, meaningful simplification is possible. A good place to start is a simpler version of Gordon Baskerville's presentation. He gave such a version as a talk at the annual meeting of the Canadian Institute of Forestry in Alberta in 1989. He discussed three definitions that illustrate a scale of possibilities, with two being closely related at one end, and the third being at the other end. The two closely-related definitions are maintenance of overall productivity of forest resources in a region, or province or state, or other sizable area; and long-term maintenance and hopefully enhancement of levels of outputs of a variety of products and services from these resources. Outputs would, for example, range from clean water to wildlife of many different species, to recreational opportunities of various kinds, to timber products. These are definitions that are fundamentally in harmony with meeting human needs.

A third possible definition noted by Baskerville is applicable on particular relatively small areas; namely, maintenance essentially unchanged except by natural process, of all ecological features on specific sites. Wide-scale use of such a definition is not in harmony with meeting human needs. Ecological features certainly can be and are maintained undisturbed on limited and selected areas. But maintenance of these features undisturbed except by natural processes on all areas is simply not feasible if

society is to meet human needs for a substantial range of values from forest resources.

A definition that focuses on continuing productivity of the resource base is strongly suggested. Such a definition can help to guide patterns of resource management that pay careful attention to human needs over an extended future. A definition that focuses indiscriminately on undisturbed ecological features is *not* suggested. The latter will only encourage the appearance of a false choice between meeting human needs of several generations and sustainability. That leads entirely toward ideological gridlock.

The *range of forestry activities that contribute to sustainable development* can be illustrated. A good place to start is a major statement by the Canadian Council of Forest Ministers (1992), titled "Sustainable Forests: a Canadian Commitment." The statement is very explicit on need for a strong economic base both nationally and in major regions, supported in part by forest products and by recreation and tourism. The statement is also very explicit on the need for "... a full range of uses and values including timber production, habitat for wildlife, and areas allocated for parks and wilderness." Nine areas of emphasis illustrate the range of forestry activities that contribute to sustainable development. Several deal quite directly with societal and institutional underpinnings for sustainable development.

The *geographic scale at which sustainable development can be most usefully applied* has already been discussed in an initial and rudimentary manner. The point was made that the idea of sustainable development can be best applied to areas of some substantial size. If applied in a literal-minded way to quite small areas, it would be easy to fall into a definition close to the idea of sustaining undisturbed (except by natural processes) all ecological features on all specific sites. This is simply not consistent with meeting human needs for a substantial range of values from forest resources, as previously discussed.

How can "areas of some substantial size" be defined in a more specific and less all-encompassing way? In the discussion paper mentioned earlier, I attempted an illustration drawn from the large state forest system that I formerly administered in Michigan. Reasoning at greater length than appropriate here led to the conclusion that forest stands at all stages ranging from newly regenerated to approaching some reasonable definition of maturity might be regularly found on units of some 12 to 20 adjacent compartments (of 2,500 to 3,000 acres each). That perhaps gives us some sense of what sustainable development might look like on the ground.

One additional topic can usefully be considered: the *relationship of sustainable development for forest resources to new technology, effectively applied research, and investment in forest management*. New technology based in research has quite apparently expanded the ability of forest resources to provide for continuation of particular uses in a stable or expanding manner. The waferboard industry (under a variety of specific names) in the Lake States and adjacent areas on both sides of the international boundary is a case much in point. This industry is now producing building products at relatively low cost from raw material that was considered essentially worthless only three or four decades ago (i.e., aspen). There is also evidence in parts of the region that additional very low value species (notably several different hardwoods in relatively small trees) become valued parts of raw material supply as strong demand for aspen raises prices and costs.

This whole process of an expanding supply of useful material from previously

essentially worthless material also has a worldwide dimension. This is a point strongly made by Roger Sedjo and Kenneth Lyon in discussing "The long-term adequacy of world timber supply" (1990). They make the point that technologic developments rooted in effectively applied research are making both actual use of wood more efficient (demand effect), and previously unusable/low-value species useful (supply effect).

The *level of use* at which forest resources are sustainable is also quite directly influenced by effectiveness and intensity of management of those resources. Investment in more effective management can raise the level of sustainable outputs (Charles E. Little in Sampson and Hair 1990). Investment in management of some areas can also increase commodity outputs there, making it easier (in relation to overall demand) to leave other areas essentially undisturbed for their natural values.

Much the same point is made at world level by Sedjo and Lyon (1990) in discussing the contribution to world timber supply of rapidly growing plantations in what they term an *emerging region*; i. e., New Zealand, Australia, Chile, Brazil, South Africa, and the Iberian peninsula.

LAKE STATES FORESTS ARE APPRECIATING, AND ARE IMPORTANT IN EFFECTIVE REGIONAL DEVELOPMENT

Lake States forests are in a stage of significant accumulation, in the sense of appreciating assets that are getting bigger and in a general sense better. This is a process that has been going on for decades following original harvest. Progressively better fire control and several special management efforts beginning 60 to 70 years ago have reinforced processes of forest growth occurring with passage of time. A historic sense of the matter was given by the title of the proceedings of the joint governors conference at which the Lake States Forestry Alliance was formally organized seven years ago. The title was *The Lake States Forests: A Resources Renaissance* (Shands 1988).

This renaissance, this stage of asset appreciation, is continuing. That is the clear conclusion of important parts of the Lake States regional forest resources assessment. Two analyses are particularly to the point. One is an examination of trends in the health of Lake States forests. This examination has been based on a large-scale, ongoing monitoring of forest health in 20 northeastern states by a considerable group of scientists in the North Central and Northeastern Forest Experiment Stations. Parts of this ongoing monitoring that are applicable to the Lake States have been brought together by Manfred Mielke of the state and private forestry unit located in St. Paul, MN (Mielke 1993).

The second analysis is an examination of major forest resource trends in the Lake States by Robert N. Stone. He is an independent resource analyst located here in Madison, and among several previous assignments, was at one point head of the forest inventory and analysis unit of the North Central Forest Experiment Station. He, in essence, examined forest resource inventory information for each of the three Lake States and for the region as a whole over a period of 40 years (1952-1992). In doing so, he brought to bear a discerning eye that can see and elucidate patterns and trends unusually well (Stone 1993).

Following are four central findings of fact drawn from these two analyses:

1. Lake States forests are in generally good and improving health. Threats of disease and decline are highly place-specific and *not* general. Principal threats

are exotic imported pests that affect particular areas. Occasional wider spread drought is the stress most likely to affect forests over any widespread area.

2. Forest growth substantially exceeds harvest. Indeed the margin by which growth exceeds harvest has increased somewhat over the past 40 years, a period during which harvest increased by half. It seems possible that this margin has been reduced modestly in parts of the Lake States in the last several years, but it continues to be substantially greater than 40 years ago.
3. Forest area has increased significantly in the two states for which new 1990's inventory information is available. Factors involved are higher productivity for some land previously thought too unproductive to count, and reversion of marginal farmland to forested status. It seems likely that the pattern is similar in the state for which new 1990's inventory information is not yet available (Wisconsin). Not all of this increased forested acreage will necessarily be available for harvest of timber, but it is quite likely that in time a part of it will be.
4. Lake States forests are increasingly growing into larger tree sizes. Substantial acreages are moving from poletimber to sawtimber classes (just as earlier they moved from saplings to poletimber). This movement enhances several desirable values that are compatible in an overall sense given the substantial acreages involved: habitat for birds and other wildlife best adapted to relatively dense large forests, attractive scenery featuring large trees, and wood products for which large tree size provides economic advantage.

This is a picture of major resource asset appreciation. It is currently the basis for substantial and effective regional development. And it can be the basis for continued and strengthened effective regional development.

The Lake States have a major resort industry, a part of which is based on forest resources. These resources provide both attractive surroundings, and a locale for a wide range of recreational activities by visitors. It seems quite possible that carefully designed and targeted efforts to attract additional visitors from beyond the region itself would heighten the regionally beneficial effects of our resort industry. Attending to needs of visitors from elsewhere in effect makes resorts into an export industry. Wisconsin in particular, has a long history, particularly in relation to visitors from Chicago and environs. Attracting visitors from other regions would strengthen the export effect since Chicago is, in a sense, part of the Lake States although not literally in the three-state region.

The Lake States also have a major and growing forest products industry. It is widely known that forest products industries underwent a major expansion during the 1980's. Some \$4.5 billion were invested in new and expanded plants, an investment shared approximately equally among the three states. This was industrial expansion at rates faster than for all manufacturing in this region, and faster than for forest products industries at the national level (Pedersen and Chappelle 1993, Chappelle and Pedersen 1991).

This growth is likely to continue into the foreseeable future. For example, the leader of Minnesota's principal state economic development agency recently noted that forest products are probably that state's fastest growing industry, with a growth rate twice that of the state's economy as a whole, and twice that of this industry in the nation as a whole (*Star-Tribune*, 12/10/93). Developments that are restricting raw

material supply in other regions of North America seem very likely to continue this pattern, and may well intensify it (Hagenstein 1993). U.S. consumption rates for a wide range of resource commodities are extremely high, particularly in relation to other countries and regions at similar stages of development. And **everything** does have to come from **somewhere**!¹

Why is all this important? Why does it matter, or why should it matter, to people outside the resort and forest products industries themselves?

It should matter for the simplest and most important of reasons. That everything does have to come from somewhere is a point that an informed consumer can appreciate. And the resource sectors can help us as a region to earn our way in an increasingly competitive and interactive world.

An appreciation of this last point can be heightened if we recognize some differences among the three Lake States in their overall economic situations. These are differences within an overall pattern of substantial regional similarity.

Minnesota: Despite having a remarkably prosperous metropolitan area, parts of outstate Minnesota beyond the MSP-St. Cloud-Rochester corridor have experienced economic shrinkage over the past 15 years. This is particularly true of heavily agricultural and mining areas. A resort industry of considerable size, and a forest products industry growing at twice the rate of the overall state economy, are among the most strongly positive elements in parts of outstate Minnesota where such elements are especially needed.

Michigan: It is widely recognized that Michigan has experienced 15 years of serious economic difficulties due to a predominance of the automobile and related industries that have experienced some very heavy weather. Recent partial recovery of these industries is doing little for the area which generally has the oldest automobile plants in the nation. These are being replaced to a significant extent by newer plants built elsewhere. From unemployment rates for instate regions, it now appears that parts of Michigan are partially and progressively escaping from the downward drag of the primary automobile production corridor. The tourism and forest products sectors are among several helping to bring about this urgently desired escape.

Wisconsin: The outstate economy in Wisconsin is more developed and elaborate than in the other two states. Numerous communities center on manufacturing enterprises of diverse character, with resort enterprises forming an associated source of community economic support. The fact that Wisconsin has a resort industry more developed over a larger part of the state, and over a longer history, is one important reason for Wisconsin's greater outstate prosperity. Historically, greater concentration of technologically advanced forest products industries in Wisconsin than in the other two

¹ U.S. per capita consumption of paper and paperboard is 48 percent higher than per capita consumption in Canada and 93 percent higher than in western Europe. U.S. per capita consumption of gasoline is 40 percent higher than that of the second most well-off country in a list of OECD members. Canada is second and Australia is third. Neither is a small, compact place.

states is another important reason, particularly the concentration of pulp and paper in the Fox and Wisconsin river valleys. Several other factors are also involved.

The importance of all this can be brought into sharper focus regionally above the level of the somewhat differing specific situations in the three states. Professor Jeffrey Stier and a colleague carefully examined U.S. structural economic changes, pulling together and integrating findings from a wide range of pertinent literature. They then thought in a focused way about likely effects of these structural changes on sectors associated with forest resources in this region (Bilek and Stier 1993).

A number of their observations are particularly interesting:

- As a nation, we have experienced a quite profound stall in average wage levels over a period now more than 20 years in length.
- There has been a very substantial widening of inequality in incomes over this period. This can be illustrated in several quite striking ways. One particularly vivid measure compares how many people from the bottom of the income distribution it takes to match the aggregate income of the top 4 percent. This went from 35 percent in 1959, to 38 percent in 1970, to an astounding 51 percent in 1989. Family incomes in many households have been sustained primarily by having a rising number of workers per family. This trend occurred over a substantial time period and is still continuing.
- There has been a distinct aging of population, associated with quite low birthrates. This aging would be even more marked were it not for new immigrants.
- The joint effect of these factors is likely to bring some distinct shifts in recreation activities. Participation in activities of high cost, long travel time, and high demand for personal energy may decrease to some considerable degree. Those closer to home, with less cost, and less demand for personal energy are likely to increase.
- Both the wage stall and widening inequality in incomes have resulted from loss of industrial jobs that have historically paid relatively high wages for a considerable span of skill levels. This point was vividly illustrated by a report from the Census Bureau released March 30. The proportion of U.S. residents working full-time and still below the official poverty line increased from 12 percent in 1979 to 18 percent in 1993. The report titled *The Earnings Ladder* specifically discusses the effect of reductions in employment in manufacturing (*Star-Tribune*, 3/31/94).
- These factors together with examination of some additional industrial trends, led Ted Bilek and Jeff Stier to conclude that the Midwest will do better than several other regions in terms of manufacturing. This favorable manufacturing performance will involve a substantial range of specific industries and sectors. Forest products industries will be one such sector. One exception to good Midwest performance will likely be automobiles and related industries, as previously suggested in considering the economic situation in Michigan which has by far the greatest concentration of this sector.

This relatively favorable regional performance in manufacturing seems to me to be the good news. It is within the capacity of our natural resources. And this is a route toward a region of relatively good income levels, distributed over population segments in a more equitable manner than would otherwise be the case. A resort industry which

draws visitors from beyond as well as within the region will also contribute to an expanding and reasonably stable regional economic base. Such an economic base will also be a contribution at national and North American levels as a whole.

SUMMARY AND CONCLUSIONS

Sustainable development requires both economic growth and environmental protection, not one or the other. It is important that the orientation of the Bruntland Commission be widely understood and taken as the major guiding orientation. The importance of societal and social dimensions of sustainability needs substantial emphasis.

Human need as well as resource conditions must be directly considered in applying concepts of sustainable development to forest resources in a useful way. This amounts to considering societal and economic consequences in choosing what specifically to sustain and how to do it.

Lake States forests are in a major phase of accumulation by several important and mutually reinforcing measures. They are a sustainable and appreciating regional asset. They contribute substantially to effective regional development, and can do so to an increasing degree in the future.

To help this happen, we need to work as individual resource professionals, and as a group, to bring about several things. **One** is to stop arguing about non-questions. A rather extreme example is the proposal that we somehow return to conditions both vegetative and societal that obtained at the time of original European settlement of North America. That is literally impossible after 350-plus years of settlement and major population increases.² **A second** is to view overall resource management as a *positive whole*. That is quite different and much more constructive than a tendency in some circles, particularly at national levels, to see resource management as a zero sum game. To assume that what's good for *this* is automatically bad for *that, that, and the other thing* is simply to pull the ceiling down on our own heads quite unnecessarily. And **a third** is to view natural resources and resource management as an integral part of society, the economy, and our overall social as well as biological environment for living.

These three things will help us individually and as a group to work on constructive societal solutions. That's much better than being part of the problem! Thank you.

² The human population of the Lake States is slightly under 20 million. We are also influenced by population in surrounding areas. The states immediately south of the Lake States have human population of approximately 32 million. The province to the north of the Lake States has a total population between 8 and 9 million, although its center of gravity in terms of population is sufficiently east of the Lake States that its effect on the Lake States is less direct. Thus, population fairly directly affecting the Lake States is in the range of 50 to 60 million, built up over a settlement period of some 350 years. To suggest returning to presettlement societal and vegetative conditions is to call for negative population growth of very large proportions. That is simply not going to happen.

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