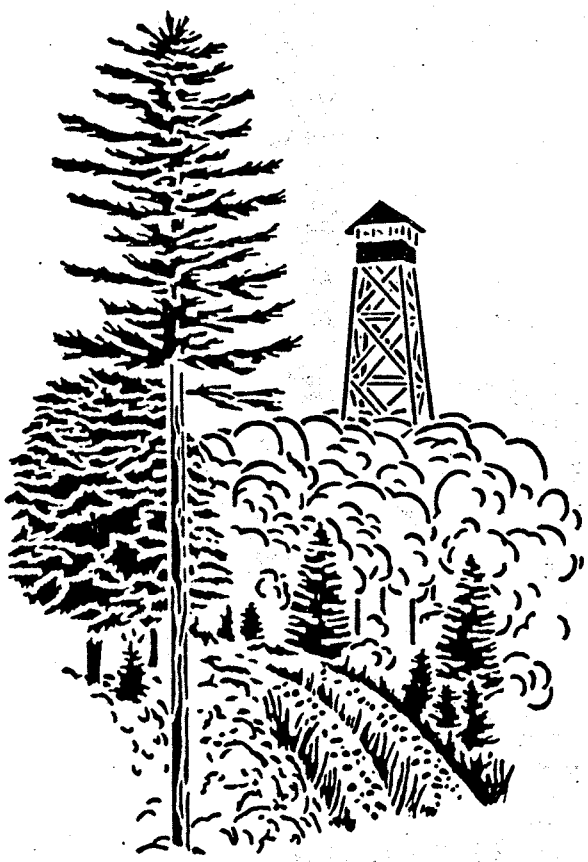
BUILDING A FOREST RESOURCE CONSTITUENCY



PROCEEDINGS OF THE NORTHEASTERN FOREST RESOURCE PLANNERS ASSOCIATION 1989 ANNUAL CONFERENCE

BUILDING A FOREST RESOURCE CONSTITUENCY

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A VIEW OF THE FUTURE: WILL FOREST RESOURCE PLANNING MAKE A DIFFERENCE

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INTRODUCTION

Greetings from the School of Natural Resources at the University of Michigan, its four hundred and fifty students, and thirty faculty. It's a pleasure to have this opportunity to help you begin your 1989 Conference, Building a Forest Resource Constituency.

The topic given to me for this keynote is, "A View of the Future: Will Forest Resource Planning Make a Difference?" I began preparing this speech six weeks ago on a drive back south after a weekend in Northern Michigan. It was an opportune time to think about this speech because of just having finished some enjoyable time in the woods and a time when I observed conflicting forest uses. As I thought about talking with you, two topics kept coming up again and again:

1. The forces that are shaping a future very different from the present.

2. The resulting changes that are needed in forest planning.

Three pages of notes resulted from the four hour car ride, but they promptly disappeared. They got lost, and despite the best efforts on my part and my staff, they were not easily found. I now think that part of the reason they got lost is that my thoughts about the future and forest planning seemed at the time, difficult to face and hard to communicate to you.

I thought a bit about how my ideas could be made more palatable or to put it in a different way, how they could be sugar-coated. Then I remembered that sugar isn't quite as harmless as I once thought it was, and acknowledged to myself that being direct with you is what I want to do. So, I won't hold back. I invite you into my view of the future and my ideas about directions to be pursued for forest planning. Forest planning can become more effective and have a bigger impact on our future, a bigger impact than perhaps even you could have foreseen when you made a commitment to your chosen profession.

I see forest planning as a dynamic, interesting, and important activity. This shouldn't be surprising because it is done by foresters. Your profession has a long and rich tradition of promoting and achieving the wise use of forest resources through action based on science and management expertise. You have a heritage of being involved in major changes in our natural environment. The very rise in importance of forestry as a profession in the U.S. grew out of the far reaching deforestation of North America in the nineteenth century.

Today, forests are on the minds of virtually all citizens. Public attention is directed to forests, whether a U.S. National Forest, the tropical rain forests, or a local forest slated for possible development. Today, planning processes, whether at the national, state, or local levels are changing very rapidly, and generally in the direction of greater concern for the well being of the

natural environment. Forest planning is increasingly important to our society and to the globe. You have much to be proud of and to feel good about. Challenging ideas, difficult changes, and unfamiliar thinking are not new to forest planners.

I'm not here to criticize. I have come to share a perspective on the future and set of ideas for improving forest planning which I believe can be helpful in the challenging and difficult times that lie ahead of us.

THE FUTURE: A PERSPECTIVE FOR RESOURCE PROFESSIONALS

The future is difficult to think about because of uncertainty about what will happen and why it will happen. In the face of such uncertainty we often experience both fascination and fear along with a desire to figure it out -- and to somehow gain control.

In my judgement, our natural tendencies in the face of uncertainty, including the desire to control; need to be acknowledged -- and understood -- so that they do not become our predominant reactions. Because with fear comes avoidance -- not thinking about the future --; and along with avoidance often we see cynicism, and over-simplification leading to partial solutions and unintended negative impacts. Some experts argue that neither our biological nor cultural evolution is sufficient for insuring our continued adaptation to increased rates of environmental change which will be present in the future. (Ornstein and Ehrlich, 1989) They maintain: "...the only permanent means of resolving this paradox is through conscious change." (Ornstein and Ehrlich, 1989 p. 53)

What we need to do is to give continuous, conscious attention to the future in all we are doing as professionals and citizens. We also need to pursue understanding and appreciation of very complex situations -- probably the most complex ever faced by our species. The complexity we face is rooted in the reality of wide ranging, very rapid global changes in the fundamental conditions of our collective existence.

I want to describe a selected subset of the basic forces that are part of this complex pattern of rapid change. The ones I will touch on are: human population, urbanization, economic growth; and then deforestation, species extinction, climate changes and the impacts of nuclear energy. Most of these important forces will not be new to you -- but we cannot revisit them too often. We need to appreciate and understand them in our effort to give them sustained attention in our professional work, in our citizen roles, and in our day-to-day behavior.

Human Population Growth

First, there is the matter of changes in human population: I remind you that it took somewhere between two million and five million years to get to a world population of one billion. We got to one billion about 1830, but it took only eighty years to get to two billion - about 1910. It took thirty years to add the third billion and fifteen years to add the fourth billion. The fifth billion was added between 1975 and 1987 -- a twelve year period and it's estimated that the sixth billion will be added by 1998 -- only eleven years later. (Miller, 1986) Currently, we are adding about one and one-half million people each week, which adds up to approximately seventy-seven million people each year. All these people must be fed, clothed, housed -- and each will use natural resources and add to global population.

This human population growth is a fundamental and awesome change in the condition of our planet and the life of our species. It is a global change affecting all of us. This is not just an abstract global problem nor a problem of the underdeveloped part of the world.

As stated in The Blueprint for the Environment (1988):

> The United States, with the fastest growing population in the industrialized world, also experiences population pressures. The population of Florida is growing faster than that of Kenya, the world's fastest growing nation. As a result, Florida's drinking water supply is in dangerous shape. The population around the Chesapeake Bay, the nation's largest and most valuable estuary, increased 50 percent between 1950 and 1980. The result has been increased pollution run-off that has smothered oyster and clam beds, commercial fishing pressure that has almost wiped out the striped bass, and a decline in the quality of the water in the Bay. There are examples all over the U.S. of population pressures seriously impacting productive natural environments. From a global perspective, U.S. population dynamics also have far-reaching effects. Every year, for example, U.S. population growth causes the loss of enough farmland to provide millions of people with a minimum diet. (Maize, 1988, p. 28)

Human population growth is one example of a powerful force reshaping the future. It requires both local and global attention, planning, and action.

Urbanization

"The single most important change in human settlements during the twentieth century is their rapid urbanization." (Human Settlements, 1988, p. 35) This is a quote from the chapter on human settlements in World Resources 1988-89. This review of the state of human settlements goes on to report: "As urbanization in industrial nations slows, urban populations in the undeveloped countries -- where three quarters of the world population lives -- are vigorously increasing." (Human Settlements, 1988, p. 35) The data on urbanization can be summarized as follows:

> In more developed countries urban population grew an average of: two percent a year from the 1920's to the 1960's. It will grow only about nine-tenths of a percent during the 1990's,.and will decrease to about half of a percent during the first quarter of the next century. (Human Settlements, 1988 p.30)..
>
> ...in less developed countries urban populations in this century have been growing: more than three percent a year (nearly double the total population growth rate, and more than twice that of the industrial countries. An estimated forty percent of the urban populations in less developed countries lives in slums and squatter areas with minimal housing and services. (Human Settlements, 1988 p. 36-37)

These urban centers are increasingly where most people live and have their day-to-day environmental experiences. It is these cities which degrade land, water, and other natural resources in the process of producing economic and social products. Sustainable environmental

use and development requires heavy attention to these rapidly growing cities which are increasingly dominant in human political affairs.

Economic Growth

Along with the forces of tremendous growth in human population and its resettlement into urban communities there is the force of economic growth.

Through economic activities the human population has a tremendous impact on the natural environment including fellow humans. One among a myriad of indicators of this economic activity is the gross world product measured in dollars, 1980 dollars. In a recent Futurist article, Lester Brown and Sandra Postel use this measure to describe the phenomenal change that is occurring. In summary, since 1950 the gross world product expanded from 2.9 trillion dollars to 13.1 trillion, a four-fold increase calculated in 1980 dollars. In the same period world fossil fuel consumption also increased four-fold. Economic growth became the central goal of all national governments. Increased interdependence between societies is one consequence with the emergence of global markets and a global economy. (Brown and Postel, 1987)

As Brown and Postel state, "While the global economy has expanded continuously, the natural systems that support it have not." (Brown and Postel, 1987, p. 10). This gross world product is produced by the use of resources including natural resources.

These resources that are the ground of human welfare are not evenly distributed across the world's population which makes inequity a part of the force of economic growth that is shaping the future. I remind you that Western affluent nations, and Japan, and the Soviet Union account for about one-fourth of the world's population, but use eighty percent of its natural resources. The US, with five percent of the world's population, produces about twenty-one percent of all goods and services, and uses about thirty percent of all natural resources and produces at least one-third of the world's pollution.

One result of the interactions of human populations, and economic development with its use of resources is unmet human need. One widely accepted and brief characterization of present unmet human need includes the following:

> The UN estimates that at least half of the adults on this planet are illiterate; one-fifth of the people are hungry or malnourished; one-sixth have inadequate housing; one out of every four lacks clean water; one out of three does not have access to adequate sewage disposal and effective medical service. (Miller, 1986, p. 3)

These unmet human needs demand our attention, as resource planners seriously preparing for the future. Such massive unmet need will generate increased pressures for social changes including the way we use the natural environment and how we distribute the benefits and costs of such use.

In my so far brief and simple characterization of unprecedented changes that are shaping the future, we have a basic pattern of increasing human population with multiple and growing needs, generating economic development with increasing resource use which yields impacts on human populations including serious unmet human needs

Another class of very important impacts from this pattern of population growth, urbanization and economic development are impacts on the natural environment. There are four

impacts I want to briefly call your attention to: deforestation, species extinction, climate change, and effects of nuclear energy.

Deforestation

In World Resources 1987 the overall course of deforestation is described as follows:

> At one time the world's forests and woodlands probably covered 6 billion hectares. By 1954, the total had declined to approximately 4 billion hectares because of the increasing use of land for agriculture, pasture, and settlement for a rapidly growing population. (Forest and Rangelands, 1987, pp. 58-59)

Until recently, as is the case for many natural resources, global studies of forest resources have been poorly coordinated and hampered by the available technology. Therefore, global data on forests are not well validated and sometimes are controversial.

As stated by World Resources 1987:

> .....evaluating long-term trends is difficult. But one recent assessment indicates that, historically, the greatest relative changes in the vegetation cover have occurred in temperate regions. Since large-scale land clearing for agriculture began around 8,000 years ago cold-winter deciduous forests (seasonal broadleaved forests) have been reduced by 32-33 percent. In contrast, most natural climate tropical vegetation has been reduced by only 15-20 percent over the past several millennia. Some 24-25 percent of all wooded savannas and tropical-subtropical deciduous forests have been cleared, while until recently only slight losses (4-6%) of tropical evergreen rainforests and tropical/subtropical evergreen needle-leaved forests have occurred. (Forest and Rangelands, 1987, p. 58)

International organizations focusing on the global forests have concluded: "that now reduction in forested areas is greater in the tropics than in temperate regions." They cite as their evidence:

> In tropical regions, deforestation rates have been 10-20 times greater than reforestation in recent years. Average annual deforestation is greatest in Latin America, and it is also high in Africa's open forests. In Central America, the area of forests and woodlands declined 38%, from 25 to 71 million hectares, and in Africa by 23% from 901 to 690 million hectares, between 1950 and 1983. (Forests and Rangelands, 1987, p. 58)

These think tank experts remind us: "Slightly more than half the world's 4 billion hectares of forests are in developing countries, where they cover 2.3 billion hectares or 30% of the land area. In developed countries, forested areas amount to approximately 1.8 billion hectares or about 33% of these countries' land area." (Forest and Rangelands, 1987, p. 59)

According to a 1960's report by FAO (UN Food and Agriculture Organization) reports: "Between 1963 and 1983 the amount of land under management plans increased in the Soviet

Union, the U.S., and tropical Asia, and has decreased in Europe, tropical Africa, Central America and the Caribbean, and tropical South America. (Forest and Rangelands, 1987, p. 59)

This report also states: "Developing countries manage less of their forests than developed countries do. Of 1.2 billion hectares of tropical closed forests in developing countries, only 42 million (4.7 percent) are under "intensive management." (Forest and Rangelands, 1987, p. 59)

It is clear that humans have deforested massive areas and are continuing to do so but now in vital tropical areas and in situations where deforestation creates desertification and deprives people of vitally needed fuel wood, watershed protection, and places to live.

Species Extinction

Scientists now know that twelve times in the past six hundred million years, there have been very abrupt changes in the earth's biological characteristics. From fossil evidence its known that large numbers of animal species disappeared from the evolutionary record. These are referred to as episodes of "mass extinction." About 14 million years have passed since the last world wide die-off of ocean-dwelling organisms. The most recent mass extinction involved mammals (woolly mammoths and saber toothed cats) occurred millennia before the dawn of human civilization. (Wolf, 1988, p. 101).

Wolf in his recent article states:

> Many scientists believe that a larger share of the earth's plant and animal life will disappear in our lifetime than was lost in the mass extinction that included the disappearance of the dinosaurs 15 million years ago. It is likely to be the first time in evolution's stately course that plant communities will also be devastated. The U. S. National Research Council in 1980 warned that, 'the ramifications of an ecological change of this magnitude are so far reaching that no one on earth will escape them.' (Wolf, 1988, p. 102)

One estimate, based on rain forests' shrinking to fifty-two percent of their original size by the year 2000, is that we will lose fifteen percent of the forest plant species, or about thirteen thousand, six hundred types of plants. In a worst-case scenario, we could lose up to sixty-six percent of these plants, a storehouse for new crops and medicines.

Even U.S. national parks are too fragmented to promise sustained life for many species. The smaller parks have lost many of their mammal species, while even the larger parks, such as Yosemite, have lost from one-quarter to one-third of their mammal species. Experts fear that severe losses in bird and plant species will follow:

> The disappearance of animals from (U.S.) national parks occurred so slowly that the local extinctions went unnoticed by park rangers. It is not clear to what extent bird and plant species will also be affected. (Wolf, 1988, p. 104)

To compound the difficulties of estimating species losses is the fact that many insects, plants, and fishes have yet to be discovered and catalogued. This leads Wolf to conclude:

> Since so little is known about the earth's biological future, the consequences of losing biological diversity cannot be forecast with confidence. (Wolf, 1988, p. 105)

Climate Change

Scientists have been warning for more than a decade that the burning of fossil fuels and other human activities are loading the atmosphere with gases that will warm the atmosphere around the world through the "greenhouse effect."

In its section on global warming the Blueprint for the Environment which provides advice to President Bush states:

> The National Academy of Sciences estimates the potential increase in global temperature over the next 50 to 100 years to be between two and seven-tenths and eight and one-tenth degrees Fahrenheit. (Maize, 1988, p. 9)

This recent compendium of environmental problems goes on to state:

> Scientists tell us that the consequences of global warming are certain to include a significant sea-level rise as oceans expand and polar ice melts; extraordinary changes in weather and precipitation patterns; destruction of forests and plant life; and disruptions in current agricultural patterns. (Maize, 1988, p. 9)

The most important greenhouse gas is carbon dioxide. According to a recent summary of research:

> It is currently estimated that three-fourths of human-caused CO_2 emissions come from burning fossil fuels and the remaining one-fourth from deforestation, mostly in the tropics. The United States alone accounts for about 25 percent of global emissions. (Maize, 1988, p. 10)

In the matter of climate changes, the interactions of the future shaping forces I am describing are very clear. For example, deforestation contributes to the greenhouse effect, both from the burning of the forests and from the loss of the carbon dioxide absorbing capacity of the plant life. The changes in the earth's atmosphere are also impacted by world population growth, urbanization, and economic growth. In attempting to meet the basic human needs of billions of people, we are producing many of the gases contributing to the greenhouse effect.

Nuclear Energy

As we think about the future we dare not forget about nuclear energy. Certainly its domestic applications present us with major challenges of safety of operations; and now we also are discovering the dilemmas and profound difficulties of waste disposal but, it is the military applications of nuclear energy that are most fearsome for the natural environment. The leading introductory text on environmental science by G. Tyler Miller states:

> Most analysts agree that the biggest overall threat to the environment and to humans and all other forms of life is global nuclear war. There already exist enough nuclear weapons to kill 35 times the number of people now living and an average of 10 more nuclear weapons are made each day. (Miller, 1986, p. 9)

For resource planners the future will be very different from the present and requires attention to fundamental forces we have to date pretty much ignored. These forces of population, urbanization, and economic growth involve such major and rapid changes that we dare not ignore them. It is clear that our future will be radically different from the conditions now familiar to us. I want to shift focus from the forces shaping the future to forest planning and how it will need to change.

WILL FOREST RESOURCE PLANNING MAKE A DIFFERENCE?

Forest planning in the U.S. already has been making a difference in the use and preservation of some forested areas. Systematic comparisons of alternative management plans as a basis for decision making are making a difference. Many interest groups have become involved in forest planning as well as experts from many different professional and scientific backgrounds. Expectedly, there is conflict and sometimes a great deal of it, but the involved disputes are being settled.

Yet, there are substantial criticisms of existing forest planning processes, the plans they produce and the implementation processes that follow the planning. In your meeting you will give attention to some of these criticisms. The already extensive forest planning activities and criticisms of it, indicate that forest planning is important and attention is being given to improving it.

All this is going on in a society that has had a generally very short term and exploitative perspective toward the natural environment including forests. This is also a society that is at best ambivalent about planning including forest planning. This is in a society that encourages individuals and groups "to do their own thing," first and only later give attention to the impacts on others. Forest planning in many ways goes against some strong values and traditions of this society but despite these conflicting values forest planning is making a difference.

For forest planning to have positive impacts in the future, continuous work and major improvements will need to occur over a number of years. Achieving such improvements will require the joint commitment and hard work of planners, scientists, managers, policy makers, advocacy groups (including business and environmentalists) and citizens. In my judgement, the following improvements are needed in forest resource planning

Unit of Analysis and Basic Functions

The unit of analysis and basic function of forest planning need to be changed. Ecosystems need to be the basic unit of analysis rather than forests. The function of planning needs to be changed to environmental planning. The reasons are simple, an ecosystem is a more scientifically meaningful unit of analysis than a forest, and environmental planning is more comprehensive than forest planning. I remind you of Webster's definition of the noun *forest*: "A dense growth of trees and underbrush covering a large tract," or *forest* as a verb - "to cover with trees." (Webster. 1965, p. 327) But what about water, soil, air, and wildlife?

A specific ecosystem is a local/regional reality which should be the focus of our planning but always in the context of the ecosphere -- a global reality. Dr. Stan Rowe, a plant ecologist, analyzing the implications of the Bruntland Commission Report for Canadian Forest Management -- points out that forest ecosystems are functional parts of the ecosphere. (Rowe, 1989) He reminds us that each sector of the ecosphere influences and is influenced by this whole of which it is a part. He described the ecosphere:

> ...as the cloud swathed skin of the planet: air layer above and water/earth layer below with organisms...The two thin life-filled layers together comprise an ancient, evolving ecological system. (Rowe, 1989, pp. 5-6)

In Rowe's judgement and words:

> An earth-shaking corollary is that the ecosphere whole, the integrated three-dimensional film at the planet's surface, is more important than the air, the water, the soil, and the organisms that are functional parts of it. In four and a half billion years of evolution the ecosphere produced people and continues to reproduce them. People on the other hand haven't a clue as to how to invent working ecological systems short of borrowing and the necessary spare parts from nature. (Rowe, 1989, p. 6)

Concept of Use

The understanding of "use" in forest planning needs to continue to change. Increased attention to non-consumptive uses is essential so that these uses have equal footing with consumptive uses. Despite the historic attention to multiple uses, consumptive uses have been the most important. The goal of sustainable use, for the full range of human needs, not just the isolated needs of this generation, but the needs of the coming generations should be central to our planning. The complexity, time frame and geographic scope of forest planning will need to increase to accommodate the intensifying pressures on the natural environment and the increased interdependence of the human populations producing these pressures.

Conservation must be the bedrock of planning for human interaction with natural systems. In the words of Canadian scientist Stan Rowe commenting on sustainable development:

> This is not an argument for doing nothing with forests. It is an argument for a different perspective on humanity's place in the world and on what has unthinkingly been done to it by traditional exploitation urged on by such unecologic concepts as maximum production, efficient extraction, and maintaining "market share". Sustainable development, sustainable economic development, depends on a sustained ecosphere, and we had better start asking the growth promoters and not a few forestry professionals, "How much is enough? (Rowe, 1989, p. 6)

He goes on describing the changes that are needed. Rowe states:

> The entire philosophy and history of conservation is a lesson in teaching people to take less from the earth's ecosystems now so that

> a continuing supply can be gleaned in the future. Conservation is an appeal to protect diversity and resiliency in ecosystems today so that they will be able to stand up to future shocks and keep producing tomorrow. Forestry no less than agriculture needs to take this lesson to heart, for it is the soul of sustainability. (Rowe, 1989, p. 7)

In this changed understanding of the uses of forests, global use must be a major consideration -- not just local, regional or national use. We are already part of a global economy and social system and our interdependence with other parts of the world will continue to increase. A planning perspective is needed that simultaneously views a forest as a local/regional resource and at the same time as part of the global forest and global natural environment. This will require new information and new understandings on the part of both involved environmental planners and interested groups seeking benefits from the forest.

Knowledge Base

The knowledge base of forest planning, or as I would prefer environmental planning focused on ecosystems, needs to continue to change. Scientific knowledge will continue to be important to the forest or environmental planner. In fact, scientific knowledge is increasingly complex and essential to understand phenomena like forest decline and global and regional climate change. To understand these important impacts on forests requires a multi-disciplinary knowledge base -- not one focused on trees, and it requires an interdisciplinary analyses focused on the total environment not centered around timber. Yes, trees and timber need to be considered but as only one of a complex and interacting set of inputs and outputs.

With increased human needs for forests and their related ecosystems and with it growing pressure from widespread citizen involvement in the planning process -- local knowledge will increasingly have to be considered in the planning process. The wisdom from day-to-day, direct experience will come to be as important to the planner as scientific knowledge. Much remains to be done to gather, analyze, and understand this type of knowledge and integrate it with relevant scientific knowledge in the course of the planning process.

Means of Planning

The ways planning for forests is done needs to change. Planning for forests and their inseparable environmental components needs to be done by teams that include a variety of specialists. Furthermore, these groups should be functioning interdisciplinary teams, meaning that a single speciality should not dominate. The specialists should include experts who focus on the biophysical environment and political, economic and social systems that interact with this environment. The task to be done in forest/environmental planning is too complex for one specialization to perform and it requires interdisciplinary, group problem-solving to cope with the breadth of what is to be planned for and the fact that a group of specialists of different backgrounds are required to understand the involved processes.

Forest/environmental planning needs to utilize new technologies like geographic information systems to improve the analyzes that are a core part of the planning. Applications of such technology will lead to greater compatibility of the information being used in different planning processes. It will also lead to examination of a richer array of alternatives and to a more meaningful comparison of alternatives.

Multiple interest groups and citizen constituencies should be active partners or co-participants in environmental planning. Multiple interests and needs must be identified, understood and incorporated for effective planning to occur. These groups and constituencies need to understand the problems, potentials and alternatives for using a given forest ecosystem. They need this understanding to identify and set priorities among their needs and interests and to eventually give their support to the planning process and the plan.

To have such co-participants requires that there be mutual education going on among these different groups and between them and the planning team of professional experts. I say "mutual education" to convey it is two-way, not the typical one-way flow of information from the expert to non-expert. These different interest groups and citizen constituencies are co-participants, not simply the source of input or advice. The intensity of public need for environmental resources will no longer allow for professional domination of the forest planning process. The professional alone can no longer know what is best, nor can the professional any longer be trusted to take care of it.

With broader representation of interest groups in the environmental planning will come a greater diversity of racial and socio-economic backgrounds among participants. In part this will be the result of changing national and international demographic patterns whereby the proportion of people of color will continue to grow. The greater diversity of groups and individual participants in environmental planning will also occur because of the increasing human needs for the benefits of the natural environment and with these needs increased pressure to pay attention to reducing inequities in the use of the environment.

In forest planning, there needs to be a greater connection made to urban environments. The urban environment is the day-to-day natural environment of most of the citizens who will influence forest policy and forest planning. Forest planning and the people doing it need to also be urban environmentalists who understand and work for the integrity of urban natural systems and for making connections between these systems and their human inhabitants and the rural and semi-rural natural systems where most forests are located.

Conflict and disputes will be an increasingly present and visible part of forest planning. This fact arises from the ever increasing intensity of human pressures on the natural environment and from the goal of meeting the needs and gaining the acceptance of a greater number and diversity of social groups. Consensus building, to develop needed policies and site specific dispute settlement processes for specific issues will be essential for environmental planning to work and to be effective. This will require new processes and skills in mediation, negotiation, problem-solving, communication and decision making. Our view, even, of conflict must change. We must learn to value diverse opinions as different perspectives from which to examine environmental planning and to illuminate potential problems and as sources of vital ideas and priorities.

The scope and rate of social change will increase and this will require increased innovation and adaptability in our planning processes -- but without structure; breakdown and burnout out will occur. We need to expect mistakes and incorporate means of self-correction and redirection. Respect among involved groups needs to be maintained and enhanced as a precious asset for achieving consent and collaboration.

CONCLUSION

At this point, for fear of giving new meaning to a phrase I've used often in this speech -- "long-term" -- I'll stop. In summary, let me say that these ideas I've shared with you are the

product of the reforms they suggest; they're not just my ideas, but informed by working with experts such as yourselves. In that sense, they are not exclusively about forest planning. In aggregate, I believe them to be an emerging approach to environmental management; they have to be in order to match the scope of the problems we face.

As the Worldwatch Institute observes, "No change in the biosphere is more dramatic than the degree to which human activities have reduced forested ecosystems to remnants." (Wolf, 1988, p. 109) Through your work, it's conceivable that you will be creating a model for the healthy stewardship of our natural resources for many years, and I hope generations to come. It's not too far a stretch of the imagination to say that as our forest resources go -- in the larger context I've suggested -- so go we as a species. The objects of your profession, forests, are a keystone element of a very important environment, the ecosphere which determines our future and the future of life on this planet.

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STATUS OF THE 1990 RPA PROGRAM

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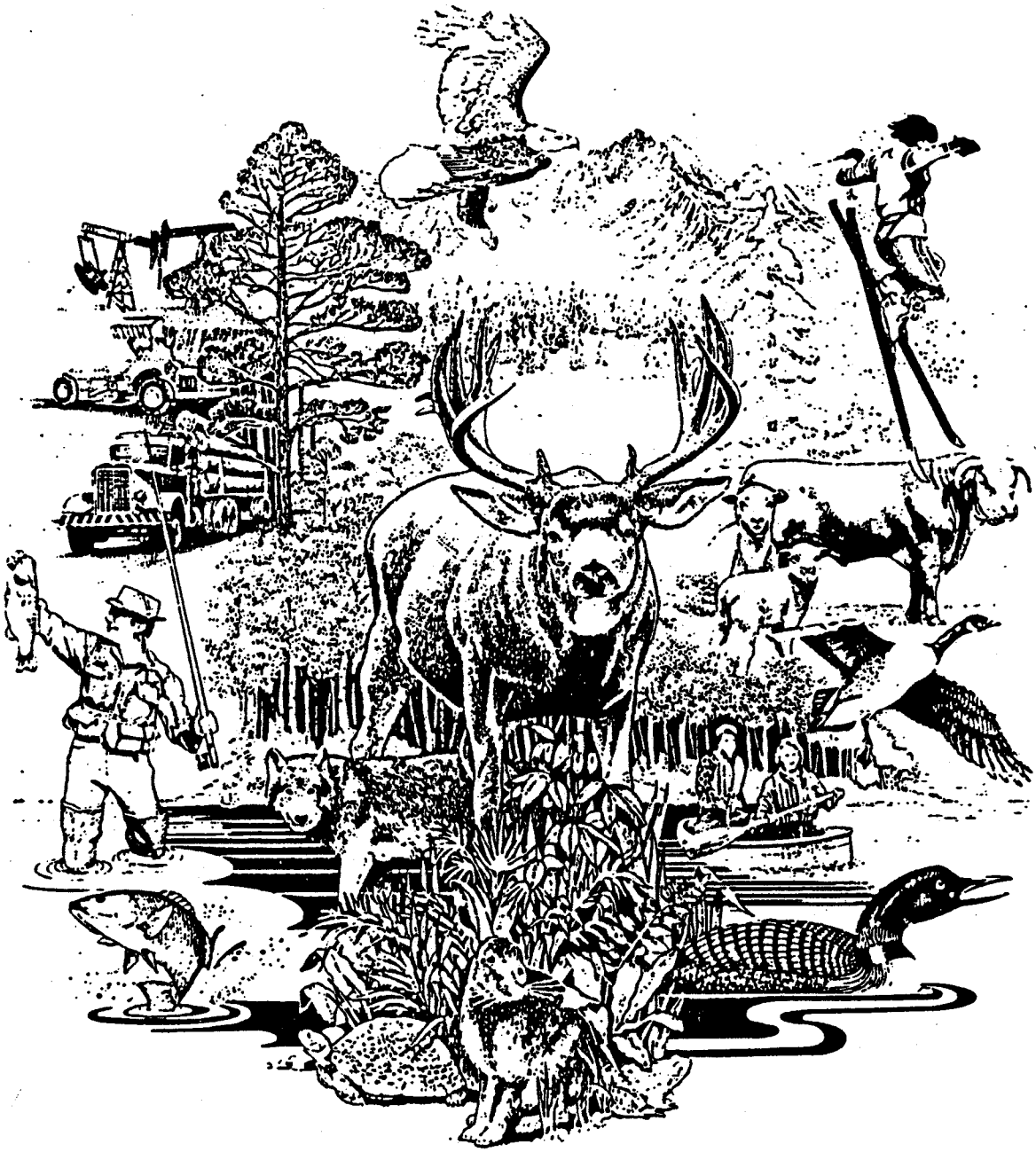

Introduction

The design of the 1990 RPA Program is based on three components: roles for Forest Service programs, consideration of contemporary issues, and long-term program Strategies. Each of these components is discussed in the Draft Program.

To serve strategic planning needs of the Forest Service. . .

The Draft Program includes proposed future roles for Forest Service programs, agency responses to contemporary issues, and an analysis of five alternative long-term program Strategies. The proposed future roles form the foundation for Forest Service responses to contemporary issues. This approach was taken because issues are often symptoms of more basic philosophical questions about what roles the Forest Service should fill. Together, future roles and responses to contemporary issues will influence the design of the single long-term program Strategy that will be developed for the Recommended 1990 RPA Program. The development steps for the three components of the Program are diagramed in figure 1.

***consider* roles *for programs,* issues, *and long-term program* Strategies.**

The 1989 RPA Assessment provides an analytical base for anticipating future resource needs. It has been used in the development and analysis of the long-term program Strategies. National forest land management plans ("forest plans"), responding to local issues and concerns, provide a basis for development of the Strategies. Local plans are also summed as one of the Strategies. The final Recommended Program will provide guidance (via the regional guides) for subsequent amendments and updates of the forest plans, and guidance for program budgets.

Background

Under the Forest and Rangeland Renewable Resources Planning Act of 1974 (RPA), a recommended program for Forest Service activities is to be prepared every 5 years. The Recommended 1990 RPA Program is designed to serve the long-term strategic planning needs of the Forest Service. The latest RPA Assessment of the Nation's resources projects that demands for most renewable natural resources will increase in the future. The Assessment also suggests there are numerous opportunities to increase resource supplies to meet these increased demands. The 1990 RPA Program will recommend how the programs of the Forest Service can best contribute to meeting society's resource demands. The Draft 1990 Program sets forth a number of possible Forest Service program responses about which the agency seeks public comments.

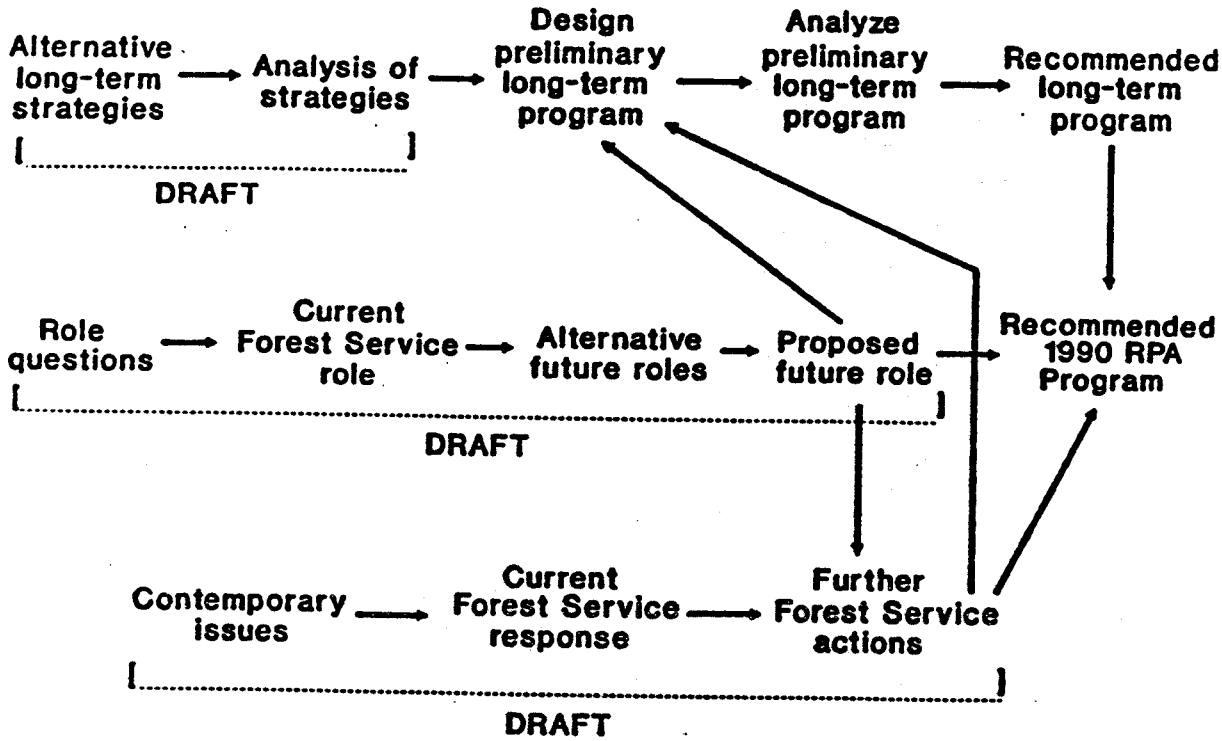

Figure 1—Steps in developing the 1990 RPA Program.

The Forest Service is one of many providers of natural resources. Its programs for National Forest System (NFS) lands, State and Private Forestry (S&PF), and Research represent opportunities to contribute significantly to the Nation's forest and rangeland resource needs. After further analysis and consideration of public comments on the Draft Program, the Secretary of Agriculture will develop a Recommended 1990 RPA Program. The President will transmit the Program and a detailed Statement of Policy to Congress in March 1990.

Roles for Forest Service Programs

The role of Forest Service programs has evolved over time in response to changing societal needs. Emerging needs and demands for forest resources make it likely that future Forest Service roles will expand or change. In the Recommended 1990 RPA Program, the selected roles for Forest Service programs will be described. They will provide the philosophical basis for the long-term strategic plan that is recommended. The current roles and proposed future roles are contained in this Draft Program. While the roles in eight topic areas are described individually to add structure to the discussion, these roles are highly interrelated and are integrated when used to direct programs.

Emerging needs and demands for forest resources suggest expanded or changed roles for Forest Service programs in the future.

Multiple-Use Management: What is the role of the Forest Service in the multiple-use management of forest and rangeland resources?

The fact that one parcel of land can produce several resource outputs provides significant opportunity to reduce conflict among resource users and to satisfy competing demands. Compatibility among varied outputs can be further enhanced with increased scientific understanding about resource interactions, coordinated management, and resource investments that improve productivity. Although multiple-use management cannot overcome mutually exclusive uses, it can extend the boundary at which one use must give way to another.

Multiple-use management can extend the boundary at which mutually exclusive uses must give way to one another.

Current Role—Under the broad forest-resource mandate of the Cooperative Forestry Assistance Act of 1978, the current emphasis of S&PF's program through the State Foresters is on increased timber production from State and private lands. This is accomplished through development of multiresource management plans for private landowners and supported through the fire, insect, and disease protection programs.

The NFS has a strong legislative mandate in the Multiple-Use Sustained-Yield Act of 1960 to manage for all renewable resources and for minerals production under the U.S. Mining Laws of 1872 and other laws related to mineral leasing. Managed under the multiple-use concept, the national forests provide a significant array of recreation, range, timber, water, wildlife, fish, mineral, oil, and gas outputs. In recent years, the agency has placed increased emphasis on the recreation, wildlife, and fish resources while retaining current levels of timber harvest and livestock grazing.

Under the legal mandate in the Forest and Rangeland Renewable Resources Research Act of 1978, Forest Service Research provides scientific support for the management of forest and range lands.

Scientific information can provide methods to achieve improved management effectiveness and compatibility of multiresource outputs.

Proposed Future Role—(This section for the Multiple-Use Management role is included with the proposed future role for Future Resource Opportunities for clarity of discussion.)

Future Resource Opportunities: What is the appropriate Forest Service role in preserving and increasing the variety of natural resource opportunities available to future generations?

Current Role—Technical assistance through the S&PF program contributes to enhanced forest productivity and the sustainability of timber supply from State and private lands. This role is supported by programs in fire, insect, and disease protection.

The Organic Act of 1897 established the forest reserves (later renamed national forests) and stressed the need to provide a continuous supply of timber into the future, to improve and protect forests, and to secure favorable conditions of waterflow. The Multiple-Use Sustained-Yield Act of 1960 further described the sustainable future resource outputs. Legislation mandates protection against the impairment of certain resources, such as cultural resources (the Historic Preservation Act of 1980) and threatened and endangered plants and animals (the Endangered Species Act of 1973). Managing NFS lands for sustained availability of all renewable resources contributes to future opportunities. Resource investments help to enhance the array and extent of future opportunities. Also, the reservation of significant areas of currently undeveloped preserves sensitive ecosystems for the future.

The Research program provides scientific information to support management decisions affecting future opportunities. Research also studies broader ecological subjects, such as atmospheric deposition, that have the potential to affect a far wider set of natural resources in the future.

Proposed Future Role in Providing for Multiple-Use Management and Future Resource Opportunities—

Increase S&PF's program of forest management assistance for State and private forest landowners through encouragement of multiple-use management planning on those lands.

Expand role to encourage multiple-use management on State and private forest lands. . .

Increase the outputs of recreation, wildlife, fish, and water from NFS lands while maintaining or moderately increasing the timber and range outputs. Lands will continue to be available for minerals production consistent with multiple-use management objectives. Increase emphasis on broadening the variety of future resource opportunities through investments that enhance resource production capability.

Increase NFS outputs, particularly of recreation, wildlife, fish, and water.

Increase the efforts of Forest Service Research to develop techniques that will enhance the compatible production of multiple outputs while improving understanding of major ecological issues.

Focus more research effort on increased resource compatability.

This proposed future role is most consistent with long-term program Strategies 2 and 4.

Contributions to Local Economies: What role should the Forest Service play in contributing to the well-being of local or regional economies?

Current Role—Because inadequate resource supplies can cause local economies to fail, the Forest Service role has been to contribute to local economies where possible and to avoid abrupt reductions in resource management programs that lead to rapid economic failure. Many factors contribute to the vitality of local economies, including the application of technology that permits them to be competitive.

Proposed Future Role—

Increase efforts in the future to contribute to healthy local economies and rural communities. The agency will give special attention to providing resource programs that contribute to the diversification of those economies, such as recreation programs

Increase efforts in the future to contribute to healthy local economies and rural communities.

that can help timber-dependent communities diversify. This increased effort to contribute to local economies will be tempered by the need to meet national objectives. Contributions to local economies should not occur at significant expense to national objectives.

Management in Mixed Ownerships: What role should the Forest Service play in ensuring complementary management in situations where landownership is mixed, especially when common or shared resources like wildlife and air and water quality are involved?

Current Role—The Forest Service seeks more-complementary management where it does not materially conflict with the roles for multiple-use management, providing future resource opportunities, and contributing to local economic well-being. More than any other role, this role gives the greatest emphasis to cumulative water quality and air quality effects across all ownerships and cooperative suppression of fires, insects, and disease on all forest and range lands. The regulation of forest management on private lands is clearly a role for State and local Governments.

Proposed Future Role—

Encourage development of mutually acceptable adjustments that increase complementary management.

Increase emphasis on communication and cooperation with adjacent landowners, and with State and local governments, to promote mutually acceptable adjustments that make management more complementary.

Research: **What should the role of the Forest Service be in providing scientific information on natural resource issues in an increasingly complex and competitive global arena?**

Current Role—The Forest Service provides scientific information that enhances the productivity and utilization of renewable resources and balances competing uses while maintaining ecological integrity. That information is provided to a wide array of landowners and land managers, both public and private. At the present time, effort is primarily oriented toward single-discipline research. Some changes have been made to focus on integrated multiresource information on management and utilization of natural resources that are interrelated as a result of their physical proximity, biological interdependence, or other characteristics.

Proposed Future Role—

Increase research efforts to provide information on muitiresource management problems using an ecosystem analysis approach, with emphasis on the recreation, wildlife, fish, and water resources.

Increase research efforts to understand how broad environmental changes affect natural resources, including those changes that are global in scope.

Increase research efforts on multiresource concerns and ecological issues of broader scope.

Resource Inventory and Analysis: **What is the role of the Forest Service in conducting inventories and analyses of the Nation's natural resources?**

Current Role—Accurate inventories and sound analysis are essential to effectively managing natural resources and to making informed public policy decisions about them. For many years the Forest Service has had a responsibility for inventories on State and private lands, as well as NFS lands. The Forest Service's current role is guided by two legal mandates, one for NFS lands and another for renewable resources in the entire Nation. The National Forest Management Act of 1976 has led to long-term, integrated inventories of all of the renewable resources on national forests and grasslands. The portion of the 1974 RPA directed toward an assessment of all resources and all lands has led to long-term continuous forest inventories throughout the Nation, with particular emphasis on the timber resource.

Proposed Future Role—

Expand inventory and analysis efforts to all renewable resources; improve monitoring of effects.

Continue recent trends by improving inventories of NFS resources other than timber and improving techniques to monitor the effects on forests of management activities.

Continue forest inventories on non-NFS lands, with primary emphasis on the timber resource. Increase cooperation with other agencies in their inventory activities of other renewable resources to gain a broader understanding of forest resource trends. In cooperation with appropriate agencies, expand inventory activities on all lands to collect information on forest health and productivity.

Increase emphasis on inventories and analyses to answer short-term, issue-oriented questions as well as provide information for long-term planning needs.

Natural Resources Communication: **What is the Forest Service role in communicating information about the condition and management of natural resources to the public?**

Current Role—Disagreement over policy and programs is sometimes aggravated by the public's perception of resource conditions. The overriding factor that guides the Forest Service is the need to provide sound and factual information for policymakers to use in determining policy on sensitive issues. The Forest Service is engaged in natural resources communication through management actions, activities, and interpretive programs on the national forests, through S&PF assistance to landowners, and through the transfer of scientific information generated by the Research program.

Proposed Future Role—

Increase agency efforts in providing basic information on natural resource topics, emphasizing activities that increase public understanding of natural resource issues.

Increase communications to provide basic information. . .

Increase agency efforts in natural resources communications that create forums for public discussion of broad natural resource issues.

create forums for public discussions. . .

Increase agency efforts to establish two-way communications with the public about Forest Service programs.

and discuss Forest Service programs.

International Forestry: What is the role of the Forest Service in addressing natural resource issues beyond national boundaries?

Current Role—Since its establishment in 1905, the Forest Service has had a tradition of international cooperation. The level of international activity has increased significantly in the past decade, with the Forest Service working through cooperative arrangements with the U.S. Agency for International Development and international organizations.

Proposed Future Role—

Expand International Forestry programs to advance the science and practice of forestry.

Expand Forest Service international forestry programs of technical and managerial assistance, research and scientific exchange, and training in order to advance the science and practice of forestry in the United States and other countries.

Those roles form the primary foundation for the Forest Service response to contemporary issues and the development of long-term program proposals.

Contemporary Issues

A total of 15 contemporary issues are described in this Draft 1990 RPA Program. Those selected for display are particularly relevant to the Recommended Program as they tend to have long-term and national implications. Forest Service response to issues is described here. The responses to contemporary issues will be incorporated in the Recommended long-term strategy. For example, if the response to the old-growth forests issue is to preserve and not cut old-growth forests, the long-term program Strategy will reflect this fact. Specifically, the Recommended Program would not only maintain old-growth forest acreage but also display the effects of doing so on the NFS timber program.

Selected issues that are particularly relevant to the Recommended Program and. . .

have long-term, national implications.

Here is a brief summary of the issues included and the current Forest Service response to each issue:

Issue: *Changing Recreation Needs.* **The American public's preferences in recreation opportunities are continually evolving. How should the Forest Service respond to these changes?**

Response—The National Recreation Strategy is intended to increase customer satisfaction with recreation that is provided from NFS lands. It provides opportunities to kindle an entrepreneurial spirit within the agency and to build strong partnerships and cost-sharing arrangements with other agencies and organizations. Additional research will permit the agency to give more effective consideration to customer satisfaction during planning.

Issue: *Threatened, Endangered, and Sensitive Species.* **To incorporate the needs of listed species and still achieve other resource objectives is a management challenge. This challenge increases as private land becomes more developed.**

Response—Forest plans have been prepared with the objective of ensuring viability of all species, with special emphasis given to those species already Federally listed as threatened and endangered and those recognized as sensitive. The Forest Service has designed special management standards, guidelines, and prescriptions to address this need.

Issue: *Riparian Management.* **The national concern for protecting riparian areas includes both wetlands and streamsides, and it is increasing.**

Response—Forest plans include standards and guidelines for management and monitoring of riparian areas. To strengthen planning, the agency will initiate a national program for the stewardship of riparian areas.

Issue: *Water Quality.* **Some people are concerned that the Forest Service cannot assure protection of water quality and at the same time provide current levels of other resource products.**

Response—To ensure the protection of water and water-dependent resources on the national forests, the Forest Service has implemented a program for managing nonpoint sources of pollution and will increase research on cause-and-effect relationships between land management activities and water quality.

Issue: *Air Quality.* **Evidence shows that air pollution can have adverse effects on forest and related resources. Also, questions arise about whether the Forest Service should continue to use prescribed burning as a long-term tool for forest protection and management.**

Response—The Forest Service will continue to lead a coordinated effort to determine the effects of a changing atmospheric environment on forest ecosystems. Through the National Wildfire Coordination Group, the agency will consider management techniques to reduce the adverse effects of prescribed burning.

Issue: *Catastrophic Fires.* **Catastrophic fires will continue to be a concern until the buildup of natural fuels is reduced and the risk to people living in wildlands is also reduced.**

Response—The Forest Service will offer help in wildland fire protection and research to contribute to solving these problems. Wildland vegetation must be managed to reduce the risk of loss, especially where residential areas are interspersed with wildlands. Efforts to minimize catastrophic fires must be intensified by Federal, State, and local governments.

Issue: *Range Condition.* **The growing concern about the condition of public rangelands is not whether livestock grazing will continue, but how and under what conditions it will continue.**

Response—Range areas in unsatisfactory condition need to be improved through application of better management techniques. The Forest Service has undertaken several actions to update the range management program under an overall theme of "Change on the Range." This program recognizes broader multiple-use values for the range resource.

Issue: *Minerals Development.* **Minerals production on NFS lands needs to be facilitated in an environmentally responsible manner.**

Response—The Forest Service program will increase integration of mining and oil and gas activities with other resources. There is a strong emphasis on having an active minerals program that is responsive to environmental concerns.

Issue: *Below-Cost Timber Program.* **The public is concerned that in some national forest timber sale programs, annual costs exceed annual revenues to the U.S. Treasury. Critics have proposed that these below-cost timber programs be eliminated.**

Response—Individual national forests are finding ways to increase productivity, reduce costs, and enhance revenues through evaluation of recently improved timber accounting information. Current national direction on below-cost timber programs is being reviewed. Conclusions will be reached at the end of a timber accounting system test going on now.

Issue: *Old-Growth Forests.* **The amount and location of old growth to be withdrawn from timber harvesting is the subject of great debate. Complicating the issue are differences in acreage estimates and definitions.**

Response—The current Forest Service response to the old-growth issue was developed in the forest plans. The agency has undertaken efforts to develop improved definitions of what constitutes old-growth forests and to conduct an improved inventory of old growth. A national task group has been established to coordinate further study of this issue with other Federal and State land management agencies.

Issue: *Clearcutting.* **To many users of the national forests, clearcutting is a method of harvesting timber that is not acceptable. They feel that impacts of clearcutting are too great on some species of wildlife, on water quality, and on esthetics.**

Response—The Forest Service changed its use of clearcutting since passage of the National Forest Management Act of 1976 by reducing the size of clearcuts and doing fewer clearcuts relative to other harvest methods. The agency continues to review its harvesting practices and Research is evaluating alternative methods of managing species mixes; however, clearcutting remains a legitimate harvesting method under certain conditions.

Issue: *Timber Supply from Nonindustrial Private Lands.* **While there are abundant timber-growing opportunities on these lands, uncertainty exists about the dependability of timber supply and whether government assistance programs can affect that dependability.**

Response—Timber supplies from nonindustrial private lands are a dependable sources of timber when the landowners receive financial and technical assistance.

Issue: *International Forest Products Competitiveness.* **The U.S. forest products industry faces increasingly severe competitive pressures in both domestic and export markets.**

Response—Traditionally, support for forest products competitiveness has come from forest products research. The Forest Service formed a task group charged with identifying steps and actions the agency can take to enhance the industry's ability to compete at home and abroad.

Issue: *Biological Diversity.* **Biological diversity is not well understood and means different things to different people. The public is concerned about how management of a specific area or a grouping of areas is related to the "big picture."**

Response—Forest Service management actions are designed and implemented to conserve specific components of biological diversity on NFS lands. Forest Service Research is working to better define, measure, and maintain our Nation's biological diversity.

Issue: *Global Climate Change.* **Atmospheric models project global atmospheric warming in the next 50 to 100 years and major changes in global wind patterns that will alter seasonal and regional precipitation patterns. If these projections prove to be correct, major changes in ecosystems will result.**

Response—The Forest Service is embarking on an accelerated research program to develop the knowledge needed for sound decisionmaking. This program will provide the scientific basis to address broad questions on the effects of physical and chemical climate change on forests, rangelands, and related ecosystems.

Long-Term Program Strategies

Five Strategies for Forest Service programs were developed, and all are displayed in this Draft RPA Program. Each represents different resource emphases and implies a somewhat different set of future roles for Forest Service programs. Each Strategy is described by resource outputs provided, management activities, and costs necessary to accomplish the management activity. None of the Strategies attempt to prejudge the outcome of existing policy debates beyond Forest Service control, such as listing of threatened and endangered species. The major thrusts of the Strategies are:

Each Strategy represents different resource emphases and implies a somewhat different set of future roles for Forest Service programs.

Strategy 1—Continue Budget and Relative Resource Emphasis of the 1980's. Continue the Forest Service funding levels and resource mixes that were in place during the 1980's. The rationale for this Strategy is that the funding level and program mix in recent appropriations reflect the current preference of the Administration and Congress for Forest Service programs.

Strategy 2—Implementation of Local Resource Plans. Fully implement forest plans, the S&PF program assistance required to implement the Statewide forest resource plans, and the plans of Forest Service Research. This Strategy will determine the national program that would result from implementing an aggregation of the existing plans that were developed to respond to local concerns and issues.

Strategy 3—High-Bound 1985 RPA Program (adjusted). Emphasize increased revenues and net public benefits from national forests, increase the role of States in resource management, and implement high-priority research initiatives. This Strategy is similar to that of the last nationwide Recommended RPA Program. This is essentially an adjustment of the high-bound 1985 RPA Program, which offered 13 billion board feet of timber in 2000 and 20 billion board feet in 2030. For the 1990 Program, the volume of timber offered in 2000 was reduced to the offer level in forest plans with a rise to 15.6 billion board feet in 2040, consistent with available technology needed to support increased timber-harvest levels. The 1985 RPA Program was also adjusted for subsequent changes in production—cost relationships and relevant legislation.

Strategy 4—Special Emphasis on Responding to the RPA Assessment. Develop a program that maximizes the overall response to the projected resource demands, supplies, and opportunities described in the 1989 RPA Assessment. The rationale for this Strategy is the need to tailor a set of programs that respond to Assessment-projected increases in resource demands by

emphasizing shared Federal, State, and private responsibilities for resource production.

Strategy 5—Shifting Resource Balance Among Private and Public Lands. Develop a program that accomplishes (1) a relative reduction in the production of timber and range from national forests and (2) a relative increase in production of recreation, water, wildlife, and fish from national forests. This program increases dependence on the private sector to produce commodity outputs. The rationale for this Strategy is to allocate resource production responsibilities to lands that are especially well-suited to turn out specific resource products, whether by their physical characteristics or because of the institutional characteristics of their respective owners.

This Draft Program also evaluates several near-term program initiatives for each of the five Strategies. They include objectives related to:

- Threatened and endangered species recovery
- Restoration of anadromous fish habitat
- Facilities maintenance and equipment purchase
- National Recreation Strategy
- Healthy and diversified local economies.
- Strengthened intergovernmental relationships

Tables 1 and 2 compare selected program components and other factors.

Tables 1 and 2 briefly compare selected program components and other factors for the five Strategies. The material presented in table 1 provides indications of the programmatic composition and resource output mix of each Strategy. In table 2, other key factors are summarized, such as, responsiveness of the Strategies to findings in the 1989 RPA Assessment, environmental effects, costs, and economic effects.

Figures 2-5 show selected aspects of the NFS programs.

Selected aspects and components of the NFS program are displayed in figures 2—5. In addition to showing long-term direction for each Strategy, the figures show the 1987 base and selected intermediate data points where appropriate. Long-term program costs are displayed in figures 6—8 for S&PF, Research, and NFS. The average annual rate of increase in total costs between 1987 and 2040 varies but is less than 1 percent per year for each Strategy.

Figures 6-8 show long-term program costs by S&PF, Research, and NFS.

Figure 9 compares annual "profitability" for the NFS portion of each Strategy. Eventually, all Strategies will generate receipts that exceed program costs. Strategy 1 receipts will cover costs by about 2009 and Strategy 5 receipts will cover costs by about 2025. The other Strategies will cover costs between 2030 and 2035.

Figures 9-11 show economic and employment effects of the NFS programs.

Strategy 1 has the highest present net value when benefits are measured by receipts. Strategy 1 present net value is positive at $0.8 billion (figure 10). The present net values for other Strategies are negative, when benefits are measured by receipts, with Strategy 3 last at $-13.5 billion.

When benefits are measured by market clearing prices, the order of the ranking is much different—all present net values are positive and Strategy 5 is the highest. When benefits are measured by market clearing price plus consumer surplus, the ranking is the same as the ranking by market clearing prices. Benefits from Strategy 5 are high primarily because the high recreation and wildlife and fish outputs more than compensate in value for the value of lower timber outputs compared to other Strategies.

Most Strategies project employment resulting from NFS activities to approximately double by 2040 to about 1 million jobs (figure 11), even though the resource mixes vary considerably. The exception is Strategy 1, which shows smaller increases in employment by 2040.

The Draft 1990 RPA Program document provides more detailed information about the three program components—roles, issues, and Strategies. Public review of the draft is a very important part of the process of developing the 1990 RPA Recommended Program. Comments on the draft are encouraged, and the Secretary of Agriculture will carefully and fully consider them as the Recommended Program is prepared.

Table 1—Comparison of Long-Term Program Components

Selected Program Components	*Strategy 1*	*Strategy 2*	*Strategy 3*	*Strategy 4*	*Strategy 5*
National Forest System					
Recreation	Use increases by about 33% by 2040, far less than new demands. Facilities and trails continue to deteriorate as maintenance is deferred. Total deferred maintenance increases 79% by 2040.	Use increases about 85% by 2040. Facility and trail conditions improve as previously deferred maintenance is performed. Total deferred maintenance is reduced 97% by 2040.	Use increases 100% by 2040. Facility and trail conditions improve as previously deferred maintenance is performed. Total deferred maintenance is reduced 83% by 2040.	Use increases 98% by 2040. Facility and trail conditions improve as previously deferred maintenance is performed. Total deferred maintenance is reduced 97% by 2040.	Use increases 111% by 2040. Facility and trail conditions improve as all previously deferred maintenance is performed by 2040. Emphasis is placed on dispersed recreation and wilderness opportunities.
Range	Grazing declines about 10% over the planning period. Range health is unchanged, and livestock management is satisfactory on 87% of NFS allotments by 2040.	Permitted grazing continues at the current level. Range health improves, and livestock management is satisfactory on 98% of NFS allotments by 2040.	Permitted grazing increases about 15% by 2040. Range health improves, and livestock management is satisfactory on 95% of NFS allotments by 2040.	Permitted grazing continues at the current level. Range health improves, and livestock management is satisfactory on 98% of NFS allotments by 2040.	Permitted grazing continues at the current level. Range health improves, and livestock management is satisfactory on 96% of NFS allotments by 2040.
Timber	By 2040, offer level is 10.4 BBF, 10% below today. Access is mostly provided by reconstructed roads and some new roads. Road system totals 425,000 miles by 2040.	Offer level increases to 13.7 BBF by 2040. Most of increase is in hardwoods. Access is provided by a combination of new roads and reconstruction of existing roads. Road system totals 447,000 miles by 2040.	Offer level increases to 15.6 BBF by 2040 and includes increases for softwoods and hardwoods. Access is provided by a combination of new roads, particularly early in the planning period, and reconstruction of existing roads. Road system totals 436,000 miles by 2040.	Offer level increases to 13.4 BBF by 2040. Most of increase is in hardwoods. Access is provided by a combination of new roads and reconstruction of existing roads. Road system totals 448,000 miles by 2040.	By 2040, offer level is 10.5 BBF, 10% below today. Access is mostly provided by reconstructed roads and some new roads. Road system totals 401,000 miles by 2040.

Table 1 – Comparison of Long-Term Program Components (continued)

Selected Program Components	*Strategy 1*	*Strategy 2*	*Strategy 3*	*Strategy 4*	*Strategy 5*
National Forest System (continued)					
Soil, Water, and Air	Water quality is maintained in most areas. Soil and air inventory and monitoring continue at current levels. In face of increasing demands, current program will lead to somewhat increased risks of short-term degradation.	Soil productivity and air and water quality significantly improve over the planning period. This is accomplished through investments and timely management actions.	Soil productivity and air and water quality significantly improve over the planning period. This is accomplished through investments and timely management and mitigation actions.	Soil productivity and air and water quality significantly improve over the planning period. This is accomplished through investments and timely management actions.	Soil productivity and air and water quality significantly improve over the planning period. This is accomplished through investments and timely management actions.
Wildlife and Fish	Habitat capabilities decline for most species. Hunting, fishing, and nonconsumptive uses increase 22% by 2040 – far short of anticipated increases in demands. Recovery objectives for 116 of 166 T&E species are met.	Essentially all habitats are maintained, and some improve. Hunting, fishing, and nonconsumptive uses increase 94% by 2040, and yet some demands are not met. Recovery objectives for all 166 T&E species are met.	Habitat capabilities decline for nearly all big game and increase somewhat for fish. Hunting, fishing, and nonconsumptive uses increase 92% by 2040. Recovery objectives for all 166 T&E species are met.	Habitat capabilities significantly increase. Hunting, fishing, and nonconsumptive uses increase 326% by 2040. Recovery objectives for all 166 T&E species are met.	Habitat and use capabilities significantly increase. Hunting, fishing, and nonconsumptive uses increase 375% by 2040. Recovery objectives for all 166 T&E species are met.
Minerals	Increasing demands for leasable minerals and mineral materials cannot be fully accommodated. Minerals cases processed continue at current level, but emphasis shifts to locatable minerals.	Growing demands for access to explore and develop minerals are nearly all met. Minerals cases processed increase 60% by 2040.	Growing demands for access to explore and develop minerals are all met. Minerals cases processed increase 72% by 2040.	Growing demands for access to explore and develop minerals are nearly all met. Minerals cases processed increase 64% by 2040.	Most demands for access to explore and develop minerals are met, except when high risk to other resources exists. Minerals cases processed increase 28% by 2040.

Table 1 – Comparison of Long-Term Program Components (continued)

Selected Program Components	*Strategy 1*	*Strategy 2*	*Strategy 3*	*Strategy 4*	*Strategy 5*
State & Private Forestry					
	Continues current level of assistance. Accomplishments in tree-planting, timber stand improvement, and other areas are constant through 2040. Protection activities for forest pests and fire decrease 7% by 2040 and result in increased resource losses in future years. (Under Strategy 1A, financial assistance is eliminated with related decline in accomplishments.)	Assistance increases moderately in all resource areas. Accomplishments are primarily timber-related; however, nontimber resources receive increased emphasis, too. Protection activities for forest pests and fire increase 79% by 2040 and provide greater resource protection in future years.	Assistance increases moderately and results in increased accomplishments in all resource areas, particularly timber-related areas. Protection activities for forest pests and fire increase 72% by 2040 and provide greater resource protection in future years.	Assistance increases significantly in all resource areas. Increased emphasis on nontimber resources results in significantly higher accomplishments in these resources, together with increased tree-planting and timber stand improvement. Protection activities for forest pests and fire increase 84% by 2040 and provide greater resource protection in future years.	Assistance increases significantly for timber-related needs and results in significant increases in accomplishments, particularly for tree-planting. Protection activities increase 81% by 2040 and provide greater resource protection in future years.
Research					
	Continues current programs with heavy emphasis on timber and wood production and single-discipline issues. Other research broadly addresses protection, noncommodities, and support.	Added emphasis is placed on recreation, wildlife, and fish research to support integrated multiresource approach to forestry management. Emphasis on ecological issues of broader scope increases.	Emphasis is placed on applied research to increase timber and wood production and to mitigate adverse effects on other forest resources.	Added emphasis is placed on recreation, water, wildlife, and fish research to ensure multiresource approach to forestry management. Emphasis on ecological issues of broader scope increases.	Recreation research increases dramatically. Added emphasis is placed on wildlife and fish research to support integrated multiresource approach to forestry management and on wood production from State and private lands. Emphasis on ecological issues of broader scope increases.

Table 2—Comparison of Other Long-Term Program Factors

Program Factors	*Strategy 1*	*Strategy 2*	*Strategy 3*	*Strategy 4*	*Strategy 5*
Response to Assessment	Overall responsiveness rating is LOW. Responses are low in all resource areas.	Overall responsiveness rating is MODERATE. All resource programs respond to growing demands. Wildlife, fisheries, and recreation programs increase most, but provide only a moderate response to fast-growing demands.	Overall responsiveness rating is MODERATE. While all resource programs respond to growing demands, the increased timber and recreation programs are most responsive.	Overall responsiveness rating is MODERATE to HIGH. All resource programs provide moderate to high responses to growing demands. Responses are highest for wildlife and fish programs.	Overall responsiveness rating is MODERATE to HIGH. All resource programs except minerals provide moderate to high responses to growing demands. Responses are highest for wildlife and fish programs and S&PF timber-related assistance.
Environmental and Other Effects (NFS only)	Given the cost constraints in Strategy 1, growing demands for forest resources result in growing risks of resource damage over the planning period. Long-term sustained yield and harvest levels will be about equal over the planning period.	Intensive management practices are expected to result in improved forest health. Insect and disease problems are reduced and soil and water conditions improve over the planning period. Long-term sustained yield exceeds harvest levels throughout the planning period.	Intensive management practices are expected to result in improved forest health. Insect and disease problems are reduced and soil and water conditions improve over the planning period. Long-term sustained yield exceeds harvest levels until the end of the planning period when they are about equal.	Intensive management practices are expected to result in improved conditions for essentially all forest resources. The greatest gains are likely for watershed, wildlife, fish, and cultural resource conditions. Long-term sustained yield exceeds harvest levels throughout the planning period.	Intensive management practices are expected to result in significantly improved conditions for essentially all forest resources over the planning period. Long-term sustained yield exceeds harvest levels throughout the planning period.

Table 2—Comparison of Other Long-Term Program Factors (continued)

Program Factors	*Strategy 1*	*Strategy 2*	*Strategy 3*	*Strategy 4*	*Strategy 5*
Costs (constant 1987 dollars)	Essentially unchanged from the 1987 base level of $1.9 billion, across the planning period.	Increases occur throughout the planning period and total nearly $3.1 billion by 2040. The rate of increase is 0.91% per year from 1987 to 2040.	Increases occur throughout the planning period and total about $3.2 billion by 2040. The rate of increase is 0.99% per year from 1987 to 2040.	Increases occur throughout the planning period and total about $3.1 billion by 2040. The rate of increase is 0.95% per year from 1987 to 2040.	Increases occur throughout the planning period and total about $2.8 billion by 2040. The rate of increase is 0.76% per year from 1987 to 2040.
Economic Effects (NFS only)	Present net values are positive for all accounting stances. Receipts increase for all resources, except minerals. Related employment increases moderately.	Present net values are negative when measured by receipts ($-11.6 billion), and positive for market clearing price ($119.2 billion), and market clearing price plus consumer surplus ($349.5 billion). Related employment increases 44% by 2040.	Present net values are negative when measured by receipts ($-13.7 billion), and positive for market clearing price ($113.4 billion) and market clearing price plus consumer surplus ($342.5 billion). Related employment increases 60% by 2040.	Present net values are negative when measured by receipts ($-11.9 billion), and positive for market clearing price ($138.3 billion), and market clearing price plus consumer surplus ($382.4 billion). Related employment increases 61% by 2040.	Present net values are negative when measured by receipts ($-6.8 billion), and positive for market clearing price ($165.8 billion), and market clearing price plus consumer surplus ($423.4 billion). Related employment increases 63% by 2040.

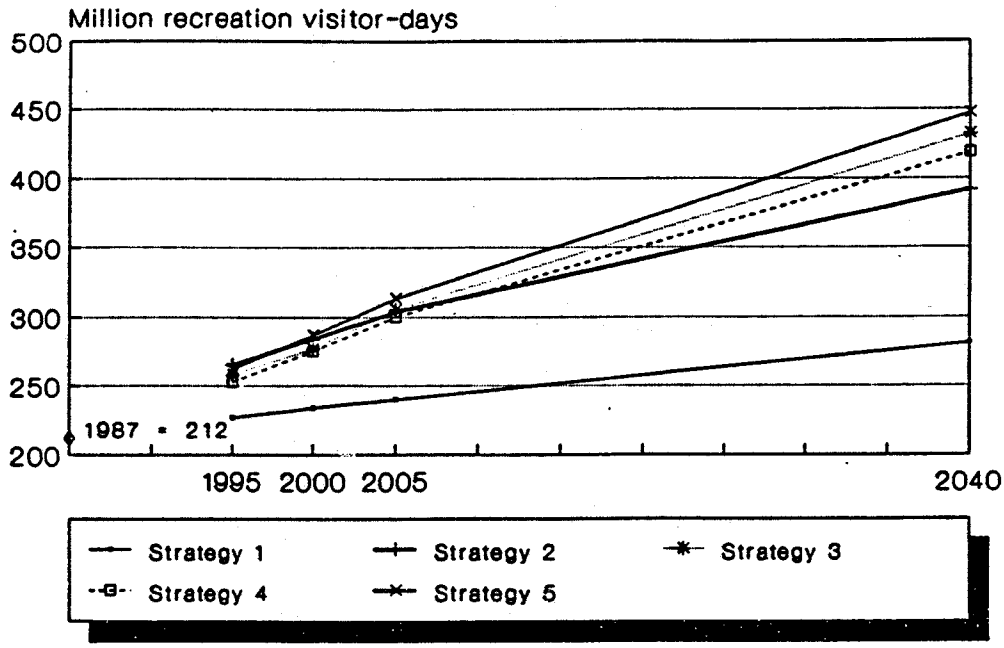

Figure 2—Total recreation use by Strategy, 1987—2040.

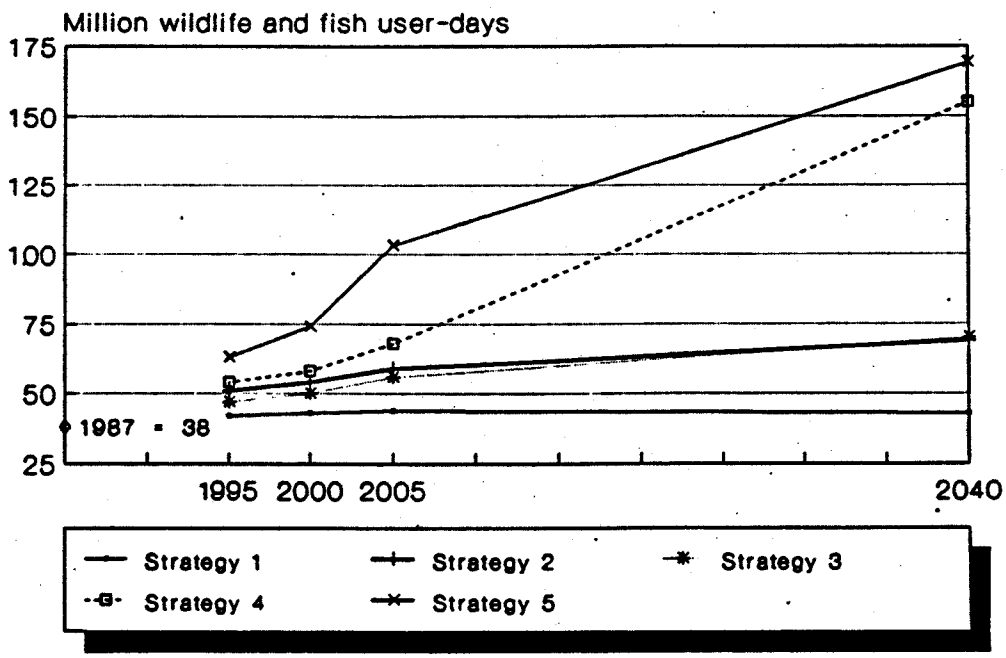

Figure 3—Total wildlife and fish use by Strategy, 1987—2040.

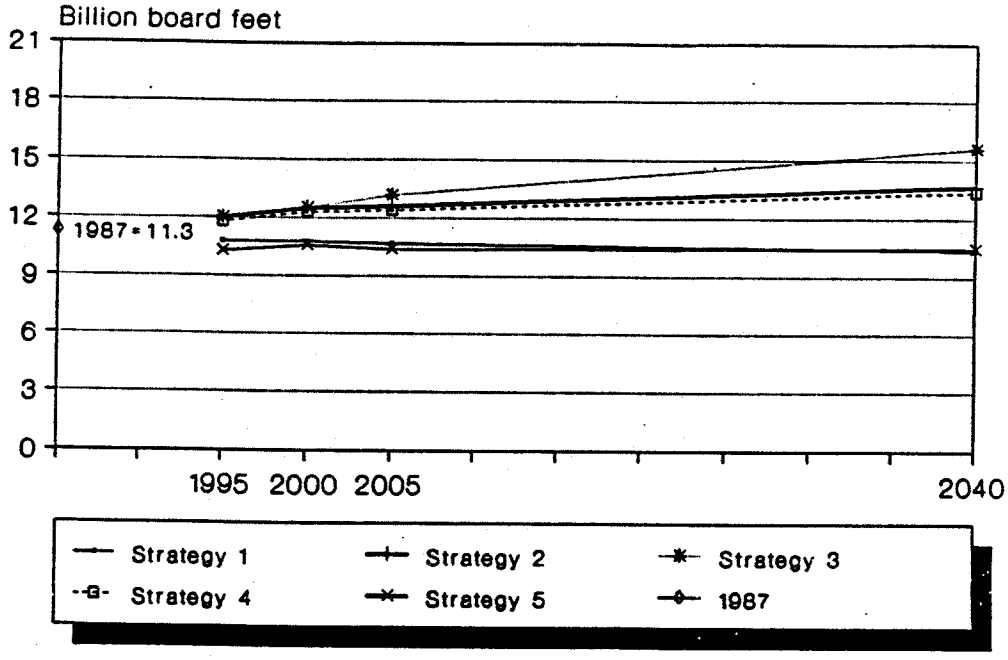

Figure 4—National forest timber offered by Strategy, 1987—2040.

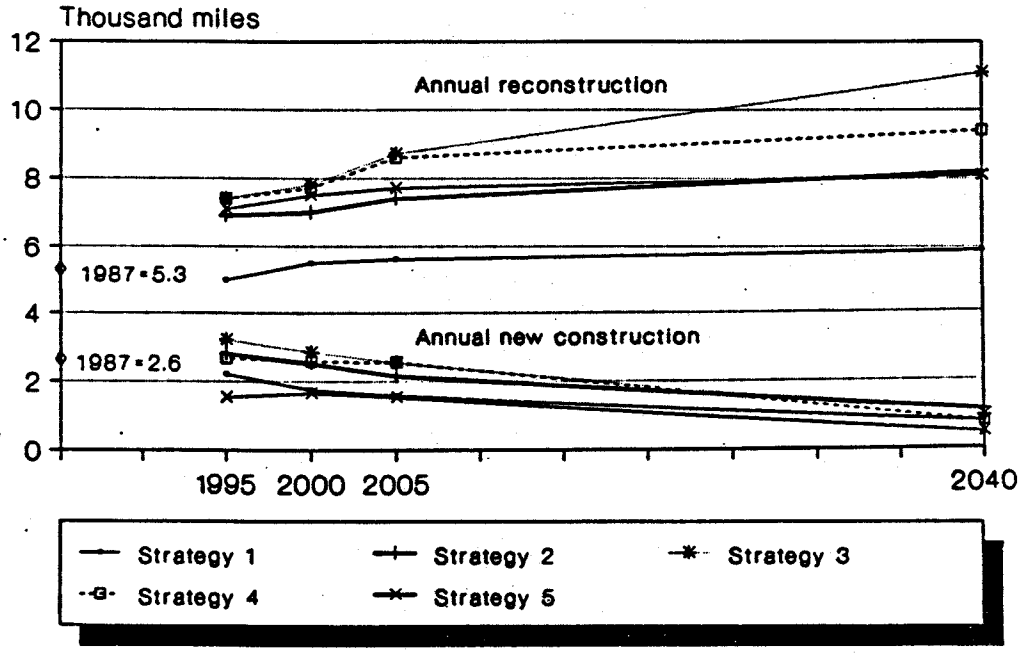

Figure 5—Annual new construction (below) and reconstruction (above) of roads on NFS lands, 1995-2040.

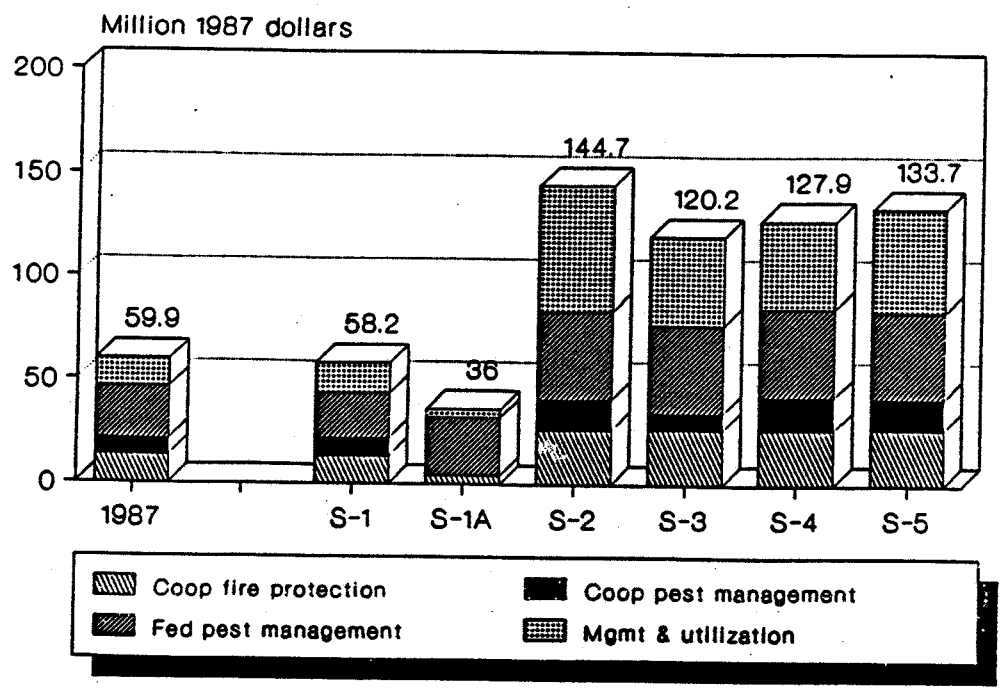

Figure 6—Cost of the S&PF program, by Strategy and components, for 2040.

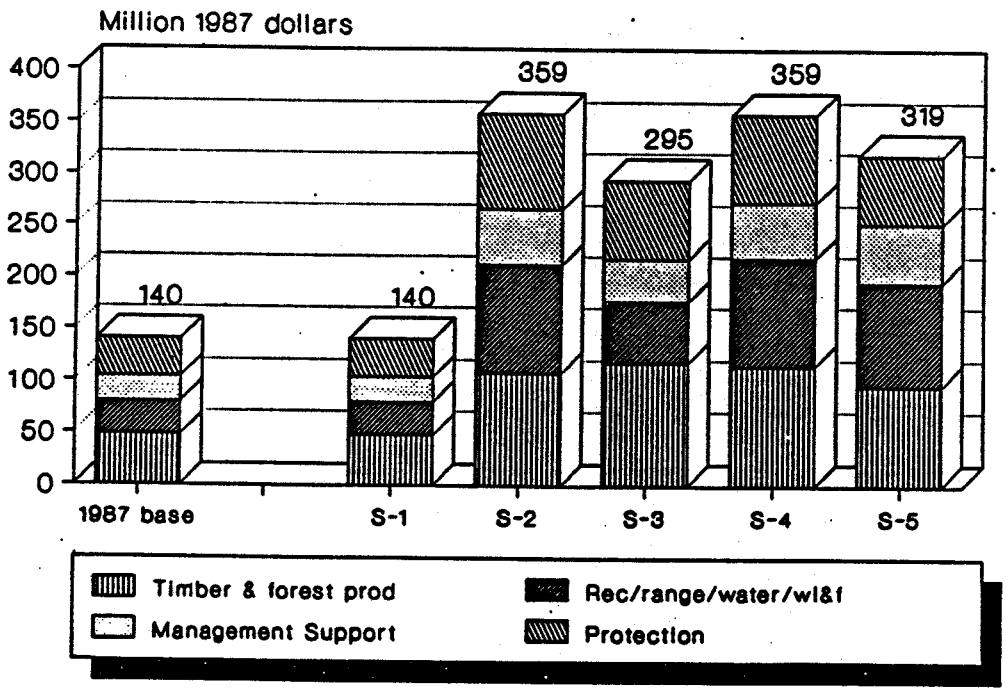

Figure 7—Cost of the Research program, by Strategy and components, for 2040.

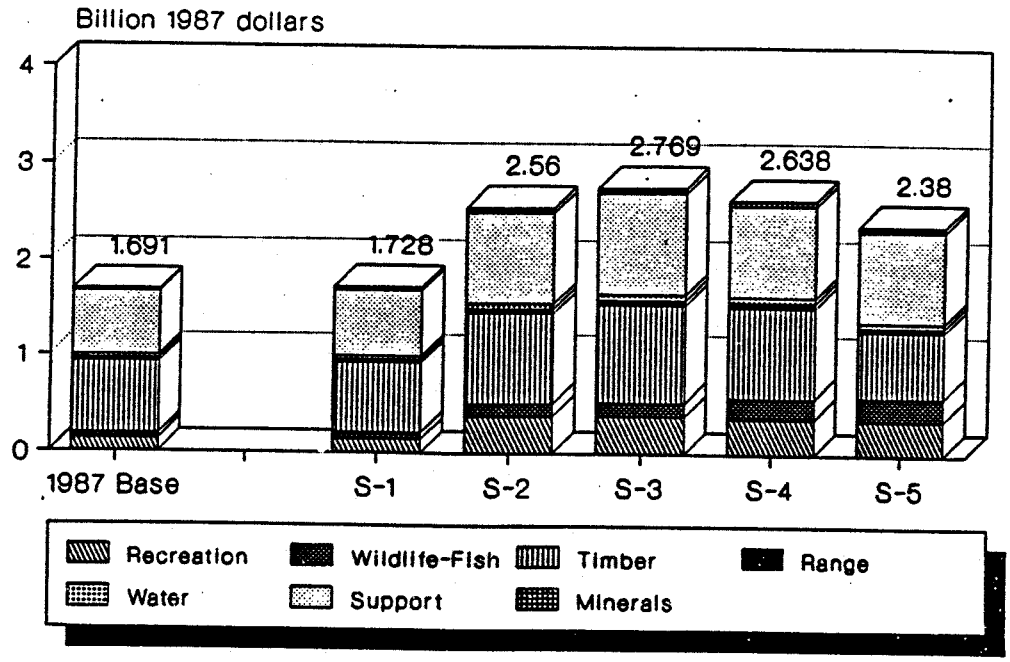

Figure 8—Cost of the NFS program, by Strategy and components, for 2040.

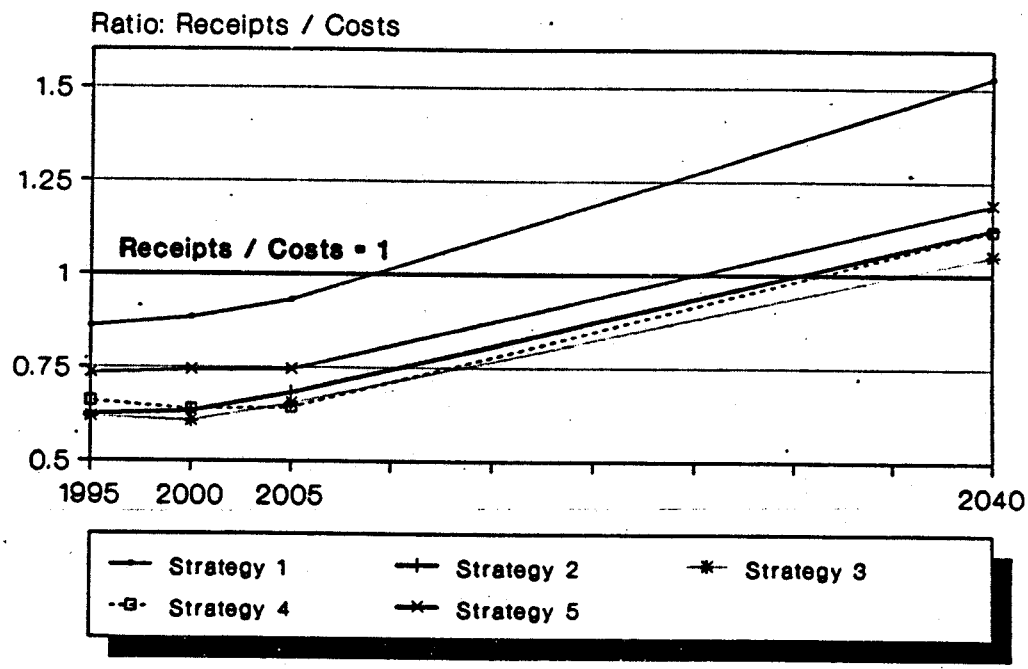

Figure 9—Ratio of NFS receipts to costs by Strategy, for 1995—2040.

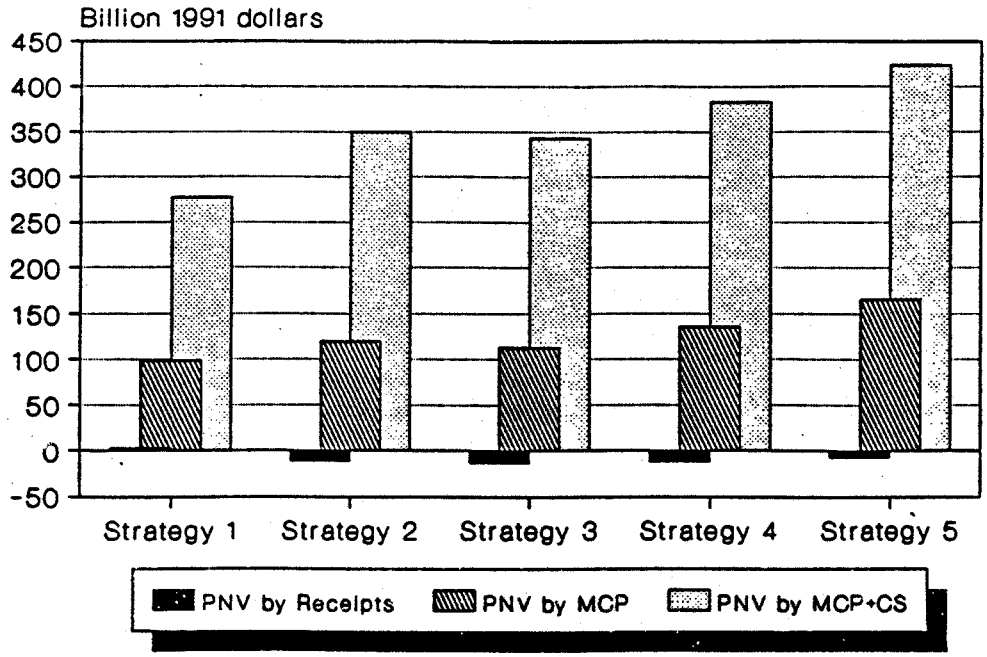

Figure 10—Present net values for the NFS program, based on receipts, market clearing price, and market clearing price plus consumer surplus.

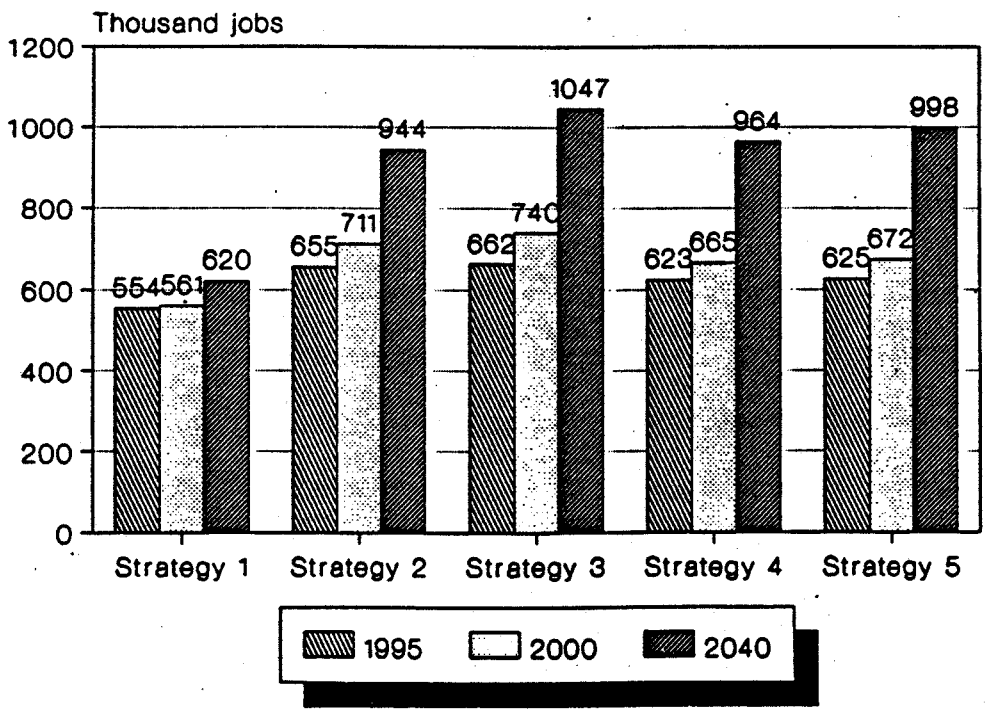

Figure 11—Total employment, by Strategy for 1995—2040.

FUTURE OF RPA: Some Potentially Hopeful Directions

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It's my pleasure to take part in this discussion of the future of the RPA. RPA is an undertaking that once seemed most promising. But some major aspects of it have not fulfilled their initial promise to this point. There are, however, at least signs of hope in matters that Tom Mills has discussed and some associated developments.

One minor bit of history illustrates the promise of effective direction-setting that I initially thought was inherent in the RPA. In 1975 there was a series of hearings around the country concerning the proposed RPA program. One for this region was held in Chicago. The first witness there was the State Forester for Michigan who had then been in office 2 1/2 months. I essentially made a case for an alternative program that would provide enough investment in forest resource management to separate use and users who might otherwise conflict. There seemed at the time a real sense that we were about to get our resource management house in order.

One other aspect of this minor bit of history is interesting. The hearing was held in the room where Judge Julius Hoffman had tried the Chicago Seven. The location might have given a person pause if foresight was perfect. The site of the trial growing out of the severe disruptions of the 1960's culminating in events at the Democratic National Convention in 1968 might have warned a person of perfect foresight to "look out for turbulence ahead". It never occurred to me at the time. Rather I was fascinated by the note on the door that read "Judge Hoffman's cases will be heard today in Room X". So much for history and foresight!

Let me provide the views of one person concerning the future of RPA--one person who has thought about it a bit, but also a person who appreciates Lyndon Johnson's observation that "prediction is difficult, particularly when it's about the future". I will not literally attempt to say what states (let alone <u>all</u> states) expect/want/need from RPA.

I will attempt to do four things in the next few minutes. The first is to note what to me is the real significance of the RPA. The second is to consider some possible causes for the RPA not reaching its initial promise. The third is to examine some signs of hope. And the fourth is to consider several things we may be able to do jointly to help realize this new hope.

<u>WHAT IS THE SIGNIFICANCE OF RPA?</u>

The significance of RPA can be best approached by considering its two primary elements. There is essentially no question concerning the assessment (and the forest resource data underpinning it). The assessment portion of RPA and associated information is highly valuable to states. It is the analytic base concerning resource demands and resource conditions. This is where states characteristically start in efforts to size up their own situations (as in the assessment portion of a statewide forest resources plan). Any given state will very likely need to go further in terms of local specifics concerning societal and resource issues that form the context in the particular place. But the RPA assessment and associated information is the most solid place from which to start. The Forest Service has a number of people of great analytic strength. We all benefit from this strength both via the RPA assessment and outside of it.

The <u>program</u> portion of the RPA is a somewhat different matter. Two thoughts immediately occurred to me when Dave Zumeta first called me months ago concerning this presentation.

The question was what did I expect from the RPA program? Two answers far apart occurred to me right while we were talking.

* A settled sense of national direction concerning management and use of forest resources.

* Not very much.

The first of these answers is what I would like from the program. The second is what has sometimes seemed to be the case for reasons that have often been beyond anyone's immediate control. Tom Mills is actively considering some changes in approach. His approaches and associated matters were discussed at some length at three Belmont House conferences (named after the site of the first). These new approaches may well improve the situation. But they will do so against some persistent difficulties. It seems important to understand the sources of difficulties. Only by such understanding can we avoid getting frustrated, stick in there long enough to actually help improve the situation, and hopefully finally outlast some sources of difficulty.

DIFFICULTIES CONCERNING RPA PROGRAM: SOME POSSIBLE CAUSES

Sources of difficulty concerning the RPA have some very deep roots. They go well beyond matters specific to the Forest Service or indeed the whole resource management field. Let me try to identify sources in incremental fashion.

There is a first simple explanation of failure to achieve a settled sense of national direction concerning forest resources. The simplest point is negative budgetary trends of this decade. This has been a significant factor. That is true whether you choose to say this is a result of a real squeeze, or one manufactured for a purpose by Reaganauts of the right wing. In the process it has become apparent that a close link between program and budget can run backwards just as well as frontwards.

Secondly, there are also some sources of difficulty that have greater conceptual content. One to my eye is a strong fairly recent tendency in American society to define as "national issues" only those matters that are supposedly equally relevant everywhere. This can readily degenerate into "equally irrelevant everywhere" since few issues of substance really do apply equally everywhere. In purest case, these might involve only matters of foreign policy and military affairs. Taken to extreme this way of defining "national issues" has made it extremely difficult to identify any positive purpose of civilian government at national level. It is not surprising that in this atmosphere RPA has encountered major difficulties in establishing a positive central sense of direction for resource management.

There is very likely a cyclic element in terms of ability to define positive purposes of civilian government. Historian Arthur Schlesinger, Jr., has carefully examined what he calls "The Cycles of American History"[1]. He has described two alternating tendencies that have recurred over essentially all of our 200-plus years as an independent country. Periods of a very strong sense of positive public purpose have regularly been followed by periods of retreat into dominantly private values and pursuits. Then the cycle repeats itself (with variations). Periods of strong sense of positive public purpose require an enormous level of energy. Hence they tend to eventually run down and so give way to the other tendency. In Schlesinger's analysis, periods of retreat cause lots of things to fall into decay, and eventually give rise to widespread and shared feelings that "we've just got to do better than this". There can be little doubt as to which tendency has been dominant in this decade. Again, it is not surprising that RPA has encountered considerable difficulty during this phase of major cycles in our society.

These three large forces in society are primary reasons for RPA not unfilling its initial promise. Some things internal to RPA may also have been secondary reasons for difficulty. A first matter internal to RPA is methods of analysis in the past. These methods may have relied too much (too exclusively) on technical examination of demand and supply. It was in essence hoped that major issues would somehow arise by themselves out of this technical examination. The counterpoint is not enough attempt in the past to directly identify major issues in simple language ahead of time. (Not enough attempt to directly identify major issues goes back to a considerable degree, unfortunately, to the view that "national issues" must apply equally everywhere. Given that constraint, any of us would be hard put to quickly produce a short crisp list of salient issues).

A second matter inherent in RPA itself relates to the two landmark pieces of federal legislation affecting forest resource planning. Both the Forest and Rangeland Renewal Resources Planning Act and the National Forest Management Act may well have overspecified the processes to be used. This is perhaps most clear in the case of NFMA, but may also apply to a degree to RPA as well. It is simply true that processes highly specified ahead of time in legislation will contain elements that work well, elements that work poorly, elements that don't work at all, and some that are worse than that! If there is no easy and legal escape from the specified procedures there is bound to be difficulty. (He might not wish to be publicly quoted in this manner. But my friend the regional forester in Milwaukee has described aspects of national forest management planning as a "quagmire"). This whole business of overspecification of procedures has been described as a matter of "American legislative perfectionism" by an astute, knowledgeable, and well-disposed Canadian friend. As some wit once observed, one major source of problems is solutions!

SIGNS OF HOPE (WITH DELIVERY DATES LESS THAN CERTAIN)

Where do we go from here? It seems clear that we are at or near the stage of "we've got to do better than this". There are some signs both in society at large, and in the RPA specifically, that point the right way to a potentially hopeful degree. What the delivery date will be (particularly on the societal trends) is a good question with answer unclear. But direction may be right.

Possibly we are at the beginning of a turn in cycles of American history. Possibly the retreat from positive public action has reached its natural limit, and begun to swing back. After all, some number of people now realize Dan Chappelle's classic corollary to the question "How many supply-side economists does it take to change a light bulb?" (story). More seriously, there is discussion in many places of situations requiring purposeful public action to resolve societal problems and get on with it. Some of this discussion is in places you might not immediately expect it to be. Discussion in such places is meaningful. For example, I recently read about discussion in Houston of need for more concerted civic action, and joint effort among city government and citizens, to resolve a wide range of issues. This is quite a departure for a place that historically left everything to market forces, to the extreme of not even having any rudimentary form of planning and zoning to help rationalize urban development. Talk about concerted public action, particularly against this historic background, would suggest that something significant is happening. The cycle may be turning.

Fortunately, there are also some developments within the forest resource community, including RPA, that seem potentially hopeful. There are several threads that can be drawn together. The first is the so-called Belmont House conferences I referred to earlier. Several major ideas emerged from discussion at these conferences. One was that future versions of RPA should have stronger central focus on major issues (hopefully societal issues to which forestry can be part of the solution). Another was that future versions of RPA should have a stronger regional

dimension. These two together represent a promising direction. This is so since it appears much easier to crisply state for regions major societal issues to which forestry can be part of the solution, than if we attempt to do it immediately for the United States as a whole.

The major southern regional forest resource analysis that was recently completed by the Forest Service and some thirteen states from Virginia to Texas is a second thread in a hopeful pattern. This analysis had a simply stated central issue to my eye: how to best offset an apparent forest growth decline in order to avoid an appreciable decline in employment. That is simple enough to be widely understandable. An apparent consensus has been developed among at least a substantial share of regional publics. That undoubtedly reflects both simple clarity of the issue, and deliberate efforts in consensus-building. This analysis also makes relatively specific proposals for doing identified things about the stated central issue. All of this is distinctly encouraging. This analysis was a special project, not initially an integral part of RPA. But as I understand it, the results are being substantially incorporated into RPA. That perhaps suggests a useful pattern.

A proposed regional forest resources assessment for the Lake States is a third thread in this hopeful pattern. This seems parallel in a major sense to the southern regional analysis. It will likely be more a forestry opportunity analysis than a forestry problem analysis, as was the southern regional analysis. But there will still be the same ability to clearly state central issues: how to best sustain and continue recent expansions in employment based on forest resources (which obviously requires protection of the resource base), and how to best make contributions of several resource sector additive rather than competitive. Specific examples from both Michigan and Minnesota strongly illustrate the central importance of these issues. (I developed these issues at a meeting of the Lake States forestry alliance two weeks ago, and will not repeat details here unless there are questions). The Lake States forestry alliance would appear to be a quite useful core around which to work for regional consensus-building. This assessment stands good chance of contributing to the RPA in much the same way as the southern regional analysis has. I find this effort toward a regional forest resource assessment to be very encouraging. Indeed it is so encouraging that I am prepared to take a substantial role in it if that is appropriate.

There are certainly possibilities for similar identification of central issues in additional regions. We will hear this afternoon about efforts in the Chesapeake Basin. As I understand it, protecting the qualities of the Chesapeake Bay is the central idea, and how to best keep a portion of the basin in forests to help to do this is the immediate issue. That is direct and simple enough to provide guiding sense of direction. The Northern Forest Lands Study in northern New England and New York provides one last example. It would appear that the central issues are how best to retain the essential societal character of the north country, and how to sustain substantial resource industries, in the face of urban development pressure. This is a bit more multi-faceted but still provides central sense of direction.

It seems very likely that an RPA program tied to these sorts of simply stated regional issues would be quite useful and relatively easily done. One trick will be to figure how to aggregate matters that are certainly somewhat different from one region to another.

THINGS WE NEED TO JOINTLY HELP HAPPEN

Can we help this hopeful pattern to go forward? I believe that we can both via things we can directly do, and via encouragement we can lend to the Forest Service. Several occur to me.

* We can encourage on-going efforts to give RPA more orientation to major societal issues, and a stronger regional dimension. This seems quite the right way to go.

* We may be able to participate directly in regional projects that are part of this emerging regional pattern. The examples cited above are illustrative (but certainly not exhaustive of all possibilities).

* We can help to figure out how to assemble a national program/sense of direction from regional elements. (This may be as much, or more, a matter of developing new philosophy as it is one of new arithmetic for essentially mechanical aggregation. Perhaps our Canadian neighbors have provided an example of the needed philosophy. During the past several years there has been a major effort to improve forest resource management in order to sustain levels of employment and export earnings--an objective considerably like that underpinning the southern regional analysis. Impending regional timber shortages triggered this effort. These impending shortages were foreseen primarily in three specific places: northwestern Ontario, coastal British Columbia, and portions of New Brunswick. This was treated as a national matter of substantial importance. That importance can be illustrated by things as diverse as a major increase in federal funding support to provinces for support of forest resource management, and the Prime Minister's appearance as keynote speaker at a major national forest congress three years ago. The situation in the U.S. may be more complex but this example may nevertheless help point the way to new philosophy. It does not have to be everywhere, and everywhere the same, to be a national matter).

* We can help to alter direction setting methods used concerning forest resources. There is need to place more stress on stating major issues simply, and on forming consensus right from the beginning. (We can do this in individual states and in regional projects of the kind discussed. And we can encourage the Forest Service to make greater use of methods rooted in representative democracy, as contrasted with participatory democracy. Indeed, the Belmont House conferences were steps in this direction. And we can--and I believe should--do this ourselves. As preparation we might individually do well to read observations on consensus-building made by F.L.C. Reed at the regional governors conference at which the Lake States forestry alliance was formed.[2]

* Finally, as citizens and as resource professionals we can help where we can to overcome some attitudes that are giving us substantial difficulty as a nation. Three come immediately to mind: the equally-everywhere syndrome mentioned earlier, a certain zero-sum view of resource matters that is prevalent in some resource interest groups at national level; and a view that implies that national prosperity can be permanently assured without any positive public attention to particular industries, least of all to resource industries. (Attitudes like these are at the root of difficulties in international competitiveness, balance of trades, etc. in my considered judgment. We have a responsibility as informed citizens and professionals to be among those working to counteract such attitudes).

SUMMARY

The RPA was initially a very promising idea. The assessment portion has proved very useful at several different levels including regional and state levels. The program portion has proved less useful for reasons considerably beyond the direct control of those responsible for preparing the program. There now are some potentially hopeful developments that may considerably help to make the RPA program more useful to states, as well as more useful at regional and national levels. Some of these developments are in society at large, and some are in the approach now being taken to RPA. It is important that we help these developments to go forward.

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[1] Arthur M. Schlesinger, Jr.
1986. The Cycles of American History. Houghton Mifflin Company. Boston.

[2] F.L.C. Reed
1987. Building a Consensus the Canadian Way. In The Lake States Forests: A Resources Renaissance, Report and proceedings of the Great Lakes Governor's Conference on Forestry April 9-10. Published by The Conservation Foundation for the Lake States Forestry Alliance.

LESSONS FROM NATIONAL FOREST PLANNING: THE AGENCY VIEW

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Let me begin with a couple of notes you should understand.

The first is that while I'll list a number of lessons, this does not mean that we made a lot of foolish mistakes or that the Forest Plan effort was a negative experience or not worthwhile. Quite the opposite, we are only beginning to use the plans and receive support for them and we now know much more about our Forests and their capabilities. In my judgment, what really happened is that we planned in the last 10 years in a way that would have been 20 to 30 years in the doing, absent the strict requirements. So the planning process has been overall positive and has taken us forward more suddenly than we otherwise might have been able to go.

The other note is simply that these "lessons" are necessarily more personal that institutional. The Forest Service is conducting a critique of planning (it is underway and will be finished next year), but we do not yet have any official or even unofficial "lessons" or critique summaries yet. I like to think that someone else in a similar vantage-point to mine, a Regional Office or possibly Washington Office, would have a similar list of "lessons", but would most likely place different emphasis or organize them differently.

I'll review the planning we did, in the most skeletal form. NFMA and NEPA, both augmented by detailed regulations, were merged in the NFMA regulations to require each National Forest to prepare a very complete and systematic Plan and EIS which can be summarized as having to meet two criteria:

1. Show how everything affects everything else.

2. Pick the alternative which maximizes net public benefit (defined to include unquantified characteristics as well as take into account all costs and benefits).

With these two and other requirements in mind, our method had to be to create hundreds and thousands of prescriptions, by which we mean a possible treatment of a kind of forest land our time to gain (usually) several resource outputs. We compiled several possible prescriptions for each kind of forest land, then composed alternative ways to manage the Forest to respond to issues. Also, each Forest ran benchmarks which computed limits, physical and financial, for management of the several major resources.

In terms of major events, we first had public involvement to understand issues, concerns and opportunities (ICOs); then created the prescription to answer the ICO and spent up to two years of intense analysis; following the Draft Plan and DEIS, we went through the public comment with care and replied in writing in the Final Plan and FEIS to each comment; we issued the Record of Decision with the Final Plan and every Forest had at least one appeal. We have finished most appeals, some by changing the plan. While most plans are cleared for implementation, a few appeals are still in process and could conceivably result in filing of lawsuits.

That's a very quick review of Forest Planning and now I can discuss the "lessons". I categorize them into lessons about resources, about people and about process, ending up with three lessons in each category.

RESOURCE LESSON 1. As a whole, for the near term, we have adequate supplies of timber, recreation opportunity, water and wildlife.

These are large and remote Forests and the present consumption of resources is not real close to the amounts that can be simultaneously produced, especially assuming higher levels of investment. There are, of course, shortages in particular areas of certain opportunity, but we are not in short supply generally.

A frustrating note is that we do not have general agreement about the meaning of supply and demand. Is it primarily physical quantities available or consumed, or should we factor in prices?

RESOURCE LESSON 2. Some resources tradeoffs are counter-intuitive.

If demand assessment has led us to a situation where we only need to harvest much less than is growing, then we ought not to do much thinning or improving of the worst stands. The reason is that doing these practices would replace doing the regeneration harvests which generally have higher wildlife and economic returns.

Also, in these still-young forests, it is interesting to note that too little harvest in relation to growth has the same effect that too much would: reduced sustainable yield in the future!

RESOURCE LESSON 3. I call this one "How Little We Know!"

During the planning process we were reminded of several severe gaps in our knowledge:

1. We have a host of wildlife questions about minimum viable populations and management of indicator species and sensitive species.

2. There is discomfort with our estimates of managed yields of timber.

3. Which values to use, particularly for recreational uses of the forest.

4. The effects of practices upon other resources. Not many findings are available.

Leaving resources now, we also learned or re-learned some very simple and common lessons about interacting with people interested in our plans.

PEOPLE LESSON 1. The Golden Rule: treat each person who contacts you as you would like to be treated by a public agency that you had taken some trouble to contact to work with them.

I think we may have accidentally caused some people or groups to escalate their opposition, their energy level and their effectiveness beyond how it started out by not treating their input very well at first. Probably what makes people maddest is ignoring them. If you decide to ignore anyone, be aware that the person or group may become more determined and hostile and ultimately succeed in upsetting your program, possibly to the public's detriment as well as your own detriment!

PEOPLE LESSON 2. Many people's values and likes about our Forest practices are different from ours.

More timber harvest is not seen as positive, nor is better access (more roads) to the Forest. People do not agree with us that harvest and attendant roads are overall positive to wildlife and recreational use.

PEOPLE LESSON 3. We must communicate deliberately and carefully to avoid alarming people unnecessarily.

Note these two descriptions of the SAME Plan decision:

1. Harvest will rise from 40 MMBF to 70 MMBF by the fifth decade and we will have 1200 miles of road instead of the 800 miles we have now. Half the Forest will be harvested using even-aged systems. There will be more forest products, better access and more intensive management.

The above might provoke a negative reaction from many people.

2. Harvest will remain at the same 4000 acres per year that it is now (volume will go to 70 MMBF because of the volume per acre increase). Open road mileage will remain at 800 miles (we will develop and close about 400 miles in addition). Half the Forest will not have any timber harvest. Compared with now, over time the Forest will have more variety, more old-growth and more areas set aside for protection.

Many people, whose reaction to "1" would have been negative, might have a positive reaction to "2".

PROCESS LESSON 1. A goal-oriented approach might focus people's attention more positively than an issue-oriented approach.

If we keep asking "what's wrong?" or "where do you stand on X issue?", people will not only tell us, but they will remember what they told us! If instead we state our present situation, our goals and our wish to form a consensus, we will likely get forward-looking and more positive participation.

PROCESS LESSION 2. Systematic planning is expensive and time-consuming. It is worthwhile to do once, but may not be necessary for replanning.

We spent several person-years on the model for each Forest. We explored limits of multi-resource production and constraints very thoroughly through the model. In revisions of the Plan, it may not be necessary to build another model unless (1) we have much better coefficients or (2) the Forest is running right up against a supply constraint and needs to systematically explore how to stretch the supply as much as possible. I frankly do not anticipate either condition on many of our Forests five to six years from now when we begin to consider revision.

PROCESS LESSON 3. Process shapes communication. If you have influence on it, shape your process to cause the kind of communication you want.

Our process caused some excellent communication, but there were also some glitches that will serve as examples of process shaping communication in ways we did not intend.

1. We received universal comment to the point that the Plan and EIS were too big, difficult to follow, complex, etc. We knew that, but we published what we perceived as the minimum required by the process.

2. Because our process specified public interaction at certain points, we probably paid less attention to volunteered feedback in between the expected times of involvement, including after the Final Plan.

3. Our whole appeals and litigation systems are set up for procedural objections and responses and decision. This is necessary and appropriate, but it tends to substitute for and get in the way of dialogue and cooperative work on substantive matters. Maybe we need provision for discussion of levels and emphasis if resource programs without having to disguise the issues as procedural deficiencies.

Which of these lessons might be the most significant:

My choices are

PEOPLE LESSON 1.	Treat people as you would like to be treated by one of your public agencies.
PEOPLE LESSON 3.	Communicate deliberately and carefully to avoid unnecessary conflict.
PROCESS LESSON 3.	Process shapes communication.

LESSONS FROM NATIONAL FOREST PLANNING: THE ENVIRONMENTALIST VIEW

Anne Woiwode
Sierra Club - Mackinac Chapter
Lansing, Michigan

We have entered a new age with regard to management of our natural resources nationwide. In times past, the public was largely unaware and unconcerned about the management of National Forests. National Forests were viewed by the general public the same way as National Parks. There existed little public comprehension of the role that the Multiple Use concept played in the National Forests. The people with whom resource planners interact today represent a substantially broader constituency than 10 to 15 years ago. From off-road vehicle interests, to nature lovers, to local units of government, the interest in forests and their management has greatly increased.

The primary reason that interest in the forest has recently increased is a growing public awareness concerning the finite nature of its resources. For many decades, the general public ignored these lands, because they were largely unaware of the importance of National Forests on their lives. However, with increasing development of forest lands and more leisure time spent on vacactions in the woods, interest in the National Forests has grown. Interest in protecting our natural heritage transcends the boundaries of National Parks and now includes National Forests, as the scientific community has expressed growing concern about the size and distribution of habitat needed to sustain a variety of plant and animal species. Likewise, declining budgets at all levels of government have influenced our view of and heightened our concern for our forest resources.

I think all of this increasing attention is good. Increased awareness, even in conflict, is preferrable to continued forest management oriented solely for the benefit of timber interests. The attutudes of people in the timber industry have also changed in recent times. In the Great Lakes Region, large timber holdings have been sold by companies wishing to get out of the business of managing forest land. This has placed additional pressure on public forest lands as a source of raw material for aiding industry in meeting its timber harvest goals. The timber industry has also become increasingly sophisticated and effective in lobbying efforts intended to influence public decision makers and managers. These conflicting interests on public lands have placed additional stress on the Forest Planner, who must draft a plan which will equitably balance these competing groups.

Management has entered a new era on our National Forests, in large measure because of the process established to facilitate public participation and inevitable change. From an environmental point of view, the key positive and negative aspects of the National Forest Planning process as it occurred in Michigan are summarized.

POSITIVE ASPECTS

1. Required a total review of the resources of a particular forest prior to any planning process beginning.

2. Required identification of alternatives to be considered and extensive information on alternatives to allow a balancing of the benefits and impacts.

3. Mandated and spelled out the elements of a Multiple Use approach to forest management.

4. Provided a clear path for involvement for any interested citizen, group, government unit or business.

5. Ensured that comments were catalogued and responded to.

6. Some flexibility was allowed for creative solutions to the efforts to resolve different interests.

7. Heightened awareness of the National Forests to an extent never before realized, leading both local and national groups and individuals to have a greater understanding of the purposes of the National Forests, the role they fulfill and the benefits they provide to our society.

NEGATIVE ASPECTS

1. The individual personalities involved on each Forest had as much or more to do with the final outcome of planning as did all the objective resource information and the public input.

2. The process took inordinately long, particularly with appeals.

3. The Integrated Resource Management process, while a good idea, has some serious flaws. Some Forests are apparently using the IRM process almost to do additional, second tier planning, creating some false expections particularly for local residents.

4. The process is subject to political manipulation, such as occurred in the Reagan years when timber cutting was increased well beyond the levels of sustainable yield.

LESSONS FROM NATIONAL FOREST PLANNING: THE INDUSTRY VIEW

Peter C. Grieves
Michigan Association of Timbermen
Newberry, Michigan

The Michigan Association of Timbermen is a trade association formed in 1972 that represents small businesses in Michigan's forest product industry. Our primary objective is to bring balance to programs that affect Timbermen members. Therefore, planning on the National Forest is of critical interest to us.

The Timbermen views our work on the National Forest plans as having two distinct areas of activity. We are involved both in a planning and political process. First we will review what we have learned from this effort as a planning process.

We got more involved in reviewing the forest plan when the Wilderness Society brought their below-cost timber sale fund-raising campaign to Michigan. This campaign threatened traditional timber sales and the timber supplies from our National Forests. It also cast a cloud of suspicion on both the U.S. Forest Service and our members.

After reviewing the draft and final plans on the three National Forests in Michigan, we concluded that some of our major concerns were not properly addressed. We had specifically requested that the three National Forests provide their proportionate share of timber needed by the forestry markets. We believe that the USDA Forest Service in the past has had a sound public policy of doing their share to stabilize the economies in our rural areas.

We filed appeals on the National Forests in the state as the Michigan Multiple Use Coalition which was formed for that purpose. The coalition includes: Timber Producers Association of Michigan and Wisconsin, Michigan Chamber of Commerce, Michigan United Conservation Clubs, Ruffed Grouse Society, Michigan Natural Resource Commission and our Timbermen Association.

We also learned that it would be necessary to learn a whole new vocabulary that included such terms as visual quality management system, semi-primitive non-motorized, and WILMA. The acronyms and special language is a major hurdle and discourages public involvement.

On the Hiawatha National Forest, our first effort in working with other appellants was attempted through facilitated meetings. This effort lead to successful agreements on the Hiawatha National Forest and the Huron-Manistee National Forest. More difficulties were encountered on the Ottawa National Forest. The Michigan Multiple Use Coalition reached agreement on the Ottawa

National Forest. The Environmental Coalition has not reached an agreement on their appeal at this time.

We have described this planning process to our members as the most complicated and expensive planning effort ever attempted in man's history any place in the world. It is almost impossible for the average user of the National Forests to understand or to get involved. The plans and facilitated hearings have not provided good representation for major groups of people who have used our National Forests in traditional ways for many generations.

Local leaders involved in tourism businesses and citizens who spend a great deal of their recreational time in the National Forests are some that were not adequately represented. These citizens not involved in the planning process are becoming aware of the plans as they are implemented. Representation is improving at current meetings, advisory sessions, and as the opportunity area plans are prepared by Forest Service staff. Facilitated hearings have helped develop a better understanding between forestry and environmental leaders.

The Michigan Multiple Use Coalition was concerned that the plans did not provide a proportionate share of timber for forest products markets. Our State Forester Henry Webster was correct when he said, "As a public land system gets progressively larger, there becomes a progressively stronger obligation to provide a reasonable proportionate share of resource commodity supplies as well as recreational and environmental uses." We describe this principle as the "fair share of timber" that should be provided to the market from National Forests.

We believe that local and state leaders will become more involved in the planning on both State and National Forests when they become aware of the consequences of these planning programs. We are following very closely the planning on the State Forest system in attempt to head off any adoption of those parts of the planning procedures that are especially clumsy on the National Forests.

The title of your conference "Building a Forest Resource Contingency" is especially appropriate. We believe that it is essential to have coalitions that are truly broad-based. People must be brought together to work on the development and implementation of plans on both National and State Forests. Planning requirements must be simplified. We all realize that good planning is essential on our public lands as greater demands are placed on public forests by many diverse users.

Additionally, it is clear to us that future options are not foreclosed as the Forest Service does its daily work. In fact, we were able to reach agreements on the three National Forests in Michigan because of a logic of working out some of our differences over the next several years prior to starting the

work on the second decade plans. It is necessary to allow the managers discretion and flexibility in managing our public lands.

In conclusion on the planning portion of my remarks, several things should be considered:

1. The plan and the planning process must be more useable and more easily understood by the general public. Bring them in at an early stage and try and keep them involved. This allows people to acquire some ownership and personal involvement in the Forest plans. This is evolving on the National Forests in Michigan.

2. Implementation of the plans must provide better involvement by more citizens who represent traditional users of our National Forests. Be more clear on what is going to happen. This effort is being assisted through the formation of Friend of Hiawatha on that forest and implementation workshops being conducted by the American Forest Association on the Huron-Manistee Forest.

3. An executive summary should be prepared on the plan that is easily understood by all users of the National Forests. The summary should focus on the flexibility that is built into the plan for this and future planning decades.

4. More recognition is needed for the responsibility of the Forest Service in fostering stability of rural communities. This is a traditionally important role of the Forest Service. To the extent that this role is changed, a gradual transition is essential.

Planning on the National Forests is an important political activity. The interest of the general public who have used the National Forests in traditional ways for generations were not well represented as the planning rules were developed. We are now engaged in"catch-up" activities. Coalitions are being formed, information is being developed and shared. Representation efforts are more coordinated. A network of leadership is emerging at the state, regional and national level.

The National Forest planning process has caused this rapid improvement and focus for organizations across our country. This is resulting in effective coalition building with adequate budget support. Forestry leaders believe that it will take several years to acquire balanced representation. This is the cost of not getting adequately involved in the political process that created the National Forest planning program.

The American Forest Resource Alliance (AFRA) is a newly formed organization that will provide strategic planning in the legislation, litigation, communication and technical information needs of this effort. Overall, AFRA will be responsible for more effective action in representing the wise-use of our forest

resources. We will look back at this planning process as the program that resulted in more activist-oriented leadership in forestry. Many will say, "It is about time!"

THE NORTHEASTERN FOREST ALLIANCE

Gail Vaillancourt
Division of Forests and Lands
Concord, New Hampshire

I can't begin to tell you in 15 minutes everything that's exciting and innovative about the Northeastern Forest Alliance. But I understand the emphasis of today's panel is on process, on "what's working", so I'II try to concentrate on that.

NEFA takes in a four state region: Maine, New Hampshire, New York, and Vermont. It includes over 40 million acres of commercial timberland. It is fair to say that NEFA is a direct result of the State Forest Resources Planning programs in the four states.

As planners in the region shared experiences, we were struck by the similarities of issues in our plans. Connie Motyka was Vermont's planner at the time (he's now Vermont State Forester), and it was really he who first came up with the idea of developing a regional alliance, and approached the other planners in the region with the idea. He felt it should key in on the commonalities of our plans, and contain an action plan to deal with those issues. We decided to begin working on the concept, and to individually approach our State Foresters. After getting a cautious green light from each one, we proceeded. I was designated to coordinate the effort, with help from Joe Michaels of the USDA Forest Service. We drafted a charter for the hoped-for alliance.

The Charter sets up three levels of authority:

The Executive Committee is composed of the Commissioners from the appropriate natural resources agency in each state. They authorize the State Foresters to enter into agreements. The Executive Committee has never met, but could do so if the need arose.

The Alliance Directors are the State Foresters. They set policy, and act as the major decision-makers for NEFA. We considered involving the Commissioners more deeply in the decision-making process, but felt that the decision-makers had to be intimately familiar with the subject, and people who will come to meetings in order to keep things moving.

The Technical Group includes the State Forest Resource Planner from each state, and an additional member of the State Forester's staff in most cases. We develop project proposals, policy recommendations, and carry out day to day operations.

After creation of the draft charter, we screened our SFRP plans for issues and opportunities with possible regional implications. We provided a brief synopsis of each, and finally, put our candidate issues in order of priority.

The draft charter and candidate issues were presented to State Foresters in July 1986. About this time, the Yankee Forest Cooperative issued an invitation for us to join them, but we felt our orientation was different. So the State Foresters agreed to go ahead with NEFA and the Commissioners signed the Charter in August 1986.

NEFA's four goals, as expressed in the Charter are:

1. Support a regional approach to Forest Resources Planning.

2. Focus attention on natural resources issues and opportunities that transcend political boundaries, and enhance the ability of member states to affect positive change in these areas.

3. Share technical expertise in the region to provide efficient problem solving and delivery of services.

4. Promote the Northeast as a significant producer of forest amenities such as timber, water, wildlife, and recreation, and the jobs and other social benefits which result.

Regarding issues, one item appeared near the top of everybody's list: the need for more and better markets for northeastern forest products, particularly hardwoods. People especially commented on the loss of secondary markets, and the perception of the northeast as a strictly urban area.

Well, it's fairly easy to agree on regional goals, but now it was time to decide what, exactly, we were going to do. It was clear that every state had a slightly different agenda. So we started out by developing a set of objectives to address our four goals, and they served as a useful focus for ironing out our differences. Believe me, there were a difficult couple of days, and even a couple of heated exchanges, before the objectives were agreed upon. By then, the commitment and trust was beginning to develop.

Still, the hardwood situation kept coming back. We elected to pursue that particular issue as our #1 priority for the next 5 years. One of the questions that kept re-occurring was what role a lack of awareness, not only by the public, but by wood users, governmental officials and the like, played in the problem.

The State Foresters agreed to take a bold, and I think very wise step, to look for a private public relations firm to help us identify our problems and tell our story to the world. Moreover, they decided it should be an agency without a possible bias born of long association with forestry.

With the help of a focus finding grant, we were able to contract with the Christie Associates of Augusta, Maine, a relatively small agency which specializes in small accounts. We interviewed about a half dozen agencies, all the way from the Wall Street agency who told us we couldn't do anything meaningful for less than $250,000, to the agency whose solution for everything seemed to be a video (the kind you see on local television).

By going with a small agency, we have assured ourselves of personal attention, and we've developed a close working relationship. Another nice thing about the relationship is how much we all have learned -- us about public relations and marketing, them about forest resources. You've got to think that what they're learning about forestry is going to be reflected in some small way in their work for other clients.

With our input, the Christie Associates has prepared a five year marketing plan that focuses on two basic elements:

- Communications with those who consciously or unconsciously influence our forests.

- Targeted marketing research and development.

Several on-going projects address these elements:

NEFANEWS is a quarterly newsletter targeted to those within the forest products industry, as well as key decision-makers outside of forestry, such as financiers and government leaders. The distribution is presently over 8,000.

The **NEFA Brochure** - explains NEFA, its goals and objectives, and provides a snapshot view of the region's forest resources.

Our **Exhibition Booth** is used at appropriate gatherings such as NEWPEX and forestry events.

The **Marketing Brochure** summarizes NEFA's marketing strategies from the 5 year plan, and is often used with the booth.

A **Regional Showcase** is due out any day. It is a colorful 24 page publication aimed at potential buyers of NEFA forest products, here and overseas. It highlights some of the basic characteristics of the region, and some of the wood and wood products available.

We plan to build on this rather general document by identifying specific products and specific markets, then to serve as a catalyst for bringing buyer and seller together.

We have many other projects either in the works or in the development stage which I'd be happy to discuss any time.

Karyn Richards (New York Dept. of Envirnmental Conservation) asked me to include some recommendations to states considering similar initiatives, so I will close with a few of my own observations:

- An objective coordinator has been one of the key elements to our success. It's essential to have someone to make the arrangements, keep track of the details, and to facilitate meetings -- without having to also worry about the concerns of one particular state. Joe Michaels has given us some expert assistance.

- Keep negotiating until you can settle on projects everyone can be enthusiastic about. You may have to scale down your expectations a little at first.

- Don't pursue projects that all states cannot participate in, or that create conflicts for a particular state forester at home. The teamwork has to be nurtured and maintained.

- Above all, do what you do best: plan! Make sure you are very clear about what your goals and objectives are, and that your projects clearly move you in that direction.

I have high hopes for NEFA: it's going to make a real difference, and it's going to be around for the long haul. All of the Alliances, more or less, are a result of state forest resource planning programs. That's something we can all be proud of.

THE LAKE STATES FORESTRY ALLIANCE

Barbara G. Clark
Lake States Forestry Alliance
St. Paul, Minnesota

First, I'd like to say a few things about the Lake States -- Minnesota, Wisconsin and Michigan -- which support the idea that a regional approach to forest policy makes sense.

They share a common geological history of repeated glaciation, leaving soils of great variety, a multitude of lakes and bogs and the Great Lakes, themselves. This variety is reflected in the diversity of scenery and wildlife which attracts tourists, recreationists and sportsmen. The forest cover is similarly varied, being a mix of boreal and northern hardwood types.

Human history also is comparable. Early logging and settlement caused removal of the forests where feasible, leaving a fire-scarred and nearly destitute Northland. Meanwhile, southern areas experienced rapid growth in population through agriculture and industrial development.

State and county ownership of tax-reverted lands, along with federal ownership, mainly of lands never claimed, resulted in large and mixed public ownerships. Publicly funded programs of fire suppression and replanting, and natural regeneration then set the stage for today's forest.

The states have a similar political structure, as well. The sparcely populated, forested North, with few representatives in the legislatures or Congress have little clout compared to the metropolitan districts.

Even economically, the states share similar situations. Economies built on iron and heavy manufacturing floundered in the deep recession of the early 80's, which didn't quit as imports took over large portions of traditional markets. At the same time, the regrowth of the previously decimated forests, and the potential for economic development based on wood product industries and forest related recreation and tourism resulted in strong new attention and focus on the forest resources of the three states.

Finally, the mixed pattern of ownerships, being comprised of approximately 40 percent public (half federal, half state or county), 52 percent non-industrial private and 8 percent industrial ownerships, resulted in a high level of cooperation and joint programs. Fire protection, insect and disease control measures, wildlife and fisheries management, research and inventory data collection represent areas of cooperation among agencies, states and industry.

Against this backdrop, state and federal planners of the region, a subset of this group, greatly assisted by the Conservation Foundation and funded by USDA-Forest Service State and Private Forestry Branch, conducted a series of workshops. Closer regional cooperation was the theme and the ultimate result was the three states' Governors' Conference on Forestry in April, 1987.

At the conclusion of that conference, the Governors signed an Agreement directing their State Foresters to proceed with establishing a more formal Alliance. The new organization would deal with regional issues and encourage activities jointly which would be more effective than if the states acted alone.

The goals of the Alliance were spelled out in general at the conference and formalized in its Charter. In brief, they are:

- To enhance the conservation of the region's forests on all ownerships by maintaining water quality, diversity of wildlife habitat, and a sustainable flow of a variety of products

- To improve and diversify the region's economy through wise use of its forest resources

- To build public support for long-term forestry objectives, encompassing economic development, environmental quality and sustainability of the forests for their many values

- To create a regional image, both nationally and internationally, of the Lake States forest resource.

The organization of the Alliance also developed out of discussions at the Governors' Conference. It was the clear intent of participants that both public and private organizations must be represented in as wide a range of interests as possible. From this directive the Charter was prepared, finalizing the existing structure.

A Board of Trustees constitutes the decision-making, legal body. It meets twice a year, at least. It is composed of the three State Foresters, the regional heads of the three branches of the Forest Service, an appointee of each Governor, and finally, four additional members from each state. These are chosen by each state's members to represent as wide a diversity of public and private interests as possible. Trustees presently represent universities, tourism, wood fiber industries, timber producers, and economic development, environmental and private landowner associations. An Executive Committee meets between Board meetings and acts in its interests.

The planners of the states and Forest Service support the Trustees with technical and programmatic back-up and serve on committees.

Research done by the USDA Forest Service North Central Forest Experiment Station and several universities provides regional information needed as a basis for Alliance activities. Significant regional economic research has already been done in cooperation with the Alliance, and additional informational needs continue to be identified.

A part-time Coordinator, the only Alliance staff, provides continuity, tactical support and communications.

Four committees function semi-independently to carry out specific projects. These committees are Marketing, Public Policy, Research and Education and Funding. Our achievements to date relate to these committees and will be described in that way.

The Marketing Committee has developed a flexible and easily updated brochure, which contains forest resource and other information about the region and the states. It is designed for both general and special targeted use. The committee arranged a presentation for the Trustees by Utilization and Marketing specialists from the DNRs and economic development people from Commerce Departments of each state. They compared what is being done already and how a regional approach might enhance their efforts. With the help of these specialists the committee will be developing a marketing strategy for the approval and adoption of the Trustees.

The Public Policy Committee is organizing the second and more extensive annual visit of Trustees to Washington. We are planning a workshop on forestry issues for Congressional staffers, visits to the offices of the Forest Service, meetings with National industry organizations and individual meetings with Members of Congress. We also are arranging a reception for Members. This committee is developing plans to create a regional Forestry Caucus as an adjunct to the Forestry 2000 group in the House.

The Public Policy Committee also has the responsibility of drafting policy positions on current forestry issues, such as conservation of biological diversity, old-growth forest management, water quality protection and forest inventory cycles. Needless to say, the diversity of the Alliance Trustees and the three state allegiances make this a complex and sensitive process.

The Research and Education Committee has developed, with Michigan State University, University of Wisconsin, University of Minnesota and Michigan Technological University, a proposal for a regional International Trade Development Center. This is now being considered for funding in Washington and continued Alliance efforts with Congressional contacts is expected. That committee is also responsible for preparing a proposal for a multi-faceted Resource Assessment. This would develop methodologies and usable data concerning the value, demands and capacity of our forests to

produce a variety of resource outputs.

I want to slip in here an ad-hoc committee which planned and put on a major conference in Gaylord a week ago, the theme of which was "Timber and Recreation: Partners in Community Revitalization". The conference was well attended by industry, economic development, tourism, recreation and sportsmen groups, and resource planners. Real communication and respect developed out of the interactions. The conference ended with a mandate to the Alliance to follow up on the ideas expressed, and to extend this constituency development to include public educators.

Thanks to the efforts of our Coordinator, two quarterly newsletters have been published. We anticipate each issue will show improvement in content and circulation as we continue to define our positions and role.

Finally, the Funding Committee has been saved for last because it is so crucial to our future. For the first two years, funding for Alliance programs has been provided through State and Private Focused Funding proposals. These have been presented by all three states as their first priority request. We all agree that other sources are essential and desirable. Our funding strategy includes an attempt to obtain our basic organizational support through annual contributions of forest-based industries and businesses. As soon as our federal tax-exempt status is obtained we will begin a finance drive in the three states.

We also hope to tap some foundation and non-DNR funds in the states. Any organization's goals are more clearly expressed in its budget than in its Charter. Thus it is essential that we somehow dependably fund the administrative functions of the Alliance, so that we can then seek additional support for our priority projects.

The future of the Alliance really hangs on the outcome of this effort. Unless we can convince those who depend on the resource that what we have done and hope to do is of value, the Alliance will have to retrench into primarily an agency-controlled, supported and coordinating body. There are no doubt benefits to be derived from such an organization, but I believe that part, and an important part, of the Alliance's potential will be lost without the participation of the private sector.

Keep your eyes and ears open. The story isn't over yet!

THE ROLE OF STATE FORESTRY IN ADDRESSING ENVIRONMENTAL ISSUES IN THE NORTHEAST

Frank Ruswick, Jr.
Michigan Department of Natural Resources
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I must say by way of an introduction that I am both pleased and awed to be speaking to you tonight on environmental issues faced by forest planners in the twenty northeastern states. This is an awesome responsibility because although there are obvious similarities between the states, there are also some very important differences. These include differences in forests, ecosystems, the nature and sophistication of public interest organizations and the states' political systems. These differences make generalizations difficult.

I must also admit to being just a tad nervous. This is my first opportunity as a banquet speaker. I don't know about you, but I usually have rather high expectations of this type of speaker. I certainly expect to be informed; I want to be challenged; and, my hope is that I will also be entertained.

That is, in fact, my goal, tonight: to inform, challenge and entertain. I hope that in retrospect you will find that I have at least partially met that goal.

I have been asked to address three important questions:

1. Which environmental issues should forest resource planners be addressing in the twenty northeastern states?

2. What vehicles does state forestry have or need to develop to address those issues?

3. What success can be expected?

Now, one approach to these questions is best illustrated by a story about my father. I used to spend some time with him hunting ducks and geese at Horicon Marsh in Wisconsin. Once I noticed that when geese flew in formation, one arm of the "V" was always longer than the others. Why?, I asked. After a moment's reflection, he answered simply: "There's more geese in it."

The law of parsimony holds that the simple answer is often the best. With that in mind, I will give you the simple answers to the second and third questions at hand and spend somewhat more time on the first:

What vehicles does state forestry have or need to develop to address environmental issues? First, professionals with the wisdom of Solomon, patience of Job and the cunning of

Machiavelli. Second, unlimited budgetary and forest resources. Third, a compassionate, understanding and informed public. And finally, a sympathetic and altruistic political leadership structure.

What success can be expected? None. But that does not mean you shouldn't try. In fact, it means that you must try. And that is where I would like to begin on the question of pertinent and important environmental issues.

As I mentioned earlier, there are differences among the states which make generalizations about environmental issues difficult. Two points, then, are important by way of preface. First, what I would like to do is, contrary to the role of most attorneys, make some order out of the chaos. Second, planners are by nature "detail" people. However, the farther you advance in your profession, the more important it is that you perceive the "bigger picture". What I hope to do is aid in that perception.

Broadly speaking, there are two types of environmental issues facing state forestry. First, there are external intrusions. These are activities outside your sphere of influence which impact your ability to manage the resource. Acid and toxic deposition are two that come to mind. These are important because the damage they cause limits the resource at your disposal. For example, they diminish timber production and recreational opportunities. This places more pressure on remaining resources and increases internal conflicts. For this reason alone, you should be "mad as hell" about these environmental insults. In fact, I hope to show you are duty bound to do something about them.

The second category of environmental issues is internal conflicts. There are two types of these. First, there are those which cause resource damage such as ORV misuse or erosion causing forestry practices. Second, there are those which do not harm the resource per se, but entail conflicts between users: snowmobiling and cross-country skiing, timber production and semi-primitive recreation, pulpwood versus hardwood.

Conflicts which damage resources are similar to external intrusions in that they limit available resources. This, also similarly, increases user conflicts.

Note that all three environmental issues (external intrusions, internal resource damaging activities, and conflicts between users) all share one common denominator: they result in the need to allocate resources. We must ask the question, then, do all environmental issues boil down to nothing more that how to best allocate a resource. If this is the case, the role of forest planners is nothing more than to allocate resources. "Management", under this scenario, is nothing more than the quiet accommodation of interest groups and creative problem solving.

Yet if this theory is true, planners are in a terrible dilemma. To allocate is to mediate between values. But how is this to be done? Under the influence of John Locke, western philosophy traditionally holds that values are neither good nor bad. One person's desire is of equal weight with another's.

Well, as is usually the case, society has developed some constructs which apparently allows us to bridge this theoretical chasm. What I will hope to show is that this bridge is a mirage and that what is really needed is a new direction of travel with its own vistas.

I can think of at least three constructs which decision-makers use as screens to allow them to judge "between" values. First, there is measurement. In our culture, this is the common language of dollars. If we can put everything the forest can offer into current real dollars we can judge between which is "more valuable" and hence in the "best interest" of society. The problem is that not all of the forest's attributes are measurable in dollars. How does one place a valid dollar figure on scenic characteristics? This construct fails because it cannot measure everything about the forest in common terms.

The second construct is the assumption that if more people want something than it is of "higher value" than that which fewer people want. Planners ask the simple question: "Who wants what" and then manage to fill these demands. Yet this assumes that society's best interest is in maximizing current utility. That our culture has scores of examples of how we protect ourselves from ourselves is ample proof that this is not necessarily the case.

The third construct borrows from both the first and second by viewing society's best interest from the capital investment point of view. One judges between values by deciding that in the long term, returns will be maximized by decisions which use a site consistent with its capabilities and constraints. We use as variables in this equation the "investments" of different forest product species or levels and types of recreation.

Now I imagine that this third viewpoint sounds both familiar and attractive to you. In shorthand, it goes something like this: "We are preserving the usefulness of the forest through management". If you reflect a minute, however, you may notice some similarity to phrases used by the chemical industry in recent years: "Better living through chemistry"; "Without chemistry, life itself would be impossible." The forest planners catch-phrase is just as self-serving as that of the chemists: True at one level, but ultimately shallow and inadequate.

As you can see, all three constructs are insufficient to judge between competing values."

I mentioned earlier that I hoped to provide to you a new perspective. Let me start with a variant of the familiar Chinese proverb about a tree falling in the forest: Is a forest which no one is "using" still a forest?

What is a forest? Trees, mountains, lakes, streams, animals. Are these groupings of "products" or life? My preference is to view the forest as an ecosystem and the chief characteristic of an ecosystem is that it provides habitat.

Every good ecologist knows that every species has habitat needs for food, escape, rest and procreation. The forest clearly does all this and--in fact--it does it no less for humans than it does for whitetail deer, raccoons or red-bellied salamanders. The forest provides "food" when it offers a means to make a living for those in the forest products or recreation industries. It offers escape and rest for that is precisely what recreation is to a conscious organism.

My point is that we are part of nature, not separate from it. The forest is part of our habitat. As such it has a carrying capacity for humans as surely as it does for other species. Together these statements form the concept of what I call "the forest as human habitat."

There are three implications to the concept of the forest as human habitat. The first is a definition of environmentalism. An "environmentalist" is one who pursues a relationship with the world based on what is in the best long term interest of the species and an understanding that we are part of earth rather than separate from it.

This definition allows a closer look at the pejorative term "preservationist" which so often gets in the way of dialogues on forest use. Typically, this term is used as shorthand for an "elitist" who only wants to "lock up the resources". (Note, first of all, that even if accurate, there is nothing better or worse about this expression of values in comparison to others: As discussed, our society holds that values are co-equal and we have proven inadequate all constructs used to "judge" between those values.)

Rather, a "preservationist" is one who holds a particular perspective on the definitional phrase "what is in the best long term interest of the species." That perspective provides the second implication for the concept of forest as human habitat.

That implication is, in fact, a mechanism for choosing between management options. It is axiomatic that a simple ecosystem is an endangered ecosystem. The primary rule of thumb which follows is that we should manage for diversity. This applies to both species and structural diversity.

This has implications for both site specific and forest-wide decisions. On a site, we should minimize the size of even age stands and pay careful attention to the shape of edges. In the forest, we should manage for an array of habitat types and simply leave some areas alone.

The third implication of the "forest as human habitat" is that it imposes a duty. The typical view of our relationship with our environment is that we are "stewards". But according to this view we are "separate" from the environment. However, we aren't separate, but are part of nature. And importantly, nature is a process of change. If we are part of nature, we are part of that change.

As part of changing nature our participation in the process is interactive. We are not merely swept along; we have a role in shaping the process. Why do I offer this statement so self-evidently? For the simple reason that our species' characteristics help define our role in nature. We have consciousness. This allows us to exercise understanding and forethought. In fact, we have no choice but to exercise these attributes.

This conclusion has a crucial implication for professionals and public officials. We have a duty to lead, not just follow. Traditionally the role of professional resource managers is, as we have discussed, to mediate between values. But since as professional resource managers we have a greater understanding of the resource, we must employ that understanding. While we must still listen to the public, we cannot blindly follow each public whim.

Another implication of our species characteristics of understanding and forethought is that it provides a direction. If we are to employ our professional judgment, how do we choose? Since we as a species are capable of understanding the forest, those management options which fosters that understanding, which increases understanding and appreciation--or the opportunity for such--should be advanced over that which does not.

The forest, always remember, is like a book. It should have parts that everyone can enjoy. But as a society, we should always seek to increase the understanding of the forest, our natural heritage, just as we seek to increase understanding of our written heritage.

Of paramount importance is the corollary that those values which foster an understanding of the forest are "better" than those which do not. In other words, values are not co-equal but can in fact be ranked.

In closing, allow me to reiterate the two main points which I hope you have gleaned from my discussion. And let me say I am fully aware that these are quite controversial.

First, values can be ranked. We have discussed one parameter--understanding of the forest--and there are others. The thing to remember is that properly allocating resources is not merely "counting" dollars, or votes, or long term "investments". We must look beyond that to our fundamental relationship to the resource in question.

Second, as public servants we must not blindly follow the public, but must in fact lead them. We have a duty to use our judgement about what is "in the best long term interest of the species".

Of these two points, the most important is that you accept the responsibility of being a leader. In that role, you will employ your own subjective values even if you don't agree that some values are "better" than others. Over the long haul, the application of the subjective values of one with an understanding of the resource is better than a mere plebiscite on how to manage our forests.

Let me leave you then with an admonition: Writing on his most famous subject, Dante opined that "the hottest places in hell are reserved for good people who, in times of crisis, decided to do nothing."

MICHIGAN'S ELK RIVER WATERSHED PROJECT

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The Elk River contains 202,060 acres within Antrim and Charlevoix Counties in northwestern Lower Michigan. The land use pattern is characterized by forest (81,030 acres), cropland (45,600 acres), inland lakes (28,720 acres), fallow land (15,360 acres), pastureland (10,500 acres) and other uses (20,850 acres). Wetlands comprise 30,800 acres, including inland fresh meadows (type 2), shrub swamp (type 6) and wooded swamp (type 7). Floodplains occupy 2,100 acres, including pasture and cropland (2,000 acres) and urban land (100 acres). All land in this watershed is owned by private interests and includes 170 farms, averaging 380 acres in area, and 65 orchards. Although no endangered species occur here, numerous threatened species have been recorded including Dalibarda repens (Dewdrop), Ptersopora andromedea (Giant Bird's Nest), Panax quinquefolius (Ginseng), Cirsium pitcheri (Pitcher's Thistle), Haliaeetus leucocephalus (Bald Eagle) and Tanacetum huronense (Lake Huron Tansy).

The Elk River Watershed project was initiated to develop a plan to improve soil and water management in this river basin. The major sponsors of the project include the Charlevoix Soil and Water Conservation District, Antrim Soil and Water Conservation District, Antrim County Board of Commissioners and Village of Bellaire. The major problems identified in the Elk River Watershed were (1) soil erosion and sedimentation from urban lands, (2) degradation of water quality, (3) deterioration of fishery resources, (4) degradation of recreational resources, (5) depletion of the resource base and (6) loss of net income. Alternative actions considered included (1) development of a resource protection plan, (2) an NED plan or (3) to take no action. Option number one was selected as our course of action.

The recommended plan contains practices to prevent erosion on cropland, pastureland and urban areas, along with practices to improve water quality. Cropland and pastureland management practices include conservation tillage, stripcropping, cover crops, grassed waterways or outlets, hayland planting, grade stabilization structures, grass and legume planting in alternate rotations, changed land use and critical area planting. Practices for urban erosion control include streambank protection, diversion, sediment basins, grade stabilization structures and critical area planting. Practices for the improvement of water quality include fencing, filter strips, cattle water facilities, animal waste facilities and diversions.

The plan specifies the following measures be taken within the watershed:

1. 13,000 acres of conservation tillage
2. 2,500 acres of cover crops
3. 400 acres of stripcropping
4. 1,000 feet of diversions
5. 4 grade stabilization structures
6. 3,400 feet of streambank protection
7. 20 acres of grassed waterways or outlets
8. 1,000 acres of hayland planting
9. 10 cattle watering facilities
10. 16,000 feet of fences
11. 25 acres of critical area planting
12. 6,000 acres of changed land use (tree planting)
13. 20 animal waste management systems
14. 3 structures for water control
15. 4,000 acres of grasses and legumes in rotation
16. 10 acres of filter strips

Table 1. Elk River Watershed Project costs.

Action Category	SCS Funds	Private Funds	Total
	Dollars		
Land Treatment	1,613,200	1,190,500	2,803,700
Technical Assistance	689,500	66,900	756,400
Administration	105,100	35,100	140,200
Total	2,407,800	1,292,500	3,700,300

Annual benefits accrued in the watershed amount to $253,890 for reduction of erosion and sedimentation and $78,840 for improvement of water quality. The area benefitted includes 27,120 acres of land and 19,400 feet of streambank.

Local impacts of the project have resulted in land use changes that have converted 6,025 acres of cropland to woodland or permanent vegetation cover. A net increase of 20,500 angler-days has been realized, while no change has occurred in the area of wooded flood plain, wetlands or prime farmland.

The overall effects of plan implementation include the following:

1. Decreased soil erosion in critical areas from 373,500 to 111,600 tons per year on 27,120 acres of pasture and cropland.

2. Decreased sediment yields to stream channels from 112,050 to 34,140 tons per year

3. Reduced loss of phosphorus in cropland sediment that enters streams by 70 percent, down from 175,000 pounds

4. Improved water quality in streams by reducing influx of sediment, nutrients and agricultural chemicals

5. Improved wildlife habitat

Additional yearly economic benefits will accrue to contractors, laborers and suppliers of agricultural products. Future economic benefits will result from the harvest of wood products derived from pine stands planted during the 10 year program.

BIOLOGICAL DIVERSITY AND FOREST PLANNING

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Conserving biological diversity is an issue receiving greater attention in the popular media as well as within scientific circles. The fundamental concern is an accelerating loss of species due to the cumulative impacts of human activities. While exact rates of species losses are difficult to quantify and past rates can only be estimated from fossil records, scientists generally agree that we are living in a period in which extinction rates far exceed those at any time during human history (Wilson 1988). In relative terms, if rates of species extinction over geologic time were approximately one species per year, current rates could well be at least the loss of one species per day and perhaps as great as one species per hour.

Current discussions about conserving biological diversity generally center around creating more reserves, parks, and other protected natural areas. While such areas are essential for conserving diversity, most of the land base will continue to be used for commodity production. Maintaining and enhancing biological diversity in the future depends heavily on lands that are actively being managed for a variety of products and benefits. Foresters manage many of these lands and so it is likely that forest planners will be asked to assess the impacts of forest management on biodiversity (Crow 1989).

WHAT IS BIOLOGICAL DIVERSITY?

Defining biological diversity "as the variety and variability of life and its processes" does not provide an operational definition. For purposes of forest planning, it is useful to consider at least three types of diversity -- compositional, structural, and functional -- that are related but also represent identifiable subgroups (Figure 1). In turn, each of these subgroups can be divided into several hierarchical levels. Compositional diversity, for example, includes genetic diversity that exists within populations and species, and species diversity that reflects the distribution of supporting ecosystems (habitats) in time and space (Figure 2).

Structural diversity can be characterized by such measures as the age-class distributions among forest stands or by the number of vegetative strata within a stand. Diversity in composition and structure produce variation in functional diversity that can be characterized by ecological processes. For example, if a plant depends on a particular insect for pollination and that insect species goes extinct, there will also be a concomitant loss of functional diversity within the biosphere.

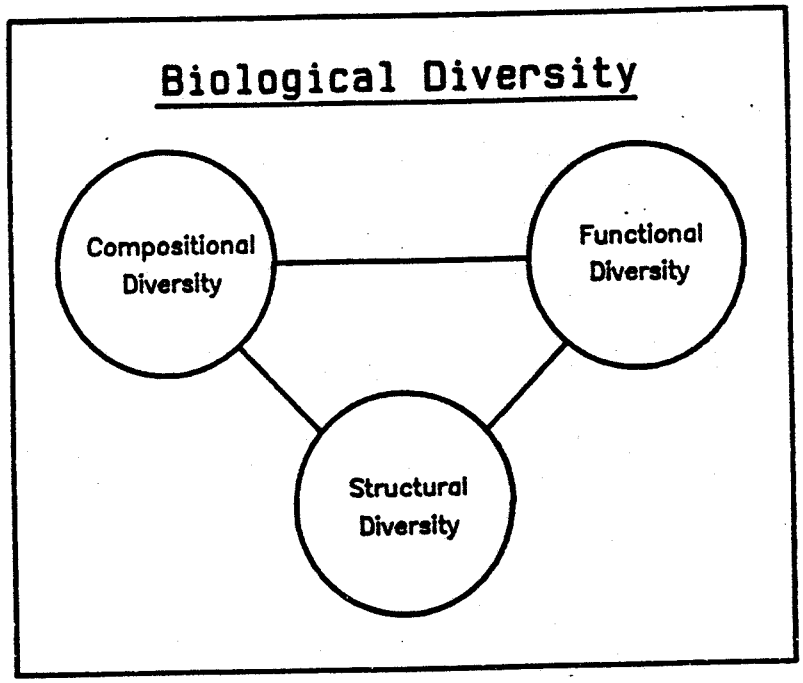

Figure 1. The interrelated subgroups of biological diversity.

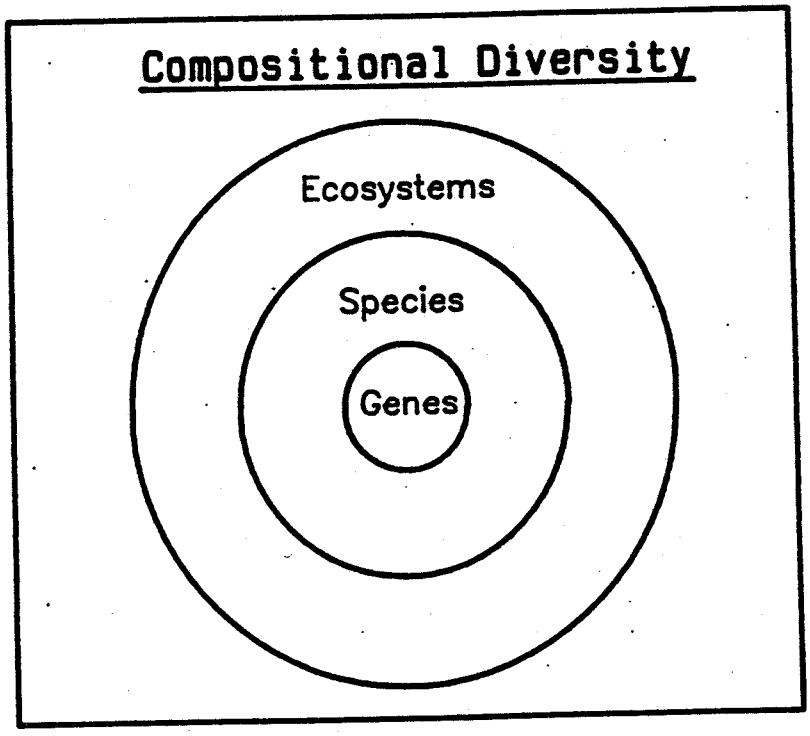

Figure 2. Each subgroup can be further divided into hierarchical levels. In the case of compositional diversity, these levels include genes, species, and ecosystems.

Scale also affects our perceptions about diversity. Each of the diversity subgroups represented in Figure 1 can operate at a variety of spatial scales. Again using compositional diversity as the example, the hierarchical levels of diversity as defined by genes, species, or ecosystems can each operate at the local, regional, or even global scale (Figure 3). The importance of scale is illustrated by the fact that a strategy to maximize local diversity can result in less regional diversity. This apparent contradiction is explored in the next section.

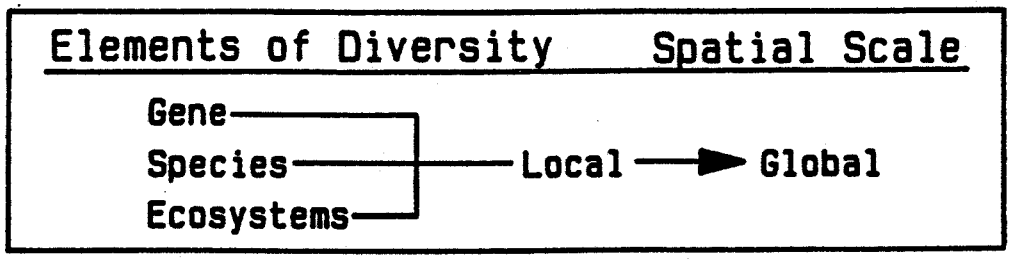

Figure 3. The levels of compositional diversity operate at a variety of spatial scales. Foresters have traditionally dealt with species diversity at local scales.

When discussing biological diversity, the diversity subgroup (Figure 1), the hierarchical level within the subgroup (Figure 2), as well as the spatial scales (Figure 3) being considered need to be identified. To summarize, a comprehensive plan to conserve biological diversity involves more than merely counting local species.

THE CASE FOR A REGIONAL VIEW

Resource managers often respond to concerns about biological diversity with statements such as "there is more diversity now than ever." In some respects this statement is true. The common strategy of creating diverse habitats by maximizing the age-class structure of forest stands across the landscape does indeed tend to increase *species* diversity at *local* scales. However, management that maximizes species richness locally often favors "generalist" organisms at the expense of "habitat specialists" (Figure 4). Species that are habitat generalists are more likely to prosper under a variety of conditions and tend to be ubiquitous. Adding generalists at the local level is unlikely to add to regional diversity. As their name suggests, habitat specialists require very specific and often unique habitat conditions and so these species often have small or localized populations. Loss of a habitat specialist at local levels often results in its loss at regional levels as well. And so, a strategy to maximize species richness at the forest stand level may result in a loss of regional diversity (Figure 4).

Not all species are equally important when developing conservation strategies. Plants and animals that prosper in human-dominated landscapes are typically generalists that colonize disturbed habitats. Among these species are important game species that historically have been managed for public benefit and will continue to be an important part of resource management.

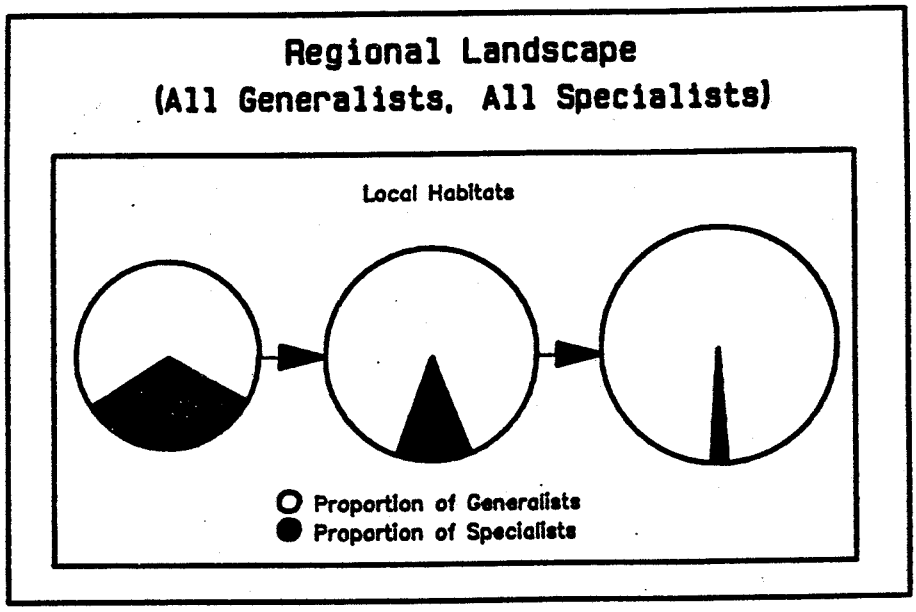

Figure 4. This schematic represents the relation between local and regional diversity. All species are present at the regional level. At the local level, most habitats contain more generalist species than specialist species. A strategy to maximize species richness at the local level will often create conditions favorable for generalist species at the expense of the habitat specialists, i.e., increasing the total number of species by increasing the number of ubiquitous generalist species but at the same time decreasing the number of rare habitat specialists. This trend, represented by the arrows, results in reduced regional diversity.

In contrast, species that are habitat specialists, species with low population densities that require large home ranges, species with poor dispersal and colonizing abilities, and rare species are much more prone to extinction under prevailing land-use patterns. They need more of our attention.

Regional conservation strategies are needed that meet the needs of hunting and fishing groups, nature enthusiasts, as well as conservation biologists. Public support for conservation (and indirectly for conserving biological diversity) will diminish if the sportsman's interests are ignored. Building coalitions is the key to conserving and enhancing biological diversity.

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MONITORING SYSTEM FOR IMPLEMENTATION OF FOREST PLANS IN MISSISSIPPI

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Introduction to The Monitoring System

Today Bayless Morton, our System Analyst Manager, and I will attempt to explain how our monitoring system works. Bayless has named it "The Monitoring System" (TMS). After our Pathways for Mississippi in 1983, we floundered with the question of "how do we monitor what is being accomplished by all the agencies and organizations mentioned in the Pathways document?" We produced the firest progress report in January 1987 to show what tasks had been accomplished by the prospective responsible party. This was a monumental task. The chairpersons of each main area in the Pathways contacted the agencies or organization with task responsibilities. This information was sent in, assembled, edited and turned into a document. There was no structured format and some negative replies from two main areas. I knew then that I did not want to go through this process again. Soon after, I got with Bayless and tried to explain what I wanted. From this he developed "TMS" in the summer of 1988. We soon hope to adapt it to our five-year tactical plan and use it as our in-house system. With that I will now turn the program over to Bayless Morton.

How TMS Works

A computerized monitoring system was developed after the Pathways booklet was printed. Not having this data in some type of electronic media caused several problems:

- No way to easily make changes, add or delete any of the data.
- No way to view all tasks assigned to a single agency.
- No way to monitor what agencies were doing as to find status of tasks.

A decision was made to put data into a database. A numbering system was developed so each main area, goal, objective and task would have a unique number. This would allow us to quickly find an item individually or to collectively put items together to form the whole.

- The first step was to assign numbers to all main areas (Attachment 3).
- Then assign numbers to all agencies involved (Attachment 4).
- Then assign numbers to all goals, objectives and tasks (Attachment 2).

Sample pages from the Pathways document (Attachment 1) show the goals, objectives and tasks in their original form.

Explanation of the Numbering System

1. The first goal under the main area is "01".
2. The second goal under the main area is "02" (if it exists).
3. The first objective under the main area under that particular goal is "01".
4. The second objective under the main area under that particular goal is "02" (etc.).
5. The first task under the main area under that particular goal under that particular objective is "01".
6. The second task under the main area under that particular goal under that particular objective "02" (etc.).
7. The agency that is responsible for that task is coded in the "AGEN" field.

Keying Data into the PC

1. Show that main area are already keyed in by searching for MAIN AREA "01".
2. Show that agencies are already keyed in by searching for AGENCY "24".
3. Key in GOAL "03/01".
4. Key in OBJECTIVE "03/01/01".
5. Key in TASK "03/01/01/01".
6. Key in TASK "03/01/01/02".
7. Show report printed from data just keyed.

Attachment 1

Representation on the Research Subcommittee should include the following agencies or groups:

- Misissippi Research & Development Center
- USDA Forest Service
- Industry Consulting Foresters
- Mississippi State University
- General Public

Functions of the research subcommittee should include:

1. Identifying and ranking research needs.
2. Keeping abreast of current research and how it interfaces local needs.
3. Assisting in implementation of research.
4. Coordinating with the technology transfer subcommittee on transfer of research results.

Representation on the Technology Transfer Subcommittee should include the following agencies and groups:

- Mississippi Forestry Commission
- Mississippi Cooperative Extension Service
- USDA Forest Service
- Soil Consevation Service
- Forest Industry
- Private Non-Industrial Forest Landowners
- General Public

Specific functions of this subcommittee should include:

1. Identifying and ranking technology transfer needs.
2. Coordinating technology transfer.
3. Advising the Research Subcommittee on research needs.

GOAL: Speed up the research and development of harvesting equipment and methods of thinning for partial cutting of small landowners' timber and leave an undamaged stand for future harvest.

OBJECTIVES:

1. Evaluate existing harvesting equipment to obtain capability, productivity and cost information.

2. Make economic analyses of harvesting systems, including modeling systems for specific forest conditions.

3. Evaluate forest resource data of Mississippi in terms of probable land use changes, forest growth and use, and other factors to develop projections of harvesting needs in the future.

4. Develop a manual on harvesting contracts.

5. Carry out an effective, concurrent technology transfer effort.

TASKS:

1. Develop a "Small Landowner Logging Equipment Manual".

   RESPONSIBILITY: MFC

2. Compile and evaluate information on harvesting equipment that would supplement the "Small Landowner Logging Equipment Manual".
   Funding: $75,000 per year
   Duration: 2 years

   RESPONSIBILITY: MRDC, MAFES

3. Conduct studies of harvesting systems applicable to important forest conditions that exist or will exist in Mississippi using a range of cost, return, and production values.
   Funding: $75,000 per year
   Duration: 2 years at minimum

   RESPONSIBILITY: MAFES, MRDC

4. Develop projections of probable forest conditions 10, 25 and 50 years in the future based on current forest resource data.

   RESPONSIBILITY: MRDC, MAFES, USDA-FS, MFC

5. Conduct studies of resource projections to determine likely harvesting requirements in the future.
   Funding: $75,000 per year (Tasks 4 and 5)
   Duration: 2 years at minimum

   RESPONSIBILITY: MAFES

6. Develop a manual that provides private landowners with guidelines for writing or obtaining a harvesting contracts that maximize dollar returns while increasing good forest management practices.
   Funding: $50,000
   Duration: 1 year

   RESPONSIBILITY: MFC, MCES, USDA-FS, FL

7. Tansfer technology and information through demonstrations, meetings, seminars, publications, personal contacts and other means.
   Funding: $50,000
   Duration: Indefinite

   RESPONSIBILITY: MCES, MFC, MAFES, MRDC, MFA

8. Make a concerted effort to encourage more informal contact between equipment manufacturers, forest industry, forest landowners, forest managers, and other technical professionals in the forest arena.
   Funding: $50,000
   Duration: Indefinite

   RESPONSIBILITY: MCES, MFC, MAFES, MRDC, MFA

GOAL: Utilize latest research findings and develop new uses to maximize the utilization of all raw forest materials.

OBJECTIVES:

1. Develop a data base on the hardwood resource that can be used to classify the volume of low-quality wood by regions, size classes and species group.

2. Determine the economic feasibility of short-log operations to produce furniture blanks, pallet lumber, flooring, rustic paneling and other sawn product from low-quality hardwoods.

3. Quantify the price and supply constraints for pine that will permit hardwoods to compete at the same economic level in those products for which pine or hardwood can be used in combination or alone.

4. Conduct long-range programs to develop high-volume uses for low-grade hardwoods.

5. Conduct research and development work on direct combustion of wood for energy production.

6. Develop methods to use dense hardwoods in board products.

7. Develop technology to use wood as a chemical feedstock.

TASKS:

1. Supply survey data by regions for the parameters identified.

   RESPONSIBILITY: USDA-FS

2. Evaluate the hardwood distribution patterns to determine region of highest value concentration in stem sizes both less than and greater than 12 inches.
   Funding: $10,000 - $20,0001 (Tasks 1 and 2)
   Duration: 6 months

   RESPONSIBILITY: MAFES

3. Conduct marketing studies for hardwood products produced from low-quality hardwoods, using as a reference successful bolter mill operations in the Northeast and the marketing studies conducted by the USDA Forest Service Marketing Laboratory at Princeton, West Virginia.

   RESPONSIBILITY: MRDC

4. Cooperate with the Mississippi Research and Development Center in transfer of results of marketing studies to potential users.
   Funding: $50,000 - $100,000 (Tasks 3 and 4)
   Duration: 2 years

   RESPONSIBILITY: MCES, MDED

5. Determine maximum price differential between pine and hardwood that will result in substitution of hardwoods for pine.

   RESPONSIBILITY: MAFES

6. Calculate supply short fall trend for pine by region, based on current growth-removal data.

   RESPONSIBILITY: MAFES

7. Project when (if) dense hardwoods may become attractive as substitutes for pine.
   Funding: $50,000 (Tasks 5, 6 and 7)
   Duration: 1 year

   RESPONSIBILITY: MAFES

8. Design efficient stoker-fed, wood-fire furnaces for home and businesses.

   RESPONSIBILITY: MSUE

9. Determine economical pre-processing methods for wood fuels lo provide uniform moisture content and density.

   RESPONSIBILITY: MSUE

10. Identify specific requirements for harvesting, processing, marketing and distributing wood fuels.

    RESPONSIBILITY: MAFES

11. Conduct economic analysis to determine the feasibility of using wood in various forms as an energy source in homes, businesses, and industries compared to fuel oil, gas and electricity.
    Funding: $250,000 per year (Tasks 8, 9, 10, and 11)
    Duration: 5 years minimum
    RESPONSIBILITY: MAFES

12. Study the effect of various species combinations with pine on properties of products.
RESPONSIBILITY: MFPL

13. Determine the effect of processing variables on properties of products.

RESPONSIBILITY: MFPL

14. Develop resin system tailored for hardwood furnish.

RESPONSIBILITY: MFPL

15. Develop pre-processing technology to favorably modify hardwood furnish.
Funding: $250,000 per year (Tasks 12, 13, 14, and 15)
Duration: 5 years minimum

RESPONSIBILITY: MFPL

16. Devise efficient pretreatment system to increase glucose yields.

RESPONSIBILITY: MFPL

17. Perfect one-step, continuous processes for separating major wood components, to convert wood to commercially important chemicals.

RESPONSIBILITY: MFPL

18. Perfect rapid and efficient chemical and enzymatic hydraulic technology.

RESPONSIBILITY: MFPL

19. Conduct studies to determine the feasibility of producing specific groups of chemicals from wood.
Funding: $250,000 per year (Tasks 16, 17, 18, and 19)
Duration: 5 years minimum

GOAL: Build, through state, federal and private cooperation, a forestry research "Southern Center of Excellence" that is results oriented, using as a core, Mississippi State University and the Mississippi Research and Development Center facilities and staff.

OBJECTIVES:

1. Evaluate the fiscal and manpower requirements for a comprehensive, centralized research center in forest resources in Mississippi.

2. Secure the facilities and scientific manpower required for a forest resources research center that will be responsive to both basic and applied research needs in the State.

TASKS:

1. Make detailed analyses of basic and applied research needs by broad project areas.
   Funding: None required
   Duration: 6 months

   RESPONSIBILITY: MAFES

2. Determine the professional support staff and operating funds required to inaugurate an expansion of the current project work and accommodate the new research initiatives.
   Funding: None required
   Duration: 6 months

   RESPONSIBILITY: MAFES

3. Audit existing resources devoted to forestry-related research and development activities.
   Funding: None required
   Duration: 6 months

   RESPONSIBILITY: MRDC

4. Determine the additional funding needed to expand analytical and economic service functions to a level consistent with present and anticipating future needs of forestry in Mississippi.
   Funding: None required
   Duration: 6 months

   RESPONSIBILITY: MRDC

5. Develop support at both state and federal levels for funding a forest resources research center.

   RESPONSIBILITY: MAFES, MFPL

6. Maintain liaison with House and Senate leadership of the Mississippi Legislature.

   RESPONSIBILITY: MRDC, MFA

7. Include program expansion in forest resources research as a high-priority request to be fulfilled by sequential budget increases over a period of three to five years.

   RESPONSIBILITY: MRDC

8. Prepare and submit to Mississippi's Congressional delegation a proposal seeking designated matching funds for forest research facilities and program expansion in Mississippi.
   Funding: $10 million for facilities, $1.5 million additional annual operating funds (Tasks 5, 6, 7 and 8)
   Duration: Indefinite

   RESPONSIBILITY: MRDC

Attachment 2

MAIN AREA: 03
RESEARCH

GOAL: 01

Speed up the research and development of harvesting equipment and methods of thinning for partial cutting of small landowners' timber and leave an undamaged stand for future harvest.

OBJ: 01

A: Evaluate existing harvesting equipment to obtain capability, productivity and cost information.

B: Make economic analyses of harvesting systems, including modeling systems for specific forest conditions.

TASK: 01

Develop a "Small Landowner Logging Equipment Manual".
PRIMARY AGENCY: MISS FORESTRY COMMISSION

TASK: 02

Compile and evaluate information on harvesting equipment that would supplement the "Small Landowner Logging Equipment Manual".
PRIMARY AGENCY: MISS AGRI & FORESTRY EXPERIMENT STATION

TASK: 03

Conduct studies of harvesting systems applicable to important forest conditions that exist or will exist in Mississippi using a range of cost, return and production values.
PRIMARY AGENCY: MISS AGRI & FORESTRY EXPERIMENT STATION

OBJ: 02

Evaluate forest resource data of Mississippi in forms of probable land use changes, forest growth and use, other factors to develop projections of harvesting needs in the future.

TASK: 01

Develop projections of probable forest conditions 10, 25 and 50 years in the future based on current forest resource data.
PRIMARY AGENCY: MISS FORESTRY COMMISSION

TASK: 02

Conduct studies of resource projections to determine likely harvesting requirements in the future.
PRIMARY AGENCY: MISS AGRI & FORESTRY EXPERIMENT STATION

OBJ: 03

Develop a manual on harvesting contracts.

TASK: 01

Develop a manual that provides private landowners with guidelines for writing or obtaining a harvesting contract that maximizes dollar returns while increasing good forest management practices.
PRIMARY AGENCY: MISS COOPERATIVE EXTENSION SERVICE

OBJ: 04

Carry out an effective, concurrent technology transfer effort.

TASK: 01

Transfer technology and demonstrations, meetings, seminars, publications, personal contracts and other means.
PRIMARY AGENCY: MISS COOPERATIVE EXTENSION SERVICE

TASK: 02

Make a concentrated effort to encourage more informal manufacturers, forest industry, forest landowners, forest managers, and other technical professionals in the forest arena.
PRIMARY AGENCY: MISS COOPERATIVE EXTENSION SERVICE

GOAL: 02

Utilize latest research findings and develop new uses to maximize the utilization of all raw forest materials.

OBJ: 01

Develop a data base on the hardwood resource that can be used to classify the volume of low-quality wood by regions, size classes and species group.

TASK: 01

Supply survey data by regions for the parameters identified.
PRIMARY AGENCY: RESOURCE INVENTORY & ANALYSIS GROUP, USDA-FS

TASK: 02

Evaluate the hardwood distribution patterns to determine region of highest value concentration in stem sizes both less than and greater than 12 inches. PRIMARY AGENCY: MISS AGRI & FORESTRY EXPERIMENT STATION

OBJ: 02

Determine the economic feasibility of short-log operations to produce furniture blanks, pallet lumber, flooring, rustic paneling and other sawn products form low-quality hardwoods.

TASK: 01

Conduct Marketing studies for hardwood products produced from low-quality hardwoods, using as a reference successful bolter mill operations in the Northeast and the marketing studies conducted by the USDA Forest Services Marketing Laboratory at Princeton, West Virginia.
PRIMARY AGENCY:

TASK: 02

Cooperate with the Miss. Research and Development Center in transfer of results of marketing studies to potential users.
PRIMARY AGENCY: MISS COOPERATIVE EXTENSION SERVICE

OBJ: 03

Quantify the price and support constraints for pine that will permit hardwoods to compete at the same economic level in those products for which pine or hardwood can be used in combination or alone.

TASK: 01

Determine maximum price differential between pine and hardwood that will result in substitution of hardwoods for pine.
PRIMARY AGENCY: MISS AGRI & FORESTRY EXPERIMENT STATION

TASK: 02

Calculate supply shortfall trend for pine, by region, based on current growth-removal data.
PRIMARY AGENCY: MISS AGRI & FORESTRY EXPERIMENT STATION

TASK: 03

Project when (if) dense hardwoods may become attractive as substitutes for pine.
PRIMARY AGENCY: MISS AGRI & FORESTRY EXPERIMENT STATION

OBJ: 04

A: Conduct long-range programs to develop high-volume uses for low-grade hardwoods.

B: Conduct research and development work or direct combustion of wood for energy production.

TASK: 01

Design efficient stoker-fed, wood-fire furnaces for homes and businesses.
PRIMARY AGENCY: MISS STATE U., COLLEGE OF ENGINEERING

TASK: 02

Determine economical preprocessing methods for woodfuels to provide uniform moisture content and density.
PRIMARY AGENCY: MISS STATE U., COLLEGE OF ENGINEERING

TASK: 03

Identify specific requirements for harvesting, processing, marketing and distributing wood fuels.
PRIMARY AGENCY: MISS AGRI & FORESTRY EXPERIMENT STATION

TASK: 04

Conduct economic analysis to determine the feasibility of using wood in various forms as an energy source in homes, businesses, and industries compared to fuel oil, gas and electricity.
PRIMARY AGENCY: MISS AGRI & FORESTRY EXPERIMENT STATION

OBJ: 05

Develop methods to use dense hardwoods in board products.

TASK: 01

Study the effect of various species combinations with pine on properties of products.
PRIMARY AGENCY: MISS FOREST PRODUCTS LAB

TASK: 02

Determine the effect of processing variables on properties of products.
PRIMARY AGENCY: MISS FOREST PRODUCTS LAB

TASK: 03

Develop resin system tailored for hardwood furnish.
PRIMARY AGENCY: MISS FOREST PRODUCTS LAB

TASK: 04

Develop pre-processing technology to favorably modify hardwood furnish.
PRIMARY AGENCY: MISS FOREST PRODUCTS LAB

OBJ: 06

Develop methods to use wood as a chemical feedstock.

TASK: 01

Devise efficient pre-treatment system to increase glucose yields.
PRIMARY AGENCY: MISS FOREST PRODUCTS LAB

TASK: 02

Perfect one-step, continuous processes for separating major wood components; to convert wood to commercially important chemicals.
PRIMARY AGENCY: MISS FOREST PRODUCTS LAB

TASK: 03

Perfect rapid and efficient chemical and enzymatic hydraulic technology.
PRIMARY AGENCY: MISS FOREST PRODUCTS LAB

TASK: 04
Conduct studies to determine the feasibility of producing specific group of chemicals from wood.
PRIMARY AGENCY: MISS FOREST PRODUCTS LAB

GOAL: 03

Build, through State, Federal and a private corporation a forestry research "Southern Center of Excellence" that is results oriented; using as a core, Mississippi State University and the Mississippi Research and Development Center facilities and staff.

OBJ: 01

Evaluate the fiscal and manpower requirements for a comprehensive, centralized research center in forest resources in Mississippi.

TASK: 01

Make detailed analyses of basic and applied research needs by broad project areas.
PRIMARY AGENCY: MISS AGRI & FORESTRY EXPERIMENT STATION

TASK: 02

Determine the professional support staff and operating funds required to inaugurate an expansion of the current project work and accomodate the new research initiatives.
PRIMARY AGENCY: MISS AGRI & FORESTRY EXPERIMENT STATION

TASK: 03

Audit existing resources devoted to forestry - related research and development activities.
PRIMARY AGENCY:

TASK: 04

Determine the additional funding needed to expand analytical and economic service functions to a level consistent with present and anticipating future needs of forestry in Mississippi.
PRIMARY AGENCY:

OBJ: 02

Secure the facilities and scientific manpower required for a forest resources research center that will be responsive to both basic and applied research needs in the State.

TASK: 01

Develop support at both State and Federal levels for funding a forest resources research center.
PRIMARY AGENCY: MISS AGRI & FORESTRY EXPERIMENT STATION

TASK: 02

Maintain liaison with House and Senate leadership of the Mississippi Legislature.
PRIMARY AGENCY: MISS FORESTRY ASSOCIATION

TASK: 03

Maintain liaison with House and Senate leadership of the Mississippi Legislature.
PRIMARY AGENCY:

TASK: 04

Prepare and submit to Mississippi's Congressional delegation a proposal seeking designated matching funds for forest research facilities and program expansion in Mississippi.
PRIMARY AGENCY:

Attachment 3

List:

Record Number	Main Area (MA)	Main Area Name (MANAME)
1	01	FOREST PRODUCTIVITY
2	02	MARKET DEVELOPMENT
3	03	RESEARCH
4	04	TAXATION POLICY
5	05	FOREIGN TRADE
6	06	EDUCATION
7	07	TRANSPORTATION
8	08	CONTINUING FORUM

Attachment 4

List:

Record Number	Agency Number (AGNO)	Agency Name (AGNAME)
1	02	BANKING INDUSTRY
2	03	CONTINUING FORUM
3	04	CONTINUING FORUM TASK FORCE
4	05	CERTIFIED PUBLIC ACCOUNTANT
5	06	CORE TEAM
6	07	COUNTY TAX ASSESSOR
7	08	COUNTY TREE FARM CHAIRMAN
8	09	DEVELOPMENT ORGANIZATION
9	10	DEAN, SCHOOL OF FOREST RESOURCES
10	11	FOREIGN AGRICULTURAL SERVICE, USDA
11	12	FOREST INDUSTRY
12	13	FOREST SUPERVISOR, NATIONAL FOREST
13	14	INDUSTRY FORESTER
14	15	INDUSTRY LANDOWNER ASSISTANCE FORESTER
15	16	MISS ASSPC OF CONSERVATION DISTRICTS
16	17	MISS ASSOC OF CONSULTING FORESTERS
17	18	MISS AGRI & FORESTRY EXPERIMENT STATION
18	19	MISS COOPERATIVE EXTENSION SERVICE
19	20	MISS DEPT OF ECONOMIC DEVELOPMENT
20	21	MISS DEPT OF ENERGY & TRANSPORTATION
21	22	MISS FORESTRY ASSOCIATION
22	23	MISS FARM BUREAU FEDERATION
23	24	MISS FORESTRY COMMISSION
24	25	MISS FOREST PRODUCTS LAB
25	26	MISS LUMBER MANUFACTURERS ASSOC
26	27	MISS RESEARCH & DEVELOPMENT CENTER
27	28	MISS SOCIETY OF AMERICAN FORESTERS
28	29	MISS STATE HIGHWAY DEPT
29	30	MISS STATE U., COLLEGE OF ENGINEERING
30	31	MISS STATE U., SCHOOL OF FOREST RESOURCES
31	32	PRIVATE NON-INDUSTRIAL FOREST
32	33	RIVERS & HARBORS ASSOC OF MISS
33	34	RESOURCE INVENTORY & ANALYSIS GRP, USDA-FS
34	35	STATE AID DIVISION
35	36	SOIL & WATER CONSERVATION DIST
36	37	SOIL CONSERVATION SERVICE
37	38	USDA FOREST SERVICE
38	39	STATE FORESTER
39	01	AGRI STABLIZATION & CONSERVATION SERVICE

MICHIGAN'S FOREST PRODUCTS TARGET INDUSTRY DEVELOPMENT PROGRAM

Robin Bertsch
Michigan Department of Natural Resources
Lansing, Michigan 48909

The Lake States region (Michigan, Minnesota, Wisconsin) has recently experienced major growth of the forest products industry. Over $4.5 billion has been invested in wood manufacturing plant modernizations and expansions during this decade. Each state has shared somewhat equally in these overall investments.

Michigan's share of these investments has created an additional 9,000 jobs within these manufacturing facilities and in related service/support sectors. This employment increase means an estimated 154,000 jobs (direct, indirect, and induced) are now supported statewide by the forest products industry. These jobs typically pay higher wages: in 1982, forest based manufacturing jobs paid $23,000 in annual wages; forest based recreation paid $11,000 in annual wages. This relationship has important policy implications to government in pursuit of social and economic development goals.

Three factors which have influenced these investments should continue to bear positively on additional growth within the region into the near future. These factors include ample raw material supplies which are competitively priced; technological developments which allow greater use of hardwoods (our majority timber resource) for consumer goods; and economic forces (rising transportation costs) which have tended to regionalize consumer markets.

Today I will briefly discuss the history of Michigan's forest products target industry development program and describe some important elements crucial to its success. Ellis Perraut, Forest Products Industry Account Executive within the Department of Commerce, will share duties with me in this endeavor. Together we hope to leave you with a sense of our successful program elements.

History

Michigan's forest products target industry development program acknowledges the opportunity our state has to capture more of the employment benefits offered by this industrial sector. This program is part of a broader statewide economic development and diversification strategy to provide employment for our citizens. Its origin is rooted in the decline of heavy industry (steel, automobiles, machinery) and the nearly 18 percent unemployment our state experienced in the late 1970s and early 1980s. The

forest products industry will not solve all of our social/ economic problems; it certainly can help.

In 1983, Michigan's newly-elected governor appointed a Commission on Jobs and Economic Development to identify sectors of our state's economy where net economic growth can realistically occur if we proactively pursue them. This Commission was co-chaired by Lee Iacocca and Douglas Fraser and was supported by nationally prominent economists providing analytic assistance. Three targeted sectors were announced as a result of this Commission's work: food processing, auto suppliers, and the forest products industry. Elements of the forest products target industry development program include assuring a stable supply of increasingly more valuable timber; improving the business climate and markets for the forest products industry; and greater coordination of public and private forestry activities.

A number of concerted actions taken in the years prior to and during this time contributed positively on the analytical process. These efforts have also helped to institutionalize Michigan's forest products target industry development program. The development of a statewide forest resources plan during the mid-1970s and early 1980s provided a consensus building foundation for using our forest resources for social and economic development purposes. A new statewide forest inventory was completed in 1980 which documented major under-utilized timber supplies. Michigan State University completed our state's first timber products economy report describing, via analytically accepted methods, the forest products industry's impact on Michigan. Two governors' (Republican and Democratic administrations) forestry conferences provided direction and consensus building forums. The establishment of forest resource policy advisory bodies (the Michigan Forest Products Industry Development Council was legislatively established in 1984) has brought many of our state's societal interests together to help provide consensus and program direction.

Direct Development Activities

An effective target industry program requires coordination of effort and a strong sense of direction. Michigan's proactive forest products industry development effort is rooted in the shared work of the Departments of Commerce and Natural Resources. A team approach (one individual from each agency) has served our state well. It has merged the expertise (business assistance and forest resource) of these agencies/individuals; enhanced their professional credibility with corporate decision makers; allowed cost sharing of program elements (publications, trade shows, etc.); and provides a single contact point for expansion minded industry. This team makes direct business retention visits and promotes business expansion opportunities. Companies within Michigan are offered the first chance at business development activities; out-state businesses are solicited secondarily. This approach has been very effective at getting Michigan plugged into

the corporate strategic planning process and changing perceptions of Michigan's opportunities for the forest products industry.

A proactive industry development program requires the development of an intelligence base which can effectively provide objective direction. Michigan has divided the forest products industry into five sectors for purposes of intelligence gathering: pulp/paper, composite wood manufacturing, solid wood manufacturing, wood energy production, and value added wood manufacturing. We have objectively obtained and analyzed data on each of these sectors (by standard industrial classification codes) to determine growth areas. Data analyzed includes both supply and demand for forest products within our state, within a broader region (multi-state area), nationally and internationally. Understanding these trends will help us focus on truly promising endeavors.

We have also analyzed the key locational factors for each forest products industry growth area. Factors such as desirable raw material supply, site requirements, labor/transportation/energy availability and costs, markets, capital requirements, and environmental regulations are considered. Michigan must be able to provide the minimum locational requirements for each growth opportunity identified if we are to realistically expect success. This has had the effect of minimizing pursuit of wood manufacturing opportunities which clearly cannot succeed in our state.

Michigan has also developed economic development tools to help our direct marketing activities. These tools include investment analyses which serve as pre-feasibility studies for specific projects (hardwood dimension production is an example). Other tools are regional analyses (sub-regions of Michigan) which prepackage initial locational information needed by corporations to screen various opportunity areas objectively. Promotional brochures were developed after our efforts had identified forest products industry growth areas. Directories of our primary and value added wood manufacturers serve as excellent product market documents as well as providing an existing industry information base.

Summary Highlights

This concludes my brief description of Michigan's forest products target industry development program history and some highlights of the elements of our direct marketing activities. Consensus building, objective analytic foundations, coordination of agencies and more specifically individuals have all contributed to the strength and continuity of Michigan's forest products target industry development program. Ellis Perraut, Michigan Department of Commerce, Forest Products Industry Account Executive, is the other half of the target industry "team". His discussion will focus more completely on our current marketing efforts and future direction.

MICHIGAN'S FOREST PRODUCT TARGET INDUSTRY EFFORT

Ellis Perraut
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Lansing, Michigan 48909

The purpose of my talk today is to give you a feel for some of the factors that have made Michigan's forest product target industry effort a success. As Robin Bertsch mentioned in his description of the history of the forest products effort, the effort to enhance our forest product industry development, came as a result of a general recession and a down-sizing in our automotive industry sector in the early 1980s. It is true, automotive and its support industries are still the largest employer in the Michigan economy; however, we can say that for the first time in its history, a recession in the automotive industry has not resulted in a recession in Michigan's economy. Today, Michigan is less dependent on the automotive industry and more diversified than it has been.

Some measures of the success of the program can be seen in terms of manufacturing plant investment in Michigan's forest product industry and in jobs created. Based on a three year average, 1984 to 1986, for SIC codes 24-26, Michigan is the third largest forest products value added manufacturing state in the six state North Central Region. Wisconsin is the largest with 24 percent of the region's value added forest product manufacturing, followed by Minnesota at 19 percent and Michigan at 17 percent. At 17 percent of the value added manufacturing in the region, Michigan captured 25 percent of the new plant investment. Wisconsin also has done very well at capturing 34 percent of new plant investment in the region. Other states' results have been mixed.

How does this investment experience compute by industry by two-digit standard industrial codes? For SIC 24 lumber and wood products, Minnesota has the largest value added manufacturtng at 22 percent and has captured the same proportion of regional plant investment. Wisconsin, with 21 percent of the SIC 24 manufacturing value added, captured a total of one-third (33 percent) of investment in the region. Michigan, much smaller at 12 percent of SIC 24 value added manufacturing, captured 15 percent of the new plant investment. For SIC 25, furniture and fixtures, Michigan has increased its dominance, having 35 percent of the value added manufacturing, and capturing almost half, 48 percent of investment. For SIC 26 pulp and paper, Wisconsin has 34 percent of the value added manufacturing and 41 percent of the investment. Michigan also captured more than its share (14 percent) of value added manufacturlng, capturing 21 percent of the new plant investment.

So in summary, Michigan and also Wisconsin have captured more new investment than indicated by their share of value added manufacturing. Secondly, we can see that in states where an industry is concentrated, such as Michigan in furniture, and Wlsconsin in paper, these states have tended to attract more than their share of that industry of the new plant investment, increasing their dominance.

New resource is of vital concern to the forest products industry and its expansion. Other important factors to the industry, include financing, business climate business costs, training, sites, and technology. A key element to the Michigan target industry effort has been the teaming of forest utilization experts with Commerce in order to conduct team selling that covers all of the questions and needs of locating and expanding a manufacturing plant. Some other advances in terms of being able to focus on industry needs have come from Michigan's Strategic Fund for financing. Strategic Fund seeks to serve the complete range of business investment needs through financial institutions, the creation of such tools, such as venture capital, seed capital companies, and business and industrial development companies have earned Michigan high marks with such outside sources such as Inc. magazine, naming Michigan as one of the role models for economic development.

In terms of labor training, new programs have been designed to allow greater diversity of manufacturers' training needs to be met and encouraged by the state. Traditionally, many training programs are not targeted to the manufacturer explicitly, but to say enfranchising the disfranchised worker, or in expanding the education capacity of the local education institution. Michigan has designed programs to help focus on manufacturing needs and worker skllls upgrading in order to meet the challenges of the future. Considerable effort has also been expended on reducing business costs for manufacturers with reforms in workers' compensation, single business tax, and currently proposals are being considered to change the property tax and sales tax in Michigan, all wlth the aim of producing a better investment climate for business. Finally, in terms of site location, as I mentioned, the combined effort of business and forest resource specialists have been brought together to provide a complete range of business services for locating and expanding manufacturing. Proactive investment studies have been packaged with resource and investment analysls in order to help direct business investment to areas of opportunity in the state.

In order to describe this proactive process, I would like to site three cases, pulp and paper, composite board and hardwood dimension manufacturing.

Pulp and Paper

In 1983, the effort to attract a new pulp mill to Michigan was to be launched with the completion of a consultant's analysis. This third party report gave the industry perspective on a complete range of pulp mill locational factors (transportation, water, labor, resource, investment climate) necessary to select the best sites in Michigan for a pulp mill. The emphasis was on pulp. Paper investment has done well on its own. We wanted to focus on where our efforts would make a difference. With this investment report in hand, the forest products team contacted 80 national and international paper companies and made presentations to 35. The report was presented to corporate executives to become a part of their long range planning. The team found that by doing this they were able to change paper executive's perception of Michigan as being only an auto state. Paper executives were surprised to see that Michigan had much to offer in forest products and was making a concerted effort to attract pulp investments. Paper investments are long range planning efforts and in order to become part of that planning, Michigan created the right image and packaged the right information, to become part of that planning process well in advance of siting a pulp mill investment.

Composite Wood

In 1985, another study was conducted to analyze the opportunity and the size appropriate for the manufacturing of composite wood products. Again, this study was conducted by a third party, independent consultant with industry location factors in mind. This report was also mailed and combined in the visit of the same pulp and paper companies. The result, two upper peninsula locations of particle board and medium density fibreboard in Newberry and Sagola.

Value Added Manufacturing

The majority of jobs for forest products, comes in value added products such as furniture, cabinets, and dimension. These industries are less capital intensive and more labor intensive. The strategy was to create import substitution for the lumber flowing out of Michigan and flowing back into Michigan in the form of dimension parts for the furniture industry. Considerable research went into this effort with Data Resources International report that involved thirty-nine 4-digit SIC code demand estimates and forecasts. Bands of investment opportunities were identified in terms of their growth and appropriateness for Michigan to pursue. In addition, there was a Michigan State University report describing existing direct and indirect jobs impacts created by forest products industry.

Finally, Michigan Technological University prepared an investment analysis looking at the specific investments needed to capture these product marketing opportunties. One of the factors for being able to implement this effort was the existence of DNR's Michigan's Wood Products Manufacturer's directory that helped us to target our efforts, first to Michlgan dimension manufacturers, and then to furniture manufacturers. Finally, the report was introduced to out of state manufacturers. Instate, the report was marketed through our Community Growth Alliance network that has established economic development networks in every county in Michigan. Presentations were given, the report was mailed, and then economic developers were briefed on the investments analysis. An out of state campaign was mounted identifying dimension manufacturers, mill work manufacturers throughout the United States, national advertising, public relations, direct mail and telephone campaigns were conducted, followed by the International Woodworking and Furniture Supply Fair in Atlanta, Georgia. The combined effort of all these media were used to get the message across to the dimension manufacturers that Michigan was interested in their business. The evaluatlon of this effort is still underway. Key factors here were that this is industrial marketing to a target audience and that efforts of the team and media need to be coordinated in a long term effort to locate new manufacturing.

These three cases have shown us that proactive targeted marketing efforts can work and are important and these will be used for future investment opportunties. Some of the coming investment opportunties that we want to focus on are (1) strengthening Michigan's advantage in wood office furniture and suppliers to the furniture industry, including new furniture opportunities such as ready-to-assemble furniture manufacturers, (2) expanding regional marketing efforts, such as through the Great Lakes Forestry Alliance, (3) providing greater focus on individual dimension manufacturing targets and (4) enhancing the benefits of the Free Trade Agreement. In addition, we expect that the new wood applied technology training center in western Michigan will be of great benefit to help modernize our furniture manufacturing industry.

In conclusion, the factors that have added to the success of the Michigan forest products effort, have been not only resource but also combined team sales approach and coordinated effort of Commerce and Natural Resources, to focus on specific manufacturing needs and investment opportunities. Continually, we have sought to leverage limited resources with a network of people throughout the state as well as financial resources to focus on industry needs and provide an attractive investment climate.

NEW RESOURCES FOR FUNDING INTENSIVE FOREST MANAGEMENT

Ronald L. Murray
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INTRODUCTION

As with many innovative ideas, Michigan's Forest Development Fund is born of necessity. In the early 1980's, the industrial base of Michigan's economy (the automobile industry) was devastated. The oil crisis and fears of future energy shortages and rising cost of raw materials and production fueled by rising energy costs gave an enormous advantage to the economical, fuel efficient, foreign-made automobile. Sales of domestic automobiles plummeted as did the jobs and businesses that produced them. Lay-offs were common in auto-related industries. Plants were cut back, then closed temporarily, and some were never to reopen. The effect of the auto giants' trouble rippled through Michigan's economy which was already wrestling with high energy costs and the related problems. Hard times were upon us.

During those days, much effort was expended in assessing the problem to determine probable solutions as well as long-term insurance against recurrence of this phenomenon. Michigan's economy needed to diversify. The auto industry was no longer the benevolent giant, in the economic sense, protecting the State and supplying its needs. Governor James Blanchard announced a Target Industry Program in 1983. It would develop industries in Michigan with potential to contribute significantly to the State's economic diversification.

A group of economists from the universities in Michigan determined that they could best serve the interests of the State in times like these by analyzing Michigan's economic and fiscal structure. Their findings and recommendations are set forth in Michigan's Fiscal and Economic Structure", coordinated by by Harvey E. Brazer and Deborah S. Laren from the Economics Department at the University of Michigan.(1)

One chapter in the book deals with natural resource issues. The author of that chapter, Richard Porter, a resource economist, also of the University of Michigan Economics Department, makes the point that Michigan is now and has in the past, grossly underinvested in forest resources management. In 1985, forest industry invested $3.00 per acre minimum in timber management on their lands; the State of Michigan invested $.40 per acre.

The means of funding current investments in growing timber on State Forest lands was, and still is, the current revenue from timber sales. Past investments determine the values received for these currently. These revenues, in turn, are the basis for current investment. Underinvestment in the past causes current timber stumpage values to be low, thus determining low current investment and low future returns. Porter termed this situation a "classic low-level development trap".

Subsequent discussion by Dr. Porter, with Henry Webster, State Forester, G.R. Gregory, Professor of Forest Economics, University of Michigan, Robert Marty, Professor of Forest Economics at Michigan State University, and other notable forest economists resulted in a consensus that indeed the potential existed in forest resource management to break out of this "low-level trap". This could be done via the creation of a mechanism to borrow money from the private sector, to invest it in selected forest practices yielding high returns, and to repay those bonds from future timber receipts earned as a result of the investments.

Times became even worse. Budgets to State agencies were slashed in an effort to pay off State debt and restore fiscal integrity to the economy. The Forest Management Division staff from 1980 to 1989 fell from 418 jobs to 322 jobs. Reforestation no longer keeps pace with timber harvest due to lack of funding. Cultural operations such as site preparation and release work are not completed on reforested areas due to lack of funds. Valuable northern hardwood stands and pine stands are not thinned due to lack of funds to prepare and administer the work. Past investments in tree planting and other management operations are being lost because cultural operations are not performed when needed due to lack of funds.

At the same time, economic development in forest resources is being encouraged. Foresty was designated as a target industry by Governor Blanchard in 1983. By so doing, he identified foresty as one of several industries in which great potential for economic development existed as part of the effort to diversification Michigan's economy. There have in fact been major forest industry expansions involving $1.5 billion in new investment, some 3,500 to 4,000 new direct production jobs, and a total associated employment increase in the range of 8,500 to 9,000 jobs. This is indeed the largest single increase experienced during the 1980's in any industrial sector in Michigan's economy.

The obvious discontinuity between these long range plans and the current organizational structure which perpetrated the "low-level development trap" must be eliminated if the intensification of investment in forestry is to occur in a meaningful way. Management planning for forestry operations is done on a horizon which typically looks at investment periods on the 50 year range. Unstable long-term funding in the past has prevented long-term management from being accomplished effectively. A stable source of long-term funding is essential to secure effective long-term management.

Consensus of leading resource economists will gain political and intellectual support of an idea such as the Forest Development Fund, but financiers are more demanding. Before they dig into their deep pockets, they demand answers to questions like:

- How do you know you can earn enough to pay off a bond?
- What rates of return can you earn from investments in forest management regimes? Which regimes pay off at what rates?
- Can you locate stands geographically with characteristics that make them highly profitable investments?
- What are the cost and revenue streams associated with investments in highly productive forestry regimes?

- How much bond proceeds are needed and on what time schedule?
- How do forestry investments compare with other long-term corporate/industrial investments in financial terms?
- How long an investment period is required?
- What type of collateral do you offer?

Questions such as these, posed by our State Treasurer's Office and the top bonding consultant recommended to us, made it obvious that detailed analytical work was required for serious discussions to proceed.

METHODS AND MATERIALS

In 1984, we began a series of analyses taking an "in depth" look at the regimes used to manage forests in Michigan. Over 200 regimes were considered. We excluded those that were not practical from the land manager's viewpoint and included a few that were field tested research that had shown very promising results. These were analyzed over a 50 year investment period. In 50 years, most of the regimes studied matured one or more times.

The Quick Silver computer program developed by Dr. J. Michael Vasievich, USDA Forest Service, Durham, N.C., was used for economic calculations. Growth and management simulations used TWIGS, Lake States Version 2.01. Lotus 1-2-3 was used in the calculations of cost and revenue streams. Volumes were taken from management guides prepared by the North Central Forest Experiment Station. Volumes were modified if experience or DNR timber sale data indicated that values obtained from TWIGS were not realistic.

A good deal of care was taken to maintain realistic scheduling, treatments, costs, revenues and other data used in the analysis. When possible, actual MDNR data was used. When data was not available, the expert judgment of experienced DNR managers and silviculturalists and independent contractors were utilized. Statewide averages were used in determining costs of practices, stumpage values, etc. These were adjusted to reflect anticipated "real" cost and price changes. "Real" refers to the change due to factors other than inflation. To get the "real" price change, the change in cost due to inflation must be subtracted from the total change.

"Real" internal rate of return was chosen as the measure of relative economic worth to be used for ranking regimes. "Real" again indicates that the rate of inflation has been subtracted from the rate shown. To obtain rates comparable to those you would get from a bank or other lending institution, you must add the rate of inflation to the real rates quoted in this paper. Internal rate of return is the rate at which the discounted costs of an enterprise equal the discounted returns. It is a measure of the rate at which investments earn profit. Internal rate of return is the best economic measure to use to allocate scarce funds so as to receive maximum economic benefit from the entire package. A minimum acceptable real internal rate of return of 4% was selected. This compares favorably with the rates earned in other long-term corporate investments and by forestry investments in recent times.

Analysis was done on two levels -- one in which considered costs and earnings if only regimes over and above current operations were funded,

referred to as the Incremental Analysis, and another in which all regimes earning at or above the 4% minimum real internal rate of return were funded, referred to as the Total Timber Analysis. Forty three of the 200 cases analyzed were found to pay out at rates equal to or greater than 4%.

It was assumed that State Forest land was owned regardless of management. Consequently, land ownership was not considered a valid cost in the analysis. Taxes were likewise excluded, since they were paid regardless of management.

RESULTS

As shown in Table 1, regimes fall into four groupings which can be characterized as follows:

Regeneration

Management regimes typically have investment periods of from 30 to 60 years or more. They require large initial investment and fail to generate positive cash flow for about 25 years following initial investment. They frequently require additional investment within the first 25 year interval in the form of pest management.

Site Conversion and Release

Management regimes typically have investment periods of 30 to 60 years. They require little or no additional investment beyond the original. Positive cash flows are seen in 15 to 30 years following initial investment. Benefits received from the treatments applied in these regimes are so great when compared with untreated cases that high internal rates of return are realized. Most untreated stands in this group would become unmerchantable if not be lost entirely.

Release and Pest Management

Regimes have investment periods from 50 to 70 years. Positive cash flows are seen in relatively short periods--from 10 to 25 years following initial investment. Additional investments are usually not required. In these stands as well the relative value received from treated vs. non-treated stands is great; hence, internal rates of return are high.

Timber Stand Improvement

Regimes have 50 year investment periods. Positive cash flows however, begin very soon--1 to 3 years following initial investment. These treatments result in substantial quality improvements in the products finally harvested from the stands which are reflected in high revenue differentials between treated and untreated stands. This, coupled with the early positive cash flows makes these yield the highest internal rates of return.

Treatment acreages on which new practices would be initiated in an individual year are 12,400 in the incremental approach and 23,300 in the total

timber enterpise approach. Treatment would be restricted to the more highly productive commercial forest land designated by the forest planning process as having its key value as intensive vegetative management for timber and wildlife.

Net revenue streams from forest development are summarized graphically in Figure 1. for the Incremental Analysis and in Figure 2. for the Total Timber Analysis. In this 3-dimensional graph, net revenues from funding all practices that meet the requirements of hte particular analysis, and that meet or exceed the indicated minimum acceptable rate of return (left axis) are shown. Initial investment is assumed to have accured in 1985. Net revenues are shown for the time periods (right axis) indicated. The two initial periods are 5 years in length; the remaining ones are 10 years long.

ANALYSIS

Regimes with return rates greater than 10% have positive net revenues within the initial period and increasing net revenues for all periods thereafter. Regimes with minimum rates of return less than 10% have negative net revenues during the initial 10 years. Regimes with returns between 6% and 10% have increasing positive net revenues after 10 years. Regimes with returns between 4% and 6% have negative net revenues for the first 20 years followed by increasing net revenues thereafter.

Positive net revenues in the initial 10 years for regimes returning greater than 10% is almost entirely due to the sale of products generated during thinning of northern hardwood stands. Even in the period from 10 to 20 years this is the major source of revenue.

As the minimum acceptable rate of return is lowered below 10%, opportunity for investment increases -- more acres are available and more money can be invested. When these regimes begin to pay off in the years beyond 2005, net revenues begin to first balance out between minimum acceptable rate of return. By 2025 to 2035, net revenue in the 6% minimum acceptable rate of return class has risen above the others.

Based upon the results obtained in this analysis, bonding consultants recommended selling $20 million in "0 coupon" bonds maturing in 30 years in 4 bond sales -- one $5 million bond every 3 years for 12 years. "0 coupon" bonds require no payments until the bond has matured at which time the entire principal plus interest is due. This would relieve the need to make heavy debt service payments in the early years when revenues are small and allow repayment to occur in later years when revenues were greater. Federal law requires bond proceeds to be entirely expended within 3 years of the bond sale. Issuing a series of bonds made compliance easier since the annual bond proceeds required was $1.5 million.

The State's pool of timber sale revenues from state tax reverted lands was suggested as collateral for the bond. This pool includes timber sales prescribed by management plans, prepared, offered, sold but not cut, and in the

process of being cut. Normally, there are between $14 million and $16 million worth of sales in this status at any particular time.

Implementation of the Forest Development Fund would have a small, but important, initial impact on timber sale revenue from state tax reverted lands. Figure 3. illustrates the impact on timber sale revenues over time. The first bar in each series is the projected timber sale revenue without the Forest Development Fund. The second bar shows revenues expected if the Fund is implemented. Bond council suggested a $100,000 annual cash reserve account be established. It is shown here in bar 3 and is projected based on 5.5% annual interest. Bar 4 shows a debt service payment. Although interim debt service payments are not required by "0 coupon" bonds, making modest payments in the initial 10 years shortened the period required to retire the debt, thus making the bonds more attractive and saleable.

DISCUSSION

The benefits of the Fund begin modestly but increase with time. In no case do debt service payments exceed incremental benefits. Cash reserves build rapidly. When cash reserves are coupled with increased earnings in years 12 and beyond, expectations are that the Fund could cease bonding and operate on an internal revolving fund.

The Michigan Forest Finance Authority will be created to administer the financial aspects of the Fund. The Board of this authority will consist of the Director of the Department of Natural Resources, the State Treasurer, and three citizens of the State appointed to overlapping terms of 3 years.

Its purpose will be to provide funding via bond sales for the purposes of intensified forest management on certain highly productive portions of the State Forest System, to receive money from sale of timber on state tax reverted lands, to assure debt service payments are met, and to redistribute the remaining funds to the Department of Natural Resources for forest management operations. Figure 4. charts the flow of funds in the Forest Development Fund.

CONCLUSIONS

Proposals prepared and presented cooperatively by the Michigan Department of Natural Resources Forest Management Division, the Governor's Cabinet Council on Jobs and Economic Development, and the State Treasurer's Office with technical assistance from legal and bonding firms associated with the Treasurer's Office have been endorsed by the Natural Resource Commission and the Governor. Bills to create the Forest Development Fund and the Forest Finance Authority have been introduced jointly into both houses of the legislature. Broad bi-partisan support is being seen. Passage is expected in the current session. Funds could be available as soon as fiscal 1991.

Internally, some modest preparatory work is being done anticipating passage and implementation. As 1991 operations inventory is being done, stands having potential for treatment by the Fund are being earmarked and analyzed more fully. Schemes for monitoring and auditing are being devised. Managers

are thinking -- figuring means of best implementing some of the management they have wanted to do for so long but could not because they could not fund it.

Implementation of the Forest Development Fund and the Forest Finance Authority will not change State Forest land tenure arrangements, the operations inventory and management planning process, silvicultural guidelines, or timber sale procedures. It will eliminate the "low level development trap", revitalize forest management, enable the forest resource of Michigan's State Forest to perform as expected in the target industry program, and thus earn increasing financial benefits for the people of the State from their forest resources.

Table 1. CLASSIFICATION OF REGIMES BY INTERNAL RATE OF RETURN

Type of Practice Characterizing the Group	IRR
Regeneration	4-5%
Site Preparation and Planting Red Pine	
Planting Red Pine	
Shelterwood Cuttings to Regenerate Oak with Herbicide, Mechanical, and No Scarification	
Removing Residual Basal Area Following Aspen Clearcuts	
Site Conversion and Release	6-7%
Releasing Red Pine Plantations 4 and 10 Years Old from Competing Vegetation	
Converting Poor Quality Northern Hardwood Sites to Improved Aspen	
Releasing Red Pine Plantations 20 Years Old From Overtopping Oak (Dense Overstory)	
Release and Pest Management	8-24%
Releasing Red Pine Plantations 20 Years Old From Overtopping Oak (Light and Moderate Overstory)	
Monitoring and Control of Saratoga Spittlebug	
Monitoring and Control of Redheaded Pine Sawfly	
Northern Hardwood Thinning--Products Not Merchantable	
Timber Stand Improvement	25%+
Northern Hardwood Thinning--Products Merchantable	

LITERATURE CITED

(1) Brazer, Harvey E. and Deborah S. Laren. 1982. Michigan's Fiscal and Economic Structure. The University of Michigan Press. Ann Arbor, Michigan. p. 815-827.

SOUTHERN FOREST RESOURCE PLANNERS ASSOCIATION UPDATE

Michael Sims
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In December 1988, the Southern Forest Resource Planners Association asked to be recognized by the SGSF as a viable association. At their May 1989 meeting, a vote taken resulted in a 6 to 5 decision in favor of our request. The result of this vote will not be official until the meeting minutes have been approved and accepted.

We are planning our first annual meeting in September of this year. I hope you have all received announcements of this event and are planning to attend. Mr. Gene Brunk has agreed to speak at this meeting and we look forward to hearing from him.

I hope one day we can have a national meeting to get all the forest resource planners together. Even though there is much diversity on planning issues among regions and even among states, we all strive to achieve the same goal of improving stewardship and management of our natural resources.

Marketing Research

Alabama: Doing a survey to see how state can better use their Treasured Forest (Tree Farm) and use in use in revised plans.

Florida: Doing survey to be used as basis of program plans to improve public image for industry, consultants and Forestry Commission.

Mississippi: Completed survey of landowners and employees to see what kind of image the Forestry Commission has.

Pathways for Forestry (Long Range Forest Resource Planning)

Tennessee: Planning a Governor's Conference in September 1989.

Arkansas: Revising Pathways Plans in fall.

Mississippi: Looking at another Pathways in 1991.

Florida: Completed regional Pathway Plans.

Five Year Agency Plans

Tennessee: Revising Plan.

Mississippi: Revised Plan in 1988.

Georgia: Has Proposed To Revise State Plan.

North Carolina: Revising Plan.

Oklahoma: Revising Plan

Annual Work Plans

Florida: Revising its Annual Work Plans.

Mississippi: Completed 1991 Annual Work Plans.

South Carolina: Doing individual County Plans and hope to assemble into agency plan by 1991.

Rural (Wildland)/Urban Interface (Fire Protection)

Louisians: Planning a conference.

Virginia: Planning a conference.

Texas: Completed conference in 1988.

Water Quality and Wetlands

Virginia: Working on Water Quality Plans.

Florida: Completed Best Management Practices (BMPs) for wetlands.

Mississippi: Completed BMPs for wetlands.

Multi-Agency and Multi-State Efforts

Texas: All agencies in Texas have developed a Natural Resources Plan.

Mississippi, Tennessee, Arkansas and Louisiana: Working on a proposal to improve economic conditions on Mississippi River Delta bottomland hardwood areas through natural resources to include timber, wildlife, recreation and water quality.

CONFERENCE AGENDA

Sunday, June 4, 1989

3:00 - 5:00 p.m.	Registration in Hilton Lobby
5:00 - 7:00 p.m.	Reception (Wolverine Room)

Monday, June 5, 1989

8:00 a.m.	Welcome (Salon C&D) o Welcome to Michigan	Mac Waskiewicz, NFRPA Hank Webster, Michigan State Forester
8:30 a.m.	Keynote Speaker: What's Coming - A View of the Future	James Crowfoot, Dean School of Nat. Resources University of Michigan
9:30 a.m.	Break	
10:00 a.m.	The Future of RPA: 1990 Program o Status o Meaning for States o Linking NFP & RPA	Dave Zumeta, Moderator Tom Mills, USDA-FS Hank Webster, MI-DNR Don Meyer, USDA-FS
11:30 a.m.	Lunch - On Your Own	
12:30 p.m.	Lessons from National Forest Planning o USDA Forest Service o Sierra Club o MI Timbermen Assn.	Marcus Phelps, Moderator Bill Shirley, USDA-FS Anne Woiwode, Sierra Club Peter Grieves, MTA
2:00 p.m.	Reaching Constituencies: What's Working and Why o Chesapeake Bay o NE Forest Alliance o Lake States Forestry Alliance	Karyn Richards, Moderator Jim Roberts, MD-FPWS Gail Vaillancourt, NH-DFL Barbara Clark, LSFA
3:00 p.m.	Break	
3:30 p.m.	Promoting Constituency Formation	Debra Gangloff, American Forest Association
4:45 p.m.	Adjourn	
6:30 p.m.	Banquet: o The Role of State Forestry in Addressing Environmental Issues	Jerry Thiede, Host, MI-DNR Frank Ruswick, Speaker MI-DNR

Tuesday, June 6, 1989

8:00 a.m.	NFRPA Business Meeting	Mac Waskiewicz, Chair
9:00 a.m.	Wetland Regulation o Effects and Potential o Michigan's Elk River Watershed Project	Jim Burtis, Moderator Dennis Hall, MI-DNR Warren Studley, SCD
10:00 a.m.	Break	
10:30 a.m.	Interaction of Forest Planning with Wildlife Planning o Perspective of a Wildlife Planner	Gene Brunk, Moderator Tom Havard, MI-DNR
11:00 a.m.	Biological Diversity o NC Experiment Station o Eastern Region (R-9)	Leroy Johnson, Moderator Tom Crow, USDA-FS Dave Cleland, USDA-FS
12:00 noon	Box Lunch on Tour Bus	
12:00 noon	Field Tour of SW Mich. (including wetlands management, biological diversity, wildland-urban interface, non-industrial private forest land management)	Mike Moore, Deputy Director, Southern Region, MI-DNR
6:00 p.m.	Reception and Cookout at Gull Lake	Bob Essenmacher, Kellogg Biological Station
9:00 p.m.	Return to Hilton Inn	

Wednesday, June 7, 1989

8:00 a.m.	NFRPA Business Meeting Continued	Mac Waskiewicz, Chair
9:00 a.m.	Monitoring of Plan Implementation o Minnesota State Forest Example o Mississippi State Forest Example	Melody Mobley, Moderator Dave Zumeta, MN-DNR Mike Sims, Bayless Morton, MS-Forestry Commission
10:00 a.m.	Break	

Wednesday, June 7, 1989 (Continued)

10:30 a.m.	Michigan's Target Industry Initiative	Dale Brockway, Moderator
	o Tying Markets to Forest Resources	Robin Bertsch, MI-DNR
	o Forest Products Industry Program	Ellis Perraut, MI-Commerce
	o Michigan's Business Climate: Perspective of an Entrepreneur	Timothy Schad, President NuCraft Furniture Company
	o Michigan's Forest Development Fund	Ron Murray, MI-DNR
12:00 noon	Lunch - On Your Own	
1:00 p.m.	Building Constituency Leadership	Robert Terry, University of Minnesota
2:00 p.m.	Reports	Dick Little, Moderator
	o Southern Forest Planners Association	Mike Sims, MS-Forestry Commission
	o Western Forest Planners Association	Donna Story, CO-Forest Service
	o Forest Service Update	John Currier, USDA-FS
3:00 p.m.	Critique	New Program Chairperson
3:30 p.m.	Adjourn	

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