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PROCEEDINGS

"The Future of Forestry in New England and Eastern Canada"

During committee meetings to formulate a sequence of topics and speakers for the 1983 meeting, I proposed we print a proceedings of the papers presented. I sensed that presentations on the future needs and demands on the forest resource could be thought provoking and worthy of reexamination at a future time. With this in mind we planned these proceedings to document our outlook.

The papers are worded essentially as presented at the meeting with only slight revisions by authors to perhaps address questions raised in discussion or meet my request to efficiently utilize page space. Peer review was not solicited. My role was to pursue the submission of papers after the meeting, organize the format, and arrange printing and distribution to subscribers. Most of the papers presented in the general, working group sessions are included. I vigorously pursued submission on some papers to make these proceedings as complete as possible.

My thanks to the presenters for their efforts and cooperation and to members of the program committee for their effort in suggesting and engaging speakers for the meeting.

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The Planning Process Today - It's Strengths and Weaknesses

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Foresters getting together to talk about planning which has been the hallmark of forestry ever since the profession got started sounds as exotic as a PTA meeting. So, what else is new?

Actually, this is an especially important time to talk about planning because, here in the United States, we are near the end of a unique experiment in structured foresight which started about 1980 when the U. S. Forest Service began what is probably the most ambitious land use planning project ever undertaken. I don't know of any other attempt to make, in so short a time, detailed plans for the management of 186 million acres such as those in the National Forest System. Coupled with this large scale, fine grained coverage are projects in 47 states to produce comprehensive plans for the management of state forestry programs. All these plans are designed not only to guide the management of the National Forest System, but also to influence what is done with the 1.4 billion acres of forest and range land in other holdings.

I suspect one has to go back to Genesis to find a larger and quicker land planning project. But then, God had the advantage of not having to cope with Environmental Impact Statements.

Because literally millions of hours will have been spent by professionals and interested laymen in the process of developing this new set of plans, it is fair to ask whether it's all worthwhile. Phrased that way, I am afraid the only answer is the famous one, "What's the worth of a baby?". It's too early to say, we will just have to wait and see if things go enough better in the future to justify the added effort put into this new round of R.P.A. planning

Because, of course, Hubert Humphrey started it all when he introduced the first part of what eventually we came to call the Resources Planning Act. This legislation had very complex origins because practically all of those turbulent forces for change that swept over the resource field in the 1960's helped shape the R.P.A. For instance, the environmental quality advocates interested in having a larger voice in National Forest management decisions precipitated the Monongahela court case, that in turn gutted the authority for managing the National Forests given in the Organic Act of 1897 so that some legal replacement was essential. But there were other parties at interest who had to be considered. Businessmen wanted less preservation and faster conversion of old growth, while wilderness advocates wanted the exact opposite. Economists like Marion Clawson had been most effectively urging that forest investments be separated from expenses and that market value and interest rate calculations be given more weight in planning decisions. The latter had anciently been opposed by foresters when it seemed to pervert the old concepts of biological sustained yield. And then there was the very urgent problem of public participation in "open planning" which it was widely supposed was mandated by the Environmental Protection Act.

All of these forces were fulminating throughout the legislative process of inching R.P.A. through the Congress. It is not surprising,

therefore, that the final act contains something for everyone and has enough contradictions built in to give administrators nightmares for years to come. However, it is also possible that the repeated decadal Assessments called for, plus the ten-year Programs which are to be reviewed every five years, will entrain a planning process that can evolve into management far superior to anything we now have. It's not a foregone conclusion that this will really happen. However, if we view the new requirements not as a tedious task but as a chance to learn from experience and improve our planning capacities, present travail can all be made worthwhile.

Preparation for the 1985 revision of the National Program is well underway and can be viewed as a two pronged experiment, each half concerning quite different areas of land and casts of characters. On the N.F.S. side there will be new plans for each National Forest all made within a three year period and according to the same general schema. This will facilitate making the N.F.S. part of the Program more realistic by aggregating from the bottom up the grass-roots possibilities of all Forests. For the very first time it will be possible to use this much talked about technique and see if it improves Forest Service credibility and Congressional action.

The other half of the experiment concerns state plans, and here we find a great deal of variation in formats, procedures and analyses used. This lack of standardization will make it more difficult to compile a national aggregation, but it will certainly increase the number of planning procedures tested. If we are lucky, this should make conclusions about the usefulness of various approaches much more interesting. Ted Natti, Gail Leighton, Paul Bofinger and Brad Wyman will give us their reaction to the New Hampshire planning process a bit later.

Before going further I should point out that I am no expert in the Forest Service process of developing plans. The draft for the Lolo Forest came out when the Advisory Committee for the National Forest System was still meeting and we discussed it a bit. I attended a two day session designed to inform interested organizations and individuals about FORPLAN methodology. I've seen some of the internal workings at the White Mountain and been involved with making the Massachusetts Forest Resource Plan. But there are a lot of people in this room much better informed than I, so you should take my comments as primarily those of an observer standing back some distance from the fray.

Let's look at National Forest planning and see what it entails. The most striking changes from the past are: 1) The abandonment of separate plans for each function such as recreation, wildlife, timber and transportation in favor of a single land use plan in which all the various management activities are developed for an area at the same time. 2) The use of inter-disciplinary planning teams of subject matter specialists to work out and coordinate the technical production possibilities for an area. 3) The use of computer driven algorithms to review all feasible options and develop from them plans which use resources efficiently. 4) And finally, the frequent resort to public participation of many kinds throughout the planning process in an attempt to develop a working consensus around the preferred plan.

At first blush this sounds as though foresters were moving rapidly into the modern age of open planning, computers and automatic data processing. And indeed an unthinkable quantity of numbers is crunched by computers in the course of developing a single plan. The basic analytical

engine being used is called FORPLAN and it's capable of handling very large linear programming problems. This makes most economists look knowingly at each other and nod enthusiastically, computer specialists and planners are often bemused by the power and elegance of it all, most foresters furnish the data asked of them and grit their teeth in baffled frustration while laypersons tend to suspect that it is all a plot to trap them into agreeing to something that they wouldn't knowingly touch with a 10-foot pole.

But seriously, are there major problems with the concept of FORPLAN? The thing that generally strikes people most forcefully is the high wall of special jargon that has to be scaled before anyone can get started. It is frustrating to learn that an "issue" is something that bugs a layman while a "concern" is the same thing except it bothers an employee. Furthermore, both are converted into "problems" to which managerial solutions can be found by using "decision criteria" and "process criteria". It's surprising, but with enough effort a good many persistent people are able to understand the process in spite of the language barrier. Hopefully, this protective hedge will be thinned out as the desirability of easy communication becomes more apparent to the specialists.

There is another basic problem that will always be difficult to overcome. Explaining how linear programming works to find efficient plans will be hard to do simply because it's a complicated method. It will probably be necessary for a lot of people to take the outcomes on faith. This is unfortunate and experts should be assigned the task of playing the devil's advocate to make sure the process is used in ways that are appropriate in light of the probable errors built into our planning data. It is much too easy to use this razor-like algorithm when the state of our knowledge will only justify using an axe. That can not only be wasteful, but also misleading.

In addition, we must be continually alert to insure that the cost of computer and planning time does not exceed the value of the improvements made in management decisions. Some of the early FORPLAN runs were inordinately expensive compared to the knowledge gained but I believe that this cost problem has been brought under control. However, a definite effort should be made to encourage local initiatives that develop "skinny models" that run for a few dollars and produce answers about as useful as those of elaborate "fat models". We should guard against the trap of being bound to analytical schemes that have been outmoded just because computer programs are hard to modify.

What do we know about the value of the plans developed so far? Actually, most aren't approved yet and none has been tried long enough to detect any pay-off. However, elaborate as the process is, the time from start to finish is at most a couple of years, and in the future this can be radically reduced. Even present elapsed times are a vast improvement over the 7 years it took in 1960 to finish a National Forest plan in California.

So far I've had a chance to study only one printed plan and this was the Proposed Lolo National Forest Plan. Being a prototype for Montana and the west, the folks doing it suffered all the trauma of going through the process first. Procedures had to be perfected, programs debugged and the whole business pushed forward very fast because of tight deadlines. Not surprisingly, there were problems epitomized by the remark of one forester that it was, "--like riding in a three day bicycle race and trying to

assemble the bicycle at the same time". In any case, I understand the Proposed Plan had so many bugs it had to be withdrawn and redone, a fate that has been mercifully rare.

Other than that, my first-hand experience is limited to taking part in one of the Working Groups of laypeople that helped design the White Mountain Draft Plan. This, so far, has not seen the light of day because it is hung up somewhere in the higher headquarters approval process. Eventually we will all be able to see how the final outcome was influenced by public input.

For those of you who haven't served on a Working Group I highly recommend it as an experience not likely to be forgotten. Any group of 15 to 20 people chosen to bring a set of interests as diverse as, say, the Sierra Club, Audubon, industry and trail bikers to bear on a problem of common concern is sure to have a lively time of it. I judge that this technique is not as widely used elsewhere as folks in this region believe it should be.

The Working Groups were asked to review the way the lands of the White Mountain National Forest are now being used, the mix of values being produced, and to decide what changes, if any, they thought were needed to meet future requirements. Maps of land capability were furnished the Groups together with management goals that could be used. Each goal was a set of coherent practices designed to produce a given mix of forest values. Taken together the goals spanned the full range of management possibilities. At one end of the scale were goals which considerably disturbed the natural landscape with many roads and intensive timber and recreation management. Other goals stepped down the disturbance gradient all the way to Wilderness management. These standard goals could be modified by a Working Group or new goals written to complete the array of options as they saw fit.

Finally, the Group had to assign the goals they thought most suitable to the various land areas of the Forest. This was a very difficult task and one with which the Boston Group was clearly not very comfortable. They were, however, at ease with project-level questions about specific locations. This is probably so because they had visited individual trails, campsites, views, cutting areas and the like and this first hand experience gave them a mental image of terrain, values and impacts. Thus they could easily visualize and respond to a proposed land use change. There was no equally sound mental image of what managing, say, a whole watershed would do to the countryside if the complex rules needed to produce the mix of values set up for Goal A were followed rather than those for Goal B. Therefore, selecting the goals needed to generate a strategy of land use was much harder to do intelligently than choosing which trail to relocate and which cutting project to discontinue or accelerate.

It may well be that only relatively experienced lay persons can be reasonably helpful in designing a strategy of land use. But almost any thoughtful person familiar with the area can help identify topographic areas sensitive to specific land uses and those places where a minimum of conflict is likely. The task set for public participants should probably be changed so they can contribute most effectively to the whole forest planning process.

Before we can be more specific about a proper role for public inputs we should really ask ourselves what it is we want a forest plan to do for us. When I got out of school the world was a much younger place and in

our naivete we thought a plan was much like a blueprint which, if followed carefully enough, would produce a building, some products or a forest. This was the time when "Master Plan" was a popular phrase and foresters followed the formula "what do you have, what do you want, and what's the best way to get it?". In those Euclidian days a straight line was still the shortest distance between two points, foresters hadn't heard of Heisenberg's Uncertainty Theorem and the 1938 hurricane hadn't demonstrated his relevance to New England landowners.

Since those halcyon days we have been battered by enough events to perceive that we live in a much more complex world. To be useful in this world any plan we make must improve our capacity to act in response to, and in spite of, what eventually happens over time. When thinking about the future in advance, there are so many feasible scenarios that we are hard pressed to judge which is most likely to eventuate. Add to this the unthinkable and the unknown and a Master Plan makes little sense; only Contingency Plans are likely to help us be nimble enough to stay on top of unfolding events. What, therefore, should we look for in a plan to know whether it's going to help us do this?

First, the plan should give a much better idea than the executive had before of just how the system being managed really works. This more profound understanding is a major value of planning that is frequently overlooked. Realistically, the thing which is largely responsible for upgrading future management decisions is probably not the plan but rather the more penetrating insights into the interlocked nature of the system managed and the environment it works in, that are inevitably gained by making the plan. To gain such discernment the manager must be intimately involved at every important step of the way to the plan. Any process that separates on-the-ground management from planning has already lost a large part of the possible profit. One suspects that the present Forest Service approach with its large role for central processing may not be doing as much as it might to build up local forest planning and, therefore, managerial capabilities. This point needs specific research and clarification.

Second, all our experience with life in an imperfect world suggests that we have a very limited capacity to foresee the future with any degree of precision. Furthermore, accuracy declines rapidly as we peer farther and farther into the future. Consequently, actual performance is generally rather different than we expected it to be and managers are kept busy trying to close the gap. Success in adjusting management to the unforeseen events which were not in the plan at all, is generally what separates good managers from mediocre. A critical aid to them, therefore, is building enough flexibility into a plan so they can make changes to meet the unknown. This generally means that resources must be reserved in as nearly an uncommitted state as possible so they can be quickly redeployed as required to meet emerging needs.

Unfortunately, full flexibility would be to keep all our resources totally uncommitted as cash jingling in our jeans. But then, essential current needs couldn't be met, in fact, one wouldn't be a forest owner at all! The hard fact is that the intelligent manager must compromise between the commitment needed to meet imperative immediate needs efficiently, and the flexibility to redeploy resources and avoid being overwhelmed by unanticipated events in the long run. This compromise is not an easy task but it is one that must be treated explicitly in any good planning process. Thus far I've seen no evidence that this essential

trade-off is part of the FORPLAN process. If individual forest plans do consider the appropriate price to pay for flexibility, I believe its done in spite of rather than because of the present planning process. I hope I am wrong about this.

Thirdly, a point related to the last one is that the whole planning process should be so cheap that new plans can be made whenever events suggest they are needed. Otherwise, managers rather quickly find themselves making intuitive adjustments in the old plan in light of successive failures to foresee just how events would really fall out. If we can't make a new plan cheaply, then planning loses most of its power as a way of coping sensibly with the adjustments required to live in an imperfect world. I think we are only just beginning to see the need for cheap plans because we have been slow to realize that to keep reasonably on top of events over the next century, it will be necessary during that time to have at least a hundred, hundred-year plans. If we are lucky enough to be able to make cheap plans then whenever we learn something new about our forests, uses and needs we can make a new plan and thus incrementally adjust our operations to keep the difference between performance and expectations tolerably small, rather than waiting till things are so out of whack that great wrenching emergency changes have to be made. This millenia has certainly not been achieved, yet with wisdom and electronics, the means are probably now at hand if we only recognize the need to grasp them.

Fourth, and finally, we should probably recognize that the object of planning is really to reduce the conflict over the use of our forest resources to a tolerable level. We may talk a lot about return on investment, cost effectiveness, sustained yield, balanced flow of forest values and the like. But when the chips are down there are three things we really need--a reasonable working consensus that reduces the level of bickering to something a manager can live with, a demonstrably efficient way of doing current work, and enough open options to insure an adequate array of future choices. This strongly suggests that the proper role for public participation includes identifying sensitive areas where special management practices must be designed and competing uses reconciled. In addition, finding the plan which combines values in a way that will muster a working consensus today. And finally, laypeople should agree on how the preferred plan should be changed whenever budgets call for retrenchment, or surplus resources make expansion feasible. The discipline imposed by budgetary constraints is an excellent way to develop a consensus about where the real priorities lie among various forest land uses. I don't believe that to date public participation has identified priorities well enough to keep subsequent discussions much below a dull roar.

I am afraid that this discussion has been full of speculations rather than hard conclusions. However, I do have one firm proposal to make. In order to get the most we can out of on-going planning a major effort should be made to capture the lessons learned so we won't be doomed to live the mistakes all over again five years hence in a kind of flatulent quinquennialia. I am sure that at the National Forest level and in the state offices a great deal of innovative thinking has been done to solve the host of data, procedural and interpersonal problems that came up along the line to this new batch of plans. A formal attempt should be made to record this experience before the folks who lived it forget what it was they thought and did. This is a great opportunity for us all to learn by recording some authentic oral history while it's still fresh in our minds.

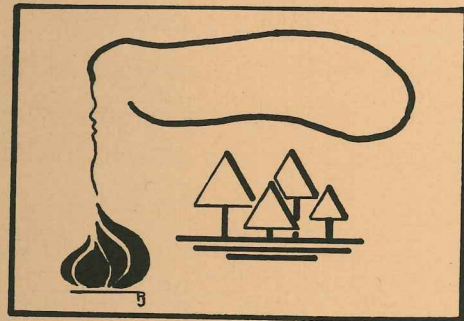
This project would be a good one for a group like the New England SAF to take on for the region. Most of the technical people involved are already members and would be logical participants. I suspect there are plenty of interested and capable members to take on the task in the discrete way needed to get the cooperation of the state and federal agencies. If we don't do this job from the outside we should urge the agencies to do it in-house because too much has been spent on this planning experiment to let the chance to learn about ourselves slip through our fingers.

As usual, I am afraid I've raised more questions than I've answered. Let us hope that James B. Conant was right when he said this is the hallmark of good science.

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