FORESTS FOR WHOM AND FOR WHAT?

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1975 *Published for* Resources for the Future, Inc.
by The Johns Hopkins University Press, Baltimore and London

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One Man's Conclusions on Forest Policy Issues

In chapter 2, we listed seven presently pressing issues of forest policy in the United States: (1) how much land to devote to forests, (2) how much forest land to withdraw from timber harvest, (3) by what methods to harvest the timber that is harvested, (4) how best to manage the national forests, and in particular how best to harvest the mature *old growth* timber found on many of them, (5) how to economically increase the output from the numerous small private forests, (6) what environmental constraints should be placed on timber growing and timber harvest, and (7) what constraints, if any, should be placed on foreign trade in forest products. We pointed out that these seven issues overlapped to a degree, and that other issues could also have been listed. But these, we think, pretty well cover the forest policy field in the United States today.

Chapters 3 through 11 presented some relevant facts, bearing upon these policy issues and a schema or method for analysis of forest policy issues. We found that an adequate consideration of policy issues in any natural resource field involves at least five separate factors: physical feasibility and consequences, economic efficiency, economic welfare or equity, social or cultural acceptability, and operational or administrative practicality.

This approach does not lead to neat and tidy answers. Those who regard economic efficiency as the sole criterion for forest policy are horrified at the loose structure of this approach, at its inability to arrive at a single answer, and at its inability to measure quantitatively the difference between one "solution" and another. This approach requires five *kinds* of facts; it involves five *types* of approach or analysis. It is almost impossible to maximize five factors simultaneously, hence any solution involves at least four factors at less than their separate maximum stages. But it was argued in chapter 3 —and we reassert it here—that this approach is far more realistic than any simpler one. Any simpler approach will be short of reality,

as this is found in policy debates and actions, and will prove unacceptable to at least some of the participants.

Having made this type of analysis and having presented some facts in the foregoing chapters, what do I conclude about a desirable forest policy for the United States today? Any reader of earlier chapters will surely have gotten some hints of my position but now I will make my conclusions explicit. Others might not agree with my conclusions even if they accept my schema for analysis and accept my facts: they might weight the same facts differently, particularly because their concepts of cultural acceptability are different from mine, or they might introduce additional facts into the analysis.

HOW MUCH LAND TO DEVOTE TO FORESTS

This general issue breaks down into two parts: How much effort, if any, should be directed to preservation in forest uses of presently forested areas? What efforts, if any, should be directed to restoring or developing forest cover on land capable of commercial forest tree growth but now lacking any trees or lacking a reasonably satisfactory stand of trees?

On the issue of preserving presently forested land in forests, my answer is: expend no efforts in this direction. The acreages of forest land likely to be diverted from forestry to nonforestry uses are small compared with the total forest area. The need for forest land is not so acute as to require the preservation in forests of all land capable of growing commercial trees, and the difficulties of trying to protect forest land from conversion to nonforest uses are so great as to make the results not worthwhile. There are other ways—more intensive production from better sites, in particular—to get any needed output of forest services of any type (not merely more wood). Arguing that society should not expend any significant effort to retain in forestry all land now in forests does not in the least argue that society should not control the other uses of land which might develop on land that is presently forested. In particular, the high-pressure, high-promotional development of vacation or second homes on forest (and other) land has environmental, economic, and social consequences sufficiently grave to warrant social controls over this type of land conversion—but not for the purpose of preserving the land in forests.

On the issue of restoring or improving the tree cover on potential forest land now unstocked or understocked, my answer is: yes and no. Yes, for the most productive forest sites; no, for the least productive commercial forest sites. Here, as elsewhere in this book, I use the Forest Service site productivity classification because I have no other. It utilizes physical criteria only (cubic feet wood growth per

acre annually); an economic classification would be preferable. Yes, restocking or improved stocking is desirable for land in site classes I through III, or generally for better forest sites where trees will grow relatively rapidly and where the wood has significant value. For more mediocre forest sites, site class IV generally, mostly let nature take its course. Such sites will reforest naturally, though slowly; the first tree crop may be a poor one, but ecological succession will generally work to restore original forest types. If sites can be replanted cheaply, and if the resulting wood can be cheaply harvested—circumstances which apply to some site class IV pine lands in the South—replanting may be economic on these below average sites. For the poorest forest areas, site class V generally, reseeding and replanting is usually simply not worth the cost. Not only should little or no public funds be spent to replant or to improve forest cover on public forests of this site class, but they should not be spent, as a general rule, for replanting similar lands in private ownership. If private land owners wish to invest in stand regeneration or improvement on such poor sites, that is, of course, their privilege, but they should be warned that the income prospects are not good.

I hasten to point out that there will be exceptions to the broad conclusions stated in the foregoing paragraphs. For instance, there may be a particularly fine stand of some species of trees relatively near some city and often used and admired by many people, which should be saved from harvest or from land conversion to other uses; there may be some tract of land on which tree growth will be slow because soils are thin or for some other reason, where replanting is worthwhile because of its suitability for recreation use even if very costly in terms of wood production; early restoration of some type of plant cover on bare land may be desirable to reduce soil erosion; some sites, classified rather low on the productivity scale using physical criteria only, may have economic prospects good enough to warrant spending money on their replanting, or drainage or fertilization might economically raise the classification of a site; a particular tract of relatively poor forest land may be planted as part of a planting operation which includes a much larger surrounding area of higher site quality. Other exceptions could be cited, but the general conclusions stand.

HOW MUCH COMMERCIAL FOREST LAND TO WITHDRAW FROM TIMBER HARVEST

The amount and location of commercial forest land to withdraw from all timber harvest depends upon the purpose of the withdrawal, the productivity site classification of the land, its ownership, and

whether the land is now covered with merchantable timber or whether the tree cover must be restored. The purpose of the withdrawal may be to conserve the soil against undue erosion, to preserve some scenic value, to make the area available for relatively intensive or developed recreation, to preserve some watershed value, to protect wildlife, for some scientific value, or as wilderness area. Harvest may be foregone in some instances because forest regeneration of the site is doubtful. Productivity site classification is perhaps the most important factor of all in considering which lands to withdraw from timber harvest; the loss of income from withdrawing low productivity sites is relatively small, while the loss of monetary income from not harvesting high productivity sites is large. When a site has presently merchantable timber, in volume and of quality which warrant harvesting, and where the costs of harvest are less than the value of the timber, then withdrawal means some loss of immediate income; withdrawal from future harvest of a site recently harvested or denuded by fire or storm means a loss of future income. Publicly owned forests may more appropriately be withdrawn to secure nonmonetary values than many privately owned forests; the private landowner will be less inclined to take into account values which he cannot realize but which accrue to others. All of these points have been made in earlier chapters, but may now be applied more specifically.

I would withdraw publicly owned commercial forests of low productivity site class that are now forested from timber harvest relatively generously for all the purposes mentioned in the foregoing paragraph. I would couple my willingness to withdraw such merchantable stands of timber with a program to grow wood more intensively on the more productive sites. In making withdrawals for soil conservation, watershed preservation, wildlife protection, and other similar conservation purposes, I would recognize that the line between withdrawal and harvest is not always easy to draw, and that it is affected by technology and care in timber harvest. I would recognize also that the method of timber harvest (selective, shelterwood, clearcut, or other) would have some effect upon the decision to withdraw for some reasons but not for others. Roads can be built to lie lightly on the land, logs can be removed by "walk-lightly" methods, under some conditions trees can be left to protect water from adverse effects, and other measures can reduce environmental impacts. Moreover, I would temper my withdrawal of these less productive sites by some consideration of their extent in relation to productive forest sites. For instance, in the Pacific Northwest more forest land lies in high productivity classes, hence one could withdraw most of the less productive sites; whereas in the Black Hills of South Dakota

one would have little forest land left for harvest if all the lower productive sites were withdrawn from harvest.

On publicly owned commercial forests of low site productivity, where the once existent timber stand has been harvested, I would expend little money to restore the stand and would not expect to harvest the site for another 100 to 200 years, if ever. This position could usually rest solidly on the economics of timber growing on such sites. Such sites might be used for other forest outputs or uses.

On publicly owned commercial forests on the more productive sites, whether there now existed a stand of merchantable timber or whether restoration of a stand was the forestry problem, I would withdraw land from timber harvest sparingly. Most such land would pose only mild conservation problems due to timber harvest, hence withdrawals for this purpose need not be extensive. Since the economic values from timber growing and timber harvest are higher on the more productive sites, I would apply economic criteria to the use of such forests more strictly than for the less productive forests where the economic values are low in any case.

Withdrawals of forest land for wilderness purposes do not differ conceptually from withdrawals from timber harvest for any other purpose. In each case, there should be a clear definition of the purposes of the withdrawal, a measurement of the gains from withdrawal and from harvest, and a delimitation of the appropriate area. But wilderness is an issue of so much popular concern that it seems essential to make a few comments directly about it. I would withdraw public forest lands of low site productivity generously and would withdraw lands of higher productivity more sparingly. These are intentionally somewhat imprecise terms, which would have to be applied explicitly in any given situation. I certainly would not exclude wilderness use from all productive forest sites, but I would count the cost of withdrawals on these sites. I would not apply economic analysis too strictly to the establishment of wilderness areas; I would favor a few areas which had some wilderness appeal even if it could be proven, or merely argued persuasively, that their economic value was higher for timber growth and harvest. My position here is thoroughly inconsistent, and I cannot be pushed too far; to some modest degree, I am a wilderness advocate, but not one without concern for cost, value, and alternative use of the forest. My willingness to withdraw forest generously for wilderness use is conditional upon the wilderness lovers and the public forest management agencies agreeing upon some means of limiting wilderness use to capacity. If excessive use is to destroy its capacity to provide a wilderness experience, why bother to establish a wilderness?

For privately owned forests, the withdrawal situation is neces-

sarily somewhat different. I assume that the private forest owner, whether large or small, will follow his long-run interests except as restrained by law or by public opinion. Either law or public opinion might well enforce conservation measures on private forests if the consequences of timber harvest had adverse off-site effects. Such constraints might well be on output standards, letting the forest owner meet such standards as best he could. One must assume that private landowners will harvest existing stands of timber if it is profitable, even on the less productive sites. Since many such sites have stands of timber that are not highly profitable to harvest, and since the economics of timber growing on such sites are unattractive, perhaps in some cases such sites might be acquired by a public agency and used for nonharvest forest uses. On the more productive forest sites, where intensive forestry is economic, one would expect private forest owners to make very few withdrawals from timber harvest.

These various considerations can be translated into specific proposals for withdrawal of forest from harvest in many different ways. In table 14, in chapter 7, I presented one "scenario" of forest land management, a low-acreage high-intensity scheme which included consideration of productive site class and forest ownership and which recognized that not all owners would follow the same program even when their lands were similar. That scenario intentionally involved a very high—perhaps a maximum—withdrawal of forest from harvest, and to this extent it was unrealistic. Innumerable possibilities exist to produce more wood than is being grown today and at the same time to withdraw substantial acreages of forest from harvest. A willingness of the various contenders for forest land to search diligently and constructively for mutually acceptable forest management programs should pay off handsomely in terms of constructive results.

HOW TO HARVEST TIMBER

The policy issues are about methods of timber harvest often stated as one issue: opposition to clearcutting. Numerous groups have sought with much energy to outlaw or forbid clearcutting, at least on public forests. However, the issues are a good deal broader than merely clearcutting. To focus entirely on this one method is to miss both the major issues and the best resolution of such issues.

First of all, I would reserve significant areas of commercial forest land from cutting by any method, as outlined in the foregoing section. I do not know how large the acreage so reserved would be

because there is an unknown but substantial overlap of areas withdrawn from harvest for conservation, recreation, wilderness, wildlife, watershed, and aesthetic reasons. If the reservations from harvest were very generous, they could possibly be as much as a fourth of all commercial forest land (including commercial forest in site class V). Whatever the percentage of commercial forest areas reserved, the proportion of forest productive capacity reserved from cutting would be less than half as great; this is inherent in the classification of forest land by site class. If my conclusions about reservation of commercial forest land from cutting were followed, and if my conclusions about environmental protections are also followed, many of the more controversial cutting situations which have arisen in the past would be eliminated.

Secondly, what is the purpose of any timber harvest, by any method? If the purpose is merely to get out the merchantable timber in the cheapest possible way—and that is often the purpose of the buyer of timber from a small private owner—then sometimes the cheapest method is clearcutting, but more often the cheapest way is a poor type of selective cutting. The logger frequently takes all the trees that he thinks he can run through his saw and return wages or better, and he takes few pains to preserve the stems he does not take. Where there is a mixture of species, he takes the more valuable ones, leaving the less valuable ones to capture the site. The result may be a tree cover remaining on the ground, but the true forest has been destroyed. Clearcutting under these circumstances would have been more costly, but the forest which naturally became established after such a harvest would have been an ecologically and economically more productive one. This process of selective cutting, or something close to it, has created some millions of acres of mediocre to worse hardwood stands throughout the eastern half of the United States. Clearcutting for economic reasons may also leave an area equally poorly equipped for reproduction, as well as aesthetically offensive during the regeneration period. The degree of skill with which any method is employed may be high or low.

If timber harvest is viewed as an indispensable tool in forest management and in tree growth, then the method of timber harvest should be selected with management objectives in mind. For most forests, renewed tree cover, continued tree growth, and preservation of the basic productive capacity of the forest ecosystem will be among the management objectives. If these are the objectives, then the characteristics of the site become all important. The method of timber harvest may be selective cut, or shelterwood cut, or clearcut, or some other form with equal appropriateness under different con-

ditions. Where there is a forest of mixed ages, as ponderosa pine generally is, or of both mixed ages and mixed species, as many eastern hardwood types are, then a cut selecting among trees on the basis of size, age, thrift, and perhaps species is often the indispensable forest management tool for that site. For some of the warmer and drier sites for Douglas fir, especially on the eastern and southern edges of the Douglas fir belt, shelterwood cutting, whereby one cut takes some mature trees but others are left for some years for seed and ground shelter and removed later, may be the best method of timber harvest. For some sites and species, clearcutting to expose mineral soils for new seedlings to root in and to provide sunlight is indispensable. For a badly degraded mixed hardwood site, the only way that desirable species and desirable trees can be reestablished within less than a few generations may be to remove all existent trees—clearcut—and start over. A lodgepole pine site, of even-aged but overmature trees, heavily infested with dwarf mistletoe, must be clearcut if a clean new stand is to be reestablished. For this latter situation, no cutting at all may be the most economic forest management if the site is very low in productivity, or if natural regeneration is uncertain and slow. In short, the competent forester who seeks to manage his forest for continued high level wood production must use the most appropriate method of timber harvest as an indispensable management tool.

The method of timber harvest has special characteristics in mature old growth forests. As a matter of fact, most such forests are part of the national forests and are mostly some type of pine or of Douglas fir. Some of the trees in such stands have died and some have fallen; there is much defective wood in the standing live trees as well as on the ground. Any method of harvest which removes only that wood which can be economically removed will leave large volumes of defective wood behind. It is more obvious on a clearcut site; it is partly concealed on a selective cut site. Where wood chips have significant value for paper manufacture, it is economic to remove more of the wood that is defective for purposes of lumber manufacture than where no such outlets exist, but in any case some wood so defective it is valueless for any purpose is likely to remain. Such defective materials can be, and generally should be, removed for aesthetic and other reasons by piling and burning.

Timber harvest by any means may be aesthetically offensive, but by proper care can be far less so. Clearcutting is always a shock, ecologically and aesthetically. But the extent of the shock can be reduced by more care in laying out the harvest area, by disposal of slash and waste, and by prompt regeneration.

When considering the policy issues of methods of timber harvest, it is essential that the full physical-biological and economic potential of intensive forestry be kept in mind. If most of the nation's wood were grown on the better forest sites under economically sound intensive forestry methods, tree harvest would come from a much smaller total land area than if all so-called commercial forests are cut, but a given tract of forest would be cut much more frequently than is the case now. After the initial harvest, there would be far less defective material in subsequent harvests. Each harvested tract would get back into tree growing more promptly than now. More of the total forested area would not be cut at all or would be cut only very infrequently. The whole regimen of tree growth, tree harvest, and stand regeneration would be very different from that today, both for the intensively managed sites and for the least intensively managed areas.

NATIONAL FOREST MANAGEMENT

The national forests include a very large area of land with many diverse natural resources and with many diverse demands on those resources; about half their total area is commercial forest (including site class V land). They are administered under a variety of laws including the Multiple Use and Sustained Yield Act of 1960. There are many policy issues, and hence many controversies, about the best management of these lands. The focus in this section is on the problems of managing the mature old growth timber stands, and their ultimate conversion to a rotation of growth and cut.

A few brief facts may be cited again, to set the stage for my conclusions about management of these timber stands. The national forests (including site class V land) contain slightly more than half of all the standing softwood sawtimber in the United States; their inventory of both standing sawtimber and standing total timber per acre is by far the highest of any major type of forest land ownership; their rate of annual wood growth—whether expressed as cubic feet per acre, as a percentage of the volume of standing timber, or as a percentage of their potential capacity—is the lowest of any major type of forest land ownership. They are an immense storehouse of mature, somewhat defective, nearly nongrowing timber, and there is a great annual loss of dead and decaying timber. As an economist, I am shocked at the immense inventory value of the standing timber on national forests and at its very slow growth rate. This is hardly productive in the physical or economic sense. In their own way, these forests are as unproductive as bare potential forest sites.

Even with generous reservation of national forests for wilderness and other nonharvest uses, the harvest of old growth timber on national forests should be substantially accelerated above present rates. In a mature forest, harvest inevitably exceeds net growth, whether or not it exceeds long-term sustained yield, and an accelerated harvest on national forests for the next two decades would almost certainly be well above net wood growth in those years. However, growth would rise considerably as old growth areas were harvested, assuming that intensive forestry were followed on the better sites. I would aim to reduce the inventory of standing timber on national forests; I think it is excessive from a purely silvicultural viewpoint, and it is grossly excessive from an economic viewpoint. If the national forests are ever to grow more timber, at a rate more closely approaching their potential, then more timber must first be cut from them. It would be possible to accelerate their timber harvest greatly while remaining within the principle of sustained yield. The President's Advisory Panel on Timber and the Environment concluded that the idea of even flow of timber products, which the Forest Service has added to the 1960 Multiple Use and Sustained Yield Act, should be abandoned.

An acceleration of the cut of old growth timber on national forests would undoubtedly pose many difficult technical problems, and some economic ones as well. But the most serious problems would be cultural acceptability. The 100-year-and-longer conversion of mature old growth specified in the Forest Service *Manual* would have to be changed. To many persons, foresters and nonforesters, inside and outside the Forest Service, a marked acceleration of cut of old growth timber will be a traumatic experience. Nevertheless, if the national forests are to produce as much as they are reasonably capable of producing, their management must be changed in the future. We nonforesters have a right to ask foresters to work out and to implement a program of national forest management that is more economically productive and more attuned to the needs of our times. One aspect of such management must be more intensive management of the lands used for timber production. This requires greater expenditures, hence larger appropriations and better assurance of continued adequate support.

OUTPUT FROM SMALL PRIVATE FORESTS

I must confess to some uncertainty or even ambivalence about the small private forests. The nature of my uncertainty will be clearer if we review some of the more outstanding facts about these forests.

The "other" private forests (those not owned by the forest industry) include nearly 60 percent of the entire forested area of the United States. While a few owners have some thousands of acres of land, most such ownerships have only a few hundred acres or less. Many of these ownerships include land of lower site quality, but on the whole they average almost as high in productivity as all other forests taken as a whole but considerably lower than forest industry forests. In 1970, the other private forests were more lightly stocked with growing trees than was any other major type of forest ownership, but their net growth rate per acre was above average and was almost double the admittedly low net growth rate on national forests. Harvest in 1970 was substantially below growth, so that inventory of standing timber was being built up.

An on-the-ground inspection of many of these forests will show that the present timber stand has been badly degraded by past harvests of the type previously described. In addition to having a light volume, these stands often include poorer species or poorer individual trees. Observations of the management of such small forests will often show that the periodic harvests are poorly planned and conducted, both in terms of what is done to the remaining timber stand and in terms of economic returns to the owner. It is often said that the owners of these small forests lack technical knowledge about how to manage them better, and that one of their needs is for technical advice and assistance.

As I contemplate the statistical record of these small private forest owners as a group, I cannot but wonder: Is their accomplishment really so bad *given the circumstances* under which they must operate? They may attain a comparatively low output from their forests, but they also expend little on them. They surely have not overinvested in timber stand! They may be poor foresters, but possibly they are as good forest economists as are their advisers. I personally feel unquiet with our present knowledge, or our present ignorance, about the operations of this large and diverse group of forest owners.

As long as the rain falls and the sun shines, these small private forests (whatever their site class) will produce some wood, which can be harvested at intervals. The issues revolve around attempts to increase their output over that which would occur "naturally." Public and private programs (other than fire protection) to this end have been rather unrewarding in the past. But I agree, somewhat reluctantly, that present public and private programs aimed at increasing the output of the small private forests should be continued. I would also try the new approach to the problem described in chapter 10, under which a system of leasing land from small owners to

form larger management units would be subsidized by federal grants, and I feel intuitively that there must be other approaches which would be rewarding.

If it is culturally and politically acceptable to do so, I would limit both public and private programs for these forests to those on the average or better forest sites, to those of the average or larger acreages per ownership unit, and to those producing wood for which there is an active demand. Certainly, greater returns per unit of expenditure will be achieved in this way. But a program limited to the larger and better situated private forest owners might seem elitist or discriminatory to some people, even when greater wood output per unit of cost was admitted.

ENVIRONMENTAL POLICY ISSUES INVOLVING FORESTS

The environmental policy issues involving forests fall into two rather distinct categories: those involving forests as one of several other sources of raw materials and those within forestry itself.

Wood is a versatile and valuable raw material, used throughout the world today and used throughout history. Among its many other good features, it is renewable—it grows—and it is biodegradable when no longer needed in its original purpose. The fuel requirements of wood manufacture are generally far less than those for alternative raw materials. In a world which is becoming increasingly environment and energy conscious, wood has a great many advantages.

In thus urging more extensive use of wood, I most certainly do not condone any and all forestry practices, regardless of their environmental impact. Nor do I accept a greater use of wood as an excuse for not instituting greater environmental protection and conservation for fuels and metals. Nor do I accept greater use of wood as a justification for every use of wood, fuel, and metals. I personally feel, for instance, that the modern American daily and Sunday newspaper is a disgrace, environmentally and intellectually, and I would favor means to reduce newsprint consumption. Similarly, some forms of consumption of metals and energy may be socially undesirable and should be or will have to be curtailed in the years and decades ahead. But, for many forms of consumption which will continue, wood fibers in some product form or another are technically and economically good substitutes for the metals (and indirectly for fuels). Environmental concerns will almost surely lead to greater relative use of wood in the future.

Within forestry, clearly greater attention must be paid in the future

to environmental impacts than has been paid in the past. The method of timber harvest is particularly important, but environmental protection measures are not limited to timber harvest methodology. Road locations, construction standards, and mileages are highly important, regardless of whether the roads are used for timber harvest or for recreation; in many areas, 90 percent or more of the accelerated erosion associated with timber harvest has come from roads, not from the other logging operations. Greater attention will also have to be directed to preservation of water quality in streams and lakes, to preservation and care of wildlife generally, and to forest aesthetics. Without necessarily endorsing everything which is advanced in the name of environment, I nevertheless agree that all uses of forests in the future must pay more attention to environment than they have in the past.

The real question is: How is this desired result to be attained? Presumably stricter environmental controls can be imposed on publicly owned forests, for environmental considerations have too often been neglected on them in the past. The requirement for environmental impact statements and the possibility of citizen suits to enforce this process may bring desired changes; but is this the efficient way to attain this goal? How can more attention to environmental considerations be required on private forests? Education of forest owners and managers and of timber harvesters, and enlistment of their cooperation, are essential, but are likely to be insufficient. I shrink from the complexities and ramifications of laws which closely control forest operations on private land. But how else does one deal with the forest owner or timber harvester who resists any other approach?

As the reader can easily see, I am fairly confident as to ends but dubious as to means for greater environmental concerns in forestry.

POLICY ISSUES IN EXPORTS OF FOREST PRODUCTS

The only significant policy issue with respect to foreign trade in forest products relates to log exports to Japan. Imports of lumber from western Canada, imports of hardwood plywood from Japan and elsewhere in the Pacific, imports of newsprint from eastern Canada, exports of paper and paperboard to Europe from the southeastern United States, and exports of wood chips from the Pacific Northwest to Japan have raised no serious policy issues—at least not thus far.

I fully support not only continued, but expanded, export of logs to Japan. The argument that this export reduces domestic supply of wood is nonsense. If the Japanese were cut off from U.S. log exports,

they would buy lumber in the United States or Canada—unwillingly, but most probably to about the same volume as they now buy logs—and hence U.S. supply of lumber would not be increased significantly, if at all, by a cessation of log exports. While log export increases competition for logs in the Pacific Northwest, I see no good reason for sheltering such firms from competition. Log export may slightly increase wood prices in the United States, but I do not regard this as a serious problem. I would *increase* log export over a period of years. With the increased harvest of old growth timber on national forests and with increased wood growth on forests of all ownerships, this would be perfectly possible without seriously disrupting current domestic supply. More importantly, if the United States is going to continue to import some of the metals and other raw materials it needs, and to import the manufactured products it wants and can get cheaper by importing, then we must export something. We have priced ourselves out of the international export markets for many industrial products, but our natural resources and our productive manpower and management enable us to compete very well in world markets for farm commodities and forest products. The conservationists should be reminded that when we export logs and import metals we trade an environmental impact in our forests, which by careful management can be very small, for an environmental impact in mining and refining, which may be great.

Unequivocal support for long-run substantial log export is not incompatible with suggesting that there may be times when the Japanese might appropriately be urged by our government "to cool it." The demand for lumber in this country for building construction fluctuates violently so that sharp rises in lumber prices, followed by almost equally sharp declines, take place at intervals. If the Japanese should expand their log buying, in order to expand their housing construction, at the same time as domestic demand was rising sharply to expand our housing output—and this is exactly what happened in late 1972—then a difficult supply-demand situation is exacerbated, and appeals for legislation to control log exports increase. The Japanese, given the nature of their economy and the role of government in that economy, could surely find a way to step up their log buying when U.S. demand for lumber was weak and to decrease it when U.S. demand was high. Over a period of years they could buy a large amount of timber in the United States with a minimum amount of disturbance to our markets.