

“Greater Social Benefits From our National Forests”

An Address by

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**A. Why do Economists Pick on the Forest Service?**

1. You probably never heard of the Gaffney Quartet, but when I was a young sapling, 30 years ago or so, four of us used to avoid studying by singing together. If only the baritone had gotten sick, we might have gone on to become the Gaffney Trio and you never would have heard of the Kingston Trio. Nor would you have been bothered with the Faustmann Formula. However, fate ruled otherwise; it was the bass who got sick so we recruited a substitute. He was rather good but terribly bossy, with lots of good suggestions for us all. Better a mediocre Gaffney Quartet, said I to myself, than a top-notch Jones Quartet so we immediately sensed survival was at stake and froze him out. Nobody loves a kibitzer.

So why, now, do economists kibitz on the Forest Service?

Actually, you don't know how lucky you are. We've hardly begun to kibitz. Only a few of us have looked at it. Most economists have been preoccupied with other questions. Newspaper reporters have been likened to blackbirds. That is, when one flies over to a wire they all follow along. Economists are like that, too. For years and years, if you were a resource economist your subject was water and you dumped on the Army Corps of Engineers, an easy target which was always boondoggling away the taxpayers' capital. (Parenthetically, in this year of drought, if you think the economists were wrong, I remind you that the Army Engineers builds flood control units.) For a long time the economists' scolding seemed futile. The pork barrel rolled on unperturbed. But now, suddenly, all the years of effort may be getting results if the Carter Administration sticks to its recently announced cutbacks.

Then it became the environment and of course it still is. And now energy may take over and all the blackbirds may sit on that wire for awhile.

And yet I wouldn't count on the Forest Service's continuing to be ignored. There are other straws in the wind. Marion Clawson and Paul S. Samuelson have two of the sharpest pairs of antennae in the profession. (How do you think they got to the top?) When they both condemn the Forest Service in the same year they have spotted a trend and are leading it. You can count on an army behind them. You've heard about Marx's reserve army of the unemployed. In this age of higher education we've improved on that. Nowadays we combat unemployment by seeing that a man can get a Ph.D. before he has to apply for welfare. So there are a lot of underutilized troops out there looking for trouble and you may expect the Forest Service to receive its share.

2. Economists will not pick on the Forest Service in any discriminatory way that should be cause for paranoia. Economists pick on lots of wastrels.

That is their job. In this overspecialized world we have created many professions whose

practitioners become monomaniacs and fundamentalists. The world is full of them. They define professional "standards" which are preceded by the word "good." Thus, good planning means curbs and gutters, gold plated subdivisions, wide streets, large lots, expensive housing—anything that you would do if cost were no object. That is about what "good forestry" means. There are also "good professional standards" in medicine, theater, music, the arts, teaching, (that's my sin, if you want to strike back), highway transportation, conservation and outdoor recreation, civil engineering, mining engineering, reservoir engineering, farming, athletics, and, of course, military defense.

In every case "good" comes to mean what you would do if cost were no object, if you had unlimited resources at your disposal; if the whole world were there only to serve you because you are sacred and they are profane.

When we are younger and less specialized and all in school together, we instinctively reject the self-righteousness of those who feel that they are exempt from and above the standards by which ordinary people are judged. But as we become professionalized and specialized we all become guilty of succumbing to the temptation of forwarding such claims, even though this means that every profession tends to invade the resources and territory of every other profession.

That, of course, is why every company has to have its accountants and its budget officers. it is why the U.S. Government has its OMB and GAO. There must always be some s.o.b. to remind people with hobbies that there is no Santa Claus.

As an economist I am that s.o.b., that gadfly, as Socrates said, fastened upon the State. But in defense of us s.o.b.'s please note that by hassling each profession individually, we are the best friend of all professions collectively. For it surely must be self-evident that if we let everyone run riot with the collective wealth there will soon be none for anyone.

Economists are not doing their job if they merely act like auditors and snoops. We are actually more dangerous than that. We become aware that there are gross perceptual biases in popular awareness of different kinds of waste. A poor congressman can get ruined for hiring a steno with a fast track record, but quietly waste billions of the taxpayers' dollars on invisible capital costs in the name of some worthy cause like conservation and no one lay a glove on him. The economist's job is to put traceable dyes on the invisible costs to make them as visible as any other. In this new age of limits wasting land and wasting capital are coming under heavier scrutiny, and in wasting these resources the Forest Service has few peers.

Again, the Forest Service is not alone. If it were only the Forest Service that had developed elaborate obfuscating ideologies to cover its tracks, we could stand back like H. L. Mencken and laugh at the human comedy, but in fact the fallacies that are advanced to rationalize the waste of capital and land in forestry have close cousins in other bureaucratic empires and in other industries. The Forest Service may only be tying up \$42 billion worth of the nation's resources as Clawson estimates, but the kind of fallacious reasoning that is used when applied to many industries cumulates up to a substantial share of the nation's limited treasure.

Just for one example of a parallel fallacy, the allowable cut effect (ACE) in forestry, which seeks to obscure and obliterate the passage of time between investment in reforestation and

realization of mature timber, has its counterpart in the oil business in the idea that the cost of replacing oil and gas is a current expense associated with the liquidation of old oil and gas so long as you internalize the cash flow by reinvesting it within the same industry. Nonsense! says the economist, but the Courts and the Internal Revenue Service seem to believe it, with the result that an excess of capital is tied up in this industry, also.

No accepted fallacy is an island by itself but reinforces parallel fallacies in allied fields. This is why economists cannot leave them alone wherever they find them.

3. Finally, the Forest Service itself is an especially challenging, vulnerable and tempting target for reasons peculiar to itself.

a. Some of its doctrines are such transparent fallacies that they insult the intelligence. The allowable cut effect is case #1. The worst insult you can level against a man in this modern age seems to be that his virility might be deficient, but the second worst insult, believe it or not—and I've actually experimented with this—is to suggest that he is culturally inferior or just plain stupid. The reasoning behind ACE is so blatantly false that it says to us: "You're so dumb you'll believe anything." This is the kind of red flag that Ron Ziegler waved when he said to the American public, "That was the operative statement last week. It is now inoperative. The operative statement this week is . . ." You can go too far and I think ACE will go down in history as the Watergate of the Forest Service.

b. Some other questions raised by Forest Service doctrine are quite subtle and challenging, and therefore interesting to those economists who fancy themselves to be sophisticated and creative. One of these is the interesting business of showing that the culmination of mean annual increment is a waste of capital because it is the same as maximizing discounted cash flow when the rate of interest is equal to zero. In order to show this you first have to develop Faustmann's formula for identifying discounted cash flow (in Forestry lingo we call that "soil expectation value"). And then you have to bone up on your calculus and apply the footnote in the back of the book that tells you about L'Hôpital's rule.

Lest you and I be intimidated by all this esoteric talk, however, there is a commonsense approach to the question. Culmination of mean annual increment is that rotation which maximizes output per acre per year, without regard to the cost of any input. That must mean that we are applying the other inputs, in this case capital, to the extreme that we would apply them if they cost us nothing, which is to say if the interest rate were equal to zero.

c. Some Forest Service doctrines are enormously consequential in their implications for macroeconomics. One of these is the fallacy that normalization eliminates inventory. You've heard it propounded many times, I'm sure, that economics and mathematics may be all very well when we're talking about a single-aged stand started from bare land but all that goes out the window if we have a balanced forest such that when you cut a tree you plant a tree. Then, so the argument goes, input and output become simultaneous. There is no lapse of time between them, hence no need to worry about compound interest. This fallacy of the vanishing inventory must be the grandfather of the allowable cut effect with which it has an obvious relationship. It is something like saying that a bathtub becomes empty at the moment when the inflow equals the outflow, or saying that you sawmill operators have no log decks when your flow of sales equals

your flow of purchases. It is a way of trying to eliminate from your perception the cost of carrying inventory; a way of making the largest cost in forestry become invisible.

This doctrine is especially pernicious in its application to the national economy, where the macroeconomists in Washington and the universities have managed to overlook for a long time that the rate of turnover of the nation's capital stock is a great and primary macroeconomic factor determining the rate of cash flow into payrolls at the input end and flow of goods into saleable form at the output end.

d. It is the conceit of economists that they are the guardians and protectors of correct analysis. I hope we may be forgiven, therefore, if we feel aesthetically offended as well as culturally degraded by the spectacle of a large, respected organization living by and propounding fallacious doctrines. As teachers of young people, we hate to send them out into the world where they have to learn to talk nonsense in order to move ahead professionally.

e. ACE is a fraud on the National Treasury in which we all have an interest. It is an obvious ruse to pad the rate of return on government investments in order to appear to be conforming with OMB demands that federal agencies show positive benefit-cost ratios on their investments, without actually doing so.

In the world of Washington, D.C. fraud is simply fighting fire with fire, but that is no justification in my opinion.

Thirty or 40 years ago, frauds of this kind were looked upon with great tolerance. The philosophy of that time, if you remember that far back, was that what this country needs is more investment opportunities. J. M. Keynes thought that was what made the world go around and he sold his idea very effectively, or perhaps he just picked up an idea that was already selling itself. In either case, people were in a mood to be fooled in this particular way for a long time and as a result other people got into a set of bad habits. That was another age of limits, only then people thought the limit on growth was consumer spending. Today people are getting more realistic, I think, and realizing that the true limit on growth is resources. They are becoming increasingly intolerant of people who waste resources.

In those old days, you could ask rhetorically, "If we did squeeze capital out of the Forest Service whatever would we do with it anyway? We need investment opportunities, not more capital looking for work, and standing timber is an investment outlet." Today the answer is painfully obvious. We can use the capital to help finance new houses, which at this time the market is telling us we need more than we need the last 10 or 20 percent of the existing inventory of standing timber. How does the market tell us that? Because the timber is growing at 2 or 3 percent per annum at the same time that people are willing to pay 10 percent to finance a house.

f. Finally, the Forest Service is a tempting target for young iconoclasts because it has been a sacred cow for such a long, long time. The ideas of forest management that were generated in 19th century Germany and in the Depression in the United States are thoroughly obsolete today, to the extent that they were based on conditions which have changed (rather than mathematical logic which endureth forever). Thus, timberland which once was let go for taxes may now be

worth \$100 or \$200 per acre and timber which was worthless may now be worth \$150 per thousand board-feet. This calls for new standards of economy, but it takes a generation to turn around a large organization. That is because large organizations are generally run by college graduates with licenses—licenses to stop thinking, so it seems. We have learned to tolerate even that, but the Forest Service is setting some kind of a new record of passing on old ideas to the sons and the sons of sons even into the seventh generation, and it must be moving to the top of anyone's list of hoary institutions encrusted with traditions which are vulnerable to attack by spirited young bucks trying to make a reputation.

### **B. Some Major Faults of Forest Service Timber Management**

1. The doctrine of culmination of mean annual increment. In the business world in general it is widely recognized that the normative rule of investment is to maximize discounted cash flow. The Forest Service chooses instead to maximize mean annual increment. These are incompatible standards, except in the one case when the interest rate equals zero. This takes a little mathematics but it can be shown that if the forest manager aims for that cutting cycle which will maximize the expectation value at a given rate of interest, and if that interest rate falls to zero, then what you get is maximum mean annual increment. This is another way of saying that this is what you would do if cost were no object, that is, if only wood is good and all the resources used to make wood have no other uses.

In other businesses when investments are judged in the way that ordinary men are judged—on the basis of whether they can pay their way—the cost of carrying inventory has to be counted. If the inventory is top-heavy you reduce it. In Forest Service accounting the inventory is ignored. It disappears into a variety of mirrors. There is the fallacy of vanishing capital in a normalized rotation, which I alluded to before. There is an assumption that the Service doesn't need to earn a return on its equity capital. In propounding this fallacy, I blush to say, the Forest Service receives aid and comfort from certain private firms which have been known to say the same thing. Only yesterday I tore out of *Fortune Magazine* an ad by the Potlatch Forest Company. Potlatch was beating its breast about its superior efficiency which they attributed to the *low* cost of their lands and timber, resulting, from having purchased title a long time ago at low prices. They were saying, in effect, "Don't judge us by the return we make on our equity at its modern value; rather, judge us favorably today because of the shrewd purchase made by our predecessors several decades ago." Private industry can hardly point the finger of scorn at the Forest Service when it indulges in such nonsense itself. Let us hope this was purely P.R. and the management doesn't really believe it.

Another device is to say that all earnings from the forests belong, to the Forest Service and should be internalized. This rather forgets that these assets are owned by the taxpayers. Finally, there is the device of debiting all costs to other accounts, accounts *that* are vague and allegedly immeasurable such as watershed benefits, recreation benefits, wildlife benefits, and that great limitless catchall, "the ecology." If we debit away all our costs in this way we can then say that the carrying costs attributable to the timber inventory is very small.

2. Overdecentralization. This is the problem of spreading resources too thin so that instead of applying them on the basis of productivity we rather end up with "a little of everything everywhere" (in Marion Clawson's happy phrase for this unhappy condition). William Hyde has

documented the problem at length in his current research.

Overdecentralization of this kind means a great increase in the length of forest roads, and a greater increase in cost because of the more difficult terrain at higher elevation with steeper slopes. This means more trucking, with waste of scarce energy. It means more erosion, because it is the forest roads more than the cutting of timber that cause erosion. It means greater invasion of sensitive lands and wilderness areas. It means "forestry sprawl" quite comparable to the more familiar urban sprawl, and with parallel inflation of costs and environmental invasion.

3. Delay before reforestation. Clawson tells us that the Forest Service spends less per acre on forest management than private firms do. They are more likely to let cutover land lie bare, and reforest itself. This doesn't sound like a good way to protect our watersheds, but let's think about another aspect of it. In this age of limits on natural resources, and surplus labor, modern thinking says it is time to use labor more to economize on land. Forest Service procedures are doing the opposite. The resulting redwood trees might well be stamped "Made in California by Druids," while other Californians are drawing welfare checks.

Long cutting cycles have the effect of substituting capital for labor, because the longer the tree stands and grows on itself, the more of its final value is added by capital rather than labor. When the stand is established by labor, at least labor has the consolation that some of the capital was produced by labor. When we let Druids establish the stand, it is land and not labor that produces the initial capital.

Then there is delay after reforestation. Forest service cutting cycles are longer than almost anyone else's. This used to seem efficient, back in the days when people thought labor the only cost of production. But now we are recognizing that capital is costly too. In this age of limits, it is obvious that we must economize on land, but capital is a resource, too. Capital *is* the sum of all *man-made* resources, and high modern interest rates tell us that it is scarce. We need to use what we have harder. In forestry, we use both land and capital harder by recycling them more often, that is turning them over and combining them with labor more often. These are things the Forest Service declines to do.

4. The Forest Service can justify almost any thinkable investment by ACE because obviously if you can credit to any investment a harvest of mature timber which is arbitrarily tied to it, you can credit it with many times its actual value.

By the same token, and crediting the Service with a certain peculiar consistency in its fallacy, I surmise that the true value of mature timber is understated because the cost of new investments to which it is credited must, in turn, be debited from it. This would serve to rationalize tying up mature timber longer than otherwise. These seemingly opposite results have one thing in common which is desirable from the point of view of agency self-aggrandizement and that is they both tend to internalize more capital within the agency's control.

But there is nothing here to cause good allocation of capital within the agency. Sub-economic investments can be justified only in those areas or jurisdictions where they can *be* tied to the harvest of mature timber. I do not claim to have studied this in detail, but when any agency goes around putting its money on a doctrine as absurd as ACE we are justified in suspecting the worst.

You don't have to eat the whole omelet to know that one of the eggs is bad.

5. Noncommunication. Communiqués tend to come out in Federalese which is, as you know, a highly evolved system of noncommunication. When it is intermixed with intimidating inside lingo from old school days at Yale or Syracuse, it is even worse. I will spare you examples for I am sure you can all supply many of these.

6. Losing money for the government. The British Columbia Forest Service, which is certainly one of the most moribund institutions with which I have ever come in contact, at least returns a surplus to the provincial treasury each year. The U.S. Forest Service, presiding over much more land in a much more favorable climate, cannot claim as much. Marion Clawson has done a nice job of totting up the accounts. As of 1974, cash receipts of \$486 million dollars including income from mineral leases and forage were just offset by cash outlays of the same amount. This did not include an additional \$80 million dollars of payments to States and Counties which left a deficit of \$80 million dollars on current account.

But then Clawson does what should be done to every firm, that is, he slaps on an imaginary mortgage of \$42 billion dollars representing the estimated value of the land and timber presided over by the Service. He charges interest at 5% which is an annual cost or charge against the enterprise of \$2 billion 100 million dollars.

You may object that he counted in nothing for the annual growth of value caused by inflation or rising prices. In answer to this, however, note that he used a modestly low interest rate of 5%. Who among you can borrow at 5%? This was his allowance for inflation.

He did not overlook values other than timber. He puts a value on water regulation at \$50 million dollars, and we must remember that he spent many years as a student of water resources. He puts a value on recreation visits at \$440 million dollars, and we must remember that he is a leading authority on the economics of outdoor recreation. Even these values do not make much of a dent in that annual interest charge of \$2.1 billion dollars. This figure towers above all the others and serves as a constant reminder that the Forest Service is not earning any return of consequence on the colossal investment of public values placed at its disposal.

In keeping with a modern fashion, Clawson's rendering of the Forest Service accounts lets in the sunshine in a particularly revealing way. This kind of sunshine should spell sunset for the Forest Service practice of carrying excess inventories of timber and land.

### **C. Reform for Greater Social Benefits.**

#### 1. What are social benefits?

a. Responding to the signals of the market. We sometimes get a guilty feeling that "social" benefits mean following some guide other than our self-interest. Sometimes, no doubt, that is true. But, what could be more socially beneficial than producing what is demanded on the output side? What could be more socially justified than sparing what is expensive on the input side? These are things that people do automatically when following their own self-interest. Adam Smith is not dead—he is alive and well in the universities. The Forest Service would come more alive and do better if it paid more heed to Adam Smith, and his sylvan, Teutonic counterpart

Martin Faustmann. As Duke University forester Roy Thompson showed years ago in his fascinating history of forestry doctrines, Faustmann like Smith was an enemy of mercantilism and regarded economic forest management as an anti-mercantilist reform comparable to Adam Smith's view of free international trade.

b. Social benefits are accomplished by doing what landowners do when they are under pressure. Private land, forested or otherwise, is held subject to property taxation. Why? The rationale for property taxation is that the tax compensates those who are excluded from owning real estate for the benefits enjoyed by others who do. The tax puts pressure on owners to provide social benefits. First, it makes them finance government. Second, in order to raise money they have to render service by utilizing the land to yield products for others to consume. And, third, in order to do these things they have to provide employment to others. Thus, the property tax makes privately-held land be used in much wider public interest.

The national forests, which are actually owned by the public, should then provide even greater social benefits. However, we see in fact that far from yielding government revenues, the Forest Service absorbs them. Far from yielding maximum service, the Forest Service holds back timber supplies. Far from providing employment, the Forest Service manages land in such a way as to minimize it. It only provides employment for **sleepy** capital, capital that might better be used elsewhere.

c. Releasing capital and absorbing people. In this age of scarce capital and surplus labor, the social benefit is clearly to spare the one and utilize the other. Forest Service policy is programmed backwards, that is, to waste capital and save people. A monument may be defined as anything which is built with one eye on eternity. Extravagant monumental dams on the Soviet model are now widely recognized to be wasteful investments of this kind. Sierra Clubbers and economists agree on this at least. When will Sierra Clubbers recognize that over-mature timber is another such monument and an extravagant waste of scarce resources which is perversely worshipped by otherwise thrifty and Spartan outdoors persons?

## 2. What should the Forest Service do?

a. The Forest Service should act as though it were saddled with a \$42 billion dollar mortgage. It should pay \$2, \$3, or \$4 billion dollars interest to the Treasury each year until such time as it shall have sold off its excess inventory of timber and land. Excess in this case means timber and land above that on which an income may be earned. Congress, no doubt, would have to act to permit such sales, so this is not clearly a Forest Service responsibility. But who, we may ask, tells Congress what to do? Where does Congress turn for expert advice on forestry questions? What advice does it get when some Treasury watchdog inquires what the Forest Service is doing with the golden talents with which it has been entrusted? If these sound like rhetorical questions, they are.

b. The Forest Service needs to substantiate and quantify its claims that it generates enormous values other than those measured in timber sales. What is its esthetic contribution to our environment, for example? I have lived surrounded by national forests, and I have also lived in Vermont and Wisconsin. Both of these latter states were logged over by rapacious private owners. Both of them today, and especially Vermont, are environmentally popular and pleasing.

I especially enjoy Vermont where many small farmers live with their own woodlots which they cut into whenever they darn well please, which is, you may be sure, a lot earlier than the culmination of mean annual increment. Here you have a total, a fertile and a delightful society which is praised by almost all who get to know it. Can the National Forests by banning small private landowners produce an environment anywhere near as pleasing? I have yet to see it.

The Forest Service should substantiate and quantify its claims about the value of its management practices to watershed protection. The fact that this has not been done does make you wonder. Trees do transpire. Is it possible that they are wasting our water supply just as they waste our capital supply? Many of my new neighbors in Southern California think so and have been complaining for years that Forest Service watershed management practices do anything but maximize runoff or regulate it optimally.

d. The Forest Service should allocate its funds in accordance with productivity. This would mean in practice practicing more "highsite" forestry. "Highsite" is a confusing term since high sites tend to be found at low elevations, so let us avoid confusion by saying the Service should practice GOOD-site forestry. This major need is pointed out in William Hyde's recent analyses at Resources for the Future. Orthodox forestry says to invest everywhere without much discrimination among sites with the result that we have a little bit of everything everywhere. Economics says concentrate your limited forces where they are most effective and your limited capital where it is most productive. We should use our best land the way Mayor Daley used to tell his troops to vote, that is "early and often."

R. W. Behan has written recently that good forestry today means economizing on capital instead of on land. I cannot agree, although the spirit of Mr. Behan's remarks seems right on target. Good forestry economics means economizing on both land and capital at once. We economize on land by using the good sites hard and recycling them fast, while letting the low quality sites pretty much alone. John Walker has demonstrated in a most impressive way that when we go to shorter cutting cycles we can justify considerably enhanced investment in forest management on the good sites because the return is to be realized so much quicker. He has shown that if we do this we can get our timber supply from the better sites without needing to invade the poorer ones at all. This is clearly the direction in which Forest Service policy needs to move. The Forest Service needs to relinquish the fringes of its enormous territorial empire to others who will utilize them for purposes other than wood production. This will permit it to focus its energies on the better sites, producing an equal or greater supply from a much lesser base of land and capital.

To accomplish this it clearly needs direction and help from Congress and the Administration. These, in turn, have been known to listen to the industry on a number of important matters. Now the industry is gearing up perhaps for the first time to give well-reasoned, rational, constructive advice. The work of John Walker at Simpson Timber Company is outstanding and the Western Timber Association is completely tuned in on this and ready to carry the message.

Congress today, no doubt, presents the Forest Service as it presents all bureaucrats with a perverse set of incentives. Where is the incentive to the Forest Service or any other Federal agency to release excess land? It is up to Congress to give such direction. We cannot realistically expect Forest Service people to give such advice. They are only human and are reacting

predictably to the perverse incentives with which they are presented, as the poet said, in a world they never made. But then the world was never much improved by people who merely react predictably to the incentives imposed on them by others. We might reasonably look forward to some self-educated and inner-directed people within the Forest Service pushing in a new direction. We may definitely look forward to the Western Timber Association and other industry groups pressing on Congress from the other side. The net result I optimistically think will someday be a surprising turnover in Forest Service policy. Stranger things have happened before and will again.