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THE SUCCOTASH SYNDROME, OR MULTIPLE USE: A HEARTFELT APPROACH TO FOREST LAND MANAGEMENT

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In February of 1936, Professor Frank A. Waugh of Massachusetts State College published an article in an obscure periodical called *The Journal of Land and Public Utility Economics*. The title of Professor Waugh's paper was "Reconciliation of Land Uses", and in it he proposed that a farmer would maximize the benefits from his farm by "intercropping,"¹ or planting beans in between the rows of corn. He could grow both corn and beans, in other words, on no more land than he had used previously for corn production alone. This idea, and others like it, or the "succotash syndrome," as I have chosen to call it, was easily transposed from farm management to forest management. It became the rationale for what we know today as "multiple use," the nearly sacrosanct *modus operandi* of professional forestry, which lists, wood, water, forage, recreation, and wildlife as commingling products of the forest.

As a distinct concept, multiple use is peculiar to American forestry, and probably it developed concurrently with American forestry's growth as a profession. This growth, in turn, was intimately related to the conception, birth, and maturation of the U.S. Forest Service and the national forest system. This context will be used to trace the development of the multiple use concept. The five traditional uses, or forest land outputs, had to be recognized first, before such a sophisticated notion as *multiple* use could evolve.

The national forest system dates from the Forest Reserve Act

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1. F. A. Waugh, *Reconciliation of Land Uses*, Journal of Land and Public Utility Economics, (February, 1936).

of 1891,² but that legislation recognized no *uses* at all. Its effect was a virtual lock-up of all the resources, and it took Congress six years to specify in 1897 that timber production and watershed protection were legal uses of the forest reserves.³

Eight years after that, in Gifford Pinchot's famous "greatest good" letter, a third use was added: "You will see to it that the wood, water and *forage* . . . are conserved and wisely used . . ."⁴ Thus, with no particular authorization from Congress, Pinchot—via Secretary Wilson's signature—confirmed grazing on the national forests as a third legitimate use.

The Term Lease Law of 1915,⁵ providing for summer home leases, legally established recreation as a fourth recognized use of forest land. And, for want of a better and less arbitrary example, the Act of August 11, 1916,⁶ that authorized the designation of wildlife refuges in eastern national forests can serve to round out the five traditional components of the multiple use package.

By legislation or policy-declaration, then, the ideological diversity of forest land use was completed by 1916, but there had not yet been any statements of the succotash syndrome. So far as I have been able to discover, the earliest reference to multiple use *per se* was made eighteen years later.

2. Act of March 3, 1891 (Forest Reserve Act) 26 Stat. 1095, 1103.

3. The Sundry Civil Appropriations Act of June 4, 1897, 30 Stat. 11, 34, limited—but in so doing defined—the purposes for which forest reserves could be created. It also provided for their protection and administration, and served, until the passage of the Multiple Use-Sustained Yield Act in 1960, for as much of an "organic act" as the Forest Service ever had.

4. This statement was contained in a letter to Chief Forester Gifford Pinchot. The letter was dated February 1, 1905, and was signed by Secretary of Agriculture James Wilson. It was a letter of instructions relating to the administration of the forest reserves, which were that day being transferred from the jurisdiction of the Department of the Interior to Pinchot's agency in the Department of the Agriculture. There are many references to the letter in the literature. It is quoted here from Jenks Cameron, *The Development of Governmental Forest Control in the United States*, p. 239, (Baltimore; The Johns Hopkins Press, 1928). In later years Pinchot, not without a touch of pride, admitted having drafted the letter himself and presenting it to Wilson for the Secretarial signature. (emphasis added.)

5. Agricultural Appropriations Act (Term Lease Law), 38 Stat. 1086, 1101, March 4, 1915.

6. Act of August 11, 1916, 39 Stat. 446, 476. This law related directly to national forest lands purchased under the Weeks Act of 1911 (39 Stat. 961) that provided, over time, for the acquisition of the national forests in the East. The western forests were reservations from public lands, but by 1891, when the reservations began, there was not much public land left in the eastern states.

On May 24, 1934, Major Evan W. Kelly, the District (now Regional) Forester at Missoula, Montana, gave a talk in Wallace, Idaho. He said:

Popularly conceived, the national forests are wild lands, the primary use of which is to grow trees for the production of lumber. . . . This conception is altogether a narrow one. . . . Forests also have significance in providing food and shelter for wildlife and domestic animals . . . regulating stream flow, and furnishing recreation in various forms.

Federal foresters are engaged in the intricate technical business of managing such properties for all these purposes. One of the greatest difficulties inherent in this undertaking is the proper correlation of the *multiple uses* to which forest land can be put in order to accomplish the prime objective of their management. This objective is to produce the maximum of . . . products and services, including wood products, animal products, . . . recreation, . . . preservation of scenic values. It is a proposition of general farming, involving the grand-scale production of perennial crops on a sustained-yield basis over an unlimited amount of time, rather than one of single crop farming on an annual cropping basis with little or no thought of the morrow.⁷

He gave the same talk to the Ronan, Montana, Rod and Gun Club in February of 1936. And the date of that speech coincided with the publication of Professor Waugh's paper on "Reconciliation of Land Uses."

Two months later Professor Waugh's paper was reprinted in the (Forest) "Service Bulletin," and was sent out from Washington to the Forest Service field stations. Having described "intercropping," Professor Waugh continued:

Somewhat oddly, however, the most vigorous study of this principle of reconciliation seems to have been made in that department of agriculture which is least intensive of all, viz., in forestry. The capital illustration in this country is probably the National Forests.⁸

He pointed out that timber, watershed, and grazing values had been recognized, and went on:

7. This excerpt is from an untitled speech, a typewritten manuscript in the historical files of the Regional Forester, U.S. Forest Service Region I Headquarters, Missoula, Montana. (emphasis added.)

8. F. A. Waugh, *supra* note 1.

Finally, it was tardily discovered that the National Forests . . . are adapted to recreation on a large scale. Recreation has thus become a major land use coordinate with timber production, watershed protection, and grazing. These, in fact, constitute the four major branches of forestry practiced on a national scale. All this is far from saying that *multiple uses* must be maintained on every acre of land. Coordination is administrative, rather than wholly geographic. In a typical national forest of a million acres . . . some . . . small units will be used exclusively for recreation, others for the protection of domestic water. Grazing and timber cutting will be largely segregated. On the larger areas recreation and wildlife as incidental uses will go along with grazing or timber or both.⁹

But then Waugh accused the Forest Service—and the forestry profession, if only indirectly—of maintaining this idea of “reconciliation” too loosely, too informally.

“[T]he frank recognition of this principle,” he admonished, “and its general adoption would bring about some important changes . . .”¹⁰ in forest land management. Waugh was almost certainly unaware of Major Kelly’s hinterland theorizing, but he could scarcely miss the “frank recognition” that soon took the form of a spate of articles in the *Journal of Forestry*. And the term “multiple use” rapidly became entrenched in the jargon of professional forestry.

“Multiple use forest management,” said R. M. Evans in a 1938 *Journal of Forestry* article, “is a conception of management . . . that envisions the trees, the soil, the water, the forage . . . the (wildlife), the scenic . . . values . . . all as elements which must have their proper place and weight in the management pattern and plan.”¹¹

“Multiple Use Management Applied to Timberlands” appeared in 1941.¹² “Multiple Use, Biology, and Economics” was printed in 1943.¹³ There followed “Multiple Use of Wild Lands in the Rocky

9. *Id.*

10. *Id.*

11. R. M. Evans, *Multiple Use Forest Management*, 36 *Journal of Forestry* 1028-1034 (October, 1938).

12. R. P. Holdenworth, *Multiple Use Management Applied to Timberlands*, 39 *Journal of Forestry* (September, 1941).

13. *Multiple Use, Biology, and Economics*, 41 *Journal of Forestry* (September, 1943).

Mountains and Inter Mountain Region,"¹⁴ "Yield of Water as an Element of Multiple Use,"¹⁵ "Multiple Use of Range . . ."¹⁶

By 1955 professional foresters were giving speeches like this: "Millions of people will continue to insist on having these products and services . . . grazing, timber, recreation, water. They can get them best through a system of multiple-use management—in fact this is the *only* way all of these products and services can be gotten from these lands."¹⁷

A formalized *statement* of multiple use, though, was lacking. There was a lot of talk and "sloganeering," but not since Waugh's article had there been a concise definition and exposition.

An attempt was made in a massive reorganization of the *Forest Service Manual* in 1958. Multiple use was given a separate section, an identity of its own. It was now a functional equivalent of timber management or personnel management or fiscal management. The new *Manual* had this to say: "Multiple use is a principle of management rather than a system or method of land use."¹⁸

That's as close to a precise definition as the 1958 *Manual* came: what it really meant, if anything at all, was a matter for speculation.

But the *Manual* continued:

If all resources can be used to a maximum without conflict, the ultimate in multiple use is obtained. However, such full use is rarely possible under intensive management. A harmonious combination of resources and uses to arrive at maximum overall benefits from the land usually requires some modification in individual uses.

In applying the multiple use principle, the land manager is faced, therefore, with reconciling conflicts in such a manner that overall objectives are reached . . . objectives are best accomplished by securing

14. D. S. Jeffers, *Multiple Use of Wild Lands in the Rocky Mountains and Inter Mountain Region*, 41 *Journal of Forestry* (September, 1943).

15. C. A. Connaughton, *Yield of Water as an Element of Multiple Use*, 41 *Journal of Forestry* (September, 1943).

16. W. R. Chapline, *Multiple Use of Range and the Place of Research in Range Land Conservation*, 41 *Journal of Forestry* (September, 1943).

17. Address by R. E. McArdle, then Chief of the U.S. Forest Service, quoted in Grant McConnel, *The Multiple Use Concept in Forest Service Policy*, 44 *Sierra Club Bulletin* 21 (October, 1959).

18. U.S. Department of Agriculture, Forest Service, *Forest Service Manual*, Title 2100, p. 3, (August, 1958).

the highest degree of multiple use management that the character of the land will permit.¹⁹

It is interesting, indeed, that the best means could be so clearly apparent without having beforehand specified the ends. In any case, by 1958 a well developed *doctrine* had evolved. Agency, industry, and profession were embracing it: a doctrine ill-defined, vague and ambiguous, generally fuzzy, and mostly meaningless. But, like the term "conservation" served in an earlier day, "multiple use" was now an emotionally "good" idea, a panacea for all resource problems, a "principle of management" we could scarcely question, the *magnum opus* of forest land management. It became a *heartfelt* approach, and its origin was the succotash syndrome.

We became so enamoured of the doctrine that we made it into law: the Multiple-Use Sustained Yield Act of June 12, 1960.²⁰ This directed the Secretary of Agriculture "to develop and administer the renewable surface resources of the national forests for multiple use and sustained yield of the several products and services obtained therefrom." Section 4 of the Act defined its terms:

"Multiple use" means: the management of all the various . . . resources . . . so that they are utilized in the combination that will best meet the needs of the American people . . . harmonious and coordinated management of the various resources, each with the other, without impairment of the productivity or the land, with consideration being given to the relative values of the various resources, and not necessarily the combination of uses that will give the greatest dollar return or the greatest unit output.

In September, 1964, Congress passed multiple use legislation for the Bureau of Land Management.²¹ The language of the BLM law was almost identical.

The ideas of the laws are refined in the administrative interpretations of them. In the current *Forest Service Manual*, for example, we find that multiple use is "the skillful adjustment of land resources and uses into a pattern of harmonious action to achieve overall objectives for the area being managed."²² (Still, though, no objectives

19. *Id.*

20. Act of June 12, 1960 (Multiple Use-Sustained Yield Act), 74 Stat. 215.

21. Act of September 19, 1964 (Classification and Multiple Use Act) 78 Stat. 986.

22. U.S. Department of Agriculture, Forest Service, *Forest Service Manual*, Title 2100, Zero Code, Amendment No. 10, January, 1963, p. 2100-03.

are specified.) Further, multiple use is "the coordination of existing and potential uses and activities with a resultant benefit to people that is greater than the sum of individual uses if they were not coordinated."²³ Multiple use management, the *Manual* intones, seeks to provide "an increased yield of products and services from a given area while maintaining resource productivity."²⁴

In all of this there are two fundamental, but not necessarily related, ideas. One has to do with the minimizing of conflicts. This is the harmonious integration of uses, the aggregate benefit of which will exceed the non-integrated sum. The other idea has to do with maintaining or protecting or at least *not* impairing the productivity of the land.

"Harmonious integration without impairment," then, seems to accurately characterize our current thinking about multiple use. The whole scheme is based, it seems to me, on three assumptions, each one of which generates some gross theoretical deficiencies.

The first assumption is that the productivity of forest land is fixed. We read that multiple use "is based primarily on satisfying the needs . . . of people *within the capability of the site*."²⁵ Or that multiple use requires, "an analysis of the *inherent capability* of land to produce . . . resources and services *without impairment* of the site."²⁶ There is in this assumption an implication of an "ecological mandate." The vegetation, the animal life, the soils, the weather all form an *ecosystem*, an interdependent community that follows some successional sequence leading to a *climax*, a steady equilibrium of more or less permanence. The "ecological mandate" seems to provide a series of natural resource management "cues" to which we respond as Pavlov's dog. A few of the classic stimuli:

1. "Overmature" stands "need" to be cut to promote a more vigorous, healthy, productive second growth.
2. Tolerant species "need" to be cut on a selective basis.
3. Intolerant species "need" to be cut on a clearcut basis.
4. Bunchgrass must not be overgrazed or sagebrush will "invade the site."
5. Female ungulates "need" to be harvested to regulate herd size, preventing "overuse" of "key winter ranges," site deterioration, and soil erosion.

23. *Id.*

24. *Id.*

25. *Id.* (emphasis added.)

26. *Id.*

6. Use of campgrounds "needs" to be rotated to maintain vegetation, to avoid soil compaction, etc.

And almost parenthetically, we rationalize as "necessary," for the most of these "management cues," an elaborate system of roads to make the overmature timber "accessible," to "disperse the hunting pressure" so as to insure an "adequate" harvest, and to take the "pressure" off an "overused" campground. We pursue these practices, presumably, to avoid "impairment of the site." In other words, we can take—as outputs—only so much as the site can provide and this quantity is dictated by the "ecological mandate" of the site in question.

If this is so, if the capability of the site, the productivity of the site is determined by purely ecological factors, then the inputs in site production must be "natural inputs." Soil moisture is determined by natural precipitation, by evapo-transpiration, by field capacity, and other influences. Light energy available for photosynthesis is determined by latitude, by crown closure, by weather (cloud cover), etc. Soil nutrients are determined by natural fertility, by parent material, by vegetation, by micro-organisms, by weather. The amount and kind of growing stock is determined, probably, by *all* site factors, and more certainly by what happens to *be* there.

These are, I think some logical implications of the first basic assumption: the assumption of fixed productivity of forest land. The deficiency of theory here arises when we recognize such *non* ecological influences as irrigation, fertilization, artificial illumination, and various means of seeding, planting, thinning, weeding and other growing stock manipulations. These cultural influences, or other related ones, can be applied to the production of all five forest land outputs. The first assumption, then, must be rejected: site productivity is *not* fixed.

The second assumption upon which our multiple use philosophy rests is the assumption of an overwhelming demand for forest land outputs. A good expression of this assumption is this one:

The need for application of this multiple use concept to land management has increased because of limitations in space and land resources. So long as there was a surplus of resources, the problems of coordination were simple or nonexistent. However, demand for use of resources is becoming intense and there is little doubt that demands will continue to grow.²⁷

27. *Id.* at 2100-04.

The demands may indeed continue to grow, but they will be severely limited or perhaps eliminated by the availability of lower-cost *substitutes* for forest resources. Failure to account for this is a theoretical deficiency in the "overwhelming demand" assumption, and it is a critical deficiency at that. As we use more plastics and aluminum, learn how to recycle water and irrigate more efficiently, eat more fish, pork and poultry, and as we flock to Disneyland, I expect traditional demands might soften for wood, water, forage, wildlife, and forest recreation. Thus the second assumption must be rejected also: we cannot *assume* an overwhelming demand.

The third and final assumption of multiple use philosophy is that so-called "single use" management will be unable to meet anticipated demands. The following quote states this assumption rather well:

Land managers are constantly confronted with demands to segregate units within which single resource use would be given major consideration or exclusive priority. Such demands will increase as requirements for resources grow . . . the . . . forests and their resources are not adequate to fully [sic] satisfy these *individual* desires for space and other resources.²⁸

Clearly, the assumption of single-use-insufficiency rests on the other two assumptions—those of fixed productivity and overwhelming demand. And if they are invalid, this one disintegrates.

It is scarcely surprising that the deficiencies in theory spawn some difficulties in practice. (I speak here not particularly of agency difficulties nor particularly of industry difficulties. These are difficulties which the whole forestry profession must confront.)

One operational difficulty arises from the equation of what *can* be done with what *should* be: since we *can* grow beans between the rows of corn, we suppose that we *should*. This is nonsense, when we look at it closely, for it assumes—without question—that there is a good enough market for beans at least to cover production costs. Obviously, this could lead to a serious misallocation of production factors, and it certainly would if the bean market was poor.

Far more serious though, in terms of operational difficulties, is the expansion of that equation in a context of forest land management. I think we frequently seek multiplicity *simply for the sake of multiplicity*. We assume that the best use is the most varied use, and

28. *Id.*

if we get all five going, we are ecstatic. The danger here is that multiple use, as a means alleged to be necessary, substitutes for the unspecified end. The method becomes the objective, and we should maintain a strong differentiation. We must not confuse the one with the other.

In my opinion, multiple use approaches the threshold of hocus-pocus when it proposes that coordination of uses provides an aggregate benefit to people that somehow exceeds an un-coordinated sum. This idea presupposes that a picnicker gets something "extra" from knowing or sensing that logging or grazing, or wildlife browsing is going on, or has gone on, or will go on nearby. Or it presupposes that the logger or stockman gets a greater satisfaction from his knowledge of a nearby campground full of happy families enjoying the great coordinated outdoors. There is probably ample evidence that this euphoric state of affairs is rare, indeed.

The difficulty with an aggregate-exceeding-the-sum argument is contained in the following line of reasoning: "Combining uses . . . in a single unit usually requires compromise. The compromise is seldom . . . efficient for any one use: However, *the compromise and limitations are acceptable because of the greater total benefit.*"²⁹ The pertinent question to ask now is this: to *whom* are the limitations acceptable? To the logger facing the costs of coordination? To the camper who is screened from, but hemmed in by cutover land? Neither case is likely. *The limitations and compromises are acceptable only to the professional forester:* the "goodness" and propriety of multiple use exists far more in his mind than in the judgments of the forest users. The "product of multiplicity," in other words, may satisfy the producer. But it is the happy customer, not the satisfied producer, that keeps us in business. This is not the least of the operational difficulties.

Some others arise from the frantic emphasis on the minimization of conflict and on the maintenance of productivity. We would hope that no professional forester would *stimulate* conflict; on the contrary, conflicts can be minimized far more effectively by the land manager's sensitivity and clever innovation than they can by legislative or administrative decrees. Maintenance of productivity, on the other hand, is not an objective, but a precondition of any sort of management. When we establish the maintenance of productivity as a conspicuous goal we are confusing ends and means again. And by

29. *Id.* at 2100-03. (emphasis added.)

so doing, incidentally, we may fail to see the opportunities or the possible need to *enhance* productivity. We can fail to improve at the same time we are failing to impair.

Well, Pinchot once said, in a classic case of excluding the middle, "He who is not for forestry is against it."³⁰ This leaves precious little room for criticism, (and none at all, of course, for indifference).

But far from being indifferent here, I want to make it clear that I am neither advocating "single use" nor criticizing multiplicity *per se*. The one is no better a panacea than the other. And certainly there is nothing inherently or particularly wrong with multiplicity. The trouble lies in our failure to examine the assumptions that make multiplicity an explicit objective of management.

For multiplicity will take care of itself in any case. It will emerge where it is necessary and appropriate. Far more than our emotional and, I feel largely unnecessary emphasis on multiplicity, we need to adopt some better planning processes for the production of wild-land goods and services. We need to arrive at *tangible* management goals through perceptive analyses of needs and capacities, and a more rational system for choice.

So I criticize not multiplicity, but dogma. I advocate not singularity, but ingenuity. Hard, fresh, and creative thinking can produce sensible, appropriate management schemes that will have as much meaning for our public as they do for us.

We foresters, no less and probably not much more than other people, seek "touchstones," rules, principles and formulas. We would like to find a wholesale solution to the series of retail problems that we face, and the doctrine of multiple use, I think, has provided this for the profession: we use it to justify everything from wilderness areas to massive clearcuts, from wild rivers to power dams.

It is our assumption of dogma that poses the greatest operational difficulty, for it stifles—or makes unnecessary, really—the ability to innovate particularized policy responses to resource management problems. And when a doctrinaire management scheme obscures or obviates a thoughtful consideration of alternatives and a systematic decision process, the chance is just about random that a specific choice is a good one.

Obviously, we can ill afford poor decisions. But, quite aside from the adverse impact on public welfare or company good will (or

30. Quoted in S. T. Dana, *Forest and Range Policy*, p. 212. (New York: McGraw-Hill Book Company, Inc. 1956).

profits) that poor decisions produce, a doctrinaire management stance poses a distinct threat to the forestry profession.

In his brilliant essay entitled *The Image*, Michigan economist Kenneth E. Boulding speaks of "professional subcultures." "The doctor, the lawyer . . . even the beggarman and the thief all have their own jargon, their specialized means of communication, their own discourse, their own public image."³¹

Probably Professor Boulding would happily include foresters in his listing, with "multiple use" as one of our chief means of specialized—which is to say internalized—communication.

All professional subcultures, Boulding maintains, claim some sort of "knowledge monopoly" that sets them apart. I think foresters do, certainly. But "Fortunately for the progress of mankind," Boulding continues, "monopolies of knowledge are notoriously unstable . . . the frock-coated monopoly of the doctors . . . was sharply challenged by the rise of osteopathy, chiropractic, and even Christian Science. Health is a funny business . . . even the Universities are challenged by correspondence schools, business institutes, and the education programs of corporations."³²

Then Boulding concludes: Where "the rigidities of a professional subculture"³³ are incapable or unwilling to develop, modify, and change, other subcultures arise to challenge and perhaps to supercede.

That is the threat to the forestry profession posed by a sturdy, stolid, and steady invocation of "multiple use." We *can* plant our beans and corn to produce succotash. But if health is a funny business, open to substitute professions, so is resource management. We need to know not only what *can* be done, but what *should* be done, and we need to know when these are the same and when they are not. This calls for us to make some changes in our heartfelt approach to forest land management, and I think the profession is capable of making them.

31. K. E. Boulding, *The Image* 140 (Ann Arbor Paperbacks ed. 1964).

32. *Id.* at 141.

33. *Id.*