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Innovations in Forestry: Stewardship

In June of 1992, the U.S. Forest Service formally adopted a policy of ecosystem management (EM) for the 191 million acres of lands under its charge. This refocusing of management priorities came in recognition of the fact that the agency's role as trustee or steward of the national forest resource was being redefined by advances in science and changes in public perception. Ecosystem management is perhaps best defined by its objectives, which include:

- Retaining and restoring ecosystem structures, functions, and processes;
- Preserving and enhancing the ability of functioning ecosystems to produce increasingly rare, often unmarketed, products such as healthy watersheds and fisheries; wildlife habitat for sensitive, threatened, and endangered species; and varied recreation opportunities for the American public;
- Recognizing and managing for genetic diversity at the population, species, and landscape levels;
- Directing management activities toward scientifically defined future resource conditions, not just single species or outcomes;
- Integrating short, intermediate, and long term time frames into the planning process; and
- Respecting the role of people in ecosystems and in the land management process.

Ecosystem management is extremely complex. For example, in the inland West, where a significant number of forest types are adapted to low-intensity, high-frequency fire cycles, ecosystem management will be driven by fire ecology. Of particular concern are the many acres of these forest types that have attained abnormally high stand densities and fuel loads as a result of years of fire suppression and other management activities. For these forests, optimum ecosystem functioning requires that historic fire cycles be reestablished (fire cycle restoration). Accomplishing this goal will likely involve cutting and removing large numbers of small-diameter trees that contribute to the excess fuel loads and also act as fire ladders. Prescribed fire can then be used to re-initiate "natural" fire cycles without causing stand-replacing fire events.

Multi-objective ecosystem management projects, or stewardship projects, such as those centered around reforestation, fire ecology, noxious weed control, watershed restoration, and sensitive species protection are now a major focus of Forest Service land management activities. Funding for "Ecosystem Planning, Inventory, and Monitoring" alone exceeded \$130 million in FY 1997. Actual implementation of ecosystem management is funded directly through line items (FY 1997 figures) such as "forestland vegetation management" (\$85 million), "wildlife and fish habitat management" (\$86 million), and "hazardous fuel treatment" (approx. \$50 million), and through the use of certain permanently appropriated trust funds (discussed below).

Additionally, the national forest timber sale program contributes substantially to the funding and implementation of EM projects. Traditionally oriented toward efficient commodity extraction, partial satisfaction of the nation's demand for wood products, and continuous revenue return to the national treasury, the timber sale program is increasingly being used to accomplish the goals of ecosystem management. Since 1993, the proportion of total timber harvest volume being removed for timber commodity purposes has fallen from 71 to 52 percent, a direct result of agency attempts to use timber harvesting in projects such as the fire cycle restoration example given above. Although it is not possible to tally its EM-related expenditures exactly, the Forest Service's commitment to EM research, administration, and implementation is evident.

Ironically, as the Forest Service continues to emphasize EM objectives, it is discovering that traditional contracting mechanisms are not always adequate for facilitating those objectives. The authorities delegated to the Forest Service over the years, designed to enable the agency to manage the national forests, may now be in need of modification in order to further the job of managing for ecosystem health.

This pamphlet sets out the traditional administrative mechanisms available to the Forest Service for implementation of EM activities, describes their limitations, and discusses some new options being proposed to facilitate stewardship projects.

EXISTING STEWARDSHIP AUTHORITY

WORKING ASSUMPTIONS

Within the community of forest scientists, there is a general acceptance that EM represents the cutting edge of sustainable forestry. The science is young, however, and will change as it incorporates the new information constantly being generated by ecological research. Publicly and politically there are many skeptics, including a number of members of Congress who are instrumental in determining the Forest Service's annual budgets. Therefore, the future of EM as a management paradigm for the national forest system is far from certain, and the discussion which follows is necessarily based on several assumptions, including:

- Implementation of EM is desirable;
- Current legislative proposals to radically reform the Forest Service—either through reduction of the agency to custodial status or through a transfer of management authority to the states—will not be enacted; and
- The primary mission of the Forest Service has not been and will not be the generation of financial profit, but management projects will have to show some level of fiscal responsibility.

CURRENT AUTHORITY FOR STEWARDSHIP CONTRACTING

The Forest Service currently uses two traditional mechanisms to facilitate ecosystem management activities—the timber sale contract and the procurement, or service, contract. When either contract is used to achieve EM objectives, it is commonly referred to as a stewardship contract. Consistent with the EM objectives listed in the introduction above, stewardship contracts tend to be multi-task, multi-year, and end-result oriented. The benefits and limitations of using timber sale and service contracts as stewardship tools are discussed below.

THE TIMBER SALE CONTRACT

The national forest system was created by the Organic Administration Act of 1897. By declaring that one purpose of the system was "to furnish a continuous supply of timber for the use and necessity of the citizens of the United States," Congress

made explicit its intent that some level of timber harvest would occur within the system. The authority to sell timber in the national forests, originally defined by the 1897 Act, is currently set forth in the National Forest Management Act of 1976, 16 U.S.C. § 472 (NFMA).

Advantages

The timber sale contract is an agreement between the Forest Service and the timber purchaser under which the purchaser is given the right to cut, and the duty to remove and pay for, the specified timber. The timber sale contract is a complicated document that implicates a wide range of legal authorities and administrative procedures, including, but not limited to:

- The Forest and Rangeland Renewable Resources Planning Act of 1974 (16 U.S.C. § 1600), as amended by the NFMA, which governs the process by which national forest management plans are generated. Timber sales must be consistent with these plans;
- The NMFA, which sets constraints on the contract bidding process (36 C.F.R. § 223 et seq.);
- The National Environmental Policy Act of 1969 (42 U.S.C. § 4321), which requires agencies to analyze the physical, social, and economic effects associated with proposed plans and actions; and
- The Act of March 4, 1907 (16 U.S.C. § 499), which requires that all national forest revenues be deposited into the U.S. Treasury.

Over the years, the Forest Service has used the timber sale contract as an important tool in stewardship management. Timber harvests have been used to control insect epidemics and decrease fire hazards, and they have often provided incidental benefits such as creating habitat for edge-loving game species such as deer and wild turkey.

More importantly, timber sales have been used to fund a wide range of stewardship activities. Approximately 20 percent of the Forest Service's annual budget comes in the form of permanently appropriated trust funds and special accounts generated primarily by timber sale receipts and

deposits. These funds, the Knutson-Vandenberg (K-V), Brush Disposal (BD), and others, were created by legislation passed in the early 1900s. The K-V fund currently plays a significant role in the implementation of EM projects. Although originally restricted to replanting and other acts of restoration directly related to harvesting impacts, the NFMA authorized more discretion in the use of the K-V fund. Since 1976, it has financed a broad spectrum of watershed and wildlife enhancement projects on timber harvest sites, although on average, over half of the fund is still spent on reforestation.

Limitations

Designed specifically for the disposal of government property, the timber sale contract is not well suited to (and in some cases may not be legally used for) conducting stewardship activities that include timber harvesting as just one task among many. There are a number of law- and policy-based constraints on timber sales that affect their value as stewardship tools. These include:

Money and Finance Act of 1982

This act, 31 U.S.C. § 6303, requires all executive agencies to use a procurement (service) contract as the legal instrument when "the principal purpose of the instrument is to acquire . . . property or services for the direct benefit or use of the United States Government." Most EM projects should fall under the service definition of this act, especially any projects in areas of the forest deemed "physically, biologically, or economically unsuited to timber production." In these areas it is not possible to justify the service component as a secondary purpose of the contract.

"Ecosystems are defined not so much by the objects that they contain as by the processes that regulate them."

Professor Norman L. Christensen,
Duke University

EXISTING STEWARDSHIP AUTHORITY (continued)

"Prudent Operator" Policy

This policy is based on the National Forest Roads and Trails Act of 1964, 16 U.S.C. § 535, which provides that "where roads of a higher standard than that needed in the harvesting and removal of the timber and other products covered by the particular sale are to be constructed, the purchaser shall not be required to bear that part of the costs necessary to meet such higher standard . . ." The act specifically prohibits the Forest Service from requiring, without compensation, any quantity or quality of road construction beyond that which would be provided by a "prudent operator." Because the cost of necessary road construction is deducted from the price the contractor must pay for the timber, the intent of the law is to prevent the agency from "purchasing" services with the value of timber. By policy, the agency has expanded the constraints of the law to apply to all aspects of the timber sale contract.

K-V and BD Limitations

The restoration trust funds generated by timber sale receipts can only be expended on projects within the sale area from which they originated. A system wherein the major source of restoration funding is dependent on site-specific timber value rather than need cannot provide the flexibility that land managers need in deciding where and when restoration will take place. Under this system, forests with very little commercially valuable timber have chronically underfunded restoration trust budgets and all forests have an incentive to maximize the number and size of profitable timber sales.

Appraisal Policy

The NFMA imposes a general requirement that "trees, portions of trees, or forest products" be sold at "not less than appraised value." Current regulations (36 C.F.R. § 223) prescribe a market value appraisal system, in which the appraised rate is determined by subtracting operating costs (cutting, loading, transporting, etc.) from the market value of the material. Much, if not the majority, of needed EM work involves removing material which has been negatively or marginally valued, a situation due in part to the lack of competitive markets for small diameter logs.

Negatively valued material, by definition, will not be able to "pay its way out of the woods," and therefore will not attract any bids under a timber sale contract. And, because of the volatility of the market for small diameter saw-logs and logs not fit for milling lumber, many marginally valued timber sales will also fail to attract bids. Indeed, it is questionable whether the current appraisal process is appropriate for these types of products.

Under the fire cycle restoration example given above, the agency can design a timber sale contract to include all the small diameter timber that needs to be removed. If contractors can be enticed to bid on it (perhaps by including some more valuable, larger diameter material) the Forest Service can retain some of the receipts as K-V and BD funds for restoration work. However, the timber sale contract cannot include provisions for the use of prescribed fire, and it may not generate sufficient K-V and BD funds to prepare the site for the fire prescription.

SERVICE CONTRACTS

For the reasons discussed above, the commercial timber sale may not be the most effective tool for all EM projects involving the removal of forest products. For many such projects, and for all projects not involving the removal of products, some type of service contract will be needed. For example, a service contract can be used in a fire cycle restoration project to hire a logger to cut and transport marketable material to a log deck, from where the Forest Service can contract to sell it in a separate transaction. The contract can also provide—without concern for the prudent operator policy—for other vegetation manipulation needed to prepare the site for prescribed fire. The actual burning, if it is to be done by private fire technicians, can be accomplished with a service contract as well.

Advantages

Service contracts allow:

- Negatively valued material, or material valued at less than \$10,000, to be removed and "salvaged" (sold) by the contractor. (Forest Service Handbook 2409). Because the contractor's bid

incorporates the expected salvage value of the material, the dollar outlay by the government is thus reduced in what is basically a permissible form of "purchasing" services with timber values;

- Multiple services to be "bundled" into one administratively streamlined contract; and
- Greater flexibility in the use of end-result descriptions and prescriptions in contract specifications.

In the fire cycle restoration hypothetical, for example, the Forest Service can specify that a certain density of trees of a certain size be left standing on the site. The discretion as to which trees will make up that percentage can be left largely to the contractor, as he or she will have no financial ties to the material that is removed. The use of end results specifications allows the Forest Service to forego the process (generally required by the NFMA in a timber sale contract) of physically marking each tree that is to be removed, which may lead to significant administrative savings:

Limitations

There are a number of minor limitations associated with stewardship contracting under the service contract authority. They include:

- Increased financial risk: Use of a service contract to cut and transport timber increases the Forest Service's exposure to market fluctuations and log deterioration between logging and sale. In a timber sale contract, this risk is placed solely on the contractor; and
- Increased labor costs: Use of a service contract invokes Government Wage Rate acts. These acts, which require that market wages be paid to workers providing labor on government projects, may increase the cost of a given service. These acts do not apply to timber sale contractors.

There is a major obstacle to the service contract approach, however. The Money and Finance Act of 1982 requires that government agencies have appropriations sufficient for the entire contract term available *before* entering into service

DIRECTIONS FOR CHANGE

"Stewardship sales as a percentage of total timber sales have increased from 24% to 40% in the past five years."

Timber Sale Program Improvement Report,
FY 1997

contract agreements. To date the Congress has not been willing to adequately fund EM activities directly. If the backlog of needed EM work is to be addressed, requests for appropriations must increase dramatically under the current system, and funding will therefore become an even more serious problem.

Although constrained somewhat by the laws and policies discussed above, the Forest Service is authorized to design and let stewardship-type contracts. Without sufficient funding, however, this authority is largely meaningless. Furthering the goals of EM therefore requires innovation in fiscal management, either by the agency or Congress.

WORKING WITHIN THE SYSTEM

Innovation at the agency level involves searching for ways in which taxpayer dollars can be spent to further the goals of efficiency, efficacy, and social sustainability. This type of change requires adoption of new administrative policies or regulations. Some examples include:

- Relaxing the prudent operator policy;
- Leveraging funds through "partnerships in wildlife," challenge/cost-share programs, and cooperative agreements with other agencies and organizations (See Upper Swan-Condon project in *Proposed Applications*);
- Increasing the use of "Research and Demonstration" projects (NFMA § 472a(f)) and "Administrative Use" timber sales (36 C.F.R. § 223.2), which allow the agency to sell timber at appraised prices lower than would ordinarily be allowed; and
- Adopting regulations that allow the agency to consider criteria other than lowest bid in awarding timber sale contracts (e.g. "best value to govern-

ment" and criteria favoring small and/or local businesses). For further information on innovation within the system, see the Pinchot Institute's "Community Guide to Existing Authorities" in the *Resource Notes*.

NEW LEGISLATION

Overcoming budgetary limitations to stewardship contracting may require new legislation. The problem lies not only in the lack of sufficient appropriations, but in the appropriations process itself. The Forest Service budget is generally designed around a time frame of one fiscal year, and is built line item by line item. Stewardship projects, in contrast, are generally long term and tend to integrate many line items. While the system is designed to ensure maximum public control and accountability, it is not able to provide either a sufficient degree of management flexibility or ability to commit to long term projects.

While Congress has been reducing rather than expanding the agency's overall budget, it has, intermittently since the mid-1980's, authorized pilot projects for the demonstration of new administrative tools that have been proposed to alleviate some of the funding obstacles to EM. The latest pilot proposals awaiting congressional approval include requests for the following new authorities:

AUTHORITY TO RETAIN SOME PORTION OF FOREST PRODUCT RECEIPTS FOR USE ON STEWARDSHIP PROJECTS

This would involve the modification of existing funds (K-V or BD) or creation of a new revolving stewardship trust fund available for expenditure beyond the immediate project site. It would allow sales in areas of valuable timber or other material to fund EM projects on sparsely timbered or other "low-value" land. (See Winiger Ridge project in *Proposed Applications*)

AUTHORITY TO EXCHANGE GOODS FOR SERVICES

This would be a more liberal version of the authority to retain receipts. By allowing the contractor to offset operating costs with the value of material removed, the need for congressional appropriations to pay for stewardship contracts could be significantly reduced. (See Southwestern Stewardship Initiative in *Proposed Applications*)

AUTHORITY TO USE CONSERVATION CREDITS IN TIMBER SALES

Contract requirements beyond those necessary for the removal of timber could be valued as conservation credits and used by the contractor for future timber purchases. This would be less controversial than a direct exchange of goods for services. Although eliminated as of FY99, the Purchaser Road Credit System, created by the National Forest Roads and Trails Act of 1964, serves as a prototype for this type of conservation credit program. Conservation credits would work in conjunction with a relaxed prudent operator policy. (See Monroe Mountain Restoration project in *Proposed Applications*)

An additional authority, not currently before Congress, but often suggested by EM proponents, is:

AUTHORITY TO MOVE BUDGETED MONEY BETWEEN RELATED FUNCTIONS

For example, some money budgeted for fire suppression and preparedness—totaling over \$800 million in FY 1997, could be diverted to proactive fire cycle restoration projects in years with below average fire suppression needs. The obvious financial benefits of this strategy are exemplified by Forest Service Chief Dombeck's estimate that suppression of catastrophic wildfire requires an expenditure of \$400 to \$4,000 per acre, whereas prescribed burning requires only \$20 to \$50 per acre.



DIRECTIONS FOR CHANGE (continued)

PROPOSED APPLICATIONS

As indicated above, Congress has authorized a number of stewardship pilot applications on various national forests since 1981. In 1998, the Forest Service requested authority to implement another pilot series. Approval of the latest round would represent a significant step forward in the legislative process. Examples from the proposed list are briefed below.

Upper Swan-Condon, Flathead National Forest, MT

The Swan Lake Ranger District will implement a Desired Future Condition Plan by use of a service contract. The Swan Valley Ecosystem Management and Learning Center will assist with assessments, monitoring, record-keeping, and environmental education. Contact: Forest Service, Chuck Harris, Swan Lake Ranger District (406/837-7500).

Winiger Ridge Forest Health Restoration Project, Arapaho-Roosevelt National Forest, CO

The project will implement a multi-jurisdictional Landscape Management Action Plan. Various new administrative tools will be tested including expanded salvage rights and exchange of goods for services. Contact: Forest Service, Becky Parmenter, Boulder Ranger District (303/444-6600).

Southwestern Ecosystems Stewardship Initiative, San Juan National Forest, CO

The project will implement a community-based collaborative stewardship plan primarily in ponderosa pine forest. Expanded authorities have been requested for use of conservation credits, goods for services, and other administrative tools. Contact: Forest Service, Dennis Lynch (970/491-6333).

Monroe Mountain Restoration, Fishlake National Forest, UT

The project will attempt to manipulate the species composition of the forest by increasing the aspen component (a species which has, this century, decreased dramati-

cally in local abundance). The project will use alternative bidding procedures which favor small, local operators; expand the use of end-result specifications and salvage rights; and utilize conservation credits. Contact: Forest Service, Ron Sanden, Loa Ranger District (435/896-9233).

CONCERNS

Legislative change offers potential for resolving the funding problems associated with ecosystem management. However, a number of objections have been raised in response to legislative proposals. The concerns listed below, categorized as economic, ecological, or social, represent a wide variety of interest groups and individual viewpoints. These categories serve only to help organize the concerns; they are not meant to categorize the interest groups or individuals themselves.

ECONOMIC CONCERNS

As mentioned above in the *Working Assumptions*, political reality suggests that any new legislative authority will have to demonstrate some level of economic feasibility. Some of the more frequently voiced economic concerns are that:

- The new stewardship program will completely replace the existing timber sale program, further reducing the flow of high-value logs upon which many local communities depend;
- Stewardship projects will be too small in scale and too unpredictable in quantity to provide a flow of timber products sufficient for sustaining current employment levels; and
- The market for small logs and POL (products other than logs), which will play a key role in the financing of EM projects, will fail to attract necessary investments as a result of inadequate and non-guaranteed timber flows.

ECOLOGICAL CONCERNS

For many, the shift to EM represents a welcome move away from commodity extraction and towards a greater commitment to ecological sustainability. Legislative change to enable that shift, however, presents a number of concerns including that:

- Legislation will not prioritize the maintenance of ecosystem health or properly relegate all other management benefits (commodity production, employment opportunities, recreational enhancement, etc.) to "byproduct" status;
- Financial incentives, not ecological need, will continue to drive the determination of stewardship project priority;
- The partial circumvention of the appropriations process will unacceptably diminish the Forest Service's accountability to Congress and the public; and
- Legislation will enable implementation to outpace the advancement of the relatively new science of applied ecosystem management.

SOCIAL CONCERNS

A component integral to the success of EM is the appropriate emphasis on the role of local communities, a social sector often overlooked and underutilized in the land management process. Two main social concerns are that:

- Stewardship contracts offered by district forests will be awarded to large outside companies because small-scale local enterprises may be unable to perform the full spectra of tasks required by those contracts; and
- Legislation generally will fail to match the land management needs of the forests with the capacity and expertise of local small-scale contractors.



RESOURCE NOTES

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ADDITIONAL RESOURCES:

ECOSYSTEM MANAGEMENT:

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Daily, Gretchen C., ed., *Nature's Services: Societal Dependence on Natural Ecosystems*, Island Press, 1997.

The Journal of Forestry. Available from:

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<<http://www.safnet.org>>

Forest Health Update. Available from:

USDA Forest Service

<<http://www.fs.fed.us>>
<http://162.79.41.7/fh/fh_update/update97>

LEGISLATIVE UPDATES:

Washington Update. Available from:

National Association of State Foresters

444 North Capitol Street, Suite 540
Washington, DC 20001
Phone: 202/624-5415

<<http://sso.org/nasf/nasf.html>>

Public Lands News. Available from:

Resources Publishing Company

1010 Vermont Avenue, Suite 708
Washington, DC 20005
Phone: 202/638-7529

<<http://www.plnfpr.com>>

COMMUNITY INVOLVEMENT:

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