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Local and National Interests in Using Public Forests
Lessons from the Pacific Northwest
Part I: A Time for Scientists and Lawyers

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Lessons from the Pacific Northwest
Part I: A Time for Scientists and Lawyers

I. Focus of talk: recent development of federal forest policy in the spotted owl region of the Pacific Northwest. Specifically, I will focus on the Clinton administration's attempt to redirect federal forestry to comply more completely with major environmental laws and to reestablish the basis for timber production on the federal forests.

A. To break the "gridlock" surrounding management of Northwest Forests, President Clinton convened the Forest Summit in April, 1993 to allow citizens, forest industry, interest group representatives, Indian tribes, and scientists to present their hopes and dreams for the federal forests of the Northwest and their ideas for breaking the gridlock there. At the conclusion of the conference, Present Clinton commissioned a number of task forces including the Forest Ecosystem Management Assessment Team (FEMAT) composed of scientists with expertise in ecology, economics, and social science. FEMAT was given the objective of identifying management alternatives that "attain the greatest economic and social contributions from the forests" and also "meet the requirements of the applicable laws and regulations."

B. Key laws in the discussion: National Environmental Policy Act (NEPA), National Forest Management Act (NFMA), Endangered Species Act (ESA).

1) All have been around since the 1970s in something close to their current form, but their potential draconian effect on commodity production on federal land is only now being realized.

2) Their impact on federal forestry in the Northwest comes about, by and large, through the protection that the laws give to plant and animal diversity.

a) ESA--listings of threatened birds (spotted owls and marbled murrelets) and potential listings of salmon stocks.

b) NEPA--need to divulge the impact of federal actions on the habitat for plants and animals.

c) NFMA--need to protect the diversity of plants and animals on the National Forests. NFMA's regulations translate these protections into the requirement that habitat shall be managed to maintain viable populations of existing native and desired nonnative vertebrate species well distributed across the planning area.

3) The interjection of these laws and regulations into the forest management debate in the Northwest have largely come about as the result of lawsuits and threat of lawsuits by major environmental groups. Most so far, as you probably know, have focused on the northern spotted owl. These suits and the resulting rulings and injunctions have resulted in suspension of most new timber sales on federal land within the region of the northern spotted owl.

4) These rulings and injunctions have also led to the federal government bringing together groups of scientists and lawyers to help interpret the meaning of key phrases in these laws for the management of federal, state, and private land in the Pacific Northwest and to develop new plans that meet the laws.

a) Title of conference is "Who governs the public lands: Washington? The West? The community?". Based on recent

activity in the Northwest, this title might be expanded to include two other groups: scientists and lawyers.

b) Attempts to deal with these issues have spawned a new approach to planning the wildlands of the West: SWAT Teams of scientists who come together for limited amounts of time to recast the management of bioregions throughout the West. Called "science assessments" (Gordon, 1993), these efforts involved scientists addressing questions from outside science.

1) Recent science assessments in the Pacific Northwest started with the "Thomas Report", chartered by the Forest Service, BLM and other federal agencies, whose objective was to develop a "scientific credible plan for the northern spotted owl" (Thomas et. al. 1990) . This Team combined a regional reserve system on federal land in the owl region with management restrictions on intervening federal land.

2) Then came the "Gang-of-Four" Report, chartered by two committees of the House of Representatives, which expanded the focus to included a variety of representative plants and animals associated with old growth forests and streams (Johnson et. al 1991). This Team developed 40 choices that varied protection for habitats and resulting economic effects.

3) Then came the "SAT" Report, chartered by the Forest Service, BLM, and other agencies, which had the charter (among others) of developing a scientifically credible plan for all the plants and animals associated with old growth forests and streams (Thomas et. al. 1993). This Team developed a management plan for federal forests that chiefly added an expanded riparian system to the plan developed in the Thomas Report.

4) Most recently, the FEMAT Report, chartered

by the Clinton administration, revisited the analysis of these three studies to create 10 choices that varied in their ecological, economic, and social implications (Thomas and Raphael, ed. 1993). The Administration then used the report to craft a plan (Option 9) for the federal forests of the Northwest.

II. Recent science assessments of federal forest policy in the Pacific Northwest--characteristics and lessons from the process.

A. Characteristics of the four studies (Thomas Report, Gang-of-Four Report, SAT Report, FEMAT Report)

1) The work was done by a select group of scientists by-and-large isolated from the public, interest groups, and federal land managers.

2) The same core of scientists worked on most of the studies. As an example, Jack Ward Thomas led three of the efforts and was a member of the forth (FEMAT). I led the Gang-of-Four effort and was a member of the FEMAT Team.

3) The work was done very rapidly (3-6 months) considering the size of the area studied (24 million acres) and the complexity of the problem addressed

4) All worked on the premise that reserves where timber harvest was prohibited were a crucial element in protection of plant and animal diversity.

5) Economic effects were measured largely through employment associated with timber harvest and all tried, at least crudely, to minimize the impact on timber harvest of achieving the protection levels of the alternatives.

B. Lessons learned from these characteristics:

1) Exclusion of interest groups and land managers from the analysis helps protect the integrity of the "science based" assessment. This exclusion also reduces the acceptability of the results to these groups, ignores creative ideas for solving problems that might come from them, and reduces the chance that realistic, implementable choices are being developed. In addition, FEMAT exclusionary process was recently held in violation of the Federal Advisory Committee Act.

2) Including the same core of scientists in the different studies ensures some continuity of analysis and builds on collective knowledge and expertise from previous studies. It also can retard the development of creative solutions that come from wholly new looks at the problem.

3) Doing the work rapidly focus people's energy and concentration on the analysis and creates a sense of urgency. It also can legitimize shallow analysis and the leaving of large parts of the problem to be solved by some future group.

4) The focus on reserves as the heart of species protection eases the ability of scientists to describe the effects of choices since it largely eliminates the uncertainties that many scientists feel of what actions will actually take place under any set of goals or rules. This approach also precludes active management to achieve the protection objectives and assumes that these ecosystems can continue to function without intervention.

C. New bioregional studies are now ongoing in the Sierra Nevada and the upper Columbia River Basin. These new studies are trying to overcome the difficulties caused by the approaches taken in the Pacific Northwest, but the model for effectively doing science assessment is still in development.

III. Recent science assessments of federal forest policy in the Pacific Northwest--characteristics and lessons from the substance of the efforts. In this discussion, we will use the FEMAT Report as the case model. President Clinton said five principles should guide the FEMAT effort. We will go through the principles (which I have somewhat grouped and reordered), the issues they raised, their application in FEMAT, and the lessons we have learned from attempting to apply them (see the April issues of the Journal of Forestry for a more complete treatment of FEMAT).

A. Principles #2 and #3 (combined): as we craft a plan we need to protect the long-term health of our forests wildlife and waterways. ...our efforts must be, in so far as we are wise enough to know it, scientifically sound, ecologically credible, and legally responsible.

1) Approach taken in FEMAT: Protection was measured largely through risk assessment, done by panels of experts, of habitat viability for the hundreds of plants and animals associated with old growth forests and streams.

2) Results and issues: Relative to the species viability provisions in NFMA, the scientists wrestled with a number of key questions (Raphael and Marcot, 1993):

a) Which species count? The NFMA regulations refer to vertebrates but the law itself refers to diversity of plants and animals. In addition, most scientists would probably say that ecosystem health and stability depends on more than vertebrates. In FEMAT, all species were considered including 82 vertebrates, 102 species of mollusks, 124 vascular plants, 157 species of lichens, 527 species of fungi, and 106 species of bryophytes. Some of the species were grouped for evaluation. In addition 15 functional groups of arthropods were considered.

b) How much protection is needed to ensure viability? The authorizing letter to FEMAT called for the Team to "include alternatives that range from a medium to a very high probability of ensuring the viability of species", but included no guidance beyond that. In FEMAT, experts were asked to assess the probability of a series of habitat outcomes over the next 100 years for the different species mentioned above. One of these, closely tied to the NFMA regulations, was Outcome A: "habitat is of sufficient quality, distribution, and abundance to allow the species population to stabilize well distributed across federal lands." How high a probability of this outcome is needed to meet the law? 50%, 80%, 95%? The marginal costs of the moving from 80% to 95% can be large indeed. In FEMAT, a defacto standard of achieving at least 80% of outcome A was used as a measure of sufficient protection to meet the viability requirement.

c) How do you deal with the uncertainty of the estimates? Some of the species evaluate have not even been named yet. Knowledge of their life histories is often sketchy at best. With such enormous uncertainty about effects of actions on many species, how should we act while additional information is being gathered? Generally, there was a tendency to be very conservative, such as requiring large reserves, in the face of this uncertainty.

3) Lawyers worked with scientists to define threshold levels of protection that meet the law and then design a plan to achieve it. Much of this work centered on interpreting the "viable populations" clause in NFMA and much of it was done after FEMAT as the Record of Decision for the EIS was developed. At that time, the lawyers worked with the biologists to make marginal changes in the President's Plan (option 9) to move the protection of most species to at least the "80% of A" level. In the process, a great many rules and survey requirements, which will be need to be met before timber sales can forward, were

added to the Plan to satisfy the scientists.

B. Principle #4: plan should produce a predictable and sustainable level of timber sales and nontimber resources that will not degrade or destroy the environment.

1) Approach taken in FEMAT: work with resource professionals of the Forest Service and BLM to estimate sustainable harvest level and short-term sales level possible with the standards and guidelines under each alternative; attempt to maximize sustainable timber harvest given the ecological goals of each alternative

2) Results: Apparent overestimates of sustainable timber harvest possible under past plans make the possibility of future timber sale levels somewhat close to those of the past extremely difficult--even without additional species protection. All choices predict sustainable harvest levels much below those of the recent past--the Presidents Plan being about an 80% reduction. Very complex analysis and survey prescribed before harvest. Very few timber sales are being offered over one year after the plan was developed.

3) Lessons

a) The standards for management under the President's plan makes estimates of associated timber harvest levels very difficult---the Plan contains complex rules, some of which have not been tried out even on a trial basis. The Record of Decision added many new species survey requirements which further complicate implementation.

b) A predictable level is nearly impossible to achieve given the legal emphasis on protection rather than production. Federal timber harvest has become the random residual associated with achieving other goals for federal lands.

c) The current lack of timber sales is not solely due to legal injunctions--it is also due to FEMAT embracing a hierarchial planning process to determining desired management activities that largely remains to be invented: province planning, watershed planning, adaptive management areas, project planning. All call for innovative feasibility and efficiency analyzes yet we have few or no examples of what is intended or what will pass legal muster.

d) Managers often unable and perhaps unwilling to implement the scriblings of scientists. Since the managers were called on the carpet once, they are reluctant to have that happen again.

C. Principle #1: we must never forget the human and economic dimensions of these problems. Where sound management policies can preserve the health of forestlands, sales should go forward. Where this requirement cannot be met, we need to do our best to offer new economic opportunities for year-round, high wage, high-skill jobs.

1) Approach in FEMAT: measure employment effects largely though timber production; look briefly at nontimber employment; discuss restoration possibilities; put federal timber supply in the context of overall timber supply and overall regional economic growth.

2) Results. Under all alternatives considered, there will be a major contraction of employment opportunities from timber production. In the future, timber production from federal lands would be a minor component of timber supply in the Pacific Northwest. Regional economic growth, by and large, will no longer be dependent on federal timber supply, although individual communities remain highly dependent as do county receipts in some areas. Few alternatives were found to provide year-round, high-

wage jobs.

3) Lessons:

a) With the requirements for habitat protection written in such absolute form in NFMA and ESA, little room exists to consider economic and social concerns. The solution is driven, almost exclusively by what needs to be done to meet these requirements. Economic considerations are restricted to finding the most efficient (least cost) way to meet the protection requirements, not what level of protection should be provided.

b) Restoration work itself contributes little to alleviating the employment problems of displaced timber workers. Most jobs are for highly trained professionals and skilled specialists. Restoration work contributes to jobs largely through enabling commodity production to resume on recovered lands.

D. Principle #5: To achieve these goals, we will do our best...to make the federal government work together and for you.

1) Approach in FEMAT: set up a taskforce containing all major federal agencies having a major stake in the issues (FS, BLM, USPS, USFW, EPA), develop a common plan for the different federal ownerships, commit to coordinated planning.

2) Results: a common data base was created; a single set of standards and guidelines was developed for protection and management across all federal ownerships in the spotted owl region; a regional ecosystem office was set up.

3) Lessons

a) Collaboration on technical issues much easier than collaboration on forest policy as the agencies have

different charters defined by underlying laws

b) BLM and the Forest Service, two of the major land management agencies in the study, share NEPA and ESA, but only the Forest Service has NFMA. BLM management is guided by the O and C Act which has more of a economic and stability focus than does NFMA. In FEMAT, it was assumed that the NFMA viability clause applied to BLM also. Undoubtedly, that application will be tested in court in the near future.

c) Collaboration on key land management policies is at an embryonic stage. As an example, the agencies often share intermingled ownerships that will be under the same standards and guidelines in the President's Plan. Yet, they still calculate allowable cuts independently of each other.

IV. Discussion and conclusions from recent science assessments and their results

A. Measuring the success or failure of the President's Forest Plan. The traditional approach would be see whether the promises of commodity production (timber harvest) were fulfilled. The Clinton Administration, though, will use other measures given the small likelihood that substantial timber sales will be forthcoming in the next few years. Rather they will use other measures such as the production of knowledge (plans), protection of species, and restoration of ecosystem processes. Of course these are public goods rather than private goods and Congressional funding to support them is problematic. In the short term, the primary product from the National Forests will be knowledge gained through its planning processes. If history is any guide, budgetary support for this product will be weak at best.

B. Jobs vs the environment. At the end of the Forest Conference, President Clinton said "The most important thing we can do is to admit...that there are no simple or easy answers. This is not about choosing between jobs and the environment, but about recognizing the importance of both. " The results from FEMAT and other recent science assessments suggest that the decision was about choosing between jobs and environment. As long as that relationship exists or is perceived to exist, we will have a war in the West over use of natural resources. Some places have linked environmental protection to economic health: Tahoe, Willapa Bay, Washington. So far that goal has proven elusive for the Clinton administration in federal forest management in the Pacific Northwest.

C. Timber and jobs. The apparent decoupling of regional economic growth from federal timber harvest in the Pacific Northwest will have implications for the political landscape in which federal timber harvest decisions are made. Much of the past political energy to develop and then maintain timber harvest on federal land in the Northwest came from the perceived dependence of regional economic growth on that harvest. It is true that much of the future growth will be in urban and suburban areas near major transportation routes and that large portions of the rural Northwest outside these areas face economic decline. Still, FEMAT projections that the regional economy, as a whole, will grow even with much reduced federal harvests fundamentally changes the nature of the debate.

D. Private forest land and environmental protection. It may prove difficult, perhaps even counter productive, to focus solely on federal lands for species habitat protection as done in FEMAT and the other recent assessments.

1) While FEMAT's authorizing letter called for identification of needed nonfederal contributions to species

protection, the scientists choose not to undertake this task. Thus, we are faced with coming salmon listings in coastal Oregon, which contains intermingled federal and private land along with blocks of state land, without a coherent protection plan and with protection levels on federal land almost 10-fold those on private land. With the federal regulators using FEMAT riparian protection as their model as they talk to private landowners, it should be no surprise if private forest owners in coastal forests cut their forests rapidly in anticipation of draconian measures in the FEMAT mold.

2) Recent court decisions that potentially narrow the meaning of "take" under the Endangered Act on private land further complicate the private forest picture in the Northwest. With private lands of the Northwest expected to provide over 75% of the Region's timber harvest, the future of timber supply in the Region is problematic pending the outcome of the take definition.

3) Under the current legal structure, the greatest contribution of federal lands to timber supply may be to help provide a stable investment and regulatory climate for private forest land.

E. The role of timber harvest in federal forest management. Gifford Pinchot's original direction for the Forest Service emphasized the role of the National Forests in the economic development of the West through the harvest of wood, forage, and water. With the lessening importance of these outputs for regional economic development, new rationales for timber production on federal land will be needed for it to occur.

1) The emphasis of laws such as NFMA on environmental protection suggests that timber production and harvest must, in the long run, support environmental goals rather than work

against them.

2) The build-up of fuels in the forests of the West, especially the Interior West, has increased the demand that timber harvest be used as a tool to reduce the risk of catastrophic fire and insect outbreaks. The increasing settlement deep into the woods has added to the demand. In this situation, timber harvest can be an important tool in the protection of these forests. Doing so, though, will call for change in timber harvest practices--in both perception and reality.

a) In many cases, we will need a change from cutting the big trees to cutting the little ones, from cutting the most valuable trees to cutting the least valuable, from harvest methods that remove most of the trees on an acre to those that remove only a portion of the trees. The economic feasibility of such approaches on large areas remains to be seen.

b) Also, we will need a change in the belief by many members of the scientific community and the public that timber harvest equals forest destruction. This change will most likely come about when biologists and ecologists call for such harvest rather than foresters and engineers as has traditionally occurred.

F. The role of science assessment in charting the future of federal forest management. Recent science assessments have called for scientists to take over the specification of alternative futures for federal lands in the West. Recent experience suggests that a much more modest role for these assessments is needed.

1) In these assessments, scientists have been asked to both develop alternative futures that met some overall

goals and to assess the implications of these futures. Describing the implications of proposed actions is the special skill of scientists. They have no special skill, however, in outlining the alternatives that should be considered. We must find a way to involve the policy makers, managers, interest groups, and the public in the development of alternative futures. Scientists can then use their expertise to describe the consequences.

2) In these assessments, scientists are asked to describe the alternatives in sufficient detail so that specialists can evaluate ecological, economic, and social effects. These descriptions have emphasized the specification of permitted management actions more than management goals. Partly out of distrust that managers will, in fact, pay attention to these management goals, rule after rule has been added to restrict action. The net effect of these effort, as FEMAT demonstrates, is a myriad of rules and procedures that can easily overwhelm the most well intended manager. We must find a way to move back to the specification of goals from action rather than the action themselves or there is little hope that implementable plans can be developed. In addition, we must find a way for managers to reenter the process so that science assessments contribute to solving our forest management difficulties instead of contributing to them.

3) In these assessments, a fairly small group of scientists, of which I am one, have been asked by Congress or the agencies to do the assessments. Procedures to ensure "balance" among the scientists has been somewhat neglected under the guise of the urgency to complete the studies. We need to develop improved procedures for this selection to ensure that the range of scientific opinion is represented.

4) In these assessments, scientists often are

called upon to interpret key phrases in environmental laws such as the "viable populations" clause in NFMA. While many scientists are ready and eager to give their opinion on the meaning of these clauses, they soon get beyond their expertise. We need methodologies that provide for a better melding of the skills of scientists and lawyers in interpreting these key passages.

5) Most likely, science assessments will be with us for the next few years. It is time to develop and evaluate procedures for their use that will enable them to better help us think through new directions for the management of forests of the West.

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