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NEW IDEAS FOR TEACHING NATURAL RESOURCES MANAGEMENT: IMPLICATIONS OF, AND RESPONSE TO, THE FEDKIW PAPER

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ABSTRACT: The ideas presented in the paper and emerging book by John Fedkiw have some interesting implications for college-level education. Several questions are raised by his paper and the book. This response, or companion, paper discusses these questions and offers some suggestions for incorporating the ideas into coursework. The questions discussed are as follows: 1. How different are the ideas from those presented in contemporary college-level natural resources teaching? 2. Given that there are some important differences, how can these ideas be incorporated into higher education? Several alternatives appear, namely, as specific courses, as topics in ongoing courses, as examples, or as a reorientation of thinking across all courses. 3. Is this the time to argue for a specific forest history course? 4. What are the advantages and disadvantages of a functional versus a technical definition of forestry and forest management in the context of higher education? 5. What are the implications of the new ideas for courses in forestry for nonforestry majors, such as liberal arts or environmental studies majors? 6. What teaching methodologies might be appropriate here? The entire forestry profession has been struggling to define ecosystem management and to develop ways to teach it. Fedkiw might suggest that we do what we have been doing. He might argue that the USDA Forest Service has been practicing ecosystem management in an incremental fashion all along. Foresters responsible for it were a product of the forestry colleges. The paper and the presentation will attempt to be provocative and stimulate further discussion and thinking rather than offer precise solutions for higher education.

INTRODUCTION

Dr. John Fedkiw has presented some very interesting and potentially far-reaching, ideas in his paper and the forthcoming book on which these are based. We are intrigued by these ideas and offer a response by two long time forestry educators.

College education for the professions embodies different kinds of education. Within courses there are specific techniques, theories, principles, applications, and examples presented and examined. However, across courses and threading through curricula are the underlying philosophy, theory, and dogma that gives a particular profession its overall character and uniqueness. Finally, underlying the entire educational program are some basic understandings about the nature of and means to structure, the profession; in the present case the profession of forest management.

Fedkiw presents three ideas namely:

- a functional rather than a technical definition of forest management,

- the important learning experience accompanying management,
- the movement along a pathway toward a fully holistic approach to managing forest resources and their ecosystems.

These ideas have some particular relevance within specific courses, however, we see the biggest influence in how the overall forest curriculum is structured and presented, and the underlying definition of the profession. These ideas cannot be fully implemented without further discussion and elaboration. In addition, there are several critical points that need to be reexamined.

THE FUNCTIONAL DEFINITION IDEA

Fedkiw redefines forest management as Fitting and maintaining multiple uses and services into ecosystems according to (1) their capacity to support them (2) compatibility with other uses on the same or adjacent lands, and (3) in ways that assure the permanence of the uses, the resources, and their benefits for future generations. Remember

that Fedkiw's experience is primarily as an active observer and critic of public forest management, particularly the National Forests of the USDA Forest Service. Does this definition pertain to other lands? Can industry and private nonindustrial owners subscribe to this definition? Is the definition meant to be global, or pertain just to the U.S.? This definition is certainly in line with current thinking about landscape-level planning and management but why does the private owner have a responsibility across property lines? Or is this just a responsibility of the forester working on those lands regardless of employer? Given that forestry is becoming more inclusive in its mission, is this definition really or just a restatement of what is felt to be the current definition? The definition seems to carry with it the same problems as present definitions, namely, how to implement it. That is, do we view this definition as applying on each acre, each ownership, or across landscapes? This has been the age-old problem with other concepts such as sustainability, ecosystem management, and multiple-use management.

One implication of this new definition is that perhaps forestry education should be reoriented from its historic emphasis on science and planning to uses. Perhaps core courses should be timber harvesting, downhill and cross country skiing, camping and hiking, how to hunt more effectively, etc. It is increasingly true that the majority of forestry students come from urban areas, and even if from rural areas, have very little experience in actually participating in the "uses" of the forest. How can they manage without direct knowledge and experience in the uses for which they are managing? This same criticism is often leveled at counselors and the clergy, namely, how can they work to solve family problems if they have never been a parent, etc. Finally, it should be noted that the forestry profession, over its almost 100 years in this country, has often attempted to develop a definition that fits with the non-European conditions we have in America.

A second implication of this new definition for education is that we should teach management and not holistic overall planning. This flies in the face of much current rhetoric and discussion on ecosystem management. However, the emphasis on holistic planning gives the student the impression that this is actually how it is done, instilling a philosophy that is at variance with actual practice, as Fedkiw amply shows. On the other hand, the profession believes we should think holistically. How does this functional definition get us there?

Concentrating on uses rather than planning further raises the question as to whether or not forestry education has responsibility for teaching "What is the proper way of managing forests?" Getting away from this would change students' perceptions that there is something like "Good silviculture," or "Good economics" when in truth these are just subjects that can only be taken in the context of a particular situation. Nevertheless, we have all heard students, and professional foresters, use these terms in trying to justify their own actions or criticize those of others. However, if students

are not given some ethical background they will either fall back on their own pre-educational biases and perceptions, or have no sense of right or wrong.

Fedkiw argues that a clear functional definition would help clarify the debate on optimum levels and combination of uses and environmental services by focusing policymaking on uses and ends rather than on management, and we would add, process. We applaud this reason for a functional definition. Much, if not most, efforts by public foresters at present are aimed at process and completing forms, environmental impact forms, checking for endangered species, etc. not, we would argue, primarily for their effect on the use of the area but to comply with some regulation to forestall litigation and shutdown of their forest operations. However, it is precisely the process that can be attacked, not the direct use. It is the method of reaching the decision that is subject to question. This is a long held principle of litigation. If you do not like an action, you attack the process. Changing the definition will probably do little to change this. People will continue to attack process and American forest management will continue to be mired in court cases, appeals, injunctions, and stop-orders. Perhaps what is needed is a reorientation of education to give students the overall philosophy that rules and regulations are not procedural but substantive. This however, may require a change of philosophy by the educators themselves. How many of us feel the EIS is a necessary planning tool, or that the Endangered Species Act can be helpful as opposed to being just another hurdle to conquer in pursuit of what we "know is good forest management?"

Finally, Fedkiw suggests that perhaps the time has come for reconciling the conflicting perceptions and to recognize that the harvest and removal of trees from time to time is a normal and productive management practice in managed, healthy forests. But what is a healthy forest? We tend to agree with Fedkiw on this point but if so, then it raises a much more fundamental question, namely, to whom should forest management be taught? Indeed, a major conclusion we come to after studying these new ideas of John, is that we are teaching forestry to the wrong audience. Instead of concentrating on professional foresters we should be educating the public, special interest groups, the masses! (Hereafter we will use the term "the public" to include all persons other than students in resources management programs and professional forest managers.)

THE LEARNING EXPERIENCE IDEA

A very important point made by Fedkiw is that his examination of how forest management evolved over time gave him a different perspective on the current situation and what has happened. He further elaborates on the different philosophies surrounding public forest management over the last 100 years. The implication for education of professional forest managers, and the public also, is that we should teach

more history. Dr. Ernest Gould, long-time forest economist and educator at the Harvard Forest, often said that the most important thing we could give students is a sense of history. He advocated teaching many subjects, including forestry, from the viewpoint of history. We would do well to consider this in further discussion.

The example of predator control, and by implication fire control, is presented by Fedkiw to illustrate the changing views on proper forest management. However, John does not point out that while the public learned the first lesson very well, that predator control was good, foresters never used the same public relations and Madison-Avenue approach to preach the second lesson, namely, that predator control was not good! It is often the public's perception that affects forest management, not the professional forester's education. Foresters must be educated to deal with perceptions and values and the everpresent fickle and changing public. A small point, perhaps, but we wonder what John means when he refers to changes in management in favor of more desirable elk behavior?

"Learning to do it better" and "Adaptive management" are terms that are put forth in John's paper. These terms certainly apply in the dynamic field of natural resources management. However, a strong implication for college education in forest management is to emphasize for students that much of what they learn today will be outdated! Wow. This is a major "Catch-22". On the one hand we want students to be attentive and learn diligently. On the other hand we want to impress them that the world is constantly in a state of learning and that they will have to constantly learn. This conflict makes for very interesting arguments by students as to why they should work on any unpleasant or time-consuming assignments. How do we handle this? Perhaps the answer is to revise the entire curriculum from its present emphasis on concentrating on learning material, to, instead, a concentration on how to learn, how to acquire new learning, and how to put that new information into practice. This is quite a different approach to our current practices. We would like to know how the medical profession handles this, for here is an area that is rapidly evolving and changing. There has been talk and attempts to incorporate more problem-analysis and problem solving in education. However, given human nature, and that of forestry students, the students really seem to pay attention when some directly relevant technique or local example is discussed, in spite of the fact that the approach may be already outdated.

In this section of the paper Fedkiw offers an answer to the question we posed earlier, namely, whether or not forestry education should include anything on "What's proper?" He says that more explicit emphasis on the unending learning component of forest management can produce more perceptive and effective forest managers and also produce a more constructive framework for a collaborative stewardship approach versus the unending debate as to what constitutes the

proper use. Perhaps it will, in any case what harm is there is trying?

THE PATHWAY TOWARD A HOLISTIC APPROACH TO FOREST MANAGEMENT IDEA

Fedkiw contends that, "National forest management has always been on a pathway toward a fully holistic ecological approach to resource management—or ecosystem management.. He alleges that this has also been true of all professionally planned forest management generally "by virtue of the concern and emphasis of professionally trained foresters on sustaining wood flows and assuring waterflows." If these statements are true, why then have there been so many claims that foresters have not taken a holistic look? Is the emphasis on timber? We think not, for now foresters are being accused of not even sustaining the wood flow. We as foresters and educators may believe Fedkiw's statements but unless the students and the public also believe it we will continue to be mired in false claims and uphill fights with our many adversaries (including many students in our programs and especially in closely related environmental studies curricula.) Perhaps forestry was not on a pathway to holistic forest management but merely reacting to political and public pressures of the time—pressures that emphasized first this then that particular use or concern from fire control to water quality to wood flow to sustainability.

We do like and fully support Fedkiw's statement that, "It is impossible to achieve fully holistic management of forests and natural resources in one great leap since uses grow and change incrementally use-by-use, site-by-site, year-by-year, decade-after-decade." However, he goes on to say that "We do not have the science yet for fully holistic ecosystem management...nor do we have the institutional framework for managing...across multiple ownerships that constitute ecosystems" To this last statement we respond that we will never have the science fully in hand because, 1) new information and techniques will be constantly evolving, 2) changing uses and shifts in supply and demand will always occur, and 3) the very nature of the U.S. political and social structure favors private property ownership and many individual rights that work against strong centralized decision-making. Thus although we disagree with some of the contentions, we agree with the final statement that "The ecological approach to forest and resource management will continue to be incremental and adaptive as it has been in the past."

CONCLUSION

In conclusion, the ideas embodied in the paper and book by Dr. John Fedkiw are not specifics that can be incorporated into any one course for a "quick fix". Instead they are philosophical concepts that must be examined and discussed. To implement

them may require a departure from traditional biases held by many of us. The ideas also suggest much more education of the masses as to what forest management is-or is this just our imposition of our incorrect perceptions on a world that has already been subjected to many incorrect perceptions? Perhaps we are like Lewis Carroll's Cheshire Cat. When all else is removed there is nothing left but the smile—or is it a sardonic grin.