Social values in forest management: An adventure in teaching

by Thomas M. Beckley¹

ABSTRACT

Social values issues are becoming increasingly prominent in discussions of forest management and forest policy. This represents an evolution in thinking from the time, only a few decades ago, when a majority believed that virtually all resource management problems had technical, science-based solutions. This article first describes the ascendance of scientific forestry and its subsequent evolution into a more explicitly sociological endeavour. Specifically, it addresses the challenge of educating foresters to have the awareness, understanding, tools and ethical framework to deal with the complex social, political and values-based issues that permeate all of forestry.

Key words: foresters' education, professional socialization, social issues, ethics, teaching tools and strategies

RÉSUMÉ

Les enjeux reliés aux valeurs sociales sont de plus en plus importants dans les discussions portant sur l'aménagement forestier et les politiques forestières. Il s'agit d'une évolution de la pensée où, il y a seulement quelques décennies, la majorité des gens croyait que virtuellement tous les problèmes associés à l'aménagement des ressources avaient des solutions techniques fondées sur les sciences. Cet article décrit en premier lieu l'émergence de la foresterie scientifique et son évolution subséquente vers une entreprise plus explicitement sociologique. Plus particulièrement, cet article fait état du défi de former les forestiers de sorte qu'ils soient sensibilisés, qu'ils comprennent et qu'ils aient les outils et le cadre de travail pour faire face aux complexes enjeux sociaux et politiques ainsi qu'aux questions reliées aux valeurs qui imprègnent globalement la foresterie.

Mots clés : formation des forestiers, socialisation professionnelle, enjeux sociaux, éthique, outils et stratégies de formation

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Historical Context for Re-Introduction of Social Values in Forest Management

At the turn of the 20th century, the dawn of modern forest management in North America, there was an active debate regarding how best to manage our forests. Part of that debate entailed a deep values-based discussion about the moral goodness of various possible outcomes from a range of management scenarios. In

both Canada and the United States, the paradigm of sustained yield forestry through scientific management of forests won the day. Preservationists were given concessions in the form of a burgeoning national park movement, but the vast majority of public land was made available for economic use. The predominant values for forests were utilitarian and thus service to human needs was deemed to be the highest and best use of forests. In those early days, our understanding of ecosystem processes and ecological services was only beginning to emerge. The outdoor recreation revolution had not reached beyond the wealthiest class. Therefore, for many decades, the highest and best use for human needs meant producing jobs and wealth by creating forest products from mature trees.

Gifford Pinchot and Bernard Fernow were Progressive Era missionaries bent on converting society to their vision of scientific management of forests. Part of that vision entailed creating a professional cadre of foresters, whose job it was to implement modern and scientific forestry. In order to do this, a formal education system for foresters was created. In Canada, the University of Toronto established a school in 1907. The University of New Brunswick (UNB) created a program in the following year. The education system and ultimately the professional accreditation and organization of its graduates were cornerstones of the scientific management agenda. The history of forestry in the 20th century is largely a story of the rise of and ultimate transformation of scientific forestry to a more explicitly social and political endeavour. The beginning of that story, for the United States, is chronicled by Hays (1959) in his seminal work titled *Conservation and the Gospel of Efficiency*. Others have used religious analogies to capture the fervour and conviction with which foresters implemented their scientific management agenda (Nelson 1999). The profession and the ideology of scientific forestry are less well documented in Canada. Sandberg and Clancy (2000) provide a window to that evolution in their book, which describes the lives and careers of seven foresters in Nova Scotia over the 20th century. However, a similar pattern to that in the United States emerged in Canada, including the rise of bureaucratic, hierarchical management institutions, the professionalization of forestry and dramatic growth in numbers and enrolments in forestry educational institutions.

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The heyday for the forestry profession in North America was likely in the post-WWII years. Foresters, like many other professionals, enjoyed a tremendous amount of respect amongst the general citizenry. There was negligible dissent regarding the foresters' mission or their methods in the early years. As well, there was a tremendous amount of manpower and hardware available following the war effort. Forest management organizations became quasi-military organizations. They were structured on strict hierarchies. Kaufman's (1960) study of federal forest rangers in the U. S. documents how they were moved from location to location so that their loyalties would remain to the organization (the U.S. Forest Service) and its mission rather than to local communities to which they might become attached. With the military hardware and disciplined manpower that was the legacy of the war, a new war was waged against wildfire and damaging insects. Forests were transformed into rationalized, ultra-efficient fibre farms, with straight rows of single species of trees. Throughout the middle years of the century, university researchers were providing more information, more tools, and better technology with which to transform the forest, to order nature, and to produce more bounty from nature to improve human life. A similar revolution was occurring in agriculture at the same time. Faith in science and technology to increase production, to increase competitiveness, to invent new useful products, and to free human labourers from the monotony and danger of hard physical work, was widespread.

For a time, leaders in the forestry community effectively redefined political and social value issues inherent in forestry as technical problems. Professional foresters were to be above politics. According to Nelson (1999), the anti-democratic nature of the ideology of scientific management was a response to the very real conditions of corrupt governments (at various levels) of the late 19th century. Insofar as that corruption led to negative social and environmental outcomes on public land, the architects of scientific forest management were perhaps correct in implementing it at the time. Pinchot and others saw the independence of foresters from local, state and national politics as critical to the application of modern forestry. Whether one agrees or disagrees as to the appropriateness of the rational, bureaucratic, scientific management revolution at the time, in time this became the Achilles heel of the profession.

Successive generations of foresters were trained with the ideology of scientific management. A majority of foresters came to believe that their unique training and perspective put them in the best position, not only to implement forest management on the ground, but to also determine the broad social objectives for which forests ought to be managed. However, as I tell my students, any time the words "ought" and "should" enter the conversation, that conversation entails notions of goodness, badness, rightness and wrongness, and science is not well equipped to deal with these concepts. Foresters, like professionals in all other sorts of fields, bought into the cult of professionalism. Furthermore, they became focused on the technical aspects of management, they took the broad goals and objectives for granted and lost sight of the complex sociological nature of their mission. Richard Behan sounded one of the first warning cries that foresters were increasingly "out of touch" with the public that they were supposed to serve. His opinion piece, *The Myth of the Omnipotent Forester* (Behan 1966), at the dawn of the modern envi-

ronmental movement, caused a stir at the time, but clearly his advice was not heeded. The power and the status that foresters were afforded in the middle decades of the century were too precious to simply give up, especially to what foresters perceived as an uninformed public.

Clearly, these are broad and sweeping generalizations. Throughout the middle decades of the 20th century, there were scholars and forestry practitioners who attempted to keep values issues at the forefront of forest management and policy. Notable among these were Aldo Leopold and Marion Clawson. Clawson wrote extensively on the question that was the provocative title of one of his books, *Forests for whom and for what?* (Clawson 1984). The purpose of this brief history is not to castigate the profession of forestry. Rather, it is to explain why, at the turn of the 21st century, there is a need to re-discover the sociological and political nature of forestry. We need to create new models of management that balance scientific knowledge with principles of democratic participation and an evolving notion of public welfare. We need to learn how to create a meaningful dialogue between our professionally trained foresters and the rest of society (Egan 1996).

In the mid-1990s I heard an impassioned plea from a senior forest industry executive at a national forestry meeting. He acknowledged that social values change, and sometimes faster than our resource management paradigms and institutions change. He urged the audience to not judge too harshly the historic actions of our predecessors by the evaluative standards of our contemporary values. For the most part, he claimed, those predecessors were managing the forest according to the values of the day with the best information available. We can learn from experience of past generations, but we should not be too judgmental, lest we be judged for our actions today by values yet to be formed that will be shaped by knowledge not yet gained and experiences not yet lived.

The same speaker made another point that stayed with me, and this serves as a transition to the main theme of this paper, namely the role of forestry education in the creation, maintenance and evolution of forest management paradigms. He described a forestry course that he took in the late 1950s in which students were required to commit to memory a materials list, down to the pounds of nails, required for the construction of a logging camp of certain dimensions. No matter that remote, bush logging camps had not been built in that region for over a decade. The professor clung desperately to an old vision of what an appropriate forestry education entailed. While I was not an educator at the time that I heard that speech, that vision of antiquated knowledge transfer stayed with me. Now that I am a forestry educator, it makes me constantly re-evaluate the relevance of my course material, and the broader context and mission of forestry education. In my case, I interpret my role as helping prepare students to deal with an increasingly savvy, demanding, differentiated constellation of stakeholders and interest groups, as well as giving them the message that discussions of social values has an appropriate place in forestry.

My Path to the Classroom

In 1993, still eight months away from completing my doctoral work in sociology from the University of Wisconsin, I arrived in Alberta to help initiate a program in forest sociology for the federal forestry agency, then known as Forestry Canada. New jargon, such as Integrated Forest Management, Sustainable

Forest Management, Ecosystem Management, and Adaptive Management, was being bandied about on both sides of the 49th parallel. President Bill Clinton was personally engaged in trying to sort out “the forestry problem” in the Pacific Northwest. Forest certification was just about to be invented, and many Canadian initiatives, such as the Model Forest Programme and the Canadian Council of Forest Ministers (CCFM) Criteria and Indicators for the Sustainable Forest Management Process were in the planning stages. The Rio Earth Summit had just occurred and the Intergovernmental Panel on Forests was initiating a broad-based programme of events. All these programmes and activities made explicit mention of “social factors,” but there were less than a dozen non-economic social scientists in Canada for whom forestry was their major interest.

In those early days of my professional career, when I would hand out my business card with the title forest sociologist² I was greeted with scepticism and amusement, despite all the formal, high-level acknowledgement of social dimensions of forestry. Some people would smile and ask, “Do you talk to trees?” Others would furrow their brows and ask, “Sociology is people, right? What could that possibly have to do with forestry?” Fifteen years later, mills are closing right across the country with devastating impacts on communities; Aboriginal issues still loom large in forest management, sweeping reforms, largely due to social pressure, have swept Ontario, BC, and Quebec, demand for more and better public involvement in forest management and policy is evident in all jurisdictions, and social issues have become codified in the National Forest Strategy, in the CCFMs’ Forest Sustainability Criteria and Indicators, and a variety of forest certification standards. There is widespread discussion about the “social contract” in forest management and how it is becoming frayed. Today, I encounter fewer sideways glances and furrowed brows, but they continue to surface from time to time. Paradigmatic evolution often takes time.

In 2000, I left government to take on the challenge of educating future foresters about social dimensions of the practice of forestry. Some of the greatest sceptics of the prospects of “forest sociology” remain members of my fourth-year forest management class at the University of New Brunswick. The course I teach there is titled, Social Values in Forest Management.³

This paper is both a description of my approach to teaching social values, as well as a reflection on the evolution of our student body, their relationship to society, and new directions that our curriculum is taking. As well, it is evidence for how forestry is changing. In the past, some authors have been critical about how training for professional foresters and attitudes taken by professional foresters (in part due to their training), have been out of step with society (Egan 1996, Luckert 2006). While I agree with many of these criticisms, I primarily wish to address how my own efforts in the classroom are a direct

attempt to better prepare our graduates for the social and political realities that they will invariably confront in the workplace.

Paradigm Lost?: Red Suspenders and Impotent Foresters

Others have commented on the demise of a strict scientific management paradigm. In this paper, I am less concerned with the timing of the change, or evidence for it, and more concerned with the implications for forestry education. Much of the criticism of the way foresters have been trained, and for how they have tried to prop up their role as “professional experts” through organizing and lobbying for right-to-practice legislation, has come from individuals trained as foresters themselves.

In 1996, Andrew Egan published a paper titled, *Snappin’ them red suspenders: Introducing forestry students to the rest of society*. I read this paper before taking on the challenge of being a non-forester, teaching social topics to foresters. The paper was written in the U.S. context, but I believe most of the insights are true for Canada as well. When Egan wrote the piece, much of the forestry industry in the U.S. was undergoing a similar crisis to the one in Canada today. The economic viability of many operations was becoming marginal. There was a growing public debate over the best use of the nation’s forests, and amenity and other non-timber values (or social values) were surging in their importance and profile. In the Pacific Northwest, the entire timber economy was on the brink of collapse (we were told) due to wood supply issues related to federal harvest reductions intended to protect spotted owl habitat. But many observers correctly pointed out that the spotted owl was just a proxy or a scapegoat that allowed advocates of a different vision for forest management to lobby government under the guise of scientific management. Under the Clinton administration, forest management became a national issue.

As the new paradigm was emerging, Egan challenged and questioned the degree to which foresters were at the vanguard of these changes. In fact, he suggested that foresters, if not openly resistant to change, were ill-equipped to handle it because as public scrutiny of the profession and its activities increased, the job of “forester” became less a technical endeavour and more a matter of arbitration across a broad spectrum of stakeholders and interests. Egan quoted Clark and Stankey’s (1991) suggestion that the real challenge for foresters in these emerging paradigms was that, “ultimately questions of social choice and value judgements,” were at stake. Technical solutions were no longer always appropriate or relevant. Indeed, social pressures were emerging in part due to problems with those technical solutions, such as monoculture plantations and various pesticide spray programs.

Egan (1996) was critical of out-dated curricula that did a fine job of technical training, but that failed to recognize and react to the rapidly changing social and political context of forestry. Another aspect of the problem is that forestry faculties are often “ghettoes” within their respective universities. Curricula are designed, approved and accredited by professional organizations that have little concern or interest in attracting non-foresters to forestry courses, and which are designed to create a certain type of forester. And while some service courses are required in science, and a few electives are

²While the term “forest sociologist” is not common in my profession (people prefer the broader “natural resource sociologist” or “environmental sociologist”), I had been hired by a group of forest economists at a federal department then known as Forestry Canada, so it only seemed natural to describe myself with commensurate terminology.

³The first year I co-taught it with Dr. Dave MacLean. The subsequent five years, I co-taught it with Dr. Van Lantz.

required, forestry students can go through their entire program without talking to students outside their discipline. The social disconnect that Egan describes between foresters and the rest of society is real, it begins at a young age, and it is perpetuated by our accredited "professional" system of education.

More recently, Luckert (2006) has offered a serious critique that picks up on Egan's theme; however, Luckert's critique is levelled at the profession of forestry more broadly, not just at forestry education. He takes as his starting point Richard Behan's seminal work. Behan argued in 1966 that foresters had largely misinterpreted their mission. Most foresters felt that their professional imperative was to "manage for the good of the land," and that their professional credentials placed them in a privileged position to determine what "the good of the land" meant in terms of specific management practices. While Behan's article caused quite a lot of reflection and discussion in its day, Luckert suggests that the main message has not been widely accepted within the professional ranks of foresters. That message is that society should determine the objectives for forest management, and that foresters are collectively responsible for helping society achieve those objectives. In other words, society should determine the ends of forest management, while foresters should explain and implement the means to achieve those ends. In some cases foresters have the unenviable task of explaining why some of society's preferences may not be achievable, due to incompatible objectives on a given piece of land, or due to biophysical limitations of the land. Nevertheless, in a democratic society, the broad definitions of goals and outcomes should be a social process involving the full spectrum of social actors and public opinion. Democracy is messy, inefficient and contentious, however, and an anathema to foresters' traditional values and belief in scientific forestry. So rather than trying to embrace a new role as consensus builder, foresters have more frequently tried to circle the wagons.

Luckert does not target university forestry education directly in his critique, but he makes implicit and explicit connections regarding why foresters may be out of step with society. With respect to forestry education, he cites data showing precipitous enrolment declines since the late 1990s as evidence that the relevance and attractiveness of forestry as a profession may be on the wane, at least in the minds of would-be students who are voting with their feet and enrolling in other faculties. Secondly, he is critical of the lack of flexibility of professional accreditation requirements imposed upon universities by organizations such as the Canadian Forestry Accreditation Board (CFAB) and the Society of American Foresters. These accreditation bodies in the U.S. and Canada are closely tied to Registered Professional Forestry associations and they tend to reproduce tradition, not innovation in university curricula.

Luckert's main argument is that if foresters do not engage in a more open and honest dialogue with the public, the public will simply bypass them. And if the public uses other means than employing registered professional foresters to deliver the suite of goods and services they desire from the forest, then Luckert's reference to impotent foresters is apt. In the U.S., interest groups are bypassing foresters by frequently going to court to achieve their ends. In such cases, a judge, not foresters in dialogue with the public, ultimately decides what is in the best interest of society. In such a process, foresters become simply another "expert witness" in a judicial determi-

nation of management objectives. Foresters, of course, are also responsible for implementing whatever is decided. But most would agree that this is a poor (and expensive) way to establish management priorities and define desired forest outcomes.

Clearly, moving from one paradigm to another is not a smooth or painless process. Many of these matters challenge professional identities, they have the potential to drastically change work duties and expectations, and they strike at the heart of deeply held assumptions and values about what is the right thing to do with our forests. But that is exactly the point. "What's the right thing to do" is a values issue. Science can provide information to help make that decision, but in the end, it is a values-based proposition and should be recognized as such. If foresters and the rest of society are not on the same page, as Egan and Luckert suggest, then collectively, we have some work to do. Part of my work in that regard, I believe, comes in the classroom.

Goals and Objectives in Teaching Social Values

With this backdrop and context, I will describe my approach, methods, and strategies for instructing forestry students in the subject of social values. Without question, I have learned and grown as a person (and hopefully improved as an educator) through the process of teaching this course seven times. These days, I make it very clear from the beginning of class that my intent is not to instill the students with any particular set of values. Nor do I judge students or evaluate them based on the personal values that they hold. Rather I encourage them to explore their own values and learn to respect and listen to those of others. Initially, I tried to subsume or hide my own opinions. But given that I was asking the students to be forthcoming about their own values and opinions, it was awkward and disingenuous of me to pretend that I did not have views on the topics we discuss in class. As well, more than one student, while acknowledging that I was trying to cloak my own values, told me that I was not doing so very effectively. I therefore changed tactics, and while I do not use the lectern as a pulpit, I am free with my own opinions but careful to let them know that they are encouraged to disagree with me. Their marks are a reflection of their ability to reason, think critically and effectively articulate their own values, not the degree to which they restate my own views. I am also quite willing to deviate from my own value positions in order to play devil's advocate; so many students remain sufficiently confused regarding my actual stances on issues.

The formal objectives listed in the syllabus are as follows:

- To review and discuss the social values that underlay forest policy and practice.
- To review stakeholder values and present students with a range of stakeholder views of forestry issues.
- To present and discuss current issues in forest policy and practice.
- To encourage self-reflection on values and ethical aspects of the practice of forestry.
- To enhance students' writing and critical reasoning skills.

Critical Reasoning

In our current curriculum the majority of students take the Social Values course in the winter term of their fourth year. When we had a five-year program, this still enabled them to assimilate some of the material and relate it to other work in

their final year. We have recently streamlined our program to allow for most students to graduate in four years. This means that many of them do not have much exposure to social values content (or ethics) until the semester before they graduate. Given the reality that I get my first contact with students at the end of their studies, I encourage them to take a critical look back at their own educations, their own values, how those values were shaped and formed, including the socialization that occurs during their university training.

Part of this critical reflection involves encouraging them to consider the implications of the language they use and the value-loaded nature of some common forestry terms. We talk about the values perspectives embedded in terms such as “pest,” “decadent” and “over-mature.” Most admit that they would never call their grandparents over-mature, no matter how old they become. On a quiz on the first day, they are asked to define two forest pests, but the next question is to imagine themselves as a spruce budworm (*Choristoneura fumiferana* [Clem.]) and to again define two forest pests. The point is to quickly establish that these common terms, which they come to use as a sort of “accepted and uncritical forestry jargon” are imbued with many layers of meaning that are not always obvious to non-foresters. Degrees of implied “goodness” and “badness” are associated with these terms, and many suggest action (e.g., if something is a pest, you need to control it).

That first-day quiz also asks them to identify Bernard Fernow, Gifford Pinchot, John Muir and Aldo Leopold. A few can identify Leopold, but the rest of the pantheon of environment thought and forest management in North America is unknown to them. Sadly (and in spite of efforts of other professors to illuminate them on these personalities), they go through their entire program with only a faint idea of the history and cultural context and the location and origins of the poles of the great debates in forest management and policy in North America.

Values-Based Self-Reflection

The first part of the course is dedicated to giving the students a vocabulary through which they may come to understand the phenomenon of social values and to be able to recognize the difference between instrumental and intrinsic or non-instrumental values. I use Bengston and Xu's (1995) typology to describe various categories of forest values (Fig. 1).

The students' first assignment (also given the first day) is to respond to a small survey through our web-based course management system (currently Blackboard, formerly WebCT). I ask them why they entered forestry, what they do for summer work, where they anticipate working after graduation. I also ask (thanks to Peter Duinker for the idea), the location of their favourite hectare of forest. Finally, I ask them “What is the Single Best Thing about forests?” Their responses to this last question become data a few weeks later in the course. Without disclosing anyone's identity, I project all the responses, one-by-one, on screen at the front of the class. We collectively discuss and reach a quick, general consensus on how to categorize the values according to Bengston and Xu's typology. Each year, the students are dumbfounded when they see that the vast majority of students identify moral/spiritual values as the most important. Economic values always come in dead last. In essence, I “out” the students, who in an open forum within the often macho and outwardly

Fig. 1. Classification of forest values according to Bengston and Xu (1995).

utilitarian-focused culture of the Forestry Faculty, would be very unlikely to express some of the things that they include in the response to the anonymous e-mail survey. Some have actually complained that I resort to trickery in order to get them to express these values but the experience of being “outed” all at the same time gives them an appreciation that their mostly deeply held values, and ones they may not feel comfortable sharing because they are too “touchy-feely,” are indeed shared by a majority of their peers. The overwhelming selection of non-instrumental aspects of forests as being the best thing about forests also leads to an interesting discussion about whether such values are explicitly identified as management objectives or whether they need to be.

Socialization and Communication

The second assignment also pushes the students a bit outside their comfort zone, but it introduces some fun to the class. On the second day of class I present the concept of socialization and we discuss various influences and sources of social values—our parents, our peers, school, the media, the church, etc. I conclude that class with “story time,” which I begin by reading Dr. Seuss' classic, *The Lorax* (Geisel 1971). This colourful and innocent-looking children's book is one of the most strident and passionate environmental treatises I know (and it is also really fun to read out loud). I also read them and show them on video, two versions of Paul Bunyan. In the first, which was read to me as a child in the early '60s, Paul happily and faithfully extirpates several noxious species of fauna, and takes great pride in levelling the forests of the Dakotas in a massive landscape conversion (Emberley 1963). I follow this reading by showing a segment of video, produced in the 1990s, that shows Paul engaged in all those same exploits, but ending up completely remorseful for what he has done. The video concludes with Paul going off to Canada, vowing to “plant a billion trees, one for every one he cut down.”

Following the in-class story time, I inform the students that their next assignment is to write a children's story of their own that has an explicit values orientation and that is intended to “sway” or “appeal” to young minds and to instil or reinforce in them a particular value perspective. They struggle with it, pull their hair out. Some have told me it is the hardest assignment they have ever done in university. Many struggle with the fact that they are not supposed to remain “objective” and that the assignment does not appeal to nor tap in to science as much as it does emotions, visual stimuli, and values. The results are amazing and often hilarious. The assignment brings home the points that; a) values are pre-

dominantly formed at an early age, b) we are subject to subtle and not so subtle environmentally related values claims all the time through a variety of media, and c) that it is perfectly legitimate to actively participate in the socialization of others and that, in fact, we do so all the time, though often unconsciously.

Skill Development

Forestry is a profession that involves a number of technical skills. Students do not expect "Social Values" to be a skills course, but I consider it as such. In particular, I focus on developing students' oral and written communication skills. I do this all in the context of reading, writing and discussing contemporary ethical and values-based forest or environmental issues. Ten percent of the students' total course mark is determined by their class participation. In my first few years, class size was over 75, which was a major deterrent for many to ever utter a word in class. Some years are better than others in terms of broad oral participation in class. Initially, in my "new teacher zeal," I felt compelled to try to get every single student to speak in class. I soon realized this goal was about as realistic as swimming upstream during a log drive. However, the availability of online participation gives everyone a chance to participate, regardless of their shyness. As well, written submissions are often more thoughtful and clearly articulated. For this reason, I allow students to achieve up to 70% of the class participation mark by contributing by writing reflective comments through web-based course management tools. We rarely lack for lively class discussion. Some students routinely participate while others listen and then have their say online. The online forum ensures that the discussion can continue for days after a given lecture is over. In a given year, I usually receive between 200 and 400 discussion submissions on topics ranging from what one would expect, professional ethics, moral positions on clearcutting, forest certification, wood supply debates, forest communities, but also including such topics as the seal hunt, gun control, the nature of democracy, and global warming.

To be perfectly frank, the writing skills of our undergraduates leave quite a bit to be desired. Social Values is a fourth-year course, sometimes taken by second- or third-year students, but younger students notwithstanding, I was appalled at the rudimentary level of written communication ability when I began teaching. Part of the problem is residual from deficiencies in primary and secondary education. But some is due to a feeling amongst the students that writing is not a particularly relevant skill to forestry. They envision themselves out in the field after graduation, supervising harvesting crews, laying out cutblocks or research plots with a hand-held GPS unit, collecting data, doing inventory work, and so on. They do not imagine themselves writing policy briefs or even having to pay much attention to the written portions of forest management plans. In their minds, the important parts of plans are the maps, the growth and yield tables, and the wood supply analysis.

To address this writing deficiency, I make them write a major paper. I have no illusions that this one assignment will make them proficient writers, but we have structured the assignment in such a way that they get practice not only in writing, but in rewriting and editing as well. They are able to write on any topic that they choose that relates to social val-

ues, policy, forestry or the environment. For many, it is the first time they have had such leeway in an assignment and many are perplexed and dismayed at the freedom (and responsibility) that comes with finding and researching a topic. For those who have a hard time choosing, I ask them what they are passionate about and what got them interested in forestry in the first place.

The re-write and the peer reviews are the real value-added aspects of the major paper. For most, it is the first time they have ever had to revisit anything they have written in university. To understand written communication at a deeper level still, the students do a blind peer review of another student's work. They are often shocked at the sloppiness and lack of attention to detail exhibited by their peers. From the Teaching Assistant, the peer reviewer, and me the students end up with three marked versions of their original text. The majority of points for the full assignment are allocated to the first copy as incentive to "get it right the first time." I tell them not to consider it a "first draft" and to add yet more incentive, students are exempt from the rewrite if they average 90% or better on the first try. The students get additional marks for the quality of their re-written, final draft. The students are also evaluated on the thoroughness and thoughtfulness of their peer reviews.

Stakeholder Values and Views

A powerful tool to help students understand the broad spectrum of values perspectives is to expose them to many of these, first hand. The quality of the presentations varies, but they are nearly always provocative. I encourage students to examine the extent to which presenters make claims based on scientific rationales, versus moral arguments, financial considerations, and the like. Our list of guest speakers over the years has ranged from environmentalists, documentary filmmakers (and their subjects), government employees with direct experience in public involvement, Aboriginal people, mayors of forest-dependent communities, woodlands managers for Crown licenses, general managers of woodlot owner organizations, and more.

To illustrate that the range of forestry issues, stakeholders and values is much broader than our local or regional or national context, I recently introduced International Day(s) in the course. In the process of various reviews (CFAB and a university-mandated quality assurance review), it became clear to me that as much as I was trying to expand the horizons of my students to include the social realm, I was failing in terms of exposure to international forestry issues. We have another course that annually takes a small group of students to one foreign country, but that reaches a limited number of students and covers only one other cultural context. Since the world literally comes to our doorstep in the form of graduate students, I decided to try to tap that resource in order to present International Forestry to the students. The experiment has been an unqualified success. The graduate students are given an opportunity to practise their oral presentation skills. For many, English is not their first language. The setting of the undergraduate class is fairly non-threatening. There is no judgment by peers and the content is so foreign to the undergraduate students in the course that they really cannot challenge the presenters. As well, the instruction that I give to presenters is to provide a broad overview of the forest estate, its

ownership, who manages it, how things are different from Canada, and what social values are primary drivers of forest management and policy.

The class has had presenters from Ireland (where reforestation is a priority, but many oppose it), Costa Rica (where woodlot owners are sometimes paid to refrain from harvesting their trees), Poland (which completely dispels the students' notion that we do "intensive forest management in New Brunswick"), South Africa (where the presenter emphatically maintained that policy makers should eradicate erroneously planted eucalypt species in a dry environment), as well as Taiwan, China, Sweden, and the UK. The presentations do a remarkable job of illustrating the tremendous diversity of forests, forest values, forest policy, and cultural interpretations of "good" and "bad" management practices around the globe.

Ethical Reflection

One of the ways to make social values real to the students is to bring it down from the sometimes abstract level of forest policy or stakeholder interests to simple, realistic ethical issues that they might have already confronted in summer jobs or that they could easily imagine confronting in an entry level job. Each year we have a series of lectures on ethics during which we talk about to whom or to what we feel ethical obligations, how collectively our "moral community" has expanded dramatically over the past couple of centuries⁴, and how to maintain the practice of ethical reflection in one's career.

A significant amount of time in the ethics unit is spent devoted to reviewing and discussing ethical scenarios in small groups. I use different scenarios in different years. I try to make them relevant, believable, and I often draw on students' own experiences. Naturally, the discussion about ethical situations spills over into the online conversation as well. I give brief consideration to professional ethics, the code of ethics and how it has evolved and recent debates regarding whether professional ethical responsibilities lie primarily to society, to the land, to one's employer or to someone or something else.

Contemporary Issues

A good portion of class time is spent on specific, single-issue topics that are current, relevant to forest management, and that deal with social, economic or policy issues. Some of the topics we have covered over the years include the softwood lumber dispute, Aboriginal forest values and treaty rights, forest certification, the wood supply debate in New Brunswick, protected areas policy debates, and community forestry. These issues change a bit from year to year. This year I am going to present a lecture on a public opinion survey I have recently conducted with colleagues. I also had the students fill out the survey so that we can compare their own results to the general public to test the degree to which Andrew Egan's

assertions hold water in a Canadian context 12 years after he wrote his article. I try to choose topics that are timely, that are in the news, and that we can discuss through a "values lens," and a sociological lens, considering who wins, who loses, what resources various groups bring to bear as they engage in these policy debates.

For many of these theme lectures, I also use guest speakers. We had the Chair of the Legislative Select Committee on Wood Supply give a presentation on the work of that bi-partisan legislative committee in one class. We had a senior policy analyst who was deeply involved in the provincial protected areas strategy present in another. We had a presentation by the woodlands manager of a Crown licence shortly after his mill was closed. Most students appreciate hearing first-hand about these complex real-world issues. The fact that they are messy, political, and fraught with discussions of "good" and "bad" and "shoulds" and "oughts" means that they are squarely in the realm of values. In this course, we do not shy away from that fact or pretend that technical solutions will be adequate to address these problems. Rather, we discuss what other sorts of tools and processes might be required to address such deep-seated, values-based conflict. I also emphasize that such conflict is a hallmark of democratic systems and that our goal should be to manage it, but not eliminate it.

Future Directions

This year is likely the last time I will teach "Social Values in Forest Management." The faculty and our curriculum are evolving and the content of the current course is going to be dispersed among a few new course offerings. The Social Values course itself underwent an interesting evolution before my arrival at UNB. It used to be a straight policy course. Students were made to memorize dates, names of Acts and the various intricacies of laws on the books that would affect their lives as practising foresters and forest engineers. By the time I arrived at UNB in 2000, that had already changed and the course was more of a contemporary topics course, with a small dose of policy and more emphasis on changing social values that undergird policy evolution and change.

Next year, another evolution will occur. It has been a challenge to fit all I feel the students need into one course. However, as the complement of social science faculty has grown, we will soon be offering considerably more of this type of content. In the fall of 2008, I will be helping to coordinate a first-year course titled, "Resource management issues, ethics, and communication." Many of the tools and some of the subjects will be imported from the current upper-level social values course. It will be exciting to attempt to develop students' critical thinking skills as they begin their program, rather than only being able to encourage them to reflect on it at the end. As well, we will work on developing their writing skills by exposing them to a range of values and ethical issues in resource use and resource management and having them react to those issues in written essays.

I will also teach a course titled, "Social and Cultural Systems," that most students will take in the first or second year. This course will allow me to explore, in much greater detail, the characteristics of social systems within which forestry and other resource exploitation occurs. So, we will examine the "isms," feudalism, the roots and functioning of capitalism, the

⁴As recently as two centuries ago, African Americans were property in the United States, and therefore not included in the moral community of the white men who had all the power. More recently women, children, the land, our pets, endangered species, and perhaps now even ecosystems have entered our society's moral community and thus are afforded rights.

various forms of socialism, and environmentalism as a social movement. We will look at international development, globalization, private property rights, and other macro forces that shape production and consumption and how we interact with the physical environment.

These new course offerings coincide with a new degree program within our faculty, a Bachelors of Science in Environment and Natural Resources, with majors in Environmental Management, Water Resource Management, and Wildlife Conservation. Those majors also require a resource economics course, a separate Natural Resource Management, Institutions, Policy and Governance course, and a second semester of resource management issues, ethics and communications. The hope is that the new programmes will diversify our student body considerably. If we succeed, that student body will better reflect society. Our historical bias toward rural, male, Atlantic Canadian students will be balanced with more women, more students with urban backgrounds, and hopefully we will draw more from the national and international pool of prospective students. If we succeed in that goal, Egan's (1996) concerns about introducing forestry students to the rest of society will be more than addressed, because the rest of society will be working with our traditional forestry and forest engineering students on group projects in the ten core courses that they share and in numerous electives. They will be part of the same collegial community, and the debates and values-based discussions that exist out in the real world, will more easily find voices in our classrooms. Forestry and forest engineering students will not be as ghettoized in an institutional enclave as they have been in recent decades. I believe that will create better foresters, forest engineers, as well as

other natural resource management professionals. They will all be better able to understand and cope with the complex social problems and social values that are at the heart of most resource management issues.

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