New Directions in Resource Recreation Management: A Response to the Educational Challenge

Dave Robinson
University of Northern British Columbia

Robert Pfister
University of Northern British Columbia

John Shultis
University of Northern British Columbia

Ed Safford
University of Northern British Columbia

Abstract

Managers of natural resources are faced with increasingly complex issues involving resource management concerns and the emerging importance of the socio-cultural context of resource use. The resource manager has been forced to respond and react to new social, cultural, ecological, and economic realities. Educational institutions have often been slow to respond to the changing work environment, even though a growing number of practitioners and educators believe that traditional approaches to training resource managers are inadequate and increasingly, ineffectual. This paper outlines the development of a new curriculum attempting to respond to the new challenges faced by contemporary resource managers. The concepts of interdisciplinary and cross-disciplinary study are described, and the need for a new educational approach is argued. Finally, one institution's response to the changing needs and skills of resource managers is reviewed.

Keywords: Educational challenge, park and recreation programs, interdisciplinarity

Biographical Information

Dave Robinson and Robert Pfister are Associate Professors, John Shultis is an Assistant Professor, and Ed Safford is a graduate student in the Recreation Resource and Tourism Programme at the University of Northern British Columbia, Prince George, BC, Canada V2N 4Z9.

> *Natural resource management in the 21st century will embody not only an understanding of basic biology and traditional resources such as game, timber or range, but the structure and function of ecosystems and the integral relationship with human beings and human institutions (Jacobson, 1995, p.303).*

Introduction

In 1992, the British Columbia Recreation and Parks Association (BCRPA) released *Healthy Lifestyles through Parks, Recreation, and Culture*, a blueprint for parks and recreation education and training in B.C. The major conclusions of this report indicated a strong concern in the field regarding the lack of recreation degree opportunities, a need for a parks and recreation programme in B.C. that combines training in the environmental sciences with a core concept of leisure and recreation services, and a need for parks and recreation education programs to better respond to social and environmental trends. The issues addressed in the BCRPA report parallel the concerns expressed within the parks and recreation profession across Canada and the United States (see, for example, B.C. Outdoor Recreation Council, 1991; Ewert, Chavez & Magill, 1993; Jackson & Burton, 1989; Jacobson, 1995; Magill, 1992; Ministry of Environment, Lands and Parks, 1993). As the field of parks and recreation continues to grow and diversify, and as employers require degrees for an increasing number of positions, issues related to professional preparation for students are of particular relevance to university and college educators and potential modifications they may make to existing recreation degree programs.

The purpose of this paper is to propose the need for integrated curriculum programming in the training of parks and recreation professionals. Toward this end, this paper will (a) outline the key concepts associated with integrating various approaches to academic training and institutional functioning, (b) discuss the philosophical and practical arguments that address the need for an understanding of the interrelationships among the social, ecological, and economic constraints inherent in the field, and (c) describe one response to this educational challenge, namely, the newly established Resource Recreation[1] Management major within the interdisciplinary Natural Resources Management B.Sc. degree programme at the University of Northern British Columbia.

Integrated Curriculum Programming in Academic Settings: Cross-disciplinarity and Interdisciplinarity

The concept of *cross-disciplinary* studies is normally defined as approaches that draw from distinct disciplines, applied separately by a team of researchers from different disciplines, but contained within a single project (Burdge, 1991). Cross-disciplinary approaches, then, normally transcend traditional academic departments to involve faculty members from two or more departments. Therefore, the emphasis is often on providing an applied solution to an issue rather than simply accumulating disciplinary knowledge. The term *interdisciplinary* is a more difficult concept to define and an even harder concept to implement within a university setting. For the purposes of this paper, interdisciplinary research is defined as approaches and activities which are drawn from more than one discipline; that is, different methods and approaches are applied *jointly* as part of one project.

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[1] Resource recreation is defined as any recreational opportunity based in and relying upon natural environment settings found primarily (but not exclusively) in protected areas and public lands.

Interdisciplinary work, however, has not been without its critics as well as supporters. A report completed for the Social Science and Humanities Research Council of Canada (Salter & Hearn, 1992) identified three commonly-held views of interdisciplinarity. The first is that interdisciplinary approaches frequently lack both substance and good scholarship. In recent years, this notion has been replaced by a second view suggesting that interdisciplinarity allows researchers to turn their attention to societal issues and to explore the social and practical applications of their expertise. The third view considers interdisciplinarity to represent both a fundamental challenge to the premises that have long supported research and a critique of the organization of knowledge within the university into "disciplines." As such, it can often be viewed as a threat to more disciplinary-oriented and monophonic educational and research perspectives.

Caldwell (1984) and Jacobson (1995) posit that fields that meaningfully combine cross-disciplinary and interdisciplinary approaches may even be meta-disciplines, in that a level of knowledge may be generated that extends beyond the individual disciplines and differs from them in important ways. This derivative knowledge is synthesized to form new information and insights not readily discernable from any one individual discipline.

A New Emphasis in Natural Resource Management Education

Natural resource management is an area of growing public concern both in North America and the world. Given the destruction of forests, declining wilderness, loss of wildlife species, over-use of some of our national and provincial parks, and trans-global water and air pollution, the need to effectively balance competing uses while ensuring long term sustainability has become widely acknowledged (Knight & Bates, 1995). As pressures on our resources continue to grow, land managers are increasingly placed in the difficult position of trying to satisfy multiple public interest groups with divergent social, political and economic values.

Critics of the existing pattern of resource management in North America often blame our past failure on an overly narrow, technical focus that has failed to address the underlying social and political causes of ecological degradation and the interconnectedness of differing resource uses (Jones, Martin, & Bartlett, 1995; Magill, 1989). The academic training of resource managers has traditionally focused on a strict disciplinary approach that emphasized specializations in ecology, economics, biology, or forestry. Rarely, however, are real world resource use issues compartmentalized into such discrete disciplines (Gilbert, 1993; Jacobson, 1995). Whether the issue is the development and management of a large protected area by a national or provincial parks agency for recreational and conservation purposes, or the development of an integrated forest management plan for timber, recreation, and wildlife values by a timber harvesting company, the parties involved in such complex issues require an ability to integrate ecological conservation and non-industrial human uses (including recreation and tourism) with natural resource development. Consequently, resource managers require a depth and breadth of cross-disciplinary training in an array of related subject areas necessary to generate viable land-use decisions.

New Approaches to Resource Recreation Management

As increasing numbers of the public spend their leisure and recreation time in natural environments, the field of resource recreation management is increasingly recognized as an integral and important component of natural resource management (Jubenville & Twight, 1993). From a historical perspective, professionals trained in environmental sciences (particularly forestry and biology) and, to a lesser degree, recreation-related fields (e.g., leisure studies, recreation, and physical education) have represented the majority of individuals responsible for management and delivery of parks and recreation opportunities in protected areas and crown or public land throughout North America. For example, Hein (1995) suggested that more than 85% of all natural resources students in the United States have majored in wildlife, forestry or fisheries. A parallel situation appears to exist in most mid-management and management positions in various federal and provincial ministries across Canada responsible for the management of resource recreation opportunities (R.J. Payne, 1995, personal communication, October 16, 1995).

Salwasser's (1994) statement that "ecosystem management is more about people than anything else" would not be disputed by a growing number of resource managers. However, contemporary resource managers continue to focus primarily on the biophysical dimension of resources. However, in recent years, the field of natural resource management has broadened to include human dimensions of resource use, including the need to both understand and affect people's knowledge and behaviours toward natural resources and their management (Jacobson, 1995). The underlying assumption of the belief of the importance of including the human dimension is that while effective management of resource recreation opportunities requires an understanding of the biological and ecological components of the natural environment, it also requires an understanding of the human components, e.g., recreation management - who the visitors are, what their motivations and needs are, and how to effectively communicate with them for the puposes of imparting information or influencing their behaviours (Manfredo, 1992; Nichols, Reed, & Pealo, 1994).

In the past, few parks and recreation education programs effectively addressed the distinct, but complimentary, areas of biophysical and social sciences. There is a growing consensus among resource recreation educators that the public may best be served by recreation professionals having a strong foundation in the recreation area of specialization, as well as in the principles and techniques of natural resource management, the social and political sciences, and the basic and applied sciences, bolstered by a set of applied skills and field experiences (Brunson, 1995; Jacobson, 1995; Magill, 1992). Figure 1 depicts the key aspects of this educational model for professional preparation in resource recreation management.

Over the past decade, academic institutions in both Canada and the United States have increasingly attempted to fill the parks and recreation "training gap" through curriculum changes of the type described above. These changes require students to take specialist courses in parks and recreation management that provide disciplinary depth, as well as courses in other related professional areas that satisfy the need for cross-

disciplinary breadth, and require that faculty adopt interdisciplinary orientations and present multi-value perspectives in the classroom. To this end, a growing number of academic parks and recreation programmes with a resource or wildland recreation focus have shifted their emphasis from traditional course work towards courses that investigate changing social values and the wealth of knowledge found in related resource management professions such as forestry, wildlife, and fisheries (Burdge, 1989; Gilbert, 1993).

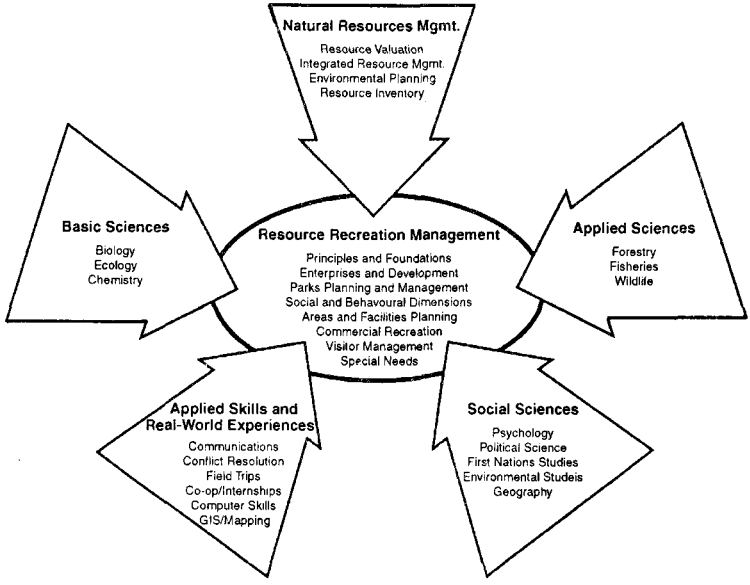

Figure 1. Resource Recreation Management Education Model

Increasingly, it is being recognized that students trained in resource recreation require exposure to the principles of multiple-use management, competing land uses trade-offs, political science, economics, business management, ecology, biology, environmental law, environmental ethics, behavioural and social psychology, and communication strategies (Jacobson, 1995; Magill, 1992; Nichols et al., 1994). These courses are essential to the resolution of abstract resource problems because they help to integrate social, economic and ecological perspectives of land management that foster nontraditional solutions to increasingly nontraditional problems. This broadened exposure will facilitate the development of new knowledge rather than binding potential solutions to existing personal, governmental, organization and disciplinary biases (Goran, 1974).

It is certain that difficult and sometimes frustrating problems will confront the academic community as it seeks to develop strategies to meet these educational needs and thereby better prepare resource recreation professionals for the future. It is also certain that many barriers will frustrate efforts to achieve cross-disciplinary and interdisciplinary approaches (Jacobson, 1990, 1995; Watt, 1991). New educational approaches, however, are needed to equip resource recreation managers to deal effectively with increasingly complex resource management issues.

A Response to the Challenge: Resource Recreation Management at the University of Northern B.C.

Caldwell's (1984) work indicated that many scientists have identified the lack of cross-disciplinary training as one of the three most important issues facing the scientific community. In spite of this, the controversy over disciplinary specialization and cross-disciplinary breadth remains unresolved. The blend of disciplinary depth and multidisciplinary breadth varies depending on an academic institution's particular mandate, as well as on the strengths and motivations of its faculty. The synergy resulting from a committed faculty who share a similar (though not necessarily identical) vision of resource management, and who are themselves prepared to grapple with nontraditional problem-solving approaches, can produce a progressive and meaningful curriculum that is relevant to the real world.

Interdisciplinarity and cross-disciplinarity have been incorporated into the University of Northern British Columbia s (UNBC) programs and organizational structure, particularly in the Natural Resources Management Program (which offers B.A., B.Sc., M.Sc., M.A. and Ph.D. degrees) within the Faculty of Natural Resources and Environmental Studies. The recent critique of academic organization and segregation into distinct disciplines has lead the Natural Resources Management Program to develop course offerings and an academic structure which ensures that integrated educational approaches are fostered wherever possible. As Canada s first fully-autonomous university to be created within the last twenty-five years, UNBC had a unique opportunity to incorporate the concepts of interdisciplinarity and cross-disciplinarity into many aspects of the university s activities. The lack of traditional barriers generated by long-established departments, disciplines, and research programs has facilitated integrated educational approaches.

Given the traditional reliance on resource extraction (primarily forestry) in northern B.C., the creation of a Natural Resources and Environmental Studies Faculty (NRES) was strongly supported. It was anticipated that an NRES-type Faculty could effectively respond to the changing social, cultural, and political values facing the resource extraction industries at this time. Therefore, from its inception, curriculum design, faculty hiring criteria, and academic structure in this Faculty emphasized interdisciplinary and cross-disciplinary teaching and research approaches.

To respond to the perceived social, cultural and economic challenges of the region, the NRES Faculty at UNBC developed a unique Natural Resources Management (B.Sc.) degree. Four majors are available within this degree programme: Fisheries, Forestry, Resource Recreation, and Wildlife. Students enrolled in the Resource Recreation major (and the three remaining majors) have to complete a set of core, specialist, and elective courses. Determining the mix of courses involved a consortium of the following organizations:

University

Faculty of Natural Resources and Environmental Studies (incorporating the Biology, Environmental Studies, Environmental Sciences, Geography and Natural Resources Management Programs)

Natural Resources Management Program

Resource Recreation and Tourism Program

Tables 1 and 2 outline the Resource Recreation curriculum. The majority of courses taken in the first two years are common to all fisheries, forestry, resource recreation and wildlife majors within the Natural Resources Management Programme.

Recreation Resource Management Curriculum

As part of the university's core requirements, all incoming UNBC students enrolled in science programmes are required to take courses in the arts and humanities as well as the social sciences. Similarly, incoming students enrolled in arts and humanities programmes are required to take courses in the physical and life sciences. The university's core courses give both science and non-science majors an integrated foundation of knowledge from the social sciences, physical and life sciences as well as the arts and humanities. Within these courses, topics and issues are presented as interdependent, interesting sources of information that reflect what we are, how we have evolved, our relationships to the physical and biological environments, and the socio-cultural contexts of humanity (Gilbert, 1993).

TABLE 1

Required Courses in the Natural Resources Management Degree at UNBC

UNIVERSITY CORE	
Arts and Humanities	
Social Sciences	
NATURAL RESOURCES MANAGEMENT	
Calculus	
Statistics	Natural Resources Management
Resource Valuation	Natural Resources Planning
Economics	Natural Resource Policy and Administration
Computer Applications	Watershed Management or Resource Geography
	Integrated Resource Management
Chemistry	Resource Inventories and Measurements
Physics or Psychology	First Nations' Resource Management
Biology	Field Camp
Ecology	Issues and Ethics in Natural Resources
Geomorphology	Environmental Impact Assessment
Spatial Data Techniques	

The two arts and humanities requirements, in addition to courses in calculus, introductory biology, chemistry, microeconomics and introductory natural resources management, comprise the first year of required study at UNBC for all students within

the Natural Resources Management degree (i.e., Fisheries, Forestry, Resource Recreation and Wildlife majors).

The recognition that management of any one natural resource has implications for all other natural resources is a primary driving factor in the undergraduate curriculum of the Natural Resources Management B.Sc. degree programme. Integrated and sustainable resource management is emphasized within the classroom by faculty drawn from Resource Recreation/ Tourism, Environmental Science/Studies, Biology, Forestry and Geography. These faculty maximize the integration of interdisciplinary and cross-disciplinary problem-solving and team planning. Interaction with the local community is also an important aspect of the Natural Resources Management degree programme, with interactions facilitated through the use of government, industry and private expert assistance in course design and delivery. For example, the Resource Recreation and Tourism Programme, which offers both the Resource Recreation (B.Sc.) and Resource-Based Tourism (B.A.) degrees, has formed an Advisory Committee composed of representatives from industry, government and private sector organizations. This Advisory Committee reviews the curriculum and learning outcomes in each course, and offers other suggestions to strengthen the utility of the two degrees offered.

In addition, the Natural Resources Management core, including Resource Recreation, requires students to complete courses in, *inter alia*, chemistry, ecology, spatial data techniques (including Geographic Information Systems), geomorphology, resource inventory and measurement techniques, integrated resource management, social science statistics and introductory resource recreation. These courses round out the second year of required study at UNBC for Natural Resources Management students.

Senior (third and fourth year) Natural Resources Management/Resource Recreation core courses include recreational geography, wildland recreation, organization and management of recreation and tourism systems, resource valuation, environmental impact assessment, First Nations' approaches to resource management, policy and administration, natural resources planning, watershed management, natural resources issues and ethics, recreation and tourism management, various resource recreation/tourism topics (see Table 2), and an integrated field camp.

Integrated into the Natural Resources Management degree programme, Resource Recreation is treated as one particular use of a land base which has other existing or potential uses or values, including timber, biodiversity, fisheries and economic development. Northern British Columbia has Crown lands, provincial and national parks, community forests, and First Nations' lands that support, or have the potential to support, a vast array of dispersed and concentrated recreation/tourism opportunities. While the province of B.C. provides an ideal setting for the study of resource recreation, the Resource Recreation/Tourism programme also addresses national and global perspectives.

Resource Recreation electives (Table 2) allow students to investigate the broad range of components involved in the planning and management of recreation opportunities and experiences. These opportunities and experiences are facilitated through courses in resource-based tourism, interpretation, areas and facilities planning, commercial

recreation, recreation for special needs, recreation enterprises and tourism development, parks planning and management, social and behavioural dimensions of recreation, visitor management and independent or directed studies. Opportunities for internships and cooperative education placements also exist, and an integrated field camp provides further opportunity for the interdisciplinary study of resource management issues.

TABLE 2

Required and Elective Courses in the Resource Recreation and Tourism Programme

Second Year
Introduction to Resource Recreation *
Introduction to Resource-Based Tourism

Third Year
Interpretive Techniques
Wildland Recreation *
Organization and Management of Recreation and Tourism Systems *
Areas and Facilities Planning
Resource Valuation *
Field Camp *

Fourth Year
Commercial Recreation and Tourism
Recreation for Special Needs
Recreation Enterprises and Tourism Development
Parks Planning and Management
Social and Behavioral Dimensions of Recreation and Tourism
Research and Analysis in Recreation and Tourism *
Issues and Trends in Recreation and Tourism *
Visitor Management
Special Topics
Directed Studies

Note: *= Required Course. Students majoring in Resource Recreation must complete 6 additional courses from this list.

The Resource Recreation programme also allows students the opportunity to choose between an additional two required courses in three potential disciplines: forestry, psychology or biology. This, it is hoped, will further increase the interdisciplinary nature of the Resource Recreation major. Students are also required to complete 18 elective credits in the discipline of their choice. Most minors offered at UNBC require 18 credits, and students are encouraged to obtain a minor in either another major within the Natural Resources Management degree (i.e, Fisheries, Forestry or Wildlife), or in another degree

programme (e.g., Economics, Business Administration, Psychology, First Nations Studies, History, Computer Science, Geography, Biology, or Environmental Studies).

Conclusions

Resource agencies are being confronted with an array of difficult problems, many related to managing resources and recreationists/tourists. The UNBC response to the educational challenge will expose students to a multitude of resource professions and will be based upon a integrated foundation of the natural and social sciences. The exposure to various disciplines within these two fields of study will permit students to work cooperatively with people from related disciplines such as forestry, wildlife biology and fisheries biology. It is hoped that graduates of the Resource Recreation major will have the broad knowledge base and practical skills to enable them to deal with contemporary natural resource management issues in diverse, and often nontraditional, ways.

It is anticipated this new genre of recreation professionals, when positioned in the various agencies responsible for managing outdoor recreation resources, will be more capable of effectively responding to changing social values, resolving conflicts among competing user groups and enhancing the experiences, benefits, and satisfactions the public and society gain from recreating in natural environments.

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