FOIA Number: 2012-0769-F

FOIA MARKER

This is not a textual record. This is used as an administrative marker by the William J. Clinton Presidential Library Staff.

Collection/Record Group: Clinton Presidential Records

Subgroup/Office of Origin: Council on Environmental Quality

Series/Staff Member: Kathleen (Katie) McGinty

Subseries:

OA/ID Number: 17806

FolderID:

Folder Title:
Multi-Scale Multi-Jurisdictional Study of Integrated Resource Management in Pacific Northwest Coniferous Forests Report

Stack:	Row:	Section:	Shelf:	Position:
S	61	5	4	2

A Multi-Scale Multi-Jurisdictional Study of Integrated Resource Management in Pacific Northwest Coniferous Forests

by: David W. Hulse[1], Phillip Sollins[2], David Povey[1], Steven Radosevich[2]

[1]University of Oregon, Eugene, Oregon
[2]Oregon State University, Corvallis, Oregon

February 16, 1993

submitted by:

Associate Professor David W. Hulse
Professor David Povey
Departments of Landscape Architecture and Planning, Public Policy, and Management
University of Oregon
Eugene, Oregon 97403
(503) 346-3672
FAX 503-346-3626
e-mail: dhulse@aaa.uoregon.edu
and
Professor Steven Radosevich
Associate Professor Phillip Sollins
Department of Forest Science
Oregon State University
Corvallis, Oregon 97331
(503) 737-6081
FAX 503-737-2668
e-mail: rados@fsl.orst.edu
sollins@sequoia.fsl.orst.edu

Starting Date: Oct. 1, 1993
Ending Date: Sept. 30, 1996

PROPOSAL CONTENTS

Executive Summary

It is increasingly clear that adversarial approaches to reconciling controversial land use and land management issues are no longer adequate. Important decisions must be made, and in a timely manner; decisions that directly effect the continued existence of threatened and endangered species, their habitats, as well as the availability of family-wage jobs in natural resource-dependent communities. Informed decisions that promote a more sustainable use of natural resources will result from the acquisition, analysis and display of information in a comprehensible manner if it is available to interested and involved citizens and decision-makers in a forum conducive to collaborative, multi-jurisdictional discussion. This requires the successful integration of scientific, economic, and social information and its presentation in a form that is understandable to participants with varied expertise and backgrounds. When such a comprehensible and broadly based information system is coupled with decision processes that allow people to interactively test and compare the implications of various land management scenarios, new opportunities appear for consensus and conflict resolution.

Forests are a key natural resource in the Pacific Northwest, both ecologically and economically. Forest management practices have become contentious during the past two decades as their effects on the sustainability of forest ecosystems and associated human communities have become evident. The result has been near paralysis in forest policy and management at precisely the time when new forums are needed to test and apply innovative approaches to sustainable forest management.

This document proposes a collaborative effort between federal, state, county and local land managers, university researchers, and community and private interest groups to 1) develop the necessary tools and information base to model the cumulative ecological and economic implications of current and possible future land management plans on a specific, forested, western Oregon landscape and 2) test and implement new multi-jurisdictional decision-making processes using these tools. The need for this work is based on the following assertions: a) Considered as a whole, current forest management practices and decision-making processes are meeting neither ecological nor economic goals; b) Data describing the location, rate, and magnitude of recent timber harvesting is publicly available and is being used to draw conclusions about current forest practices; c) Legislative revisions will occur to state forest practice acts and these revisions will be politically responsive to public sentiment; d) Ecologically sustainable economic development requires a collaborative effort in which all parties involved in forest management agree to test and debate assumptions about what constitutes sustainable forest management; e) Such a collaborative effort must honor all land owner objectives and explore compensatory incentives to optimize both ecological and economic goals; and, f) There is adequate flexibility now to achieve economically viable forest practices in an ecologically sustainable way. The longer present forest practices and decision-making processes continue, the less flexibility remains.

This study is the first unified effort to predictively model the economic and ecological status of forest communities and the human communities which depend on them. Such modeling will permit inter-jurisdictional adjustments to be made among agencies and land owners so that ecological and economic conditions can be optimized for the immediate and long range future. The goal of the project is to facilitate and improve ecosystem-based forest decision-making by providing relevant information to policy and decision-makers in a collaborative, consensus building context. This will be accomplished by creating interactive decision-support tools and providing access to them in non-threatening decision-testing circumstances. We propose to provide a forum for discussion and decision-making using a computer-based system which allows participants to clearly visualize and assess the cumulative implications of a variety of forest management scenarios. The system is organized around a powerful computer geographic information system (GIS) which is linked through an easily navigated multi-media environment to a set of mathematical models describing the economic and ecological processes acting within and upon the study area. By using the economic and ecological models to gauge the implications of existing and proposed management plans at a variety of spatial scales, land owners and managers can identify opportunities to reduce negative impacts and improve positive effects of their decisions over time and space. Further, the system will allow users to compare and contrast a wide variety of possible scenarios of land use and management to optimize desired ecological and economic effects and clarify what is necessary to achieve them.

"...Throughout our discussions with land managers, land owners and other interested parties, a recurring theme was the lack of a setting in which the critical issues facing natural resource and forest managers could be discussed in a civil, non threatening manner. Too often, forums for discussion of such issues carry with them hidden organizational pressures for conformity that dampen or completely thwart open discussion. This occurs both within natural resource management organizations as well as between managers and citizens. The result of such pressure is constrained dialogue that only contributes to the "either-or" nature of much of the debate about forest management..." Stankey and Clarke Social Aspects of New Perspectives in Forestry 1992

I. Introduction

If present trends toward industrialization, energy and materials production, and resource depletion continue, a very real possibility exists that our ability to compete for and use natural resources may exceed the capacity of natural systems to provide them. Nowhere is concern for this more evident than in the Pacific Northwest. In the late twentieth century, land management in the Pacific Northwest has become a subject of increasing controversy as the long term health and sustainability of forest and aquatic ecosystems and the human communities dependent on them are increasingly in question. This controversy is most extreme in situations where short term economic interests appear at odds with long term ecologic processes.

Land use and land management decisions have both economic and ecological consequences. In the Pacific Northwest a social debate has been in progress for over two decades pitting interest groups, land owners, managers and citizens against each other in adversarial confrontations that have left everyone searching for a better way. At issue in the short term has been the survival of a variety of threatened and endangered plant and animal species and a way of life made possible by family-wage jobs traditionally available from the harvesting and processing of forest products. In the long term whole ecosystems and human communities are at risk as uncertainty about the future viability of the forests which sustain both increases.

Of Mandates, Patterns, and Decision-Making Processes

In the twentieth century, timber extraction and production has been the primary focus of forestry in the Pacific Northwest. However, management for timber primacy over other forest values has become a subject of increasing conflict and litigation as its effects on recreation, wildlife, watersheds, aesthetics, fisheries, and the sustainability of forest ecosystems and their associated human communities have become evident. Local, regional, and national interests advocate a varied and often contradictory set of approaches to resolve "the timber crisis." These range from proposals to continue near historic levels of timber harvesting to those which drastically reduce human management of forests, particularly on federal lands.

Debates continue regarding how these propositions effect and are significantly effected by the diverse mandates and varied historic roles of the public and private organizations directly involved in forest management. It is clear, however, that federal and state governments will play a central role, whether legislatively, as land managers, or as representatives of the public interest, in resolving the conflict over forest sustainability.

The differing roles of the public and private sectors are also reflected in land ownership patterns. Large tracts of contiguous and disaggregated land are managed by federal agencies such as the U.S. Forest Service and the Bureau of Land Management. These lands are managed for many purposes, including timber production, and account for a substantial percentage of the total land base. In Lane County, Oregon federally managed lands account for nearly fifty-four percent of all land. Annual proceeds from timber harvests on such lands are an important source of county revenue, providing funding for schools, roads, and other public needs. In 1992 Lane County received over $25 million from the federal treasury as earnings from timber harvests on U.S. Forest Service lands. However, more than $9 million of this was in-kind compensation for harvests which never occurred, having been prohibited by legal action and court injunctions concerned with threatened and endangered forest species. (Eugene Register-Guard, January 30, 1993) Thus the uncertainty surrounding federal forest management in the Pacific Northwest has significant fiscal and social implications beyond the region. In addition to these federal lands, there are large tracts of privately held land which are also managed for a variety of purposes. Some are devoted primarily to growing and harvesting forest products, an activity that accounts for over 60% of the county's manufacturing payroll. (Atlas of Lane County 1992) Along with these large tracts of federal and privately-owned land, there is also land held privately in smaller tracts. Privately owned land in Lane County constitutes roughly forty-four percent of the total area. The balance of land in Lane County is held by a variety of state and other agencies. The inherited mandates, ideologies, and land ownership patterns complicate attempts to move beyond adversarial processes and toward approaches that optimize desired effects of decisions, effects which often transcend ownership boundaries.

Like land ownership patterns, the decision-making processes of these various organizations evolved under circumstances different from those faced today. Thus, such processes are not always well suited to the realities of the present debate. Because public and private organizational priorities also may vary, the decision-making processes and policies used by these organizations to allocate forest resources are often inconsistent. Currently, these processes encourage citizen groups to struggle with each other and with government agencies over the disposition of resources.

Historically, forest policy-makers, agencies, and land owners determined the directions of forest policy following legislative directives or economic ideologies, but as more interest groups and the general public have become involved adjudication among these competing interests has become difficult. The result in the Pacific Northwest has been near paralysis in forest policy and management at precisely the time when new forums are needed to test and apply innovative approaches to sustainable forest management.

II. Problem Statement

The principal problem this study addresses is that the decisions made by public and private land managers in Pacific Northwest forests, which have significant social (e.g. rural per capita school funds) economic (e.g. sustained timber yield) and ecological consequences (e.g. amount of endangered species habitat), have been poorly coordinated and at times have been directly at odds with each other and with the broader societal goal of sustaining all the valued products and processes provided by forest ecosystems. The ecological and economic processes which a sustainable society seeks to optimize operate at a variety of scales. (Table 1) These differing scales transcend geo-political and land ownership boundaries. Land management strategies are needed that respond to the larger social, ecological and economic processes they occur within. This requires tools and decision-making processes capable of integrating across multiple spatial scales and multiple ownership jurisdictions. This study proposes to develop a set of interactive forest-related decision support tools addressing the sub-region, landscape, watershed, ecosystem, forest, and stand scales and to provide access to them to interested and involved parties in a setting which promotes consensus and illuminates new opportunities for achieving and sustaining diverse, cumulative ecologic and economic goals. Further, this study seeks to improve forest decision-making by providing broad access to relevant scientific information in two contiguous watersheds in Lane County in a form and context which allows decision-makers and the general public to *interactively* test, compare, and visualize the social, ecologic and economic implications of existing and future land use and land management plans. By providing better information, possibilities previously unseen may arise for optimizing land ownership patterns, multi-agency timber harvest schedules, multi-owner habitat protection, as well as developing incentives for ensuring the rights and responsibilities of private land owners.

III. Goals and Objectives

The goal of this project is to facilitate and improve ecosystem-based forest decision-making by providing relevant scientific, economic, and social information through interactive computer-based tools to policy makers in a collaborative, consensus-building context. This will be accomplished by 1) creating interactive decision-support tools and the information base they require, and 2) providing access to them in a decision-testing circumstance that will assist understanding of the cumulative economic and ecologic effects of forest management decisions.

The objectives of this project are to:

- Optimize the cumulative ecological and economic implications of forest decisions, now and in the future;
- Test, refine, and apply alternatives to adversarial approaches for forest and other natural resource conflict resolution;
- Develop a set of tools which allow decision-makers and the public to model the cumulative economic and ecological implications of combined existing land management plans of public and private land owners in a western Oregon study area now and over several human generations;
- Provide access to decision-support tools in a series of workshops allowing forest interest groups to interactively examine a wide variety of possible land management scenarios;
- Allow non-specialists to visualize, compare, and contrast alternative land management scenarios;
- Understand and illustrate how strategies or tactics (e.g. land swaps, easements, coordinated multi-agency land management, provision of non-market mechanisms in the absence of viable market incentives) may assist in optimizing desired ecologic and economic results;
- Enhance inter-agency/private land management coordination and cooperation.

TABLE 1 - SCALES OF ATTENTION IN SUSTAINABLE FORESTRY

(Bold Face Italic Type indicates scales addressed in this study)

Spatial	Environmental	Biological	Socio-Cultural	Political/Institutional	Economic
GLOBAL	global	global	humanity	international	world
REGIONAL	climate	regional (biome)	ethnic group (race)	regional	regional (e.g. W. Europe)
SUB-REGIONAL			state	nation	nation
GEOGRAPHICAL	weather	***landscape watershed***	***cultural area***	***Polity (e.g. city, county)***	***sub-national***
COMMUNITY	physio-graphic province	***forest***	***community***		***industry***
SUBCOMMUNITY	***environment***	***stand***	***village***	***interest group (e.g. neighborhood)***	***company agency***
	micro-environment habitat	species	clan/lineage	member	firm/family
	niche	population	family		
INDIVIDUAL	individual	individual	individual	individual	individual

IV. Project Narrative and Methodology

Study Area Description

Although the problems addressed in this study effect the entire forested area of the Pacific Northwest, we propose to focus on a portion of Lane County, Oregon to demonstrate the capability of this new decision-making approach. (see Figure 1) The McKenzie River and Middle Fork Willamette River watersheds form a 2000 square mile study area which is a smaller, but representative portion of the Northwest temperate forest bioregion. Forest conflict is well advanced in Lane County. Perhaps in part because of this, there is evidence that people representing various natural resource interests here are more willing to work together toward mutual solutions. In addition, because of previous research efforts in these watersheds, the amount and accuracy of available information is great. Data on climate, topography, geology, soils, and vegetation patterns are readily available, as is information on transportation systems, land ownership, and economic relations and processes. As Figure 1 indicates, these drainage's are both part of the Willamette National Forest but contrast in their patterns of land use. The McKenzie watershed includes the H.J. Andrews Experimental Forest, Three Sisters Wilderness Area, and the communities of Blue River and McKenzie Bridge. The Middle Fork Willamette watershed includes the communities of Oakridge and West Fir. Fewer natural resource preserves have been established in the Middle Fork watershed than on the McKenzie. The "checkerboard" pattern of lands managed by the Bureau of Land Management and private timber companies are a distinctive feature of both watersheds, particularly at lower elevations. The metropolitan area of Eugene/Springfield is also a factor as it relies on the watersheds for recreation, power generation, flood control, and drinking water supply.

Project Organization and Methodology

Figure 2 presents a summary of the groups which will participate in the project and provides a synopsis of their respective roles. There are four groups directly involved in the project:
1) interest groups, 2) public agencies at a variety of governmental levels, 3) private land owners, and 4) university researchers. Each of these groups is represented in the Project Consortium, the overall collaborative body responsible for defining and carrying out the six major project tasks outlined below. The consortium consists of a Scoping/Steering Committee, liaisons between the Scoping/Steering Committee and its member's broader constituencies, and university researchers. Figure 3, the project timeline, summarizes the sequencing and overlap of each major task and the associated informational public meetings.

1. Project Goal Refinement - Refining project goals and determining what detailed land use and land management scenarios the project will address are key components of the early stages of this project. This will be a primary responsibility of the Project Scoping/Steering Committee working in concert with liaisons and university researchers.

2. Information Gathering/Modeling Teams Formation - A large amount of data on the physical and cultural characteristics of the study area already exists. However, it and more must be located, gathered, and assimilated into the geographic information system. Once the GIS data base is complete, it will be available for use with the economic and ecologic models to assess various land use scenarios. Working with university researchers, the Project Scoping/Steering Committee will assist in the selection of qualified consultants to create the economic and ecologic models. The information gathering process preceding the selection will be a primary responsibility of the university research team.

3. Creation of Economic and Ecologic Mathematical Models - Current forest policy debates often pit timber jobs and economic losses against environmental considerations in forests, allowing forest decisions to be framed as trade-offs between economic growth and ecosystem health. It is clear that long term economic well-being in the Pacific Northwest is dependent on forest health and that economic decisions must consider scientific information about ecological conditions in forests and the feedback effects those conditions have on human communities. This project task involves creating and testing economic and ecologic models which will later be applied to a range of land use scenarios. These models will address important questions regarding the economic and ecologic effects of human activities in the study area; questions which will be developed and refined by the Scoping/Steering Committee and university researchers in early project workshops. Creation of the models will be coordinated by the university research team and presented at regular intervals to the Steering Committee.

4. Geographic Information System (GIS) Data Base and Multi-Media Interface Construction - An important characteristic of GIS that makes it a preferred tool for this project is the ability to track, model, and visualize the dynamic flow of energy and material through a landscape over time. This is essential to comprehending complex ecologic and economic processes, some of which operate at scales and speeds not normal for human perception. Geographic information systems also provide a wide range of options for discovering new information about a place by allowing people to manipulate digital maps using a powerful array of spatial and statistical analytic techniques. This capability is referred to as "cartographic modeling." For example, after creating computer maps of 1) land ownership in the study area and 2) endangered species habitat, the GIS allows users to create a new map showing places

where changes in land ownership (e.g. land swaps between public and private land managers) could facilitate not only wildlife management goals but economic goals as well. Beyond such "coincidence analysis modeling" (a special type of cartographic modeling), the project employs mathematical models describing the key economic and ecologic processes in the study area. These will be linked to the GIS through a multi-media interface which will allow members of the Scoping/Steering Committee, and eventually the broader public, to test and compare a wide range of land use scenarios with minimal specialized training and visualize the results in a clear and comprehensible manner. Figure 4 is a diagrammatic description of the interactive decision support tools which will link the ecologic and economic models with the GIS. Creation of the GIS data base and multi-media interface will be a primary responsibility of the university research team.

5. Future Forests Workshops:Exchanging Ideas and Testing Progress - Predicting the impacts of future resource and development plans of governmental and private organizations in two major watersheds will require a regular exchanges of ideas, concerns, and strategies about the study area and ways to improve resource management. Members of the Project Consortium will work together in situations structured to develop trust and respect for the experience and knowledge each person brings to the process. To facilitate this interaction the project will promote collaboration through: 1) a regular series of Project Consortium meetings; and, 2) public testing and review of project progress through the Future Forests Workshops.

Project Consortium Meetings

Throughout the three year project, members of the Consortium will meet at regular intervals for seminars to discuss issues and opportunities associated with all aspects of the project. In Figure 3 these meetings are represented by the dark gray columns connecting the horizontal medium gray project task development bars. Progress reports, insights, research problems, and emerging trends will be presented and discussed at these meetings, which are intended to focus on operational strategies and opportunities not presently shared by all involved parties or organizations. The accuracy and success of the predictive economic and ecologic models will depend on the regular and active participation of steering committee members, data gathering teams, model builders, GIS operatives, and university researchers working in good faith with the models and the larger research process.

Public Testing and Review

Public meetings and discussions of the process, called Future Forests Workshops, will also occur at regular intervals throughout the three year period. Initially these will provide opportunity for citizen and organizational input not otherwise represented in the Project Consortium. In subsequent sessions, the workshops will provide opportunity for public testing and critique of the resource questions to be modeled, the data to be collected, the analysis and modeling being performed, the form and content of GIS and multi-media representations of future forest scenarios, and the expected impact on future resource management and use. Figure 3 summarizes the three primary forums for information exchange and testing.

6. Applied Demonstration Projects, Monitoring, and Evaluation Report - The final stages of the project will apply, across jurisdictional boundaries, the most promising strategies developed by the Project Consortium during the collaborative process. These applications may implement incentives and techniques aimed at habitat conservation, enhancing timber supply to local mills, or developing a more responsive land ownership pattern in ecologically critical areas. These, and other current efforts will be monitored for their economic and ecologic effects. At the conclusion of the project a report will be prepared describing the process, findings and recommendations of the study. The university research team will be responsible for preparing this report which will be subject to review and approval of the Steering Committee.

V. Project Significance

Nowhere in the United States is the debate about the wise use of our natural resources, and especially forests, more subject to serious difference of opinion than in the Pacific Northwest. One half of the land area of Oregon is in forest, and it is estimated that one of every eleven jobs is generated by the forest products industry. (Thorud, Congressional testimony, 1986) Of this total forested area, forty-two percent is commercial forest land. As a result, Oregon leads the nation in the production of timber and most timber products. Between 1950 and the late 1980's Oregon produced an annual average of over 8 billion board feet of lumber from public and private lands combined. More recently harvest levels on federal lands have been reduced by 3 billion board feet as representatives of timber interests and environmentalists raised conflicting opinions about the sustainable management of forests for plant and animal species as well as timber harvests. (Levine 1989)

It would be difficult to overstate the potential significance of this project to the Pacific Northwest. First, this study offers an information-rich multi-jurisdictional forum to environmental scientists, policy-makers, and land managers concerned with sustainable forest practices, something lacking during the adversarial era. By identifying, mapping, and providing usable information for decision-makers on the economic and ecologic effects of forest decisions, this project can assist public

and private sector decision makers in their attempts to protect the health and long term viability of forests and the people dependent on them; and ultimately promote the dissemination of accurate, important, and needed information on forest management to decision-makers in the Pacific Northwest and elsewhere.

Second, through this collaborative research, information outreach centers will be established in communities of the study area and linked by computer networks to: 1) foster this and other collaborative solutions to forest management; 2) provide public review of and education about the work accomplished; and, 3) serve as a pilot study in developing alternatives to adversarial natural resource conflict resolution.

Third, this study will provide an independent analysis of the current forest dilemma. Handled properly, this project could help foster new ways to approach such problems and could help reduce political and economic conflict in effected areas.

Fourth, this project will contribute in a number of ways to science and technology policy. Interactive use of decision support tools in natural resource management is a relatively new field, and innovations in information systems that help develop, organize, analyze, and disseminate information appropriate for decision-making are most needed. Personal computer-based GIS's represent a potentially revolutionary step forward in environmental information systems. In addition, this project involves a globally significant land use management challenge relevant to forested areas around the world.

Finally, this project involves a collaborative effort of environmental scientists, educators, policy makers, information specialists and land managers representing public and private interests. It provides an opportunity to explore previously unexamined options for enhanced forest management. Further, this multi-jurisdictional collaborative effort will provide a forum for public/private agency coordination in a context of relevant information and powerful decision support tools. As such, it offers the prospect of optimizing economic and ecologic effects of decisions across land ownership boundaries and, over time, several generations into the future. This approach can aid management of many natural resources, particularly those with harvest cycles exceeding human lifetimes.

VI. Collaborative Process

Developing a better understanding of forest ecology and forest economies requires collaborative analysis of what we know about forests and their associated needs, as well as the positive and negative impacts of human attempts to manage them. This is, by definition, a multi-disciplinary challenge. This effort will use multi-disciplinary applied research to provide the necessary tools and decision-making context to progress toward sustainable cumulative uses of forest land.

Achieving this will require the open, active, regular involvement of representatives from the U.S. Forest Service, the Bureau of Land Management, timber industry representatives, timber land owners, university researchers, state and local government representatives, environmental groups, citizen groups and other interested parties. Figure 2 summarizes the overall project organization and Figure 3 indicates the interdependent roles of project task development, Project Consortium meetings, and public review and testing of project tools and recommendations.

VII. Conclusion

The previous two decades of forest conflict and adversity provide an incentive to search for new ways to manage public and private forest lands. Support now exists for a study intended to acquire, analyze and disseminate important information on the ecological and economic consequences of current and future forest plans. Information on the economic and ecologic effects of forest decisions will be analyzed and integrated using a geographic information system and made available for interactive examination by interested and involved parties, and distributed via local educational/political networks to citizens, decision-makers, and educators.

The confrontational approaches of the past have created a political and economic situation in the Pacific Northwest that is a legitimate concern for anyone undertaking a project such as this. Recent events such as the plans for a "forest summit" by the new administration offer promise of greater stability and coordination in forest planning. Involvement of prospective participants during the formulation of this proposal indicated support for the project from both public and private sectors. In the process of developing this proposal the principal investigators met jointly with federal, state and county land managers and received unanimous support and cooperation for this project. Based on this commitment, the nature of the project, its basis in science, and the widely recognized need for alternatives to adversarial approaches, we are convinced that the appeal of this effort will endure.

VIII. Bibliography

Cohen, W., D. Wallin., M. Harmon., P. Sollins., C. Daly., and W. Ferrell., (in press) ., "Modeling the effect of land use on carbon storage in the forests of the Pacific Northwest"., in Proceedings of the Int. Geoscience and Remote Sensing Symposium., Houston, Texas., May 26-29, 1992., IEEE., Piscataway, N.J.

Eugene Register-Guard., "Forests, Owls Renewable"., January 30, 1993, p10A.

Hoagland, Peter., (17 Sep 1992)., "Insuring the Viability of the Economy and the Environment"., Congressional Record. Daily ed. , p.H8723-8724.

Lane Council of Governments., (1992) Atlas of Lane County., Eugene, Oregon 97401.

Levine, Jonathan B., (18 Sep 1989)., Industries: Lumber: 'The Spotted Owl Could Wipe Us Out'., Business Week, no.3124.

Thorud, David B., (1986)., Hearing, House Committee on Appropriations., Department of the Interior and Related Agencies Appropriations for 1986 .

Torrence, James F., (1987)., 28 Apr 1986 Hearing, House Committee on Interior and Insular Affairs., Department of the Interior and Related Agencies Appropriations for 1987 .

Pimental, David., (May 1992)., "Conserving Biological Diversity in Agricultural/Forestry Systems"., BioScience., v. 42., no. 5., pp. 354-362.

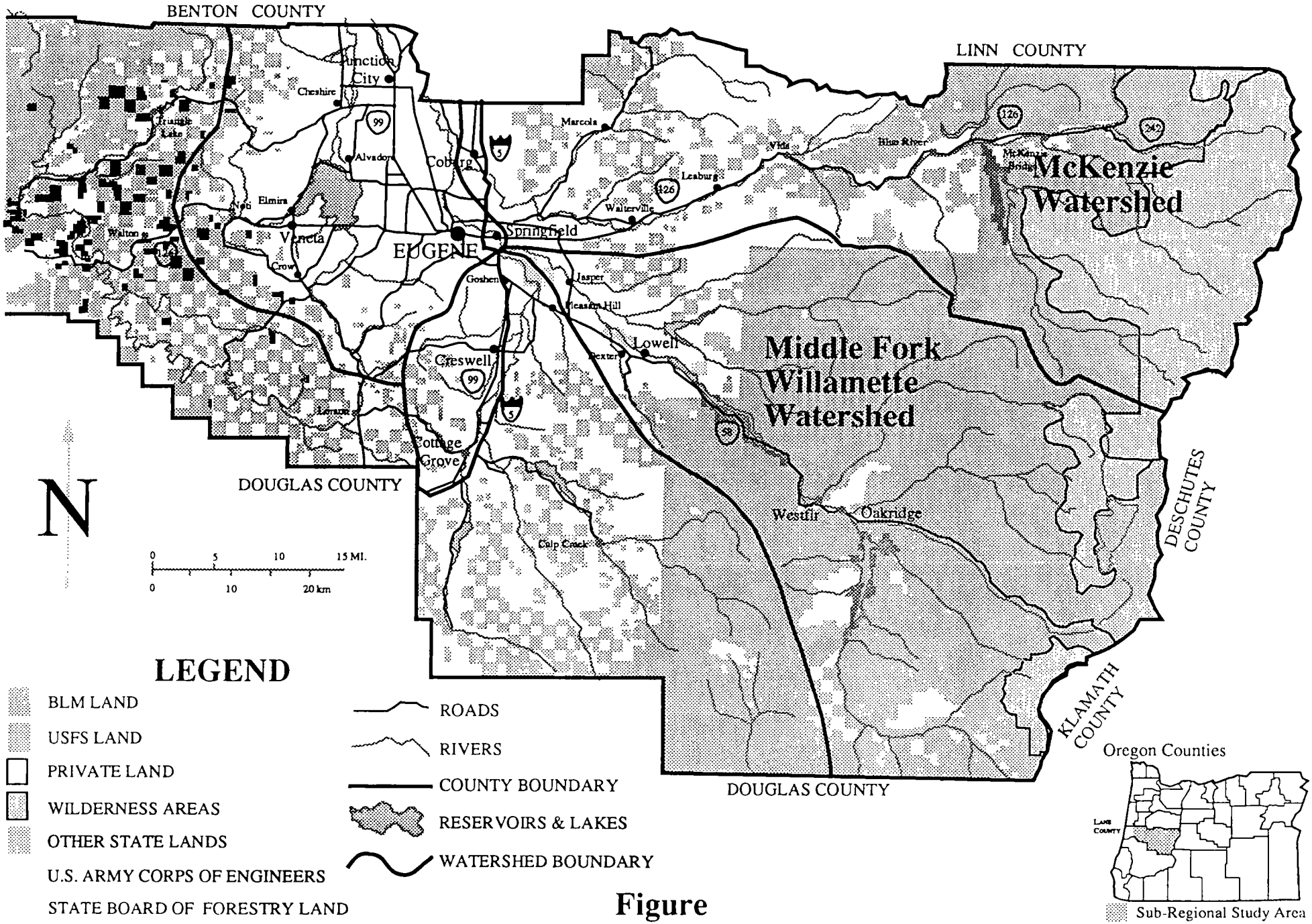
Satchell, Michael., (25 Jun 1990)., "The Endangered Logger"., U.S. News & World Report, v.108 no.25, p.27-29.

Stankey, G.H., and R.N. Clark., (1992) Social Aspects of New Perspectives in Forestry: A Problem Analysis., Grey Towers Press., Milford, Penn.

IX. Appendix

Figure 1 Study Area Map
Figure 2 Project Organization Diagram
Figure 3 Timeline
Figure 4 Decision Support System Diagram
Summary Curriculum Vitae of Principal Investigators
Related Current and Pending Support
Budget

Lane County Study Area Map



Figure

Project Organization Diagram

Interest Groups

Audubon Society, The Nature Conservancy, Waldo Wilderness Council, Forest Service Employees for Environmental Ethics, McKenzie River Trust, Pacific Rivers Council, others

Public Agencies

U.S.F.S., B.L.M., State of Oregon, LCOG, EWEB, City of Oakridge, others

Private Land Owners

Large Corporations, Small Companies, Individual land owners, others

LIAISON

LIAISON

LIAISON

PROJECT CONSORTIUM

Project Scoping/Steering Committee

Representatives of environmental groups, public agencies, land owners, university researchers, and other interested citizens

Steering Committee Coordinator

UNIVERSITY RESEARCHERS

Project Tasks	U of O Hulse P.I.	JOINT OSU, UofO, Liaisons Radosevich, Povey P.I.'s	OSU, PNWF&RES Sollins, Swanson P.I.'s
1) Project Goal Refinement	Coordinate Liaison selection with Scoping/Steering Committee; organize public information access to project	form Scoping/Steering Committee, coordinate Steering Committee Coordinator selection, organize and host initial meetings to refine project goals	Inventory existing spatial and non-spatial data in McKenzie and M.F. Willamette watersheds
2) Info Gathering & Modeling Teams Formation	obtain land use mgmt. plans from relevant agencies; strategize how best to combine; develop econ. team short list	coordinate question set which economic, social, and ecological models will address	develop short list of possible ecological and social modeling teams
3) Creation of Econ., Social and Ecol. Models	liaison with economic modeling team; coordinate external review of economic model	coordinate models data needs and available data (GIS and other)	liaison with ecological and social modeling teams; coordinate external review of ecological and social models
4) G.I.S. & Multi-Media Interface Construction	GIS data conversion and digitizing Multi-Media Interface construction	Review and critique Multi-Media Interface	GIS data gathering and digitizing
5) Forest Futures Workshops	participate in and help prepare for workshops	organize and lead series of work-shops for Steering Committee and general public, coordinate selection and implementation of Demo. proj.'s	participate in and help prepare for workshops
6) Applied Demo. Projects, Monitoring and Evaluation Report	coor. implementation of educational network in communities	coor. implemen. of monitoring plan; prepare, publish, and disseminate final report	conduct monitoring of ecol. and econ. effects

Figure 2

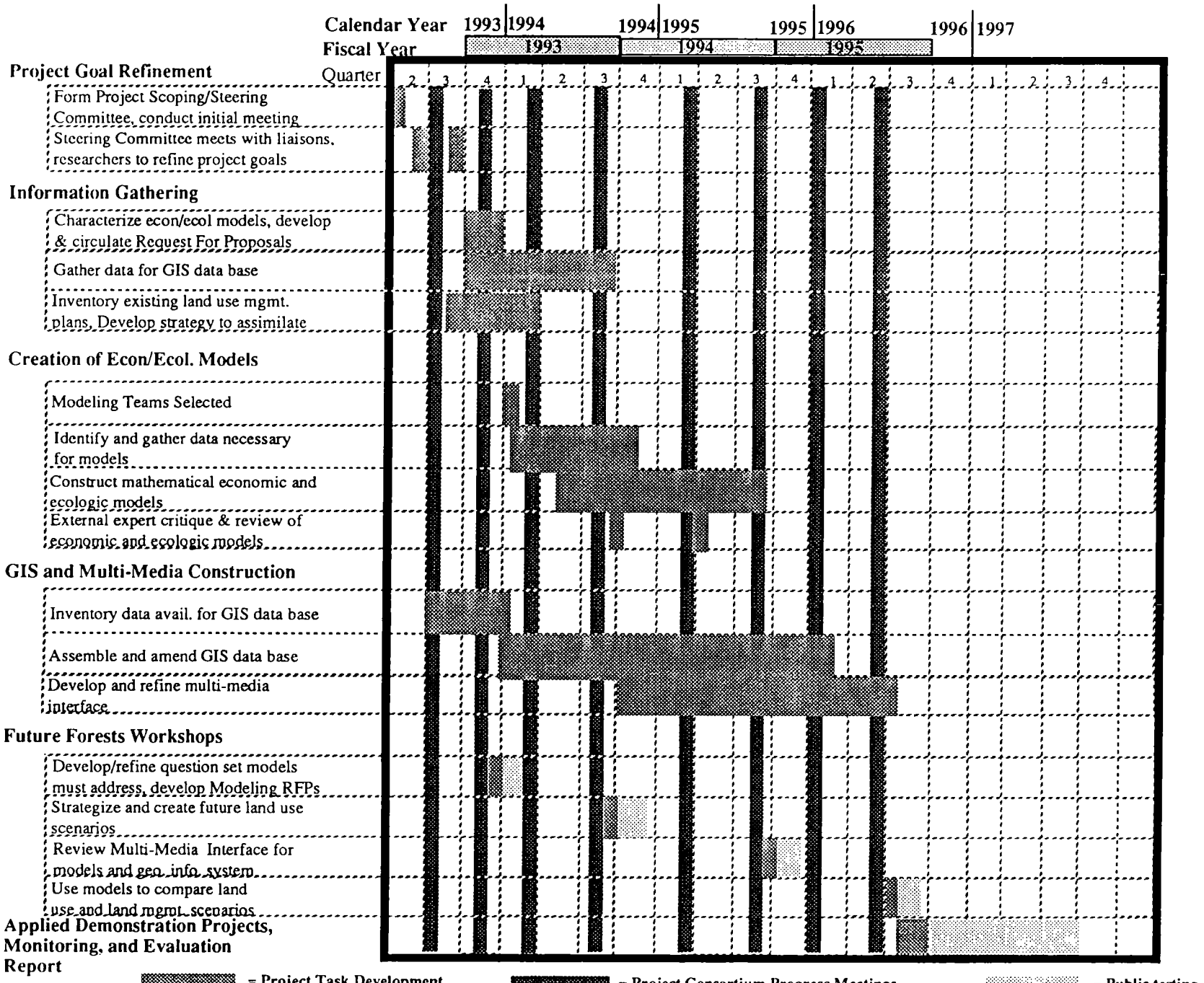


Figure 3

Project Timeline

A General Diagram of Interactive Decision Support Systems

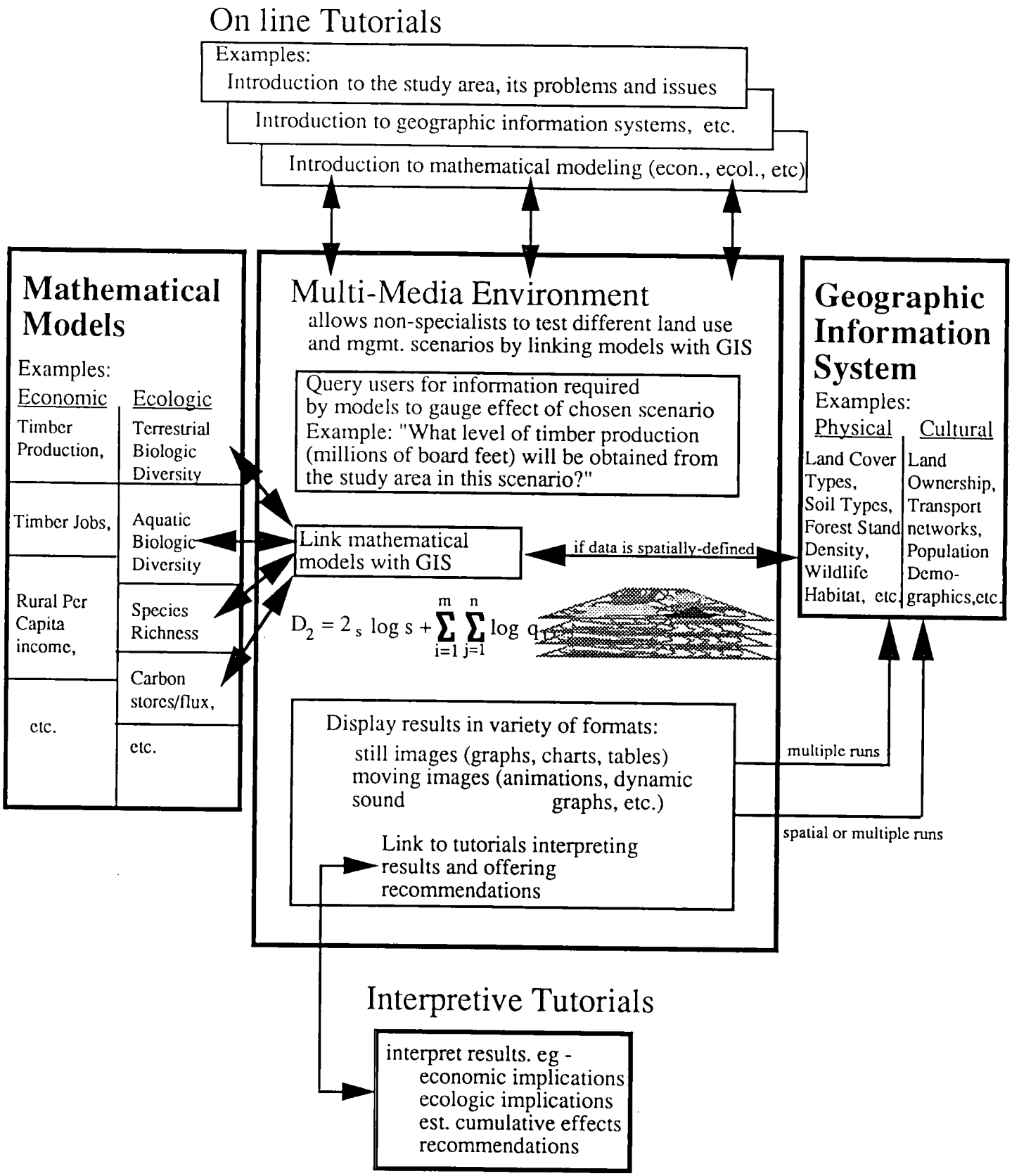


Figure 4

ABBREVIATED CURRICULUM VITA

David W. Hulse, B.S.L.A., M.L.A.
Associate Professor, Department of Landscape Architecture
University of Oregon
Eugene, Oregon 97403
(503) 346-3634, FAX 503-346-3626, INTERNET DHULSE@AAA.UOREGON.EDU

Education

Sept. 1982-June 1984	Harvard University Graduate School of Design Cambridge, Massachusetts Master in Landscape Architecture with Distinction
Sept. 1977-May 1981	Colorado State University, Ft. Collins, Colorado Bachelor of Science in Landscape Architecture
Sept. 1974-May 1976	Union College, Barbourville, Kentucky

Academic Experience

Sept. 1990-present	Associate Professor, Department of Landscape Architecture, School of Architecture and Allied Arts, University of Oregon
June 1985-June 1990	Assistant Professor, Department of Landscape Architecture, School of Architecture and Allied Arts, University of Oregon
March 1989-present	Director, Oregon Summer Architecture Academy, School of Architecture and Allied Arts, University of Oregon
Sept. 1984-June 1985	Visiting Assistant Professor, Universita' di Firenze, Florence, Italy

Creative Professional Practice

Sept. 1988-present	Project Landscape Architect with Jerome Diethelm, Knight Library Additions and Alterations, University of Oregon
May 1989-present	Project Consultant to Land and Community Associates, GIS and Visual Assessment, Delaware Water Gap National Recreation Area, National Park Service
July 1988-Oct. 1988	Project Consultant to Fred Glick Associates, Visual Component Environmental Impact Statement for Mt. Hood Meadows Ski Area Expansion
June 1981-Sept. 1982	EDAW Inc., Assistant Project Manager, The Los Angeles Marina, Laguna Canyon Specific Plan, Newport Beach, California
June 1980-Jan.1981	EDAW Inc., Project Manager, Rose Garden of the Denver Botanic Gardens, Colorado State Trails Development Plan, Ft. Collins, Colorado

Research Grants and Awards

1991-1993	MacArthur Foundation Grants for Collaborative Studies., "Chernobyl: Applied Information for Education and Regional Decision-Making" $250,000 Apple Computer, Inc. "Chernobyl: Applied Information for Education and Regional Decision-Making" $100,000
1988-1989	Award of Distinction, Council of Educators in Landscape Architecture
1987-1988	Apple Computer, Inc.,"SYNTHESIS--Creativity Enhancing Software for Environmental Design" $48,000
1986-1987	National Endowment for The Arts, Design Arts Program., "Possible Futures For The Columbia River Gorge: Predictive and Descriptive Computer Modeling and its Application to Landscape Planning"., The Washington/Oregon Border $30,000
1984-1985	Fulbright Scholar, "The Conscious Landscape: The Influence of Open Space on Everyday Life--A Case Study of Modern Florence"., Florence, Italy $11,000

Selected Publications

"macGIS 2.0: A Geographic Information System for the Macintosh"., (with Kit Larsen)., Harper/Collins Publishers., New York., ISBN 006500969X., July, 1992.

"Prediction of Scenic Beauty using Mapped Data and Geographic Information Systems"., (with Ian D. Bishop)., Journal of Landscape and Urban Planning., in press.

"GIS as an aid to Rural Landscape Protection"., (with R. Melnick) in Proceedings 2nd International Symposium on Advanced Technology in Natural Resource Management., November, 1990.

PHILLIP SOLLINS, Assoc. Prof., Dept. Forest Science, Oregon State Univ., Corvallis, OR 97331
Phone: (503) 737-6582; E-mail: sollins@fsl.orst.edu
Born: Nov. 24, 1944, Los Angeles, CA

Education:
Swarthmore College, 1966, B.A., Biology; Univ. North Carolina, 1970, M.A., Zoology; Univ. Tennessee, 1972, Ph.D., Botany.

Professional Experience:
Res. Assist. Prof., College of Forest Resources, Univ. Washington, 1973-1976
Res. Assoc., School of Forestry, Oregon State Univ., 1976-1982
Res. Assoc. Prof., Oregon State Univ., 1982-1992
Visiting Assoc. Prof., School For. Env. Stud., Yale Univ., 1987-1989
Adj. Prof., Faculty of Agronomy, Univ. Costa Rica, 1989-
Assoc. Prof., Oregon State Univ., 1992-

Publications, selected examples (66 total):
Sollins, P., F. Sancho, R. Mata, and R.L. Sanford. Soils and soil process research. In: L. McDade, K. Bawa, H. Hespenheide, and G. Hartshorn (eds.), La Selva: Ecology and Natural History of a Neotropical Rainforest, Univ. Chicago Press, Chicago (in press).

Cohen, W., D. Wallin, M. Harmon, P. Sollins, C. Daly, and W. Ferrell. Modeling the effect of land use on carbon storage in the forests of the Pacific Northwest. In: Proc. Int. Geoscience and Remote Sensing Symp., Houston, TX, May 26-29, IEEE, Piscataway, NJ. (in press)

Turner, D.P., P. Sollins, M. Lueking, and N. Rudd. 1992. Aailability and uptake of inorganic nitrogen in a mixed old-growth coniferous forest. Plant Soil (in press).

Binkley, D., R. Bell, and P. Sollins. 1992. Comparison of methods for estimating soil nitrogen transformations in adjacent conifer and alder-conifer forests. Can. J. For. Res. 22:858-863.

Binkley, D., P. Sollins, R. Bell, D. Sachs, and D. Myrold. 1992. Biogeochemistry of adjacent conifer and alder/conifer stands. Ecology 73:2022-2033.

Strickland, T.C., P. Sollins, N. Rudd, and D.S. Schimel. 1992. Rapid stabilization and mobilization of 15-N in forest and range soils. Soil Biol. Biochem. 24:849-855.

Furrer, G., P. Sollins, and J. Westall. 1990. The study of soil chemistry through quasi-steady-state models. II. Soil solution acidity. Geochim. Cosmochim. Acta 54:2363-2374.

Radulovich, R., P. Sollins, P. Baveye, and E. Solorzano. 1992. Bypass water flow through unsaturated microaggregated tropical soils. Soil Sci. Soc. Amer. J. 56:721-726.

Sollins, P., G. Robertson, G. Uehara. 1988. Nutrient mobility in variable- and permanent-charge soils. Biogeochem. 6:181-189.

Research Grants, selected examples (25 total):

Modeling the Effect of Land Use and Climate Change on Carbon Storage in the Forests of the Pacific Northwest. NASA, $395,000, 1992-1994.

Causes and Consequences of Resource Management Decisions on Adjacent Drainage Basins in the Cascade Range. U.S. Man & The Biosphere Program, $50,000, Co-I, 1992-1994.

Expansion of GIS/Remote-Sensing Facilities and Enhancement of Data Bank Capabilities. National Science Foundation, $50,000 (Co-I), 1991-92.

Facilities Improvement at Andrews Experimental Forest: 1992 Automated C,N,S Analysis of Plant and Soil Samples. National Science Foundation, $30,000 (P/I), 1991.

Analysis of Landscape Patterns and Processes, USFS PNW 1992 Station Co-op Aide Agreement, $155,875 (P/I), 1990.

Long-term Site Productivity in the Pacific Northwest, USFS PNW Station Co-op Aide Agreement, $96,520 (P/I), 1990-1992.

Long-term Ecological Research at Andrews Experimental Forest, NSF, $3,600,000, Co-I, 1991-97.

Long-term Site Productivity in the Pacific Northwest, USFS PNW Station, $94,000, P/I, 1990-92.

Improvement of Laboratory Facilities and Equipment for 1990 Research at the H.J. Andrews Experimental Forest, National Science Foundation, $85,000, Co-I, 1987-1990.

An Integrated Science Workbench/Data Bank for Ecosystems Research, NSF, $89,000, Co-I, 1987-88.

Biological Control of Soil Charge Properties and Nutrient Retention in Variable Charge Soils of the Humid Tropics, NSF, $1,320,000, Project Co-leader, 1984-90.

Graduate students:

D. Sachs, M. Gillham, J. Powers, D. Warrington.

Post-doctoral students:

G. Spycher, D. Turner, M. Lueking, T. Strickland, R. Radulovich, J. Borchers, P. Homann, D. Wallin.

Other Collaborators (co-authors and co-PIs, last 4 years):

F. Swanson, G.P. Robertson, S. Gregory, G. Uehara, D. Binkley, R. Sanford, K. Tate, B. Theng, H. Van Miegrot, B. Caldwell, D. Cole, R. Mata, F. Sancho, D. Schimel, W. Ferrell, G. Furrer, R. Griffiths, J. Westall, R. Bell, D. Myrold, C. Preston, B. Sawyer, J. Kimmins, E. Solorzano, D. Schimel, D. Perry, K. Cromack, P. Baveye, R. Boone, M. Harmon, J. Lattin, P. Baveye, P. Verburg

Thesis Advisors:

H.T. Odum, J. Olson

DAVID POVEY

EDUCATION AND CERTIFICATIONS

1972	Ph.D., City and Regional Planning, Cornell University
1969	M.R.P., Regional Planning, Cornell University
1963	B.S., Business Administration and Political Science, Lewis and Clark College

EMPLOYMENT

1992-	Co-director, Sustainable Development Group, University of Oregon
1990-	Professor, Urban and Regional Planning, University of Oregon
1983-	Director, Urban and Regional Planning Program, University of Oregon
1978-	Director, Community Planning Workshop, University of Oregon
1973-82	Head, University of Oregon Department of Urban and Regional Planning
1972-73	Co-Principal Investigator, Hawaii Environmental Simulation Laboratory
1970-73	Assistant Director, Pacific Urban Studies and Planning Program, University of Hawaii
1966-67	Project Manager, American-Yugoslav Project in Regional Planning Studies

SELECTED RESEARCH / CONSULTING PROJECTS[1]

1993	Prepared a market assessment for Personal Communication Networks in rural Oregon
1993	Survey of community values for The City of The Dalles
1993	Developed a strategic planning process and plan for the Oregon Ski Industries Association
1992	Directed evaluation of development options for an historic hotel in The Dalles, OR.
1992	Directed market assessment for winter operations of Crater Lake National Park
1992	Prepared a report on the Economic Impacts of Windsurfing in the Columbia River
1992	Coordinated the formulation of an interdisciplinary Sustainable Development Group
1991	Conducted a market analysis/ economic feasibility report for Mt. Bailey ski area.
1991	Directed an investigation o Eco-tourism and Windsurfing development in Costa Rica
1990	Directed a design competition for the City of Government Camp, Oregon.
1990	Developed a strategic plan for the expansion of the Community Planning Workshop
1989	Conducted a parkway access study for portions of Highway 101 in Coos County.
1988	Analyzed the economic impacts of the Oregon ski industry in the 1986-87 Season
1987	Conducted a feasibility assessment for a university-based research Park
1987	Analyzed the economic impacts of windsurfing in the Columbia River Gorge.
1986	Conducted a market analysis for a Research Park at the University of Oregon.
1986	Analyzed the feasibility of public/private recreation marketing for the U.S.F.S.
1986	Analyzed the economic impacts of the Oregon ski industry in the 1986-87 Season
1984	Conducted a dispersed recreation study in the Santiam Pass area.
1982	Developed an inventory of training needs for land use planners in rural areas of Alaska.
1982	Prepared a Recreation Development Plan for Homer, Alaska.

[1] Povey developed and directs the Community Planning Workshop (CPW), a program which teaches students how to do applied planning research for communities and organizations in the Pacific Northwest. Each year the CPW engages between 30-50 students in 10-15 projects. The CPW supports a staff of five and provides stipends for 10-15 students using the average annual income of $150,000 from contract research. In the past 10 years CPW has completed over 100 research reports. The listing provided here is representative of the 3-4 projects personally directed by Povey each year.

BIOGRAPHICAL SKETCH

STEVEN R. RADOSEVICH
Professor
Program Leader, Sustainable Forestry
Program Leader, CRAFTS: A Reforestation Research Cooperative

Department of Forest Science
Department of Crop Science
Oregon State University
Corvallis, Oregon 97331

Born: Yakima, Washington, 1946

EDUCATION

1972	Ph.D., Crop Science, Oregon State University, Corvallis, Oregon
1971	M.S., Crop Science, Oregon State University, Corvallis, Oregon
1968	B.S., Horticulture, Washington State University, Pullman, Washington

PROFESSIONAL EXPERIENCE

1983-Present Professor, Departments of Forest Science and Crop Science, Oregon State University

Program Leader, Sustainable Forestry--A multidisciplinary program to increase understanding about the future and health of forest and rural communities through innovative links among scientific and humanist disciplines.

Program Leader, CRAFTS--A multi-agency research Cooperative on reforestation in the Pacific Northwest.

1974-1983 Assistant Professor, then Associate Professor of Botany, Botany Department, University of California, Davis.

1972-1974 Extension Weed Scientist, Botany, University of California, Davis.

1968-1972 National Science Foundation Trainee, Department of Crop Science, Oregon State University, Corvallis.

PROFESSIONAL SERVICE

Invited Panel on the National Research Initiative and Sustainability Agriculture. 1991, Center for Rural Affairs, USDA, Forest Foundation, Farm Foundation. North Lake Tahoe, CA.

National Coordinating Committee on Integrated Pest Management, USDA. 1988-89 and 1990-92, Washington, D.C.

National Coordinating Committee on Pesticide Resistance Management. National Research Council. 1987-89. Washington, D.C.

USDA Competitive Grants Program. Review panel on biological stress on plants. 1984-87, Washington, D.C.

Agricultural Research Policy Seminar, Minneapolis, MN. 1986 (An international seminar to examine future directions of American agricultural research.)

Battelle/Kettering Foundation, Michigan State University and USDA. Invited participant. Crop Productivity - Research Imperatives Revisited. 1986 (An international conference to determine agricultural research direction imperatives for the next decade.) Boyne Mt., MI.

National Academy of Sciences - National Research Council Invited Symposium and Workshop on Pesticide Resistance Management. 1984, Washington, D.C.

National Institute of Health (NIH). 1981-82. Site review panel concerning the NIH program on pesticide toxicology at North Carolina State University.

RECOGNITION: SPECIAL HONORS AND AWARDS

Weed Science Society of America Outstanding Researcher Award, 1991. Louisville, Kentucky.

Oregon Society of American Foresters Award for outstanding accomplishments in Forest Research, 1990. Eugene, Oregon.

Staniford Lecturer. Iowa State University, 1989. Ames, Iowa.

Weed Science Society of America Outstanding Young Weed Scientist Award, 1983. St. Louis, Missouri.

Phi Sigma, Outstanding Graduate Student Award, 1972, Oregon State University, Corvallis, Oregon.

PUBLICATIONS RELEVANT TO THIS PROJECT

Ghersa, C.M., M.L. Roush, and S.R. Radosevich. 1992. Coevolution of agroecosystems and weed management. Ecological applications. (Invited paper, accepted 4/92).

Radosevich, S.R., and C.M. Ghersa. 1992. Weed Science: A microcosm of agriculture's neckriddle. Weed Technology (Feature article, accepted 2/92).

Radosevich, S.R., C.M. Ghersa, and G. Comstock. 1991. Ecological and ethical concerns a weed scientist should have about herbicide tolerant crops. Weed Technology (Accepted).

Walstad, J.D., S.R. Radosevich, D.V. Sandberg (eds.). 1990. OSU Press. "Natural and Prescribed Fires in Pacific Northwest Forests."

Radosevich, S.R., and M.L. Roush. 1990. The role of competition in agriculture. In: Grace and Tillman (Eds.). Perspectives on Plant Competition. Academic Press, Inc. San Diego, CA.

Radosevich, S.R. and J.D. Holt. 1984. Ecology of Weeds: Implications for Management. J. Wiley & Sons, N.Y.

Nearly 100 other scientific publications–books, book chapters, or scientific publications.

INVITED SYMPOSIA AND SEMINARS

More than 50 lectures or short courses, given in the United States and foreign countries. Examples:

The Production Paradigm: Agriculture's Neckriddle. September 1991. University of Alberta, Edmonton.

Alternative approaches to chemicals in forestry. New Zealand Ministry of Forests. Rotorua, New Zealand, July 1989. Keynote address.

Staniford Lecturer. Iowa State University. January 1989. Weeds, Crops, and Competition: An Agricultural Neckriddle. Ames, Iowa.

John Muir Institute Center for the Integration of Applied Sciences. Herbicide Resistance. Invited paper presented to JMI and the California Department of Water Resources. Sacramento, California. June 1981.

RESEARCH GRANTS:

Nearly four million dollars received from external research funding organizations since 1984.

Current and Pending Support

APPENDIX VII

The following information should be provided for each investigator and other senior personnel. Failure to provide this information may delay consideration of this proposal.

Investigator: S. Radosevich

Other agencies (including NSF) to which this proposal has been/will be submitted.

Support: ☒ Current ☐ Pending ☐ Submission Planned in Near Future ☐ *Transfer of Support

Project/Proposal Title: Development of a vegetation management model for forest regeneration in the Pacific Northwest region

Source of Support: U.S. Forest Service

Award Amount (or Annual Rate): $ 1,083,765 Period Covered: 10/1/90 - 9/30/95

Location of Research: Corvallis, Oregon

Person-Months or % of Effort Committed to the Project. Cal: 20% Acad: Summ:

Support: ☒ Current ☐ Pending ☐ Submission Planned in Near Future ☐ *Transfer of Support

Project/Proposal Title: A socio- ecological approach to natural resource sustainability in Lane County, Oregon (A Planning Grant)

Other Participants: M.L. Roush, W. Cohen, S. Cordray, S. Daniels, K. Goetz, P. List, P. Scruggs, P. Sollins, C. Smith, and B. Steel

Source of Support: Northwest Area Foundation

Award Amount (or Annual Rate): $ 28,000 Period Covered: 8/1/92 - 2/1/93

Location of Research: Corvallis, Oregon

Person-Months or % of Effort Committed to the Project. Cal: 10% Acad: Summ:

Support: ☒ Current ☐ Pending ☐ Submission Planned in Near Future ☐ *Transfer of Support

Project/Proposal Title: Land use patterns and ecosystem behavior in the upper Willamette river drainage: Consequences for carbon storage and flux

Other Participants: P. Sollins, W. Cohen, M. Harmon, G. Grant, D. Turner, J.Jones, S. Cordray, M.L. Roush, and C. Smith

Source of Support: Center for Analysis of Environmental Change

Award Amount (or Annual Rate): $ 20,000 Period Covered: 6/1/92 - 7/1/94

Location of Research: Corvallis, Oregon

Person-Months or % of Effort Committed to the Project. Cal: 10% Acad: Summ:

Support: ☒ Current ☐ Pending ☐ Submission Planned in Near Future ☐ *Transfer of Support

Project/Proposal Title: Causes and consequences of land use decisions in two adjacent drainage basins in the central Oregon Cascade Range

Other Participants: P. Sollins, W. Cohen, S. Cordray, S. Daniels, K. Goetz, M. Harmon, P. Homann, P. List, M.L. Roush, C. SMith, and B. Steel

Source of Support: U.S. Man & Biosphere

Award Amount (or Annual Rate): $ 50,000 Period Covered: 10/1/92 - 9/30/94

Location of Research: Corvallis, Oregon

Person-Months or % of Effort Committed to the Project. Cal: 10% Acad: Summ:

Support: ☒ Current ☐ Pending ☐ Submission Planned in Near Future ☐ *Transfer of Support

Project/Proposal Title: Development of a sustainable forestry program

Source of Support: College of Forestry, Oregon State University

Award Amount (or Annual Rate): $ 100,000 Period Covered: 7/90 - 7/94

Location of Research: Corvallis, Oregon

Person-Months or % of Effort Committed to the Project. Cal: 20% Acad: Summ:

---

*If this project has previously been funded by another agency, please list and furnish information for immediately preceding funding period.

Current and Pending Support

APPENDIX VII

The following information should be provided for each investigator and other senior personnel. Failure to provide this information may delay consideration of this proposal.

Investigator: S. Radosevich

Other agencies (including NSF) to which this proposal has been/will be submitted.

Support: ☐ Current ☒ Pending ☐ Submission Planned in Near Future ☐ *Transfer of Support

Project/Proposal Title: Nutrient interference effects in three forest herb populations

Other Participants: D.E. Hanson, M.L. Roush

Source of Support: USDA Competitive Grants

Award Amount (or Annual Rate): $ 156,000

Period Covered: 2/1/93 - 6/30/95

Location of Research: Corvallis, Oregon

Person-Months or % of Effort Committed to the Project. Cal: 5% Acad: Summ:

Support: ☐ Current ☒ Pending ☐ Submission Planned in Near Future ☐ *Transfer of Support

Project/Proposal Title: A socio-ecological approach to natural resource policy in Lane County, Oregon

Source of Support: Northwest Area Foundation

Award Amount (or Annual Rate): $ 419,000

Period Covered: 3/93 - 3/96

Location of Research: Corvallis, Oregon

Person-Months or % of Effort Committed to the Project. Cal: 15% Acad: Summ:

Support: ☐ Current ☐ Pending ☐ Submission Planned in Near Future ☐ *Transfer of Support

Project/Proposal Title:

Source of Support:

Award Amount (or Annual Rate): $

Period Covered:

Location of Research:

Person-Months or % of Effort Committed to the Project. Cal: Acad: Summ:

Support: ☐ Current ☐ Pending ☐ Submission Planned in Near Future ☐ *Transfer of Support

Project/Proposal Title:

Source of Support:

Award Amount (or Annual Rate): $

Period Covered:

Location of Research:

Person-Months or % of Effort Committed to the Project. Cal: Acad: Summ:

Support: ☐ Current ☐ Pending ☐ Submission Planned in Near Future ☐ *Transfer of Support

Project/Proposal Title:

Source of Support:

Award Amount (or Annual Rate): $

Period Covered:

Location of Research:

Person-Months or % of Effort Committed to the Project. Cal: Acad: Summ:

*If this project has previously been funded by another agency, please list and furnish information for immediately preceding funding period.

NSF Form 1239 (8/92)

CURRENT AND PENDING SUPPORT

Phillip Sollins

Source of Support	Project Title	Award Amount	Period Covered	Person Months or FTE	Location of Research
		Current			
USFS PNW Station	Various	$ 90,000	1991-1992	.10	Oregon
NSF	Long-term ecological research at Andrews Experimental Forest. BSR-9011663 (F. Swanson, PI)	$3,600,000	1991-1996	.50	Oregon
NSF	Expansion of GIS/Remote-Sensing facilities and enhancement of data bank capabilities. BSR-9011663 (Supplement) (S. Stafford, PI)	$ 50,000	7/91-7/92	.00	Oregon
NSF	Facilities improvement, Andrews Experimental Forest: automated CNS analysis of plant and soil samples. DIR-9115267 (P. Sollins, OSU PI)	$ 29,200	7/91-6/92	.00	Oregon
NASA	Modeling the effect of land use and climate change on carbon storage in the forests of the Pacific Northwest (W. Cohen, PI)	$ 395,000	9/91-9/94	.10	Oregon
NSF	Upgrading field, analytical, and data management systems for Andrews Forest LTER Program. BSR 9011663 (Supplement) (P. Sollins, PI)	$ 81,770	7/92-4/93	.00	Oregon

U.S. Man & the Biosphere Program	Causes and conse-consequences of resource management decisions on adjacent drainage basins in the Cascade Range (S. Radosevich & P. Sollins, PIs)	$	50,000	10/92-9/94	.10	Oregon

	Univ. of Oregon	Oregon State Univ.	Grand Total
YEAR 1			
Salary (including OPE)	451,250	1,023,273	1,474,523
Services and Supplies	82,000	476,000	558,000
Travel	11,500	55,000	66,500
Sub-Total	544,750	1,554,273	2,099,023
Indirect Costs (@ 50% UofO, 40% OSU)	272375	472028	744403
Year 1 Total	**817,125**	**2,026,301**	**2,843,426**
YEAR 2			
Salary (including OPE)	640,750	948,434	1,589,184
Services and Supplies	61,000	175,720	236,720
Travel	14,750	58600	73,350
Sub-Total	716,500	1,182,754	1,899,254
Indirect Costs (@ 50% UofO, 40% OSU)	358250	473,101	831351
Year 2 Total	**1,074,750**	**1,655,855**	**2,730,605**
YEAR 3			
Salary (including OPE)	445,000	997,850	1,442,850
Services and Supplies	55,000	79484	134,484
Travel	11,000	61236	72,236
Sub-Total	511,000	1,138,570	1,649,570
Indirect Costs (@ 50%)	255500	455,428	710928
Year 3 Total	**766,500**	**1,593,998**	**2,360,498**
Grand Total by Institution	**2,658,375**	**5,276,154**	**7,934,529**