

The "Chip Mill" Issue: Sustainable Forestry?

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ABSTRACT

Increased consumption and multiple-use demands on Western North Carolina forest resources threaten the region's ecological sustainability. The recent proliferation of wood chip mills appears to cause the greatest controversy among disparate groups and community members. Numerous stakeholder concerns include: air and noise quality, trucking safety concerns, clearcutting of forests, commercial timber harvesting on public lands, compliance with Best Management Practices, property rights, protection of biotic integrity and watersheds, appropriate land use, forest product yields, tax incentives, recreation and tourist industry impacts, agency responsibilities, and cultural resource protection. My research activities provided opportunities for me to work toward resolving conflict, to seek sustainable forestry solutions, and to influence policy planning in the Union Mills community and my home region of Western North Carolina.

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agency's Eastern Community-Based Environmental Protection Practitioner's workshop in Atlanta. The workshop gave me a forum to present project information and glean additional insight into the agency's dynamics. Al Lucas, my EPA Region IV mentor, with a good-spirited nature steadfastly read my prolific fieldnotes. He also reminded me to be aware of my "agenda" as I "insert myself into the process." Dr. Harvard Ayers, my SfAA mentor, again and again provided much needed support as he has in many of my anthropological activities of this last decade. Lynne Faltraco, leader of the Concerned Citizens of Rutherford County (CCRC), is a remarkable woman committed to attaining environmental and social justice for her community. To the CCRC members who have empowered themselves with an endless well of solution-seeking tools, I hope I have contributed to that process. Gwen Parker took several of the photographs contained herein (See Appendix); I have gratefully used them on numerous occasions throughout my research activities. Our previous association continues to have a positive influence on my thinking about this issue. I also want to thank Shannon Buckley, the Willamette Industries' District Procurement Forester, for his forthright participation in this research; he also has much at stake in this issue. For each person that participated in formal interviews or in workshops and meetings, I am grateful for your input. So many more people aided my research (e.g., government agents, landholders, loggers, librarians, and regular citizens), supplied me with documents, answered my countless inquiries, shared their feelings and professional opinions. I hope that my interpretation reflects what they tried to convey to me. I want to thank my family and friends who witnessed and tolerated my obsession with this issue, and who continue to love me in spite of it. To any others whom I failed to mention, I apologize. I take full responsibility for any errors contained in this final paper.

This work is dedicated to: my daughter, Nichole Denise McDonald, who gives cause to sustainable solutions; and to Michael Bernett Dueitt, a forester and my forever friend, the "other" is "us."

PREFACE

This document describes ongoing efforts towards sustainable forestry issues in western North Carolina and my anthropological part in that process. It's the tip of the iceberg. The research experience was humbling.

Natural resource concerns, environmental protection, and conflict resolution impact all of us. I hope that, you, the reader finds at least one piece of information in my environmental anthropology report that you did not already know, but wanted to know.

Part I, Chapter 1 frames the issue. Chapter 2 introduces you to the ideas and theories of others that influence some of my data in the report. Chapter 3 addresses the methods I used during my study. Chapter 4 discusses the local and regional contextual information, some historical and social, some environmental and economic.

Part II, Chapter 5 investigates different perspectives about sustainability. Chapter 6 describes my research findings in broad topic areas on the chip mill issue. Chapters 7 and 8 wrap-up the conclusions, analysis, and recommendations. The References Cited section is separated by major categories of the communication genre.

My conclusions and analysis are offered in the context of a contribution to a much larger upcoming project, the North Carolina Department of Environment and Natural Resources (DENR) chip mill impact study. The state study will have Region IV Environmental Protection Agency (EPA) support. Duke University's Nicholas School of the Environment and North Carolina State University's Forestry School will be the major contributors to the impact study. Their interdisciplinary research work through the Southern Center for Sustainable Forests is expected to take about two years, and will be funded by about \$250,000. It would be presumptive for me to make wide sweeping dogmas about my findings in light of their projected work. However, my work is a concerted attempt at reaching stakeholders in this area and on this issue. It is my desire that this summary gives voice to some of those who might not otherwise be heard.

Cheryl Darlene McClary

PART I: INTRODUCTION

CHAPTER 1. A CHIP MILL IN UNION MILLS

My SfAA Environmental Anthropology Fellowship officially began on June 15, 1997. However, the work is a continuation of my Masters study at Northern Arizona University. During the summer of 1996 I interned with the Sierra Club's Southern Appalachian Highlands Ecoregion Task Force (SAHE). I served as a researcher, an advocate, and a liaison to a grassroots group, the Concerned Citizens of Rutherford County (CCRC). The grassroots group opposes the proposed construction and operation of a Willamette Industries, Inc. wood chip mill in their rural farming community of Union Mills, in western North Carolina (See [Photo 1.1](#)). Anthropological questions, developed but left unanswered during my applied anthropology internship thesis writing (McClary 1997), compelled me to further explore research opportunities. My goals included work with CCRC toward community-based environmental protection solutions, identification of various stakeholders concerns, and conflict resolution on community development and forestry issues in western North Carolina. This SfAA fellowship provided me that expanded opportunity.

Numerous people with multiple perspectives are involved directly and indirectly in what I will refer to in this paper as the "chip mill issue" (See [Photo 1.2](#)). The geographic setting is part of the Environmental Protection Agency's (EPA) Region IV. The terrain, nestled between the Southern Appalachian's Blue Ridge mountains and the state's piedmont region, mimics the geophysics features of both. The county's western border adjoins the Southern Appalachian Assessment area. Recognition of forestry related concerns is evidenced by the inclusion of erosion and siltation from logging as one of the region's "major environmental stressors" (<http://www.epa.gov/region4/cbep/r4cbep/appalchi.htm>).

The issue concerns wood chip production. Wood chips are used in a number of wood products, especially in pulp and paper production, but are also used in photography film paper and cellulose for rayon fabric. Satellite chip mills, which produce many of the chips, are a relatively new phenomena in this region. *Pulp and Paper Magazine* reports that the South is experiencing a "record runup of chip mill construction" which continue to move "into the *outer reaches* of the South and offshore" (October, 1997:25) (my emphasis). The mills are located in areas remote from the pulp and paper mills (TVA 1993 Vol. 1:1-2). The locations increase the timber sourcing

area for the pulp mills. In addition to the domestic market, chips are also exported from the country. Export of hardwood chips alone have increased from values of \$36 million in 1989 to approximately \$200 million in 1995; shipments to Japan absorb 90 percent of the recent market (West 1996:1).

In the Spring of 1995, Union Mill citizens learned that their ex-Lieutenant Governor, Bob Jordan, hoped to acquire an \$8 million dollar industrial development bond to build a chip mill in their neighborhood. They did not, as taxpayers, want to fund a private individual to exploit their neighborhood by building an industrial plant. When the citizens investigated chip mill operations, they learned that approximately 50 logging trucks a day would enter, and then exit the mill, on their curvy two-lane roads. Road improvements near Union Mills would be required to handle the 40-ton trucks bringing the logs to the chipper. The North Carolina Department of Transportation (DOT) road work figures began at \$900,000 and did not include the costs of the necessary easements (Moore 1995). The citizens did not believe the economic benefits to the community would outweigh the cost. Bob Jordan expected to employ ten people directly and seventy indirectly through "the process of cutting and transporting the logs to the mill" (Denny 1995). Citizens' frustration mounted when they learned Jordan intended to export the chips to Asia.

He originally planned to purchase inferior-grade hardwoods, render the trees into pulp and transport the byproducts to Wilmington for export to Japan for the production of paper (Tatum 1996:1).

Initially citizen's concerns focused on construction financing through the bond, the actual construction and operation of the mill in their neighborhood, the low number of employees (thus economic benefit) to the region, and the export of local resources to Asia. Four citizens filed a suit against Bob Jordan regarding his already approved industrial bond (Tatum 1996:1). The citizens won their suit. Bob Jordan sold the mill property to Willamette Industries, Inc., of Portland, Oregon (Henderson 1996). Willamette's ownership differed on two points: the company did not need the industrial development bond financing and most often supplies domestic markets.

Willamette plans to build a chip mill of about the same size Jordan contemplated...It [the mill] will produce up to 300,000 tons of chips a year. Hardwoods cut on private lands within a 50-to-60 mile radius will supply the mill. (Bob Schaefer in Henderson 1996).

During this time, the citizens built a coalition with area support; they became known as the Concerned Citizens of Rutherford County (CCRC). Members began to learn what they could about silvicultural practices and about Willamette Industries. The corporate offices are located in Portland, Oregon (Willamette Industries, Inc. 2/96; Willamette Industries, Inc., 1996 handout; Willamette Industries, Inc., 7/96; Dunn 1994; http://biz.yahoo.com/prnews/971113/or_

[willamette_ind_di.1.html">willamette_ind_di.1.html](#)" 12/11/97; "Willamette Facts in the Carolinas" handout). The company is "an integrated forest products company" manufacturing three product lines (i.e., building materials, fine paper, and unbleached paper). The corporation ranks 322nd on Fortune's "500" list. In 1995, sales reached \$4 billion, with profits of \$515 million. In 1995 the company held 96 facilities operating in 21 states, with no foreign operations. By 1997, the company increased its holdings to 97 plants including the 1996 purchase of Medite (Medite of Europe Limited) in Ireland. In recent months, the company announced plans to construct a \$10 million East Coast office just across the North Carolina state line in Rock Hill, South Carolina (Charlotte Observer 1997). Willamette owns 1.8 million acres of timberland, including

156,000 acres in North Carolina. However, the timber for the Broad River Chip Co. in Union Mills will come from "gatewood" sources (Buckley interview 10/23/97). Gatewood describes the transfer of timber ownership when loggers deliver the wood to the chip mill gate; the company does not purchase the wood directly from the landholders.

In its July 1996 newsletter to the community, Willamette reported it would "begin operations with one shift, working 7:30 a.m. to 4 p.m. weekdays." The product would be manufactured from "fiber that can't be used by local sawmills" (e.g., "early thinnings," "tree tops and weak or deformed trees," "twisted and diseased trees and trees from stagnant stands"). The chips would be transported by truck or rail to Willamette's paper mills in Kingsport, Tennessee and Bennettsville, South Carolina. An August, 1997 company newsletter included chip transport to their Hawesville, Kentucky mill.

The company's history book chronicles a continuous series of mill openings and closings based on available timber supplies (Woodward :358-359; Dunn 1994:20-23;69-70;81;113-114; 120-121;151-154;160-162;168;195; "Willamette Industries, Inc. Annual Report 1995," 1996:15-16; "Willamette Industries, Inc. 1996 "Growth on a Solid Foundation"). Earlier controversies with environmental groups (Dunn 1994:151;160-162) and restrictions on federal timber supplies in the Pacific Northwest, influenced the company's move to the South and the East (Woodward :359-359; Dunn 1994:159-160; 162). This information worried CCRC members who heard that satellite chip mills were part of a "boom/bust" industry which exploited local timber resources. CCRC also became concerned about the company's continued historical trend in business practices which exploited local economies for the company's benefit (Woodward:358; Dunn 1994:1;49;151-153). The citizen group discovered that controversy existed in some of those communities, about labor practices (The Paperworker 1996:8-9; Woodward:358), mill operations (The Oregonian 1995), and quality of life impacts (Sandlin 1996; Surra 1995). CCRC wanted the Division of Environment and Natural Resources (DENR) to re-examine the company's use of Bob Jordan's Broad River Chip Mill stormwater discharge permit (General Permit No. NCG040000) based on Willamette's environmental history in other locations. The permit re-examination request was based on agency authority to reopen permits (NPDES General Permit No. NCG04000, p.19), and hold a public hearing [NC Gen. Statutes Art 21 sect. 143-215.3 (a)(3)] (Parker 1996). No action was taken by the agency. However, early company construction activities confirmed that the Union Mills community would also experience impacts. In November, 1996, Willamette was found in violation of the NC Sedimentation Pollution Control Act because they had not filed an erosion control plan to DENR. A Western North Carolina Alliance (WNCA) newsletter reported:

...county soil and water officials discovered collapsed silt fences on Willamette property that would allow heavy sediments to foul the unnamed tributary that runs into the Second Broad River (Dietz 1997).

In January of 1997, members of the group met with DENR personnel to again appeal for a public hearing on the stormwater discharge permit. At this same meeting, the members asked for an impact study of the proposed chip mill and a moratorium on any permitting until the study was completed. The group's ideology expanded to include other agenda. The agenda now includes missions shared with other impacted community and environmental groups (e.g., WNCA, Dogwood Alliance). In addition, the scope of the issue enlarged to include similar chip mill concerns in other states. Current concerns are many and include: noise pollution in their neighborhoods; increased logging truck traffic creating hazardous road conditions; hardwood deforestation and reforestation in loblolly pine farms; siltation of lakes and streams; loss of the area's biological diversity; possible clearcutting in three nearby National forests; visual and

aesthetic impacts to a beautiful mountain region; negative economic impacts on the tourist industry, the furniture industry, and other hardwood users; and state tax credits which encourage exporting North Carolina chips to Asia. The chip mill issue caused controversy in the community, re-examination of many public policies, and provoked serious solution seeking work toward appropriate sustainable development. Citizens desire increased job opportunities while protecting the natural and human resources and their quality of life (See [Photo 1.3](#)).

The various groups requested that North Carolina Governor James Hunt, DENR, and also the Environmental Protection Agency (EPA) take part in the solution seeking process. Eventually, the Governor directed DENR to study 'the environmental impacts and economic benefits of woodchip mills' (1997 Hunt). The enlarged environmental agendas call for putting a moratorium on any future chip mills, including additional permits to Willamette Industries, until impact studies can be completed to establish current conditions of the forest resources and to show the cumulative socioeconomic and ecological impacts.

The issue involves a multitude of stakeholders including the community groups, members of environmental and wildlife organizations, forestry and pulp and paper industry personnel, and agents for states and the Federal government. The concerns permeate many cultures (e.g., the corporate industry culture, the environmental community, and the residential communities) in the South and Southeast for a variety of reasons. Continued growth and population increases cause ever greater stresses to the natural resources in this region. People desire to protect their quality of life, their financial livelihood, to maintain their family's property rights, and to continue work that they enjoy. Research that can show the many different stakeholders' feelings, questions, concerns, and ideas about this issue, may in the long-run allow people to live more safely and comfortably in their communities. Participation in solution-seeking processes can enhance people's feeling of membership within the community; it is an action toward community-building while addressing the value of ecological sustainability.

My desires, intentions, and activities during this fellowship have been to work on community-based environmental protection issues confronting the residents of Union Mills, especially as they impact the people and the environment in Rutherford County and western North Carolina. The issues included the proposed construction of a chip mill, sustainable forestry alternatives, and related environmental protection and community development concerns. I used ethnographic data collection and interviews to identify stakeholders and their concerns. In addition, I drew on anthropological methods to organize and facilitate consensus-building public meetings exploring potential impacts of the proposed chip mill. Through participation and research I examined what information stakeholders bring to the bargaining table and how they participate in the solution-seeking processes. I worked toward developing a community-based conflict resolution model that might aid participants' involvement in this issue, and perhaps in future issues. My desire in this paper is to contribute to anthropological understanding of community-based environmental protection, and to enhance governmental and community-based stakeholders' efforts to engage in environmental solution-seeking processes.

CHAPTER 2. REVIEW OF THE LITERATURE

As part of my graduate degree requirements I completed an applied anthropology internship thesis, entitled "Grassroots Grow Greener in Western North Carolina: An Ethnographic Chronicle of Ideological

Change" (McClary 1997). My ethnographic data provides insight into incidents of ideological change as CCRC members became involved in this environmental issue. This ideological change was evidenced in their ensuing behavior to take part in more grassroots activities. Their changed behavior and involvement in this movement reflected new cultural constructions of "self/other" (Pandian 1985). As the new social and coalition identities developed, the opposition worked to enlarge their coalitions (Ginsburg 1985). This dialectical behavior represents a spiral of escalation in which each group reacts to the opposition's behavior. The groups take stronger stances on the issue and become polarized in their ideology. My thesis analysis discussed issues of "us/them," "selective victimization," (Johnston 1994) and the reconciliation of polarized positions through conflict resolution.

During this research I hoped to further my understanding of those concepts, but reach a larger pool of stakeholders. Numerous community stakeholders are already seeking ways to find solutions to natural resource issues and reduce conflict among disparate parties. In the anthropological community, I draw on works by Carley and Christie in *Managing Sustainable Development*, for perspectives on development. Sargent, Lusk, Rivera, and Varela, in *Rural Environmental Planning for Sustainable Communities*, provide methods to access public involvement and ideology about land values and planning. In *Sustainable Development: Exploring the contradictions*, Michael Redclift compares and contrasts the North (developed) and the South (developing) environmental/sustainable development ideology; both are instructive here. He describes the different perceptions about nature or the environment as:

two frequently opposed intellectual traditions: one concerned with the limits which nature presents to human beings, the other with the potential for human material development which is *locked up* in nature [my emphasis] (1995:199).

Or "...the way in which we look at the world. One person's world of resource depletion is another person's world of resource abundance" (1995:202).

Further, the different perspectives are socially constructed and involve social groups (Redclift 1995:202). He claims that the existing political economy is influenced by different economic interests, as well as disparity of power among the "plural rationalities" or social groups And if sustainable development:

is to be an alternative to unsustainable development, [it] should imply a break with the linear model of growth and accumulation that ultimately serve to undermine the planet's life support system (Redclift 1995:4).

Redclift claims that "developed world" environmental issues focus primarily on access to, appreciation and protection of rural spaces, as well as, protection of endangered species (1995:200). His text focuses on the somewhat different "environmental objectives" in the "developing" countries. The environmental impositions and exploitations of the "The South" (the developing countries below the Equator) often benefit the developed countries' (e.g., us, the "north") "material standards of life." However, I believe his arguments can be applied in my study in "the South" of the United States in which the exploitation of rural labor and resources, and the control (or lack of) thereof, benefit the desires and needs of the domestic and the international markets of timber goods.

David Cleveland, in "Can Science and Advocacy Coexist? The Ethics of Sustainable Development," ask professional anthropologist to examine our anthropological roles in sustainable development (1994:9-10). For specific techniques on conflict resolution, I found useful *Getting to Yes: Negotiating Agreement Without Giving In*, by the Harvard Negotiation Project (Fisher and Williams 1983). For example, the text

provides information about how to "separate the people from the problem" and "invent options for mutual gain" which provide participants a forthright solution-seeking fora.

A number of interdisciplinary and community-based organizations currently publish their methods and findings on forestry issues. The Food and Agriculture Organization (FAO) of the United Nations published proceedings from an electronic conference on *Addressing Natural Resource Conflicts through Community Forestry* (1996), had a special focus on conflict management and conflict resolution.

The interface between community forestry and conflict management is a natural extension of both disciplines. Conflict managers focus on developing problem-solving skills to empower those managing disputes. Community forestry professionals focus on developing problem-solving skills to empower people managing the natural resources on which a community is dependent (1996:88).

Other initiatives were instructive on different sustainability concepts and visions of implementation. One is from a market based but non-governmental perspective. The *Paper Task Force Recommendations for Purchasing and Using Environmentally Preferable Paper* provides the reader with fairly comprehensive research findings on the methods used and participants in "life cycle" of paper. They intend to shift away from a strictly sustained yield forestry approach toward a more sustainable forestry perspective (1995). Charles Taylor's "Report on Forest Health of the United States by the Forest Health Science Panel" (1997) and the *Report of the Governor's [North Carolina] Task Force on Forest Sustainability* (1996) examined forest conditions and alternative policy implications.

Frederick Cabbage's "The Public Interest in Private Forests: Developing Regulations and Incentives" (1997) focuses on the policy, practices, and options for private landowners rights and responsibilities in light of changing environmental charges to the industry. Ecosystem management, "bundle of rights," financial incentives, and "taking" of habitats, are a few of the many issues relevant to developing a base for sustainable forestry initiatives now and in the next century. Other approaches investigate the necessity of broadening forest management practices to include other than yield values. In "A Value-Based, Multi-Scalar Approach to Forest Management," Daily and Norton submit:

Coordination of forest management activities with other resource management efforts is becoming increasingly important. Forestry practices, such as clearcutting, can significantly impact aquatic systems. A system that can identify and account for these indirect effects and larger-scale considerations in local-level forest management will be needed to ensure the success of these other programs (1994:29).

In "Sustainable Forestry or Sustainable Forests?", Conservation Biologist, Reed Noss, provides the most forthright approach to sustainability and biodiversity (1993). He removes the sustainability argument from the pre-settlement condition interpretation into one of "reversing trajectories of impoverishment;" a restoration that speaks of "becoming" rather than "returning:

'It is becoming something more secure for sensitive native species, more natural, and more sustainable by any reasonable criteria...closer to it [pre-European] in some fundamental ways than the present, exploited forest and, therefore, more similar to the ecological theater in which the native species of a region evolved (1993:27).

Noss submits that our anthropocentric approach to development led to current conditions, "We got rich on

unsustainable development" (1993). He calls for a revised way of thinking:

Forests are valuable and must be sustained for their own sake. Until we acquire such an attitude, the sustainability concept may be a smoke screen, behind which we continue to chip away at our biotic heritage.

CHAPTER 3. METHODS

My fellowship required sponsorship by a community-based organization and advisement from an EPA mentor and a SfAA mentor. Lynne Faltraco, CCRCs leader, committed the group as my community-based sponsoring organization. Al Lucas, is my Region IV EPA mentor. Al is a Life Scientist and Senior Biologist in the Office of Environmental Assessment in the Environmental Accountability Division. Dr. Harvard Ayers, from Appalachian State University's Anthropology Department, is my SfAA mentor. Dr. Ayers and I already had an established working relationship. He was one of my early anthropology instructors, as well as my preceptor during my graduate applied anthropology internship with SAHE. My contract required submitting a series of reports (i.e., work plans, revised work plans, and progress reports) for mentor review before submitting the reports to Dr. Barbara Johnston, the SfAA/EPA Project Director. I generated the reports from my daily fieldnotes.

Al Lucas and I met in Asheville for a forest data review session with EPA agents, and federal and state forestry agents. One meeting objective included examining if EPA would have any role in the impending North Carolina DENR chip mill study. Information presented during this meeting contributed further to my understanding of forestry data. The meeting also provided an opportunity to meet authorities with whom I would interact during future project activities and to observe inter-agency relationships. I met with Dr. Ayers at Appalachian State University and at CCRC meetings. I also met with Lynne Faltraco on a regular basis regarding CCRCs work.

My ethnographic data came from many sources. I collected contextual data at organizational and agency offices. I read agency documents, newspaper articles, magazines, industry trade journals, and other texts which reported relevant information. The literature provided opportunities for a better understanding of the accepted jargon and a fuller awareness of "key players" in this and related issues. I also did some "ground truthing" by walking through clearcuts and woodlots, and hiking through Old Growth forests. As a participant-observer, I attended a Mountain Water Quality BMP tour, numerous workshops (e.g., Broad River Basin NPS meetings), public meetings (e.g., County Commissioner, Rutherford "neighborhood"), and public hearings (e.g., DENR chip mill hearing, DWQ Broad River Reclassification, and Maymead Materials, Inc. Draft Permit hearing). I visited the State Capitol offices to discuss trucking issues and export tax credits with legislators, and to learn more from DENR agents about the state's upcoming chip mill impact study. My observations aided my assessment of "who" participates in these events, "what" information they contribute, and "how" participants perform or behave in various cultural settings. I often learned as much about the people and the issue during informal interview settings (e.g., while standing by a pick-up truck in a parking lot) as I did in formal settings (e.g., public hearings).

I had almost daily and countless informal interviews in person or by telephone with a broad spectrum of people to discern stakeholder attitudes (e.g., loggers, hunters, landholders,

and industry). I formally interviewed six people, including Shannon Buckley, Willamette Industries'

District Procurement Forester for the in-construction Broad River Chip Mill. The interviews lasted from forty minutes to two and one-half hours, in their places of business or in their homes. Some were audio tape-recorded with the consultant's permission (See Appendices).

During the day-long meeting of the Southern Center for Sustainable Forests Forum, I was a participant-observer during meetings in which representatives from industry, academia,

government, and the private sector discussed indices and perceptions of North Carolina forest resources. I also participated in a small group meeting about "collaboration and cooperation" possibilities for/by the disparate parties to learn more about conflict resolution techniques.

I did participant-observation during an introductory meeting about the Southeastern Regional Forest Certification Standards Project. After this meeting I was invited to serve as a social scientist Working Group member to help develop standards that would, after a lengthy negotiation process, be submitted to the public and the Forest Stewardship Council for approval.

The certification standards process is a market-driven approach to encourage timberland holders to grow and manage their timber sustainably. I spent about six full days in meetings with "economic," "environment," and "social" representatives negotiating the not-yet-complete first draft. This on-going project provides an excellent opportunity for me to learn how participants define sustainable forestry and to also observe and practice conflict resolution efforts.

I continued my membership in various environmental organizations, including the WNCA, and the Dogwood Alliance. I was a participant-observer in several meetings, including annual meetings for both organizations. During the annual meeting of Southern Appalachian Forest Coalition (SAFC), I learned more about conflict resolution activities, the "zero cut" campaign, and assisted in a workshop about chip mills. The workshop provided an arena for collecting peoples' ideas about impacts and land use options. In InterFaith Forum meetings in Watauga County, I learned how various denominational persons defined sustainability. During one meeting I presented information about chip mills and sustainable forestry issues, as well as solicited their opinions about land use options.

The environmental anthropology project encourages participants to establish a social science network, which I began early in the summer. I visited with several anthropologists in person, by telephone, and/or E-mail. Our discussions provided opportunities for "intellectualizing and theorizing" in addition to literature resource-sharing, gaining fresh perspectives, and good companionship. The project also requires information dissemination with the public, students,

and agencies about social scientists' contributions in environmental protection processes. I lectured to the local community college cultural anthropology class about work options for applied anthropologists and my work on the chip mill issue. Another opportunity to disseminate this information came through EPA Project Director Theresa Trainor's invitation to speak at

the EPA's Eastern Community-Based Environmental Protection Practitioners' workshop in Atlanta. I also observed EPA personnel and gained some perspective of their philosophies about within-agency relationships, regional office-to-Headquarters relationships, and agency-to-public responsibilities.

In late November, I attended the SfAA/EPA Environmental Anthropology Project reception held during the American Anthropological Association annual meeting in Washington, DC. The setting provided an

opportunity to meet in person Advisory Committee members and other project participants, as well as to visit with professors from my graduate alma mater, Northern Arizona University.

Completion of my environmental anthropology contract requires this final analysis reporting of my project. However, preparation of this report also provides an opportunity to disseminate to other policy-makers (e.g., DENRs chip mill study team, TDA) and to social scientists working on environmental protection issues (e.g., project forum at the April SfAA annual meeting in Puerto Rico).

I found in this work, as I did during my thesis internship, that, "Objectivity gets its biggest challenge when you study your own culture" (Bernard 1994:154). Therefore, I tried to be forthright about my place in this work to those with whom I discussed the issues, to look for the "irrefutability" in the information and documentation, and to maintain a reflexive awareness in my own analysis. As I noted in my internship thesis, Bernard also suggests closing our fieldwork in a

"culturally appropriate way" for relationships may be permanent and important to maintain (Bernard 1994:153-153; McClary 1997:15). Adhering to his advice provided the fieldwork setting in which I could continue my research through this environmental anthropology fellowship and will also perhaps provide future research opportunities.

CHAPTER 4. CONTEXTUAL SETTING

My Society for Applied Anthropology (SfAA) Environmental Anthropology Fellowship provided an opportunity to explore additional questions developed during my applied internship thesis writing. My thesis analysis of the Willamette Industries' "chip mill" issue in Union Mills (Rutherford County) focused on CCRC members' ideological and behavioral change, and the escalation of the environmental movement. However, I perceived the issue as an indicator of growing concerns about forestry practices in western North Carolina and the Southeast. I was eager to return home after my graduation to begin work anew (See [Photo 4.1](#)).

The Society for Applied Anthropology (SfAA) mission statement commits its general membership to responsible and interdisciplinary work on human cultural problems

(<http://www.sfaa.net/eap/cooptext/html>). The Cooperative Agreement, between SfAA and the United States Environmental Protection Agency (EPA) Office of Sustainable Ecosystems and Communities (OSEC), contributes to implementation of OSEC's mission. OSEC, through Community-Based Environmental Protection (CBEP), promotes regional "integrated approaches" to ecosystem recovery and protection (June 1996 "Introducing OSEC," EPA/OSEC/CBEP Handout). The Cooperative Agreement supports anthropology fellows' work in an already familiar community on environmental protection activities. The Fellow's research results should contribute to that protection (<http://www.sfaa.net/eap/fellow.html>). The combination of the SfAA mission statement and the Cooperative Agreement undergirded my desire to seek issue solutions and to work toward ecologically sustainable forestry and other development issues in Rutherford County and western North Carolina.

Many of my professional desires during this fellowship paralleled those of my internship (McClary 1997:17). I wanted to expand my research capabilities, as well as learn how to better contribute to the work on sustainability solutions with community members, and now policymakers. I also hoped to make

contacts for future anthropology work.

Because of my previous involvement in the issues and the geographic area, I found it useful to assume a reflexive approach in my role as an anthropologist (McClary 1997:17). This approach requires me to examine my southern roots, my history in this region, and my ideas about this environmental issue. In cultural anthropology, the examination of those perspectives is called "reflexivity." As a long time resident of the South and the western North Carolina region, I had worked in a variety of positions which enhanced my understanding of the socio-economic dynamics of corporate structures and the region. The "chip mill" issue is related to the pulp and paper industry. My own history is related to the paper making business through family members, including my nuclear and extended family. I have many friends and relatives either directly or indirectly associated with the paper making industry, from procurement foresters to IBM paper sales representatives. Thus, I have a commitment to environmentalism that is tempered with an empathy for those who make a living in the paper industry.

During my thesis writing, I became more aware of my personal and professional need and responsibility to go beyond the obvious escalation and polarization between the culturally created identities of the "environmentalist" (as "self/us") and the "industry" (as "other/them") (Pandian 1985; McClary 1997:4;67). I wanted to more actively seek solutions for sustainable forestry working with the diverse stakeholders through conflict resolution and policy change.

The focal point for CCRCs activities is their protest of Willamette Industries' construction and operation of the Broad River Chip Mill on Centennial Road in Union Mills. The two-lane road weaves through parts of the quiet rural farming community (See [Photo 1.1](#)). In fact, it weaves past the 140 year-old Forney House which is listed in *North Carolina Century Farms: 100 years of continuous Agricultural Heritage* (1989:205). Hudlow Road is the main street of Union Mills; it is lined closely on both sides by the United World Missions, a home for the aged, a school for the deaf, and the middle school. Among the many concerns of the residents are the negative impacts of the 50-plus logging trucks that will travel to, and then away from the chip mill daily. The residents are concerned about impaired road safety and the disruption to their long-held quiet quality of life. Union Mills won honors this year from the Western North Carolina Development Association for their community beautification efforts (10/24/97 Daily Courier) as they have for many years (McClary 1997:33).

Union Mills is nestled in the Southern Appalachian foothills in Rutherford County. The county's 563 square miles asserts its place as the state's third largest county (of 100) with an approximate 59,000 (predominately white) population (Rutherford County Chamber Relocation Information; Rutherford County Tourism Development Authority 1997/1998 Marketing Plan). Elevations range from 806 to 3,967 feet creating diverse landscapes which include the agricultural fields of the thermal belt, as well as the resort mountain communities of Lake Lure and Chimney Rock. The county is home to the most abundant and profoundly beautiful magnolia trees that I have ever observed. The county also has a rich cultural and natural resource history, much of which is significant in the nation's history, and seems important to consider in this development issue (See [Photo 4.2](#)).

For "thousands of years" the Cherokee Indians, Iroquoian people who had migrated from the north, hunted and lived in what became Rutherford County (Lee 1963:56; Bynum 1984:XVI).

Historians claim that the Spanish expeditions of Hernando De Soto and Juan Pardo traveled through the area in the mid-1500s (Bynum 1984:XVI; BB&T 1984:62). By the time the English came through in

1673, both the Catawba and the Cherokee Indians used the area as their hunting grounds (Bynum 1984:XVI). They likely hunted for fox, deer, bear, otter, beaver, and even buffalo (Camp 1963:19). Projectile points, or arrowheads, can still be found in the area today.

By the 1760s Scotch-Irish immigrants, as well as some English and German settlers, migrated from Pennsylvania into what was then known as Tryon County (Bynum 1984:XVI; Camp 1963:18-19). They were drawn to the area because of the climate and terrain; most became farmers.

In 1776 General Griffith Rutherford (Patriot) led a campaign to secure settlement lands by defeating the Cherokee (Bynum 1984:XVII-XVIII; Van Noppen 1973:4; Powell 1977:65). The county takes its name from this soldier (10-24-97 Agnes interview; Bynum 1984:XVIII). In 1780, Rutherford County soldiers fought on both sides during the Battle of King's Mountain (See [photo 4.2](#)); those who joined the "Over-Mountain Men" won a victory in the fight against Patrick Ferguson (Bynum 1984:XVIII; Powell 1977:72-73; BB&T 1984:82). The British loss represented a "significant" turn of events in the Revolutionary War (Powell 1977:73). After the war, soldiers returned to farming, many raised cotton; however, textiles would not become a major industry until the 1890s (Bynum 1984:XX).

Between 1814 and 1845, Rutherford County was the nation's "center of gold production" (Van Hoppen 1973:57). In 1831, Bechtler's Mint produced the first minted U.S. gold dollar (BB&T, 1984:87; Powell 1977:124). Rutherfordton became "one of the leading towns of western North Carolina," however much of the county's economic success was attributed to the large slave labor population used on the farms and in the gold mines (Bynum 1984:XX-XXI).

In spite of the fact that North Carolina was the last state to join the Confederacy in the Civil War, 1,734 men from the 1,670 white families left Rutherford County to fight in the war (BB&T, 1984:91; Bynum 1984:XXII). Fighting in the county occurred briefly in 1865 before the war ended (Bynum 1984:XXII). After the war ended, soldiers again returned to their farms.

Well into the 20th century the local economy was driven by agriculture and textiles. During World War II, approximately 6,000 men and women from the county served in the military (Griffin 1952). Many of the remaining residents produced "war crops" (e.g., corn, peanuts, Irish potatoes, oats, soybeans) and raised poultry and cows on the farms. All of the local textile plants, including the still-operating Stonecutter Mills, manufactured war goods (e.g., tent twill, army shirts, parachute rayon, surgical gauze, and hospital flannel pajamas). Wright Bachman Lumber Company produced shell and bomb boxes for the war effort. The U.S. Government leased the Lake Lure Inn and some surrounding buildings to house a "rest and recuperation" center for returning air corps men; about 5,000 men stayed in the facilities:

Lake Lure's unusual recreational facilities and scenic beauties prompted its selection as one of the first centers of this type [only 4 or 5 in the nation], an experiment in combating fatigue and nerve strain and the after-effects of prolonged illness. Swimming, fishing, boating, hiking and tennis were of great help in putting the men back in first class condition again (Griffin 1952:87).

Even in contemporary times, the Lake Lure and Chimney Rock areas continue to be a place for "r & r." The Chimney Rock is an approximately 500 million year old geophysics feature that stands over 26 stories high (Chimney Rock Park CRP-95). The rock overlooks the 1,500 acre Lake Lure which meanders for 27 miles (Rutherford County Relocation Information) On a clear day, one can stand atop Chimney Rock and see 75 miles away to King's Mountain (Chimney Rock Park RP95). They have additional claims to fame

as settings for such well known movies as "Dirty Dancing," "The Last of the Mohicans," and "My Fellow Americans" (Rutherford County Chamber Relocation Information). The Tourism Development Authority (TDA) claims it will continue to work with the Western North Carolina Film Commission to promote the county as a film site (TDA Marketing Plan 1997/1998). These locations in the western part contributed the greatest to the county's 1996 \$69.67 million revenue from tourism, which generated \$5.87 million in state and local tax revenues, and "represents a \$99 savings to each county resident." Future implications are referenced in the report. It references studies that show the fastest tourism growth is "nature tourism" and the South "the nation's favorite region to visit." In 1995 statewide tourism generated \$9.2 billion, much based on forest related activities (Jahn 1997:3). CCRC members feel that increased clearcutting in the area caused by the operation of the wood chip mill would create a negative effect on the tourist trade. In the TDAs visitor study, tourists said "88% felt seeing the mountains and its scenery was extremely important or very important on this trip." And in fact, in county-wide input sessions, clearcutting was listed first as the perceived threat to the tourism industry's success.

Almost half of the county's "artificial" boundary borders four counties in the Southern Appalachian Assessment area (i.e., Henderson, Buncombe, McDowell, and Burke) (SAMAB 1996:iii;1;6). Parts of the county are mapped as "ecological units" of the Blue Ridge Mountains and Southern Appalachian Piedmont Sections. The Nature Conservancy lists Rutherford County in the state's "Southwest Mountains Region" (Gery 1997:17). Because chip mills source their timber from forested areas at least 50 to 100 miles away, it is useful to put in context likely sourcing and impacted geographic areas from the Union Mills facility.

The *Southern Appalachian Assessment Social/Cultural/Economic Technical Report* describes the historical habitation since the Paleoindian period around 9000 B.C. (SAMAB 1996b:5-15). Indians used baskets, stone vessels, and woodworking tools, in addition to hunting big game such as mammoth and mastodon (1996b:5-15). By 2500 B.C. residents were less dependent on fishing, hunting, and gathering in the forest, and more dependent on agriculture. When the European settlers arrived, approximately 1 million Native Americans lived in the Southern Appalachians; the Cherokee made up the largest population. Many events (e.g., conflict during white settlement, disease, and relocation) caused the reduction of the total Native American population to about 200,000 by 1989.

As the Native American had used the forest resources so did the new settlers (Steen 1991:22). Van Noppen claims:

Although the forest was thought of as an obstacle to home building, it was the chief resource of the people. In a small way the early settlers were all lumbermen (1973:291).

They found many uses for the wood (e.g. to build cabins, fences, barns, corn cribs, tools, fuel, coffins, wagons, furniture) (SAMAB 1996b:10; Van Noppen 1973:291-322). And they burned down woodlands to make room for their homes, fields, and pastures (Van Noppen: 1973:291-322). The western North Carolina forest provided about 100 types of diverse trees, including chestnut, oak, walnut, maple, cherry, hickory, ash, and yellow locust (SAMAB 1996b:10; Van Noppen 1973:291). Some of the trees were massive:

People told of walnut trees with a diameter of eight feet, and of wild cherry trees reaching a height of sixty feet to the first limb and with a diameter of four feet... (Van Noppen 1973:291).

As early as 1705 in the eastern part of the state, pine turpentine and tar extractions for ship building had provided a "naval stores" export market (Steen 1991:22). By the mid-1800s, the state provided "96 percent of the nation's production" deriving the thus-named "Tar Heel state" (Steen 1991:22). "Harsh extractive practices and overproduction" caused the state's eventual market-share decline. This type of more extreme exploitation of forest resources came later in the western part of the state (Van Noppen 1973:294). Besides the settlers' forest consumption, northern lumbermen who had already over-harvested their own forests by the 1880s, came to buy tracts of "choice timber." Locals were hired to fell the trees and to work at the many new sawmills that were built in the area. The trees became newly-cut railroad ties that soon connected the area with numerous markets. By 1887, the Wilmington, Charlotte, and Rutherfordton Railroad was completed; it would link the county with important locations eastward (Van Noppen 1973:263).

The timber and the new railroads also made it possible for George Vanderbilt to build and furnish his 250-room French chateau, "America's largest private home" (Forester, 1997:12; Van Noppen 1973:298-300). Gifford Pinchot was the resident forester at the Biltmore Estate; he introduced forest management to the nation, including "timber stand improvement cuttings and tree plantings" (USDA FS June, 1994). He found the local traditional harvesting techniques deplorable, "...done with an eye single to immediate returns and wholly without regard for the safety of the forests...;" he expected forest management would enhance "repeated crops of merchantable lumber" (Van Noppen 1973:302;306). Pinchot left the Biltmore Estate and in 1905 became the United States Forest Service's first Chief Forester (Stoddard 1968:20). In 1895 Vanderbilt hired a German forester, Dr. Carl Schenck. Schenck founded America's first forestry school, the Biltmore Forest School, located in the Pisgah Forest (Steen 1991:26; USDA FS June, 1994). Schenck had some difficult adjustments to make in transferring his knowledge to American forests (USDA FS 1994; Van Noppen 1973:304). This adjustment is not surprising, since Europe had "less than a dozen commercial tree species" (Stoddard 1968:18) and Pinchot had already documented over seventy tree varieties at the Estate (Van Noppen 1973:303). One costly mistake involved a splash dam he built at Big Cove Creek to send logs downstream to the French Broad (Van Noppen 1973:304;307). When the logs washed downstream, they tore up the streambanks, "...the fertility of the cove was reduced by the acceleration of the drainage...," logs washed into the adjoining farmlands, "...owners were furious and lawsuits resulted." Thus became his philosophy for establishing permanent logging roads. Van Noppen claims that Vanderbilt "discharged" Schenck in 1909 (1973:307); "The First Forestry School in America" brochure notes that "Schenck left Vanderbilt in 1909 and took his school with him" (USDA FS October, 1995). Whatever the reality, Schenck had already developed a relationship with Reuben Robinson, of Champion Fibre Company, who offered their Sunburst village to house the forestry school (Van Noppen 1973:308; USDA FS October, 1995). Schenck lived in America from 1895 until 1914, one year after the closing of his school. Even though he never gave up his German citizenship, his work here had profound effects on the history of forestry in this nation (Van Noppen 1973:304-322).

At the turn of the century, only 10 percent virgin timber remained in the 75 percent Southern Appalachians' forest cover (SAMAB 1996b:12). The *Southern Appalachian Assessment* provides this dismal picture of the forest conditions (1996b:12):

From 1900 to the 1920s, this forest cover would be substantially reduced by heavy cutting. Sawmills served by narrow-gauge logging railroads spread throughout the southern mountains, even to the spruce forests at the highest elevations. Overhead cables and yarding machines speeded the removal of trees in rough terrain, and new bandsaws speeded the milling. With this logging came an increase in soil leaching, erosion, flooding, and forests

fires.

1908 reports reflected large company ownerships of about half of the timberlands; and, while some young forests were developing, only about 14 percent of the acreage had not been recently cleared (SAMAB 1996b:12).

In 1907 the Champion Coated Paper Company opened a plant in Canton (Steen 1991:25). The mill owners originally came to the region to exploit spruce for paper production, and chestnut for production of tannic acid and pulp production (Van Noppen 1973:308-310). However, complications arose. The high elevations made spruce harvesting difficult and the chestnut blight killed "27 percent of the standing timber in western North Carolina" (Steen 1991:26). Schenck's forestry school had surveyed the Canton region and determined that a great quantity of pine existed (Van Noppen 1973:308-309). Champion began to make white paper from pine. Herein is an early accounting of pulp and paper made from chips (Van Noppen 1973:308-309):

A process developed by Oma Carr, a chemical engineer, was applied to chestnut chips to make pulp after the tannic acid had been removed from them. The wood was reduced to small chips and subjected to treatment in boiling chemicals which dissolved the resinous material in the wood, leaving only the fibre. After washing, screening, and bleaching, it was formed in a sheet on a revolving cylinder covered with wire cloth, passed between rollers to wring out the water, then heated over steam cylinders for drying. Wound on reels in continuous rolls as it appeared from the machine, it resembled cardboard or blotter. This product was shipped to Hamilton, Ohio, to be coated.

Champion purchased timber from the new National forests, purchased their own timberlands, and made timber contracts with local landowners requiring sustained yield management. By 1916 the company was valued at \$10 million and employed more than 1,000 people (Van Noppen 1973:308-309). As early as 1927 Champion was faced with water quality complaints about their industrial waste discharged into the Pigeon River (Van Noppen 1973:116;119;310). Health officers from Tennessee, North Carolina, and the federal government met with Champion's Robertson to try to develop pollution control measures. A 1957 French Broad River Basin study revealed continued waste discharge pollution by Champion which required remediation attempts by the company in the early 1960s. In this decade, Champion's waste discharge continues to plague agency personnel.

Even though established as an early conservation act, The 1891 Forest Reserve Act, (Stoddard 1968:20) did not provide for the protection of forests except by withdrawal of lands from "sale or homesteading" (Van Noppen 1973:311;313). By 1897 timber sales were allowed in the reserves. In 1901, President Theodore Roosevelt announced:

The fundamental idea of forestry is the perpetuation of forests *by use*. Forest protection is not an end in itself; it is a means to increase and sustain the resources of our country *and the industries which depend upon them* (Van Noppen 1973:311) [my emphasis].

In 1905 Gifford Pinchot became head of the Forest Service which had been moved from the Department of the Interior to the Department of Agriculture (Stoddard 1968:20). In 1907, the nation's forest reserves became known as the " 'National Forests' because 'reserve implies that the area is withdrawn from use', " which clearly they were not. Across the nation the forests were used by a variety of industries, aided by Pinchot's efforts, even to feed industries such as Anaconda's smelters in Montana (Moniak 1989:224).

One fourth of the revenue earned went back to the state where the forests were located (Van Noppen 1972:312). During this same time period, concern about over-exploitation provoked generation of an inventory of the condition of the nation's natural resources (Stoddard 1968:21). The 1911 Weeks Law granted the federal government authority to buy forests to protect watersheds of navigable waters. Several became established in North Carolina. The Pisgah became a National Forest by acquisition from Mrs. Vanderbilt in 1916 (Van Noppen 1973:314). The Nantahala was purchased in 1920 and the Uwharrie (in the Piedmont) in 1934 (Steen 1991:26). The Joyce Kilmer Memorial Forest of the Nantahala, home to virgin hardwoods over 400 years old, was purchased in 1935 (USDA FS September, 1996); it is now protected for its "naturalness and solitude." In 1926 The Great Smoky Mountain National Park was established (BB&T 1984:105); "Park" status provided for forest protection from logging (Van Noppen 1973:312). The Smokies' 520,000 acres contain over 200,000 acres of virgin forest, as well as habitat for more than "1,600 different types of wildflowers and more than 140 species of trees" (Forester 1997:1; Smoky Mountain Host 1995:6). Through this century numerous pieces of federal legislation passed which included: tax credits for encouraging sustained timber yield on private lands; authorizations for forest resource inventories; and, provisions for National Forest sustained yield and multiple use (i.e., watershed, timber, grazing, minerals, wildlife, wilderness, and recreation) (Stoddard 1968:21-22; Steen 1991:26). In the early quarter of the century the state Division of Forestry often partnered with federal projects, but focused principally on fire suppression methods and diseases affecting the forests (Steen 1991:26).

As noted previously, Rutherford County lies in both the mountainous area and the Piedmont (the lower elevation mid-state section leading eastward toward the North Carolina coastline). The western part of the Piedmont is another likely sourcing area for the under-construction Willamette Industries' Broad River Chip Mill in Union Mills. While the pulp and paper industry have continued to expand throughout the state (Steen 1991:25), other industries based on timber resource consumption exist in the Piedmont. Located in the Piedmont, High Point is the state's furniture center (Steen 1991:22). The furniture industry is located close to their timber source; indeed, much manufacturing occurs in Rutherford and the surrounding counties (e.g., Broyhill, Drexel). Also textiles manufacturing plants, abundant in the region, have long used wooden shuttles, as well as rayon, made from wood chips.

In fact, today's settlers produce and consume numerous products made from forest resources; the following represent just a portion (Jahn 1997:89) :

Solid wood products - lumber, plywood, furniture, fences, bird houses, toothpicks

Paper products - computer paper, newspapers, books, disposable diapers, tissues

Bark - mulch, anticancer drugs, cosmetics, oil spill control agents

Cellulose - rayon clothes, carpet, toothpaste, food additives, luggage, pressure sensitive adhesives, irrigation piping

Lignosulfates - artificial vanilla flavoring, deodorants, insecticides, cleaning compounds

Torula yeast - baby foods, vegetarian foods, imitation bacon

Wood alcohols - solvents, colognes

As previously mentioned, federal legislation required implementation of forest resource inventories to

determine conditions of the nation's natural resources (Hansen 1992). The Forest Inventory and Analysis (FIA) provides the public and policy makers with state and regional information. An Eastwide Data Base (EWDB), developed from state FIA, provides comparable data analysis capabilities. Both the FIA and the EWDB are generated from state forest inventories conducted by United States Department of Agriculture (USDA) Forest Service regional experiment station personnel. However, state inventories are taken "every 5 to 15 years." This process creates information gaps for users desiring current data.

In a new program, Southern Annual Forest Inventory System (SAFIS), inventory data will be taken in each state regularly/annually by the USDA Forest Service in "partnerships," (SAFIS 1997). Total state inventories will not be completed, nor will annual reports be published. However, critical data can be examined (e.g., hurricane impacts), as well as surveys on forest test plots. The partnership participants include state foresters, universities, industries, and others. One of the recurring claims that I heard, and experienced, throughout this fellowship was the frustration concerning lack of current forest data. It appears the implementation of SAFIS may help to correct that problem; however, public access to data may be impaired by the lack of formal/traditional reporting genre.

The North Carolina Forests:

The state has 18.7 million acres of timberlands, of which 2.0 million acres are public land, and 2.4 million are owned/leased by the timber industry (Brown 1993:iv-v). Ownership acreage is broken down as follows (Hunt 1996:13):

16 % = Less than 20 acres

42 % = Between 20 and 100 acres

42% = Greater than 100 acres

The forests cover 60 percent of the state and are valued at \$19 billion (Jahn 1997:1-3). Economically the industry ranks third in the state, following textiles, and equipment manufacturing (Brown 1993:21). The 1994 timber industry manufacturing "value added"

totaled: \$7.2 billion, which is broken down further as

(i.e., paper and allied products - \$1.9 billion;

lumber and wood products - \$2.0 billion;

and, furniture and fixtures - \$3.3 billion)(Jahn 1997:3).

Changes in the hardwood forests inventories are reflected in the following statistics. In 1984, hardwood growth exceeded removals by 99 percent (Brown 1993:iv-v;21-22). In 1990, growth still exceeded removals, but only by 33 percent. Total removals of hardwood increased by 36 percent. In the state's Northern Coastal Plain, a growth *deficit* occurred. Since 1984, there was a 4 percent increase in hardwood growing stock volume (Ibid.:10;22). The majority of the hardwood growth was "survivor" growth (Ibid.:16). In spite of the 69 percent increase in hardwood regeneration (Ibid.:v), much of it occurred on pine plantation properties and will, therefore, likely be removed (Ibid.:30). There is a "deficit" in

hardwood tree ages between 11 and 50 years old, which coupled with increased pulp demand, may threaten future regeneration success (Ibid.:v;30). Pulpwood made up 43 percent of the production output, which had increased by 24 percent (Brown 1993:iv-v).

One of the environmentalists' concerns about the increasing number of chip mills, relates to conversion of hardwood forests to loblolly pine forests. Pine forests generally have a shorter harvesting rotation period than do hardwoods. The majority of the loblolly pine inventory is in the eastern part of the state; it increased statewide by 9 percent (Brown 1993:6). For the last 50 years, loblolly pine has been replacing the longleaf pine in "its natural growing area" (Jahn 1997:7). Pine plantations in the state increased by 29 percent (Brown 1993:v). More growth is expected.

The *North Carolina's Forests, 1990* report claims that conditions elsewhere in the nation "(e.g., endangered species, catastrophic weather)," may contribute to an increased demand for timber in the South (1993:27). The *Report of the [North Carolina] Governor's Task Force on Forest Sustainability* claims that harvesting restrictions on National Forests in the state increases demand on private timberlands (Hunt 1996:3). This reports notes that, although National Forests in North Carolina make up only 6 percent of the timberlands, "they were until recently the major raw material supply for the forest products industry in the western part of the state" (Hunt 1996:3).

[Map 4.1](#) illustrates the location, by company name, of chip mills currently operating or under construction in North Carolina. The information is extrapolated from chip mill self-reported data published in *Timber Processing* (1997:75-79). Note the oldest (1969) reported mill is owned by Weyerhaeuser Company; the mill pulps 88% softwood and produces the greatest number of wood chips with an annual production of 1,500,000 tons per year. The corporation is also one of the big chip exporters to Asia from North Carolina, for which it receives a state tax credit. (*Charlotte Observer* 1996:3C; Leavenwork 1996). Currently, self-reported annual production in North Carolina is approximately 5,637,000 tons.

The *Forestry and Forest Products Data Book* describes the volume of the states timber harvest:

Thus, if all sawtimber harvested in North Carolina was converted to lumber for houses and all of the pulpwood was used to make paper, enough trees are harvested *each year* to build approximately 118,300 houses and print 9.45 billion daily newspapers(Jahn 1997:9)[my emphasis].

The Rutherford County Forests:

County statistics for Rutherford note that approximately 74 percent (267,970) of the total acreage (363,277) is forested (Brown 1993:85). About 11 percent is industry owned; almost all of the remaining is privately owned (Ibid.:87). The "management classes" include (approximate): 10% pine plantation; 28% natural pines; 20% oak-pine; 37% upland hardwood; and, 4% lowland hardwood (Ibid.:89). Over half of the merchantable timber (5 inches diameter at breast height - **dbh**) is hardwood (Ibid.:91). There is a negative net annual change in hardwood growing stock, as well as a negative net annual change in sawtimber (Ibid.97-99).

Disruption in forest cover impacts humans, as already evidenced in this issue paper; however, it also

impacts other species (See [Table 4.1](#)). My table is a very modest representation of species which may be impacted by timber harvesting for the Willamette Industries Chip mill in Union Mills, NC. Included are only ten (10) counties, which adjoin Rutherford County. Willamette's sourcing area exceeds these boundaries. If a 60-mile radius map is drawn, timber will be sourced from approximately 33 of North Carolina's 100 counties. If a 75-mile radius is drawn, timber harvesting would impact about 52 counties. A more rigorous impact study would require expert examination of impacts to these counties and species. Impacts to these species reflect the necessity to think beyond the local ecological impacts, or site specific impacts, and toward a landscape level ecology.

The Southern Appalachian Forests:

Much of the sourcing for the Willamette Industries chip mill will extend outside of Rutherford County. The Southern Appalachians' 37 million acres contain most of the east's public lands; however, about 84% are private land holdings (SAMAB 1996:10;23-26). Private land ownership includes approximately 70% by individuals and 15% by others (e.g., corporations, associations). Almost 19 of the 24 million forested acres exists on private lands. The government manages about 20% of the forested land, which includes much of the industry-desirable high-quality deciduous forest (e.g., oak). Tree growth is denoted in successional stages which varies by species. Most of the late-successional and old growth forests are on public lands (1996:47-50). The report claims even though Black bear (included in the report as game species) are most often associated with National Park property, much potential habitat exists. It notes that mid-to-late successional mast-producing forests have aided the bear population numbers, but increased road density may impede the isolation required for denning and habitat (1996:56-58). The region's profound biological diversity includes numerous Threatened and Endangered (T & E) Species; the Blue Ridge region contains the greatest number of the terrestrial species on private lands (1996:52-54) (See [Table 4.1](#)). Maintaining large mid-to-late successional tracts enhances perpetuation of these species (1996:66). As well, many of the two-thirds "rare communities" habitats (e.g., spruce-fir forests, forest-bog complexes, caves, sinkholes, karstlands) exist on private lands (1996:67-68).

The "globally outstanding" biological distinctiveness of the Appalachian/Blueridge forests are "vulnerable" to human activity (Noss; --Table I). Many tree species are ranked imperiled (G2) or critically imperiled (G1) globally, and/or threatened (T), endangered (E), or critically endangered (CE). "All" types of primary and old-growth forests are critically endangered; "all" types of "native, riparian" forests are threatened. These ratings indicate that long-range impacts of future timber harvesting in this region should be examined (and methods revised) to sustain the forests.

Interior forests habitats for area-sensitive bird (including Neo-tropical migrants - NTMBs) and other animal specie populations, are expected to decline in the future due to increased land use and development, air pollution (e.g., sulfur dioxide, acid rain), and exotic pests (Dogwood Anthracnose, gypsy moth)(SAMAB 1996:62-67). The health of plants, trees, wildlife, and humans will likely be impacted by these same factors (1996:77-101). Nonpoint Source (NPS)(e.g., agricultural fields, logging roads) and Point Source (e.g., municipal treatment plants, industrial sites) water quality pollution are also major concerns (1996:100-104). The region supplies water to many downstream populations, outside of the assessment area, from the Chesapeake Bay to the Gulf of Mexico. Many of these issues will have to be addressed on a region-wide basis, because they have region-wide implications (1996:92). All of these issues are further complicated by the conflicting ideology of the region's long-time residents and

developers (1996:39).

The Southern Appalachian Assessment Social/Cultural/Economic Technical Report examines timber resource use and the ensuing impacts on the region (1996b). Most of the comparisons included reflect differences in and between hardwood and softwood quantities/inventories over time. Timber inventories are measured by growth and drain, or removal. When the total growing stock increase (e.g., by increased tree size, additional plantings) and is not diminished by total removals (e.g., harvesting, deforestation, mortality), there will be a net annual growth in the timber resources (1996b:108). Their inventory data came from a number of sources, including an USDA Forest Service Eastwide Data base (EWDB). However, most of the data was generated in the last 1980s or the early 1990s. Changes in forest consumption and conditions warrant updated inventories (1996b:108-109).

Depending on markets, product substitutions may occur between softwoods and hardwoods (SAMAB 1996b:116). Different quality trees may also be used for different product markets. For example, since high quality sawtimber markets exist, and low quality timber markets for pulp exist, industries may substitute the middle quality timber wherever the demand is the greatest. That substitution to high quality products may become more limited (1996b:89). Pulpwood and sawlogs make up between 80 and 90 percent of the region's products (1996b:91).

Several indicators described in the report may be relevant to the operations of the Willamette chip mill in Union Mills, as well as to the number of increasing mills in the region. The report suggests that high quality timber stand improvements might be made more economically feasible through commercial thinnings; the thinnings used for pulpwood (1996b:89). In the entire assessment region, between 1989 and 1992, hardwood pulp production made up most of the 17% increase in total output (1996b:93). In the Blue Ridge subregion (most relevant to Rutherford County):

Between 1980 and 1992, output of softwood pulpwood nearly doubled, while output of hardwood pulpwood expanded by *more than 75 percent* (1996b:93-94) [my emphasis].

Sawlog production declined during the same time period. Most of the pulpwood increase was in counties in the southwestern section of the state, in which "the product mix has therefore shifted strongly from sawlogs to pulpwood" (1996b:97-99). Between 1986 and 1992, pulpwood production in this same section increased by 53% (Ibid.:116). Pulpwood procurement and production generally concentrate in areas close to the pulp and paper manufacturers (Ibid.:98; 133-134). Since pulping "capacity" in the region did not change at the paper mills, the increased production indicates increased hauling to out of state locations (Ibid.:116). As pulpwood demand has increased in the region, procurement areas have also increased (Ibid.:90; 116). Pulpwood prices that rose indicated an "economic scarcity in this region" (Ibid.:102; 116). In addition, other newer timber sourcing products compete with existing timber uses; veneer supplies compete for high quality saw logs, and composite board competes with pulp markets for low quality timber (Ibid.:98;102).

While many people are self-employed in the lumber and wood products industries, virtually none are in the pulpwood industry (1996b:130). Softwood lumber and wood products users in the North Carolina subregion declined as "Bigger wood-processing operations and labor-saving technology" increased. These changes impact labor markets in other ways. While on the average, the pulp-using industries' average wage is higher than that of the solid-wood industries employee (Ibid.:126), the solid-wood industry harvest-related employment is about double the number required for pulpwood harvesting (Ibid.:126)

The South/Southeastern Forests:

In Southeast pulpwood production, the state ranks second; and sixth in the nation (Brown 1993:23). The USDA Forest Service report, *Trends in Southern Pulpwood Production, 1953-1993* (Johnson 1996:), shows continued pulpwood production increases. During this time frame (1953-1993), the number of pulpmills increased from 61 to 102, with increases in pulping capacities from 28,670/tons daily to 132,992/tons daily. This is two-thirds of the nation's pulping capacity (1996:1). Changes in harvesting techniques include "totally mechanized tree-length harvesting operations" (1996:2). Softwood roundwood for pulp production increased from 14.1 million to 30.1 million cords; while roundwood hardwood increased from 2.0 million to 16.2 million cords. Total production percentages come from: 45% softwood roundwood, 25% hardwood roundwood, and 30% wood residues. The report quotes projections from another inventory study which *anticipate a 50 percent increase by the year 2040*. The South and its hardwood supply are expected to be the primary contributing manufacturer. In 1994 and 1995 pulpwood production again increased (Johnson, January, 1996; Johnson, September, 1996). In "Chip Mill Projects Total \$155 Million," the industry boasts of "10 million tons of new or relocated fiber capacity in the 1995-1998 period" (*Pulp and Paper Magazine* 1997:25)

In addition to the large amounts of timber chipping for domestic pulp production, environmentalists are concerned with exporting of wood chips, mainly to Japan. During a June meeting at the USDA Southern Research Station, I received a copy of a paper prepared by Cynthia West of the United States Forestry Science Lab, for her presentation to a 1996 Society for American Foresters (SAF) meeting. She claimed hardwood chip exports from the South increased from \$36 million in 1989 to almost \$200 million in 1995, "An increase of more than 500%" (West 1996). Mobile, Alabama leads Gulf Coast chip shippers in exports to Japan (78%); North Carolina leads on the east coast (68 %). I also received a USDA Southern Research Station handout of graphs reflecting trends of the 199 million acres of Southern timberlands. One graph showed Southern softwood net removals exceeded net growth in 1992 and 1996 calculations. Another graph reflected leveling hardwood growths in 1992 and 1996; but increasing removals.

In *Paper Task Force Recommendations for Purchasing and Using Environmentally Preferable Paper*, the findings describe harvest and growth relationships:

...In the South, however, where most pulpwood production is centered, a less sanguine picture is seen:

Softwood harvest rates currently exceed growth by about 10%...*Hardwood* growth rates currently exceed harvest by a considerable margin, about 50%. This situation is expected to *reverse* itself in the coming decades, however, as demand for hardwood pulpwood and sawtimber increase; the rate of harvest is *projected to exceed growth by 2010* (Paper Task Force 1995:158) [my emphasis].

Much of the controversy surrounding the chip mill issue involves continued wood chip and pulp production and continued extraction of resources, both without knowledge of current resource conditions, which may have unsustainable cumulative impacts. As mentioned in the above comments about the *Southern Appalachian Assessment*, procurement areas to acquire roundwood to chip for domestic pulping and chip exporting are enlarging. This causes more roundwood or chip hauling to the pulp mills or docks. Hauled chips most often are supplied by satellite chip mills, such as the one under construction in Union

Mills. One of the core concerns in this issue is the increased number of satellite chip mills, especially in the South/Southeast.

[Table 4.2](#) reflects Southeastern chip mills, listed by state; the data is extrapolated from "self-reported" chip mill information published in a trade journal, *Timber Processing* (1997:75- 79). When perusing this table, one should note that the production data is understated because several locations do not provide annual production figures (i.e. "n/a" for not available). In some cases, startup data is also not available (e.g., Champion's Caryville TN chip mill provides neither). Chip mills which began operation in this decade (1990s) are **bolded**. These 1990s mills included nine (9) which did not report production data (eight of which are owned by Price, Inc.). In addition, five (5) mills were "announced" or "under construction." One of these mills is the Willamette Industries' Broad River Chip Mill slated for Union Mills, North Carolina. The table shows the quantity of chip mills, as well as draws attention to those beginning operation during this not-yet-complete decade. [Graph 4.1](#) shows the same data from a different perspective. The graph demonstrates the annual reported increase in production by *thousand* tons between a baseline year (i.e., the end of 1989 therefore the beginning of 1990) through 1996. Annual production increased **73 per cent** from 19,151 *thousand tons*/at yearend 1989 to 33,204 *thousand tons*/at yearend 1996. Considerable controversy exists over how tons of chips equate to harvested forest acres. Forest types, how green is the wood, and how much moisture it holds all impact the appropriate calculations. If one risks a guess using estimates by the TVA 1993 study and Danna Smith's publication, the conversion for annual production of 33,504,159 tons at 39 tons/acres, the estimated result of annual forests cut would equal 859,081 acres (TVA 1993 Vol 2:641; Smith 1997:81). At any conversion rate, it is a substantial harvest. One much larger than the 500,000 acres that make up the Great Smokies. The Willamette Industries Broad River Chip Mill intends to produce 300,000 tons/ year running one production shift; that production would convert to approximately 7,692 acres/per year. This analysis again points to the necessity to examine the sustainability of chip mills and pulp and paper production from wood chips.

Alabama by far is the largest producer and exporter of wood chips. Mobile's success in exporting chips stems from barge chip hauling on the Tennessee-Tombigbee waterway to the state docks. Around 1990, three companies applied for United States Army Corps of Engineer (USACE) and Tennessee Valley Authority (TVA) permits related to construction and operation of three chip mills with adjoining barge terminals on the Tennessee River (TVA 1993:1; cover; xix). The close proximity of the barge terminals and the chipping facilities created potential cumulative impacts. The TVA, USACE, and the U. S. Fish and Wildlife Service (FWS) studied the potential/expected direct (on-site) and indirect (off-site) impacts of the proposed industrial development. Their Final Environmental Impact Statement (FEIS) recommended "denial of all proposed actions."

Two important differences exist between these proposed chips mills and the one in Union Mills. The three Tennessee River terminals would impact navigable waters, and one of the chip mills would be built on public industrial park property. The other two would be built on private property. The FEIS notes that "TVA and USACE do not regulate chip mills which locate on private property and which do not need river access" (1993:xxi). However, an important similarity does exist, which I discuss in my Chapter 6, in regards to USACE permitting to alter or impact wetlands on private lands.

In inter-agency communication concerning another chip mill application to the COE, Patrick Tobin, the then-Acting EPA Region IV Administrator, expressed support for development of a generic southeast region EIS (Tobin 1992). Application of the National Environmental Policy Act (NEPA) interdisciplinary process would encourage public involvement and multi-agency (i.e., Forest Service, FWS, COE, TVA,

and EPA) technical assistance relevant to the different ecoregions. He further suggested the states' involvement, as well as adjoining EPA Region III cooperation. Future individual chip mill applications would be considered based on their impacts within the associated ecoregion. He expressed concerns, including erosion, loss of biodiversity, and non-compliance of *voluntary* Best Management Practices (BMPs) during silvicultural activities.

The proposal did not materialize into a regional study; but neither did the issues abate. By the Spring of 1997, over 150 citizen groups and environmental organizations coalesced in a Dogwood Alliance formal request for a regional chip mill study to the current Region IV Administrator, John Hankinson, Jr. The Dogwood Alliance letter requested that the EPA:

- 1) conduct a region-wide study of the cumulative environmental and economic impacts of chip mill and log loading operations;
- 2) petition the President's Council on Environmental Quality [CEQ] to redefine the United States Army Corps of Engineer's ("USACE") interpretation of the National Environmental Policy Act ("NEPA") as it relates to chip mills and whole log loading facilities to require the Corps to look at the cumulative, off-site logging impacts, and;
- 3) support a moratorium on the licensing of new chip mills in the region until the study has been completed.

Basically, the above request reflects the on-going environmentalists' philosophy on the issue: to stop the activity (moratorium on permitting), examine current behavior (impact study), and re-invent a more sustainable future (redefine authority responsibilities). A similar theme, reflected in correspondences, is used by other stakeholders in this issue. A FWS Field Supervisor recommended denial of a COE permit (stop) for a Ohio River wood chip and log loading facility to supply Willamette's Hawesville, Kentucky mill (Barclay 1997). The FWS requested a EIS be done to study impacts to the "forest resources including federally listed species" in the sourcing area. FWS expressed a willingness to reevaluate (reinvent) their position if an "acceptable" EIS was completed. The Region IV Wetlands Section also recommended denial of the permit, a re-examination of the COEs NEPA responsibilities, and retention of the "option to refer the policy issues" through "Elevation of Policy Issues" procedures outlined in the agencies' Memorandum of Agreement (MOA) (Johnson, H.H. 1997). Not related to a specific chip mill permitting request situation, during this same time frame, Representative John Lewis from Georgia wrote to EPA Administrator, Carol Browner, describing the increasing concerns about chip mills and asking for a southeast regional study (Lewis, J. 1997). Enough controversy now exists to warrant EPA Region IV's further involvement in the issue.

When John Hankinson, EPA Region IV Administrator, responded to the Dogwood Alliance, he commented that petitioning the CEQ about the COEs authority is beyond his agency's authority (Hankinson 1997). However, he described the agency's plans to investigate partnership with North Carolina on the State's chip mill impact study, and further, to inventory the Southeast's chip mill "activities." He expressed his desire to establish a forum in which disparate stakeholders in this issue could share relevant information and find some "areas of common ground."

PART II: FINDINGS AND ANALYSIS

CHAPTER 5. SUSTAINABLE DEVELOPMENT DEFINED

What do you see?

The question is not what you look at, but what you see" (Thoreau, in Little 1995:145).

My research questions explore "who" participates in development issues, and how those people perceive the issues, including their ideas about the "chip mill" issue and the prospects of attaining sustainable forestry solutions. I also hoped to gain an understanding of the "what" information participants choose to use to make development decisions. And finally, I wanted to learn about "how" the information is interpreted and applied in the solution seeking processes. Since participation in development occurs on various levels, I desired to also include the less obvious "stakeholders." My previous research focused on the environmental perspective, but I concluded that finding solutions and resolving conflict required greater stakeholder involvement. Studying the stakeholder opinions required learning about their social identities.

Jacob Pandian states that our social identities come from the cultural constructions of "self/us," and also "other/them." These concepts are maintained through interaction rather than isolation (1985:41-42;124-125). As I learned about the varied perspectives, for and against the chip mill, I began to hear differences in the way these perspectives were expressed. For example, when describing the same phenomenon, an environmentalist sees a "tree," while a biologist describes a "habitat," a lumber yard manager looks at "board feed," and the procurement forester see "roundwood." Even within the disparate groups deconstructions can be made. In the environmental community, the term "environmentalism" is acceptable to most people involved. However, distinctions in ideology exist within the community (e.g., "conservationist," "deep ecologist"). What information we collect and how we interpret the data also reflects our perspectives. I know an old-growth specialist who uses the term "ground-truthing" to describe how he does his work. What is implied by using phrases like "ground-truthing" is the suspicion felt that forest service and industry foresters provide information that is "ground-falsing." I also heard "ground-truthing" used by a wildlife management classmate to describe his recent forest inventory work. The speaker is a forester, but some other foresters would pejoratively refer to him as a "birder." The implication reflects different philosophies that exist within forestry training (e.g., "industrial tree farmers" or "wildlife specialists"). Alexander Mather in *Global Forest Resources* further distinguishes between "pre-industrial" forests, "industrial" forests, and "post-industrial" forests. He also uses the term "social forestry," (1990:272-274) while some choose to use "community-based" forestry. Moreover, within anthropology a variety of terms are used to define our work on these types of issues, e.g., "sustainable development" (Carley and Christie 1993:43), "moral ecology" (Dove and Kammen 1997:91), and "sustainable ecology" (Vannette et al. 1994:94). How demands are defined at the negotiating table is based on the formation of the various identities, the related rationalities, and the polarizations that bring the parties there.

See [Table 5.1](#) Sustainability and Sustainable Development Defined.

Sustainable development was early defined by the World Conservation Strategy of 1980 (Carley and Christie 1993:42); however, the definition became widely recognized and co-opted after the United Nations' World Commission on Environment and Development (i.e., also known as the WCED and the Brundtland Commission) study findings were published in 1987, *Our Common Future* (Norgaard

1994:12;17;194; Carley and Christie 1993:11;42; Goodin 1992:63):

Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

The United Nations' definition is more recently enhanced by the understanding that "world peace and security" require sustainable development to attain "stable economic and social development" (Boutros-Ghali 1995:VII)

Various social groups add a slightly different agenda for further implication of their missions (See [Table 5.1](#)). The North Carolina Governor's Task Force on Forest Sustainability definition is the same as the American Forest and Paper Association, and specifically names forest products. In *Report of the Governor's Task Force on Forest Sustainability*, sustainability was defined as:

the management of our forests to meet the needs of the present without compromising the ability of future generations to meet their own needs for forest products and forest-related values (Hunt 1996:iii; expanded on P.6).

Other more recent ideas include "ecosystem management" which implies landscape level management as opposed to single stand management. Green Politics and the "deep ecology" view depends on "ecological wisdom" (e.g., "Nature knows best"). Another nature concept is the Goddess-worshipping philosophy, Greek mythology, of the Gaia hypothesis (Eisler 1988:

73-75;193). Eisler claims that our current "legacy" from this Greek mythology is reflected in the use of the term "Mother Nature." When I began this study, I understood that conflicts existed on harvesting techniques (i.e., clearcutting) and environmental perspectives, but I had not realized how much our cultural concepts (including belief systems), especially our ideology of the rightness (or not) of "Nature" are at the core of these issues.

In the *Paper Task Force Recommendations for Purchasing and Using Environmentally Preferable Paper*, the Task Force claims that environmental concerns generated a forest management paradigm shift to sustainable forestry, away from sustained-yield forestry (1995:123). [Table 5.2](#) shows a range of perspectives in the disparity between the "dominant social paradigm" and the "deep ecology paradigm." Redclift (and Sylvan) claim that most ideologies exist somewhere within the range (Redclift 1995:44 adapted from R. Sylvan 1985, "A Critique of Deep Ecology," in *Radical Philosophy*, Pp. 40-41.) Noteworthy on the chart are the concepts that range from dominion over nature to living in harmony with nature, nature as a resource versus nature as a limited resource, high versus appropriate technology, consumerism versus basic needs ideology. Nature as a resource is often expressed in timber terms a renewable resource.

Understanding the various meanings of nature and sustainable development contributes further to understanding stakeholder ideologies. I will refer back to some of these ideologies.

It is instructive to study the more local influences of sustainability definitions; a slight departure from the "dominant paradigm." The Governor's Task Force on Forest Sustainability inquiry stemmed from recognition of several rapid changes impacting the state's forest resources (i.e., increasing timber consumption, forest fragmentation, public concern about silvicultural practices, restrictions on National Forests timber harvesting policies, population increases, and urban-to-rural sprawl) (1996:2-5). The scope

of the study, while it often addresses general forest sustainability, focuses primarily on the timber industry' continued economic growth, restraints to timber availability and production (sustained yield), and possible means/actions to overcome those restraints (many which they admit are highly controversial, 1996:21;25). However, the results of the study created the roots for other forest sustainability and conflict resolution fora in which the interests of the general public may be more fully represented (e.g., The Southern Center for Sustainable Forests Forum, and the State's chip mill impact study).

The language in the study findings reflect the "urgency" of collecting appropriate data to make forest sustainability decisions (1996:iii;1-2;53):

North Carolina is at a *crossroads*.

The state can simply try to react....or can *look ahead*...

A cursory examination of data pertaining to the status of North Carolina's forests, collected *nearly a decade ago*, suggests that the future of our forests and the industry which they support are both *reasonably secure*. Since that time *profound and unprecedented changes* have occurred which could direct our forests into a future where their *sustainability could be jeopardized* (1996:iii) [my emphasis].

These broad data, *collected in 1989*, clearly indicate that, barring significant changes in future years, there *should be ample timber* available to meet industrial needs without jeopardizing the quality of the state's environment. *However*, since the collection of the above data, our forests have experienced changes which call into *question the validity of this conclusion*. These changes are taking place at a more *extensive scale* and at a much *more rapid pace than was, or ever could have been, anticipated by those who were responsible* for earlier studies and projections of our forest resources. These changes are *so dramatic* that they require a *fresh look* and a *sober assessment* of those things that need to be done to assure that our forest resources will continue to meet the needs of North Carolinians (1996:2). [my emphasis]

The Task Force, for pragmatic reasons, put forth only fifteen of its 79 recommendations for action; however, it is useful for one to study the 79 recommendations because the results are excerpted from a combination of them. I expect that citizens will see future actions based on many of the recommendations by the industry, the Forestry Council, and the Southern Center for Sustainable Forestry. One of the final recommendations includes investigation of methods to more quickly collect forest inventory data:

With them we can make course corrections; *without them we fly blind into the future* (1996:53). [my emphasis]

The lack of existing current data and adequate planning are exactly the complaints the environmental community have been making about forest management. In spite of this parallel understanding, the report claims:

Studies show [none noted] that most of our citizens have *no baseline of understanding* against which to calibrate their attitudes toward forestry (1996:7). [my emphasis]

Their opinions about matters environmental, ecological and esthetic, *while perhaps not*

always technically sound, are strongly held (1996:41). [my emphasis]

The Task Force attributes this lack of understanding to citizens' urban lifestyles, as well as, them not experiencing the turn-of-the-century over-cutting phenomenon (1996:4;7). This non-land-

based lifestyle and new land-use options contribute to landholders' decisions against managing their lands for timber production. The ensuing reduction in timber availability greatly concerns the industry (1996:17-21;34-35;41). Ironically, some of their recommendations include "reurbanizing" the public to reduce further fragmentation and increase timberlands (1996:36).

What I did not see in the Task Force report were questions about the suitability of the wood products made in terms of sustainable development, for example, suggesting a dialogue within the industry about deliberately changing total industry consumption, or changing allocations of resources to be used in a more sustainable fashion. In short, my question would be: is what the industry asking of the state's resources, what the state is willing to give?

A very different investigative perspective is found in the 1995 *Paper Task Force Recommendations for Purchasing and Using Environmentally Preferable Paper*. The Paper Task Force was a "voluntary, private-sector initiative" (i.e., non-regulatory), "market-based" effort to investigate more environmentally responsible production and consumption of paper (1995:27). A variety of representatives (including the pulp and paper industry) involved in impacting "the lifecycle of paper" participated in assessing, then recommending "purchaser-

supplier" options (1995:12;15). Noteworthy, at this point, is their comparison of recycling pulp production manufacturing data to virgin fiber use (1995:13;22;30;64-118;154), and also a minor mention of pulp substitutions and "non-wood" fiber alternatives (1995:22;203-204). In addition, their definition of "pulp" is more inclusive than usually provided in industry resources:

Pulp: Cellulose fiber material, produced by chemical or mechanical means, from which paper and paperboard are manufactured. *Sources of cellulose fiber* include wood, cotton, straw, jute, bagasse, bamboo, hemp and reeds (1995:240)[my emphasis].

Growing concern about forestry issues is recognized, if for no other reason, because of the number of recent issue papers. Another document, this one paid for by all taxpayers, is the "Report on Forest Health of the United States by the Forest Health Science Panel" (Taylor 1997 and Taylor 1997b). The panel, "chartered" by Congressional Representative Charles Taylor (NC-R), describes current forest health conditions from a historical impact perspective, creates several "policy options for managing forests," and explains option consequences (Taylor "Preface" 1997b:2). The authors use 1993 US Forest Service publication data to establish their models for developing a comprehensive forest management plan (1997b:1;5;8). Even though published in 1997, the models were developed on outdated statistics. The mathematical relationships would, therefore, have to be re-examined if the models were applied for policy making today.

I draw on information in this report because it became one of the most controversial, and least accepted, by the environmental community. It became a springboard for a new escalation of polarization indicated by a backlash of response (e.g., the ensuing dialectical relationships). Again, this is an example of "who" participates and "what" information they contribute to this controversy as mentioned earlier in this chapter.

Charles Taylor represents the 11th District of (western) North Carolina, which also includes much of the Willamette Industries Broad River Chip mill sourcing area. In this region Taylor is known disparagingly by the environmental community as "Chainsaw Charlie" because he is closely linked with the timber industry and especially his work on the Salvage logging legislation.

The panel findings, reported by scientists who are other-wise respected, were overshadowed by association with Taylor, the project instigator. While Taylor's research questions/purpose admittedly sought a "forest science basis of the issues" (Appendix D 1997b), my primary criticism of this report concerns its establishment of relationships between five (5) factors (i.e., social, political, economic, educational, and technical) without including panel scientists from the non-forest fields (i.e., social, political, and non-timber economic scientists) (Appendix E 1997b; 1997b:6-7). The panel members were chosen:

primarily from academia, with the attempt to *avoid* industrial, government (e.g. Forest Service), or lobbying *influences* (Appendix D 1997b) [my emphasis].

"Influence" is used loosely here, for example on government influence, since many currently hold state employee academic faculty positions, and previously were state and federal employees (of the eight panel members listed in the bibliographic section, six were previously USDA employees and one National Park Service employee) (Appendix E 1997b).

When asking the question, "What is forest health?" the paper explains that:

One definition is not more 'scientific' than another. They all describe the condition of the forest relative to various values... (1997:2).

This comment acknowledges the multitude of perspectives and the complexity of confronting forest issues. It parallels Thoreau's commentary:

The questions is not what you look at, but what you see (quoted in Little 1995:145).

Dr. Robert Zahner spoke about these views at the September WNCA Forest Health Conference in his lecture entitled, "What is a Healthy Forest? Changing Times, Changing Views." The conference named "What are the REAL Forest Health Issues in the Southern Appalachians?" was designed to help a broad stakeholder audience (conference brochure, 9/6/97):

"separate scientific reality from the political myths of forest management"

and to: "expand the debate beyond simply maximizing growth of commercial tree species."

Respected scientists (including Dr. Scott Schlarbaum from Taylor's panel) spoke about a wide range of topics (e.g., air pollution, development, forest fragmentation, diseases caused by exotic pests, neotropical migratory birds, and loss of biodiversity.) Discussions during the day often referred to the importance of "good science," "uncompromised science," science not singly influenced by the timber industry or political regimes for their own ends. I suspect, another noticeable dialectical response to Taylor's paper, the Paper Task Force paper, as well as other science papers known as "white papers," was Danna Smith's Dogwood Alliance "beige paper." Her paper, was further contrasted with the standard science white papers because it was printed on a non-bleached, more environmentally-safe, paper product. This

grassroots science-based document, *Chipping Forests & Jobs; A Report on the Economic and Environmental Impacts of Chip Mills in the Southeast*, draws heavily on industry data, which describes the advance of chip milling into the Southeast and the ensuing impacts (Smith 1997).

The Charles Taylor's science panel attributed the forests current condition on two principle policies based on an outdated "attitude" or concept of conservation ideology, which they claim have changed, (1997:3) that:

1. " *nature knows best* and that human intervention in it is bad by definition' " (Part 2 1997b:2) [my emphasis].

They continue:

Although this theory has been abandoned by most ecologists (Stevens 1990), many policymakers, conservationists, scientists in peripheral field, *members of the public, and older scientists* still consciously or subconsciously accept it (Taylor 1997b:Part 2:2)[my emphasis].

2. The same uninformed people continue to hold a "[mis]perception of an impending timber shortage" (1997:3):

The expectation of a timber shortage lasted into the 1980's. Like the outdated concept that forests exist as a stable 'steady state', complex structure unless disturbed by people, realization that there is not a timber shortage has not been consciously or unconsciously accepted by many policymakers, conservationists, scientists in peripheral fields, members of the public, and older scientists (1997b:4).

This comment speaks to the opposing opinions between the dominant paradigm ideology of unlimited resources (See [Table 5.2](#)) versus the deep ecology perspective of limited resources. The panel authors do charge the forest industry (and consumers) with some responsibility for impacts from earlier management practices, including fire suppression, as well as "increased harvesting and intensive management" (1997b:2;4-5):

Forestry became more heavily based on financially efficient approaches of maximizing timber volume through intensive management and relatively short rotations. *Even-aged management* began to be regarded as the *only* biologically feasible way to manage, rather than as *one* of many methods [my emphasis].

This ideology, they claim, increased cutting of older forests:

...it was prudent to harvest the timber before it died and replace the stand with a vigorously growing, young forest.

The panel intentionally eschews using the term "old growth" because it has "ambiguous" meanings; however, they use the term "old forest" (1997b:3-4;1997:2;4). Their resistance to using the terminology contradicts the USDA Forest Service recent cooption of the term and activities to define various species old-growth inventories (Kennedy and Nowacki 1997).

Cutting of old-growth is an important part of this Willamette Industries chip mill issue for several reasons as I mentioned and will reiterate here: 1) most old growth exists on public lands where the greatest biological diversity and endangered species exist; 2) old-growth inventories are drastically reduced since European settlement; 3) and, particularly Willamette Industries association with sourcing from National Forests and confrontation with environmentalists over old-growth cutting (Dunn 1994:160-162).

Controversy over cutting on public lands by any timber industry company is evidenced further by the increased support for the "Zero-cut" campaign. During the Southern Appalachian Forest Coalition annual meeting, Chad Hanson, from the Sierra Club's Board of Directors, described the club's support and work on legislative reform. Ninety-four percent (94%) of the chapters overwhelmingly support a halt to commercial logging on federal lands. Cynthia McKinney, a Democrat from Georgia introduced to Congress the National Forest Protection and Restoration Act (NFPRA) of 1997. The Bill defines federal public lands as those held in "the National Forest System, the National Wildlife Refuge System and under the jurisdiction of the Bureau of Land Management (BLM)." The Bill intends to support local communities through continuation of "personal use permits" and seeks to "assist communities dependent on this program with economic recovery and diversification." The Bill, obviously, provides for protection and restoration of our "natural heritage," but also provides funding for EPA research and their granting privileges for "*wood-free alternative* products for paper and construction" research.

While many environmentalists support the "Zero-cut" campaign on public lands, I have never heard even one advocate for "zero-cut" on private lands. However, the claim is made often by timber industry advocates that environmentalists seek just that. For example, in *Evergreen Magazine*, Mary Wirth, who handles public relations and legislative affairs for a Tennessee lumber and manufacturing company, claims:

'My message is always the same,' she says with conviction. 'The current forest debate is *not about how* timber harvesting will be done. *It is about if* timber will be harvested.' (Petersen 1997:24;27) [my emphasis]

In a Charlotte Observer article, "Trouble for Timber: Chip mills gobble forests, jobs, foe say; Do mills chip away Southern forests?" president of Godfrey Lumber, Chester Godfrey, says:

'This issue is *not about chip mills*,' he said. '*It's about whether we cut trees or we don't cut trees*' (Henderson 1997:1-A;10-A) [my emphasis].

Bob Slocum, the executive vice-president of the North Carolina Forestry Association continues this by-line:

This, from our perspective, is *not about chipping trees*, it's not even really about exporting chips, *it's about not wanting any trees cut* (Lewis 1997:1;14).[my emphasis]

This repeated over-simplification by some industry personnel seeks to reduce environmentalists' efforts on sustainable forestry to mandates of no wood products use. I know not one environmentalist who would restrict all wood cutting. In an interesting transfer of language, Mary Wirth, known as a "grassroots activist," comments about the environmental "industry:"

'To date, the environmental *industry* has not been interested in compromise,' she declares. 'Its main interest is in social change, and it is succeeding at redefining some of our *nation's*

bedrock beliefs, including the *rights of private property*. It is time for people living in eastern timber communities to thoroughly understand what we are up against, and respond.

She continues:

"This debate - if we can call it that - goes to the very root of what our country is all about. How many *freedoms* are we willing to give up in the name of the environment, and at *what cost to the taxpayers*? (Petersen 1997:27) [my emphasis].

Many participants began to turn their attention to private landholders' actions/intentions on timber harvesting and all related forestry issues. The Governor's Task Force established plans to research methods of encouraging landholders to commit their properties to timberlands (e.g., through forestry-friendly education, tax incentives) (Hunt:1996).

By July 1997, North Carolina State University (NCSU) Agricultural Extension Forestry Specialist, Rick Hamilton, planned a Fall informational meeting for private landowners near Rutherford County. The meeting would be held before Willamette opened its chip mill; the agents intend to inform area landowners of their timberland options (per conversation with local Extension agent 7/15/97). In Rutherford County, the local office of the USDA Natural Resources Conservation Service (NRCS) advertized their Forestry Incentives Program (FIP) (Daily Courier 8/20/97). Agents provide information about cost-sharing for "tree planting, improving forest stands, and site preparation for natural regeneration." The program exists to "encourage expansion of private, nonindustrial forestry land." Applicants must have a forestry management plan which NRCS can help them prepare.

I was interested also in the private landholders' perspective of their land use options, those related to the timber topic issues and general future development in this region. The following chapter provides some of my findings of this investigation.

CHAPTER 6. RECOGNIZING CONFLICT: WHAT ARE THE ISSUES?

It is true that citizens today perceive that they have many landuse options. I wanted to see what are those options when framed in the context of western North Carolina hardwood timberland ownership. In several settings I had the opportunity to explore opinions about landuse options. Some of the discussions were in meetings which allowed for free-flowing comments. The rest came from a *written survey at a citizen's meeting in the county. (See [Table 6.1](#)) In all cases, the scenario presented was the same (See **Appendices**):

Imagine this scenario (pretend):

You own more than 50 acres, but less than 400 acres, in western North Carolina. The land has hardwood timber on it. You need to generate some income from you landholding investment (e.g., for the children's college fund, expenses of a life-threatening illness, or desire to take a vacation cruise). Please *list 3 (or more) land-use options you would consider to generate that income. (Please do no be intimidated by the research process. It is okay to list "cutting your timber for sale," if that is a likely option.)

The range of perceived landuse options are limited only by the landholder's imagination. In several cases

the word "development" was used, this avoided the exact description of what might later appear on the land. In [Table 6.1](#) when options were exactly repeated (e.g., nature trails, cut timber, sell land), the results were lumped together. Timber cutting was listed during each investigative setting; however, few people were interested in clearcutting as a harvesting technique. A variety of property conversions to nature trails, parks, camps, and residential developments occurred. What seemed clear is that people do perceive they have many options and that timber cutting is not always one of their landowner objectives. Discussion comments and interview results indicated that what one might do under normal situations (e.g., long-range planning or long-term investment) might be different than under dire circumstances. Emergency financial conditions (e.g., treatment for long-term medical care) might lead a person to have their timber cut, rather than sell their land. Desperation to adequately provide for one's family is, and will always be, a determining factor in how people manage their assets.

Many individuals, citizen groups, organizations, and communities are investigating various landuse options for creating more sustainable lifestyles, the following are examples. An unusual coalition of organizations worked together in adjoining counties to promote conservation easements for properties that adjoin the Blue Ridge Parkway. In "Upcoming Conservation Easement Seminar Highlights Partnership: Landowners, Realtors Join Environmentalists, Miles Tager claims (6/12/97):

As polarization grows between those devoted to preserving land and those dedicated to profiting from it, along comes a means to do both at once...One of the keys to the broad-based support for conservation easements is in a definition of property value that includes more than just a financial meaning; the new coalition recognizes the worth of farm, family, community, recreational, scenic, historic, and environmental lands [my emphasis].

Blowing Rock realtor, Sue Glenn, explains:

The issue of 'property rights' has 'been politicized,' Glenn says, often to the detriment of both the value and integrity of the land.

An organization called Western North Carolina Tomorrow planned a December meeting about potential landuse options, including ideas such as "conservation by design," and examining "small town growth." In addition to many folks concerned about the impending chip mills in Union Mills and Rutherford County, numerous other western North Carolina communities recently expressed desires to plan their own growth and development. Citizens Against Pollution (CAP) in Watauga County protest the construction and operation of an asphalt manufacturing plant in their community (Tager 6/19/97). Other citizens in Avery County protest the operations of an existing asphalt plant there (Tager 7/31/97). In Hickory, NC, the article title well reflects the community's intentions, "Hickory rejects Wal-Mart store to preserve vistas" (Daily Courier 11/19/97). And in Asheville, citizens and the City Council intend to enforce an ordinance against continued increases in advertising billboards (Barrett 1997). In the major tourist region of Rutherford County, Lake Lure residents want restrictions on clearcutting (Lewis, 7/28/97). The prior year they paid 1.4 million dollars to dredge silt from the lake and have concerns about potential clearcut runoff, as well as damage to their viewshed. In Polk County which adjoins Rutherford, citizens are developing plans to keep out LULU's (Locally undesirable land uses) (Byrd 12/17/97; Lattimore 12/3/97,12/11/97, 11/26/97). Industries which they consider undesirable are: landfills, large hog farms, large petroleum storage tank farms, asphalt plants, chip mills, and incinerators. Citizens are approaching landuse issues in an aggressive manner in order to protect their environment and quality of life.

My next research question in the chip mill issue, was "who are the stakeholders?" In several settings I had the opportunity to ask that question; the answers are summarized in [Table 6.2](#). Initially the respondents would be very specific (e.g., loggers, truckers) and then broadened their perspectives to encompass a wider range of people (e.g., those concerned with soil and water conservation, living beings). The more involved I became with the issue, my perspective of impacted people also became broader. As you will see from the following discussions, I found virtually everyone would be directly or indirectly affected.

I then asked the participants what they considered the nature of those impacts. [Table 6.3](#) lists, although not totally inclusive, major expected impacts of the chip mills. The list includes responses on impacts deemed positive and negative (e.g., provides jobs, compared to reduces jobs). The information is collected from a number of sources, e.g., individuals during interviews (including landholders), individuals at various meetings (including the state's chip mill public hearing), CCRC and Dogwood Alliance members, government agents, and timber industry professionals. Obviously, chip mills will add jobs in some fora and reduce jobs in other. The answers are probably a matter of degree of impact and also related to other topics. For example, do chip mills contribute more to the number of jobs than would other alternative employment options, e.g., tourist related jobs? What is the measure of the quality of the jobs? What are the benefits and problems associated with the jobs? Some of the answers appear redundant (i.e., decreases employment opportunities versus reduces jobs) but may have a slightly different interpretation during investigation. Many of the same impacts, such as, not enough research on hardwood regeneration, can be categorized as "environmental" or "cultural" or "economic." In the following discussions, I will further develop the interrelationships and over-lapping of issue impacts.

The issues are many and extremely complex. For this reason, I have chosen to describe my findings about the impacts in five broad and frequently over-lapping areas: Air quality and noise (A nuisancing neighbor); Loggers, trucks, trains, and roads; BMPs and property: rightly; Chip mills and clearcutting (the final harvest); Water and wildlife (finding one's niche - or - if a tree falls in the forest, does anyone hear it?).

Air quality and noise (A nuisancing neighbor)

Six a.m. on a Saturday morning in September, I sat on the front porch of a Union Mills farmhouse located across the street from Willamette's under-construction chip mill. The farmhouse, originally constructed in 1904, had been recently renovated. The homeowners, regional natives Jan and Mark Pruitt (pseudonyms), purchased this home a decade before and planned to retire there. However, they will have to alter those plans. Mark's emphysema condition has severely increased in direct proportion to the chip mill's construction activities. Willamette's commitment to beginning operations "with one shift, 7:30 a.m. to 4 p.m. weekdays" clearly did not apply to the company's construction phases. Heavy equipment/earth-moving machines were cranked up, releasing diesel fumes into the air that drifted to the porch - the fumes strong enough to taste. Dust and dirt stirred up during road-building, land-clearing, and equipment delivering covered the porch. So much dust, in fact, that the Pruitts can no longer keep their windows open during the day. Repeated calls and complaints to DENR's Asheville Air Quality office provoked occasional/temporary responses of tank water spraying to get the dust to lay down. When agents visited the site to observe the situation, their visits were coincidentally on days when air quality was not severely impaired. Many construction noises filled the air: e.g., motors running, equipment clanging, and trucks braking as they came around the curves leading to the plant's entrance. The sounds from the passing trains are intensified now since a border of trees were removed to prepare for the plant's new railroad spur. During my discussions with DENR and EPA Region IV Air Quality agents, I learned that Jan and Mark

are not protected by federal or state air quality codes (see Harrison 1995; Herbert 1995). Their only recourse might be a nuisance violation suit against this Pacific Northwest-based company that numbers 322nd on Fortune's 500 List. It was not the way the Pruitts had planned to spend their retirement savings. Their opportunities for a good quality of life seem diminished. Not many prospective buyers respond to the "For Sale" sign in their front yard. They wonder if they will be able to recoup their mortgage investment in order to move to a more environmentally safe neighborhood to protect Mark's health.

In written comments to DENR about the impending chip mill study, Jan questioned the agency's investigation of the chip mill impacts: will DENR look beyond the timberland owners rights? when DENR assesses the costs and benefits, will the agency include the couple's health care costs? They feel the chip mill "has already ruined their neighborhood;" Mark says:

We have been working to upgrade our house and Willamette is working to downgrade it. They are taking over our neighborhood and trying to push us out.

The couple speculates about air and noise impacts from the chip mill's operation; how loud will the debarker be even if it is enclosed in a metal building? will the noise plague the residents as it has at Willamette's Keystone plant in Pennsylvania? will the train run all hours of the night as it does at Bob Jordan's plant in Moore County? what will be the effects of increased truck traffic on Centennial Road residents? how much debris will fall from the trucks which haul the logs to the plant, and the chips and bark away from the plant? will all the senior citizens at the Home up on Union Mills' main street ("the Hudlow") have to give up their Southern traditional front-porch-sitting pleasures because the truck noise is too unsettling? They do not feel hopeful about the answers. The Pruitts are not looking forward to Willamette's grand opening.

But there exist other questions about air and noise pollution. The *Southern Appalachian Assessment Summary Report* describes already existing air pollution impacts to the region's forest cover (1996:77-94). Airborne emissions, originating within and outside of the assessment area, impact visibility, which impacts tourism in the Great Smokies region. Airborne emissions also impact soil acidification, which impacts tree health and future forests growth. Run-off of acidified soil impacts aquatic species. In addition, the re-introduction of fire in forest management (i.e., prescribed burning) and the ensuing production of particulate matter create risks to human health. The report authors call for regional cooperation for these regional problems.

The Governor's Task Force on Forest Sustainability recommends, and sets as a priority, development of a "Right to Burn" bill for submission to the General Assembly" (1996:51;25-30). The bill would "limit the liability of a landowner who has taken reasonable precautions during prescribed burn operations" (1996:29). This brings the issue back to not only air quality but "rights." Rights to landholders that burn and rights to everyone that inhales their smoke.

Air quality affects, but is also affected by, tree growth and death. Additional research on growth and harvesting is essential to clarify those effects especially as related to global warming and other global changes. Additionally, after chips are delivered to the pulp and paper mills, additional impacts to air quality occur during the pulping and papermaking processes (The Paper Task Force 1995:178-181). All of these scenarios add to the complexity of studying chip milling impacts.

Loggers, trucks, trains, and roads

One of the Union Mills residents early expressed concerns focused on impaired road safety attributed to increased logging truck traffic. They learned that approximately 50 trucks would deliver wood to the chip mill and would then exit the mill. Since that time, however, the truck volume statistics have increased to 75 trucks in a day and 75 out, approximately 150 total daily (Buckley 10/16/97 community meeting at Fire Station). In addition to the chips, bark will be transported from a "bark load-out" station to available markets (e.g., landscaping or mulch, fuel-using sources) (Buckley interview 10/23/97). Train cars will also deliver chips away from the chip mill site. In fact, access to the railway tracks is one of the prime reasons for the plant's location choice (Buckley 10/16/97).

Further, state spending (Moore 1995) for road improvement to support increased private industry truck traffic to the Willamette Industries chip mill has long caused controversy in Union Mills. The document describing the more than \$900,000 road work did not contain figures for purchasing easements on Centennial Road from residents. Local residents expect that six to ten water wells would have to be relocated for the road work to take place. The well owners assert that this imposes a "taking" by the government. In this case, I believe that NC's Environmental Policy Act (NCEPA) of 1971 (N.C. GEN. STAT. 113A; Holton 1994) provides an arena for an EIS on agency major undertakings. It appears to meet the three required criteria for generating an EIS (i.e., action, public money, and environmental effect). This would allow the public to comment if DOT prepares to build the roads; it would also enhance DOT's decision-making ability:

An EIS serves as a decision-making tool for state governments. It ensures that agencies fully consider the policies of NCEPA before undertaking or approving projects (Holton 1994:29).

Recent investigations on ethics violations of NC Department of Transportation (DOT) Commission members highlights the agency's special interest work that does not benefit a large public.

Loggers currently haul timber products to various sites in the region (e.g., saw mills, pallet mills, lumber yards, furniture manufacturers). The average 40 ton loads (80,000 pounds) already contribute to road damage in the area. Trucking road taxes, in part, fund road repairs. CCRC members expect compounded problems with trucking traffic related to passage of HB 1096, the Trucking Adjustment Act of 1997. The Act is designed to "encourage the growth of that industry through increased truck registrations in this state" (4/21/97 H1096-CSR-5). It provides for truck weight exemptions when hauling "forest products" which originate "from a farm or from woodlands" to "first market" (Avrette 1997). The criteria for the exemption specifies leaving a "light-traffic road" traveling to "the nearest highway that is not a light-traffic road." The ramifications may include heavier truck loads of logs, as well as chip loads produced in the woods (e.g., by whole log chippers). The state anticipates also studying the possibility of allowing longer trucks on the roads: "up to 68 feet in total length on additional highways of the State" (Draft: Study Truck Safety 97-RVZ-002).

Truckers also drive long distances with their loads. For instance, Fred Boyd, Jr., of Woodlawn Lumber in Marion, previously hauled his chips to Kingsport, TN; now he can make the shorter trip to Rutherfordton. A logger, Jack (pseudonym), told me he has always carried his pulpwood to Champion in Canton; while on the highway, he always passed trucks from a local lumber yard delivering white pine and poplar from other states. During the meeting at the Firehouse, Buckley said he may source from 100 miles away if necessary to get timber for the chip mill. The TVA FEIS reported that the chip mills merchandized logs worth more than pulpwood (TVA 1994. Vol.2 P.662):

However, these logs are *not necessarily being sold to local* sawmills. They are being sold to the highest bidder, which may be 100 miles away. Loggers are separating sawlogs in the woods to avoid double handling [my emphasis].

CCRC members are concerned about road maintenance and road quality; however, they have greater concerns about road safety. The two-lane roads with narrow shoulders provide little "margin of error" for motorists. One United Worldwide Mission employee exclaimed to me, "There is NO way that two [approaching] logging trucks could safely pass each other!" It was rumored that a logging truck approaching a middle school bus in the neighborhood broke the side-view mirror off the bus. The claim may be true or false, but a drive down the road would prove to anyone that the potential for such an event exists. The following series of events further exacerbate the controversy. In early September, Donna's (pseudonym) husband passed away. As is local custom, mortuary staff posted Slow/Caution funeral signs near her home on Centennial Road in Union Mills. In spite of the signage, a 71-year-old South Carolina logging truck driver came speeding around on the two-lane curvy road in front of her home. His logs broke loose from the truck and that power forced his vehicle into a ditch on the opposite side of the road (Daily Courier 9/16/97). The Highway Patrolman, who cited the driver, claimed that any pedestrian or other vehicle driver in the vicinity would have been killed during the wreck. It took several hours for the road to be cleared of the logs, further increasing driving risks to on-coming traffic. Neighbors on Centennial Road, already concerned with the possibility of increased dangerous truck traffic when the chip mill opens, were dismayed with this event.

One CCRC member, Jerry (pseudonym) was driving to work one day in his compact car. He waited at a Stop sign where Centennial Road intersects Highway 64. His car was struck by a loaded, out-of-state logging truck. The trucker, speeding down the hill, crossed his vehicle over "No Passing" double-yellow lines. While passing several other trucks, he struck the front of Jerry's car. The trucker failed to stop to see what damage he had done. Jerry finally was able to stop the trucker and contact a NC Highway Patrolman. Through an absurd chain of events, the patrolman also ticketed Jerry. Although the charges were later dismissed in an late September appeals court, Jerry missed several work days to meet with his attorney and to appear in court. He also had to struggle with his insurance company who threatened to cancel his auto insurance and raise his rates. He incurred considerable costs which he will not recoup. The trucker was fined approximately \$50.00 for his part; neither he nor the NC Highway Patrolman bothered to appear in court during Jerry's appeal.

By this point, CCRC members had become expert observers of logging trucks and their traveling behavior by visually inspecting parked and moving equipment. On 18 September, the members mailed letters to the two local lumber yards, Gilkey Lumber and Parton Lumber, and Willamette's local office asking what precautions they will take to protect the residents from the trucking traffic. The letter also asked what liability the companies will absorb when wrecks occur. The members expressed their feelings in the letter:

The loggers and their drivers who supply you with wood are a direct reflection of you and your policies, in the community eye, whether or not they are actually employed by you...Since you have encouraged logging trucks to drive through our community to your facilities solely for your benefit, we are counting on you to encourage these same drivers to practice safe driving for everyone's benefits.

The letter further addresses some of the companies' managers prior comments about wanting to be "good

neighbors:"

...If you do not take efforts to ensure public safety regarding transport of your raw materials, the public will be compelled to redefine the term 'good neighbor.'

By 16 October, the aforementioned industry managers agreed to meet with CCRC members at the Union Mills Volunteer Fire Department to discuss trucking safety issues (Lewis, James 10/17/97). The meeting participants discussed a number of related issues: poorly maintained equipment (e.g., bald tires, missing taillights, mud-covered license plates), monitoring behavior (e.g., drugs and alcohol related), driving procedures (e.g., driver and log load), road maintenance concerns, affirming Department of Motor Vehicle (DMV) compliance (e.g., valid licenses, insurance), and company liability issues. Shannon Buckley, Willamette's District Procurement Forester, brought materials to CCRC members which described North Carolina Forestry Association's (NCFA) work to promote their [voluntary] "ProLogger" programs. He also loaned CCRC members a copy of a video "NCFA presents 'Getting that Green Light to Home' a trucker safety program." The film affirms what CCRC felt, "You and your rig are the moving billboards of our industry."

Shared desire for road safety provided a setting for first attempts at establishing common ground. However, on that same night, a tragic trucking accident, a "worst case" scenario, reminded all involved how truly critical is this issue. On a mountain stretch of Highway 64 west of Rutherford County, a tractor-trailer driver hit a school activity bus, driven by the assistant coach, carrying the Hayesville High girls' volleyball team (Perlmutter and Foon Rhee 10/18/97; Daily Courier 10/17/97). The truck driver was charged with second degree murder for killing the assistant coach and one 16-year-old team player; he was also charged with driving while impaired. He lost control of his vehicle and "its cargo of three car-sized concrete septic tanks broke loose" (Perlmutter 1997:12A). The Perlmutter and Rhee article continued

The Carolinas, home to dozens of trucking firms, see more than their share of traffic deaths involving large trucks. *North Carolina ranked sixth in 1995*; South Carolina ranked 15th[my emphasis].

The Charlotte Observer carried articles reflecting the trucking industry efforts to improve conditions and improve their public image (Reed 1997). North Carolina trucking safety issues continue to be widespread and not just limited to timber industry. DMV officials are not able to adequately enforce the laws, especially on "non-interstate roads" in Western North Carolina, where a Citizens Times analysis shows a surprisingly large percentage of fatal crashes involving trucks occur" (Barrett 12/15/97). CCRC members talked to local loggers about trucking safety. In one case, a logger told a Centennial Road resident, "Hell, we'll just go somewhere else!"

What other than re-routing their activities can be expected of loggers and their rigs? (The following list is not totally inclusive or in any rank order of importance). Pedestrians and the general driving public can expect several conditions from loggers and their loads:

loads are within appropriate weight limits;

logs are not loaded above the truck standards (series of perpendicular posts which border the truck beds),

logs are secured with binders (e.g., chains or straps wrapped across the top of the load);

loose material should be trimmed from the logs before the truck leaves the site;

flags trailing the long end of a load which extends beyond the truck bed;

equipment in maintained in safe conditions (e.g., tires, lights);

drivers will be sober and maintain safe speeds;

drivers follow all existing highway laws and have necessary insurance coverage;

and, license plates are visible to other drivers.

Newer trucks generally have the company name, address, and phone number painted on the sides of the doors. Most of them have reflecting tape along the sides of the truck bed or additional lights. Jack said that for small logging companies some of these conditions pose a problem: A roll of reflecting tape may cost a driver about \$115; an expense he considered substantial (prohibitive for some). He also explained that estimating truck weights in the woods may be difficult. Even experienced drivers exceed the weight limit on occasion. Loggers experience a variety of non-driving circumstances with their vehicles, including equipment fires in the woods (Daily Courier 9/9/97).

Considerable discussion at the community meeting centered around how to deal with loggers who come to the mills loaded over their standards. Buckley claimed it created a dilemma. If the company refuses the load, the driver is back on the road in a unsafe condition. Once the wood is unloaded at the mill, and processed, different type vehicles haul the wood chips away to the next production facility (e.g., pulp and paper mill). Willamette's chip mill in Union Mills is designed to drop chips from a chute into open-top railroad cars or open-top chip vans (trucks) (Buckley interview 10/23/97). Chip vans usually have a cover to prevent debris on the road. A variety of chip trucks exist, some have a "walking floor" on which the truck can unload itself (like a conveyor belt); this type is used by businesses with limited unloading facilities. Some new vans have light weight aluminum bodies to "maximize the load." A sawmill may blow chips into the back of a truck, gradually filling the truck, then close up the truck with a mesh gate. Green chips generate heat and therefore trucks require some ventilation.

When a trucks enters or leaves a site (e.g., chip mills, woodlots, sawmills), the time required to straighten the vehicle and begin a normal driving speed is called "exposure." This is a critical time, especially on curvy rural roads. Reduced speed limits and logging truck warning signs are critical to enhance a safe roadway. Likewise, appropriate warning signals and flashing lights are necessary at railway crossing. Although Willamette intends to ask DOT to put up some signs, there are none currently near the in-construction Willamette Broad River chip mill facility. It is my opinion that people driving the road are not adequately protected from the construction truck traffic, nor are the construction truck drivers.

BMPs and property: rightly

The term "property rights" is used often in relation to landholder options on forestry issues; I refer again to timber activist Mary Wirth's comments:

'To date, the environmental industry has not been interested in compromise,' she declares. 'Its main interest is in social change, and it is succeeding at redefining some of our nation's bedrock beliefs, including the *rights of private property*. It is time for people living in eastern

timber communities to thoroughly understand what we are up against, and respond.'

She continues:

'This debate - if we can call it that - goes to the very root of what our country is all about. How many *freedoms* are we willing to give up in the name of the *environment*, and at what *cost* to the taxpayers?' (Petersen 1997:27)[my emphasis].

In the first passage, Mary is referring to "property rights" which relates to the legal concept of "real property." In *Rural Environmental Planning for Sustainable Communities*, Sargent et. al. describe those rights:

Real property refers to land and generally whatever is erected, growing upon, or otherwise permanently fixed to that land...Rights in real property may be applied to the surface of the land, its subsurface, or the air (space) above it (1991:216).

However, with private property rights, come responsibilities:

Landowners in the United States has traditionally consisted of a *bundle of rights* regarding the use, acquisition, and disposition of real property. As derived from our heritage of English common law, private and public landowners hold *exclusive but not absolute rights*. Landowners are granted title to the land on the condition that they *may use, but not diminish or destroy*, the value of their land; *nor* may they impose costs on other landowners or on society by improvident use of their lands. The concept of protecting the intrinsic productivity of land infers that future generations have usufructuary rights; *avoiding imposing costs on other owners* refers to the concept of externalities. Private landowner rights are conditioned on the owner's wise use of the land in order to protect present and future public interests in the land and what it produces (Cubbage 1997:339) [my emphasis].

It is the condition of landowners wise use of the land which environmentalists assert.

There is little doubt that landholders have many rights, what is now called to question, are the landholders' responsibilities. One of the most compelling comments about landholder rights/responsibilities I have heard in the history of this chip mill issue was made by Lamar Marshall from Alabama in a documentary called "Southbound" (Hawes-Davis):

I have 100 acres, I live in this forest.

If somebody upstream from me destroys the land

and all the silt and stuff comes down

and fills my stream and fills my fishing hole,

or wipes out some species of wildlife that lives there,

that impacts me.

As far as I'm concerned,

you can swing your arms around all you want to,

but *your freedom ends where my nose begins* [my emphasis].

In order to assert one's property rights but live within societal responsibility, how would one proceed if they wanted to harvest their timber? In other words, how would one put into place this particular "landowner objective"? Landgrant colleges throughout this country have long-time provided citizen support on agricultural issues. North Carolina State University's Forestry Program prepares information for the Cooperative Extension Service offices in each county; Agricultural Agents are easily accessible to the public. Many citizens are skeptical about the quality and motive of information gleaned from the state forestry school because it is so closely linked with the timber industry (e.g., "in the timber industry's pocket" is the phrase most often used). In spite of the controversy surrounding that relationship and current silvicultural methodology, the Ag Extension office is still a good place to start collecting literature and information about forestry activities.

One Extension leaflet informs landowners how to "Start Your Forest Retirement Account: and Watch Your Money Grow" (Gardner). It briefly describes possible benefits to the landowner for empowering their financial future through timberland management. Other much more specific brochures summarize responsibilities and liabilities of the landowners and professionals:

"Woodland Owners Notes: Maintaining the Forestry Exemption [for "Forest owners, managers and forest operators"] Under the Sedimentation Pollution Control Act" (WON22) briefly describes the chronology of timber harvesting related laws, including the 9 major components of the Forest Practices Guidelines (FPG) (15A NCAC 11.0101-.0209). The performance guidelines also require that participants follow the 6 laws incorporated into the FPGs. Waters must be kept free from contamination by debris from sites, pesticides and fertilizer use, waste (e.g., equipment servicing, petroleum), and excess debris and soil from roads. In addition, SMZs should retain shade to maintain appropriate water temperature levels. It introduces the Forestry Best Management Practices (BMPs); these are methods and techniques, through which those responsible for forestry activities can maintain the forestry exemption. Details of the NC Division of Forestry's oversight and violation enforcement are given, as are some recommendations on inclusions for bid requests and timber sales contracts. An important part of this brochure lists those who can be held liable for damage:

Landowners, timber buyers, loggers, contractors, and *others with financial or economic interests can be liable*. Liable parties will be held jointly and separately responsible for compliance, penalties, and site rehabilitation in the event of a violation [my emphasis].

Another brochure "Woodland Owner Notes: Maintaining Forest Property Boundaries" (WON35) provides cause for marking boundaries and informs the landowner about marking techniques so that they can protect their landed investments. Most Government documents point the reader to additional sources of information, including the "Forestry Best Management Practices Manual" (BMPs) (NC DFR 1989). The "recommended" practices are devised to "minimize erosion and prevent or control water pollution resulting from forestry operations" (1989:1). The document claims that NC forestlands contribute to only 4 percent of all erosion; however, the [out-dated] source for this information is a 1977 Soil Conservation Service Report. Major pollutants from forestry operations listed reiterate some of those addressed above by the Sedimentation Control Act. Chapters include specifics about the following critical topics: "Runoff and Erosion," "Accessing and Harvesting Forest Products," "Site Preparation and Reforestation,"

"Revegetating Disturbed Areas," and "Wildfire Protection." A Glossary is provided to describe the industry jargon. Although some leeway is allowed (i.e., operator knowledge and experience) for adaptations of these procedures, the manual claims, "If properly applied, BMPs will protect the quality of our waters." Anyone remotely concerned with forestry issues in North Carolina should read this text. Numerous additional NC Division of Forest Service "Forestry Leaflets" include:

"Preharvest Planning for Landowners" BMP-7, June 1996; "Suggested Provisions for Timber Sale Contracts" FM-1, September 1990; "Forest Practices Guidelines Related to Water Quality - Summary of Performance Standards" BMP-1, October 1990; "Streamside Management Zones" [SMZs], BMP-s, June 1991; and, "Stream Crossings," BMP-4, July 1996.

There is even a convenient "Pocket [-size] Guide" to help those who plant seedlings and includes advice of planting contract preparation. This guide focuses on pine seedlings, as does their brochure "Forest Tree Seedlings and How To Plant Them;" however, both reference another guide, "Tree Planting Guide for Use in North Carolina," for those interested in Christmas tree or *hardwood plantations* [my emphasis]. Both guides also lists contacts in the District and Regional offices. The state Forest Service also provides lists of area Registered Consulting Foresters. Of the 16 listed for Rutherford County, none were actually located in the county (12/27/95). Again, these documents reference others which are, also, readily available and free of charge. These others include cost-sharing assistance plans which encourage non-industrial private landowners under varying conditions to maintain or establish their lands as timberlands: "Guide to Cost-Share Assistance Requirements for Forestry Practices," "North Carolina's Forest Stewardship Program: A commitment to the forest, for this and future generations," and "Landowner's Guide to the North Carolina Forest Development Program" (DFR 1993). The last program mentioned is funded by an assessment paid by the Industry on "all timber harvested in North Carolina" as well as by legislative appropriations. In addition, occasionally advertisements in the local newspapers by the USDA Natural Resources Conservation Service (NRCS) alert landowners to opportunities of the Forestry Incentives Program (FIP) for "tree planting, improving forest stands, and site preparation for natural regeneration" (Daily Courier 8/20/97). FIP activities are coordinated nationally by the NRCS and the National Forest Service (FS); and on the state level by NRCS and state forest services (1996 "Part 610-National Forestry Incentives Program Handbook," 1996:610-1 to 610-9). This program also funds "afforestation." Oxford American defines afforestation, simply: "planting with trees to form a forest." It differs, however, from reforestation in relation to previous landuse (e.g., planting trees on farmland). Afforestation has had greater or lesser roles in forest management policy throughout this century.

The Industry also provides data for the landowner. The North Carolina Forestry Association (NCFCA) "Landowner Guide to Forestry in North Carolina" addresses briefly a range of important topics (e.g., management plans, timber sale agreement, forest types to suit landowners objects, financial assistance, tax incentives, and environmental regulations). The American Pulpwood Association, Inc. charges only \$1.00 for its publications: "Tips to consider When Selling Your Timber," and "How to Choose a Quality Logger." The former recommends items the landowner should know about (e.g., property lines, mortgage restrictions, forestry terms) and includes components for preparing a timber sale contract. The latter explains about BMPs and lists questions that landowners should ask their loggers and their logging referees. Both recommend talking "face to face" with the contractor.

With all of this educational information so readily available to the public, why do so many problems still exist on the ground/in the woods and in communities? It would appear that solutions already exist for many of the problems. But in fact, I found considerable differences between expected (or potential) and

actual behavior, between theory and practice. When I spoke with Shannon Buckley, Willamette's District Procurement Forester, he suggested that some disparity stemmed from lifestyles different today than from traditional timberland owners. He suggests that many people who have the lands for investments, did not grow up on the land, and do not have a "real connection with the land." Their history does not lend itself to mimicking previously traditional timberland owners who sought advice and had regular dialogue with Agricultural Extension or Soil Conservation Service Agents. (This explanation resembles one expressed by the Governor's Forest Sustainability Task Force). Buckley submits that these landowners also simply do not think about looking for the information or simply do not know where to look. In addition, some landowners lack interest in the seeking the information and are primarily concerned with just selling their timber for the highest price. He equated timberland sales with other major monetary investments, such as contracting for building a house:

You wouldn't build a house like that. You wouldn't just turn a carpenter loose and say, 'build me a 2,000 Square foot house.' You would give him what you are looking for, a floor plan, siding, roof, material, the whole package that you desire in a house.

But unlike the construction industry which requires regular oversight, permitting, and inspections, timber harvesting on non-industrial private lands does not. Best Management Practices are not-mandatory (they are voluntary) in North Carolina (Cubbage 1997:351; NC DFR 1989:1; NCFAPp. 18-19); they are, however, mandatory in cost-share assistance agreements (NC Forest Service "Guide to Cost-Share Assistance Requirements;" Governor's Task Force on Forest Sustainability 1996:30; NCFAPp. 18-19; Buckley 10/23/97). BMPs in most eastern (Cubbage 1997:351) or southern states (TVA 1993 Vol. 1:70-71; Paper Task Force 1995:149) are also voluntary. Evidence suggests that BMP compliance generally reduces non-point pollution and promotes related environmental protection (NC DFR 1989:1; Henson 1996:1; NCFAPp. 19; TVA 1993 Vol 1:71). A recent BMP survey showed 92% compliance in the state and claims that the Division "continuously" checks for compliance (Henson 1996:1). Skepticism exists about such high BMP compliance in this area. Water quality impairment from silvicultural practices (e.g., clearcutting) was listed consistently as a major problem during the Broad River Basinwide Water Quality Workshop held in Rutherford County in June, 1997 (Hoover 1997). In addition, area agent work loads negate their capabilities to monitor BMP compliance unless the landowner cost-shares or is reported in violation of water quality standards by a third party.

Buckley thinks the blame is occasionally misdirected on the wrong party (e.g., loggers) when the landowners should have been more responsible. He and agency foresters claim that even when landowner workshops are held to provide important timberlands information, few members of the public show up. Others have a different opinion. Often foresters fail to provide full options even when landowners seek their advice:

'Good forestry offers choices...I'm big on long-term planning,' he says. 'I want my clients to understand how forestry will change their land. Most of them have no idea what is possible, and, unfortunately, many foresters never take the time to explain options. I do.' (Tennessee consulting forester, Jack Leake, in Petersen 1997:40).

When discussing paper company foresters:

Advice from paper companies tends to be weighted toward growing pulpwood, the product they need for their mills, said Lee Laechelt, executive vice president of Alabama Forest

Owner's Association.

Laechelt, through his newsletter, tries to alert his members to the high prices they can get if they postpone selling their timber until it reaches sawlog age.

'You're not going to hear that in a speech from a paper company forester,' he said (Finch et. al. 1997:32).

It is appropriate for landowners to design a management plan that best supports their objectives, to seek pre-harvesting advice, and to replant soon after the harvest for the most successful growth. Although this is recommended in virtually every forestry document, one area forestry agent estimated that pre-harvest planning only occurs about 5% of the time in Rutherford County. One long-time local landowner, Mr. Rhea (pseudonym) did seek pre-harvest advice. He received good service from agents, although no cost-sharing funds were available. They encouraged him to replant in loblolly pine after his +60 acre clearcut and arranged for migrant workers to replant the Bowater seedlings. The agents promised to return to assess the status of the tree growth. This landowner is suffering from a longterm illness and has incurred high medical expenses. He needed to receive some income from his landed investment. His children encouraged him to bushhog the site and leave it to regenerate in hardwoods. However, he claimed "Hardwoods take too long to regrow." There is tremendous pressure to convert forest types (e.g., to fast growing loblolly pines) after clearcuts or to change landuse to some other development type. A logical alternative to cashing every forest resource in at once is to cut using the selection method. Not only did I often here that not enough cost-sharing is available to landowners, but, one consulting forester, Ed (pseudonym), claimed, "If you want cost-sharing for selection cutting in North Carolina, well, you can forget it!"

Replanting costs for hardwoods is considerably higher than for loblolly pines. Prices, of course, vary. In one instance I heard that loblolly cost \$40/acre compared to \$130/acre for hardwoods. Shannon Buckley read to me from a state seedling order list which charges \$37 for 1,000 loblollies and \$20 for 100 chestnut oaks. Problems often exist during afforestation of farmland because the soil quality is not good. In addition, there are difficulties associated with hardwood reforestation even when the soil quality is good:

...And the most practical way is with natural regeneration, a combination of seedlings and stump sprouts...you would have to control what comes back natural. That can be very expensive. The one thing you can do with loblolly because it grows so fast, is plant it, and get out of the way. It will out compete a lot of those stump sprouts. Hardwood, on the other hand, the seedlings are relatively slow growing in their juvenile years, and the stump sprouts, the natural regeneration, is going to come up and shade it out, so you'd be throwing your money away. So you'd be killing hardwoods to grow hardwoods, to plant hardwoods.

There are numerous, although more intensive, silvicultural techniques that Buckley and most other local foresters agreed can be used to promote hardwood reforestation (e.g., thinnings, reducing numbers of stump sprouts). Virtually all claimed that there is not enough research taking place about hardwood regeneration. Most of the foresters also claimed they would prefer hardwoods on their own lands. In fact, one said, "You'd never see me plant loblollies on my 40 acres."

Some landowners have additional opinions about forest management. Champion Mills has been known in this region for doing "In Your Face Forestry" with huge clearcuts, as well as their manufacturing non-compliance on water quality issues (*Daily Courier* 9/17/97). Timberland owners eschew association

with the company and what they consider insulting silvicultural and management activities. Forester bumper stickers that claim "Earth First! We'll Log the other planets later" do not enhance landowners' or the public's admiration. The Evergreen Foundation addresses the collection of attitudes contributing to this issue:

But let us be clear on one very important point. Sustainable forestry has not captured the public's fancy because it embraces leading edge science and technology. Quite the opposite. It has earned wide public support because it seems more *natural* than forestry has seemed for a very long time. As such, it addresses a widely held belief that forestry has placed too much emphasis on timber production and too little emphasis on protecting other less tangible forest resources. Rightly or wrongly, this inequity has caused the public to lose faith in its foresters. A good many organizations - including this foundation - were established in the hope that public confidence can eventually be restored. (Peterson 1997:backcover) [my emphasis].

Chip mills and clearcutting (the final harvest)

Clearcutting is one of the most controversial issues related to chip mills and industrial forestry (See [Tables 6.1 and 6.3](#)). Many comments against clearcutting focused principally on cutting western North Carolina hardwoods (e.g., oaks) and reforesting sites with loblolly pine plantations. Citizens concerns are many. They include diminished cultural resources and impaired viewsheds; the conversion of hardwoods to pines would alter the brilliance of the Fall season. The lack of Fall "Colors" would have ensuing negative impacts to the tourist industry, therefore too the economy. Conversion would also impact furniture manufacturers and other hardwood users. Clearcutting increases the loss of top soil, causes erosion and siltation which reduces water quality, and fragments forests which reduce biodiversity of plant and animal life. Further, environmentalists claim that the proliferation of new satellite chip mills encourages clearcutting and deforestation (Smith 1997). Numerous people, including those who have no opinion about chip mill operations, oppose clearcutting as a silvicultural technique. It is, therefore, useful at this point to understand forestry jargon about what clearcutting means, why it is done, and about existing alternatives to clearcutting.

In Karl Wenger's 1984 *Forestry Handbook*, he describes silvicultural system choices:

Attention is focused on the crucial step of stand regeneration by *naming the silvicultural system the same as the method of regeneration cutting* by which the stand is replaced (1984:418)[Wenger's emphasis].

The clearcutting method is linked through this manner with even-aged systems; clearcutting as he defines it:

removal of entire stand in one cutting, reproduction obtained artificially, or by natural seeding from adjacent stands, or from trees cut in the clearing operation. In the silvicultural sense, it usually refers to regeneration operations in which virtually all woody vegetation is removed from the site preparatory to establishment of new trees (1984:418).

Wenger further distinguishes between "high-forest systems" and "low-forest systems," or "coppice" (1984:418-419). High forest systems regenerate through seeds, "sexual reproduction by the parent trees whether it be from natural seeding..., artificial seeding, or planting." High-forest systems include even-aged systems (i.e., clearcutting, seed-tree, or shelterwood methods) and uneven-aged systems (i.e.,

selection methods include group, strip, or single-tree selection). Coppice or low-forest systems produce stands "originating from vegetative sprouting by the trees that are harvested (stump sprouts, root suckers, and naturally rooted layers)" (1984:418-420).

As is true within any discipline, professional perspectives and interpretations differ. In *Essentials of Forestry Practice* Stoddard and Stoddard (1987:74-83. New York: Wiley & Sons) also describe silvicultural systems:

The objective of a silvicultural system is to permit the harvesting of the mature timber crop while providing for the regeneration of the forest. Basically, silvicultural techniques fall into two broad groups: the *area management system*, which removes all merchantable trees by clearcutting, and the *individual tree management system*, which selects only marked trees for removal... Small tract owners tend to prefer tree selection whereas large operators generally favor area management systems.

Individual tree management systems include the *seed tree method* and the *shelterwood system* for even-aged forests and the *selection system* for uneven- and all-age forests ...Each system must be considered a theoretically ideal procedure, needing modification in actual practice on the ground (P.75)[Stoddard and Stoddard's emphasis].

Stoddard and Stoddard address the matter in a section headed: "The Selection System (*Selective Cutting*)"[my emphasis]

Cutting is called selective when each tree cut is chosen with regard to its present position in the stand and future possibilities for growth. This system is naturally suited to all-aged and uneven-aged woodlands, especially the hardwoods. Clearcutting, high-grading (removing the best and leaving the poorest trees), and diameter-limit cutting are usually a drastic shock to the forest, whereas properly conducted selective cutting merely works with nature before removing the old trees to make room for the younger ones (1987:79).

Well, knowing this, why would anyone choose to clearcut and exactly how does clearcutting relate to chip mills? Evidence reported in "Chapter 4: Contextual Setting" documented the increase in the number of chip mills in the Southeast. The chapter also summarizes data reflecting increased chip milling of existing hardwoods and the ensuing conversion of sites to softwoods (e.g., loblolly pines). The two most common reasons I heard expressed by industry personnel for clearcutting were use of a suitable methodology for improving poor quality forests and economic efficiency. Many industry personnel said that "the science" indicates that clearcuts are necessary for shade intolerant trees to grow.

Most industry responses to this question involved economics. Clearcutting as a silvicultural technique, in conjunction with short rotations of monoculture crops, have been driven by financial market economics (Cubbage 1997:353). Clearcutting is also deemed a good site preparation method for planting or regenerating shade intolerant tree species (Petersen 1997:28; Paper Task Force 1995:159; Stoddard and Stoddard 1987:76). Clearcuts, foresters claim, mimic natural disturbances; the ensuing canopy openings allow sunlight to reach shade intolerant species (Petersen 1997:39). The industry perspective continues to purport that trees are renewable resources (Hunt 1996:iv; Lewis 8/8/97). Industry practices of clearcutting short rotation pine (e.g., loblolly) plantations for pulping link chip mills to clearcutting (Finch et. al. 1997:32). As mentioned in the Ethnographic Context Chapter, industry techniques have been transferred to embrace hardwood cutting since softwoods are being overcut. And regional citizens expect a similar

overcutting of hardwoods, through clearcutting, for pulping.

However, when asked about the chip mill/clearcut relationship, Bob Slocum of the North Carolina Forestry Association (NCFA) stated: "No harvesting is done solely to provide wood to a chip mill" (Lewis 8/8/97). Bud Conner, of Godfrey Lumber, intends to build a chip mill in Stokes County to supply a South Carolina mill (for circuit boards and counter tops). He will also rail chips he receives from other chippers (Tursi 1997:A1):

...The rest of the trucks will unload logs. Most will be trees from private woodlands or urban tracts that are cleared for development. The loggers will take the high-quality trees to sawmills, Conner said, while the scraps and those too small for lumber will end up in the chipper. Godfrey said he *won't hire loggers to go out and cut trees just to feed the chip mill* (Tursi 1997:A6)[my emphasis].

Chip mill proponents claim that the mills provide good opportunities for the local timberland owner (Tursi 1997; Henderson 1997):

A nearby chip mill can actually create a new market for tree growers and makes for a more efficient use of the land. With a chip mill in the area, Slocum said, it could actually result in a better utilization of forest resources and less acres of timber cut. Slocum also points out that land owners, chip mill operators, decide what's cut and what's not (Lewis 8/8/97).

In explaining to Rutherford County Commissioners Willamette's impact, Tommy Thompson, Regional Forester for the Mountain Region of NC's Division of Forest Resources states:

The proposed chip mill could help us provide a sustainable healthy forest by providing improved markets for the thousands of woodland owners of this and surrounding counties that have made a long term investment in their forest land. Better markets produce competitive prices and better utilization of trees on site thereby reducing the costs of reforestation. Currently, some woodland owners in Rutherford County are paying \$130-\$150 per acre to pile the wood debris after logging so tree planting crews can access the site to plant new trees. This mill could help to reduce this site preparation cost or eliminate it. This type of chip mill can improve hardwood forest management by providing a market for low quality trees allowing for better opportunities for natural regeneration of hardwoods and improvement cuts in hardwood. These in turn can improve our hardwood forests to supply our hardwood sawmills and furniture plants which still find 60% of their raw material outside of N.C. (Prepared speech handout provided by Willamette Industries, Inc. local office/1997).

Thompson predicted the new mill would increase harvest levels by about 8.5%; Willamette's District Procurement Forester, Shannon Buckley, predicted a little more than 5%. Buckley described how he will secure timber for the chip mill through the "gatewood system" (10/23/97 interview):

...we don't actually purchase wood from the landowner...It will be the saw mills, the loggers, and the wood dealerships that work this area; there's quite a few of them. The Apalaches, the Canal Wood, the Upstate Timber; there's a lot of wood dealerships that purchase timber, oversee the cutting, contract the logging out...

He expects greater BMP compliance as a result of professional forester and technician involvement

associated with dealerships. Methods of selling and purchasing timber have changed. Timber is currently sold more often on the "lump sum" basis (i.e., "so much up front for the [site] boundary of timber") than on the "pay as cut" basis (e.g., by the cord or by the thousand). Fewer loggers actually buy timber; cruising and bidding are becoming more complex to satisfy the diversified market. Merchandising continues during the cutting and sorting:

You know, when you cruise timber, you can't see inside a tree; but when the logger cuts it down and it's dragged up to the loader, he can see inside of the tree. So he knows if it is sound or not...The guys that are the best business men are the ones out there merchandizing it to it's best possible use for them to make money on; depending on who pays the most for which product they deliver to them.

Buckley claimed that area timberland owners have suffered from a limited market, e.g., historically Champion has been the only major buyer. Area pallet, crate, and railroad tie mills compete with chip mills for hardwood materials, but they also provide limited markets. Fred (Tommie) Boyd, Jr., intends to supply "gatewood" to the Willamette chip mill (12/1/97 interview). He also has a residual chipper on site. Although not a forester, he has 30 years experience at his log yard/sawmill/lumber yard companies in Marion and West Virginia. His primary product is lumber for furniture manufacturers (e.g., Drexel, Broyhill). Boyd, like many other timberbuyers, chooses his harvesting technique based on the market. Loggers are selected depending on the quality and size of harvest that needs to be done; he can even arrange for cuts as small as 1 to 5 acres. Most of the owners let their lands regenerate naturally, as Boyd does on his own lands. He says, "Nature will do a much better job than we can." Ultimately, however, the soil and property dictate what kind of regeneration needs to take place. During manufacturing, all woods are used or sold; there is no waste (e.g., tops go in the chipper; bark can be made to mulch, and sawdust can be used in the boiler or woodburner at his lumber company to generate steam). Boyd is not concerned that chip mills might deplete the timber supply because trees are dying faster than they can be cut (e.g., old, diseased).

Not all timber buyers are this optimistic. Gene (pseudonym), an area small lumber company owner, claims he already has a short work week because he cannot purchase enough timber locally. The existing major timber-using mills overlap in sourcing areas and he cannot compete with these bigger outfits. Further, various other sawmill owners get concerned when they see good sawtimber going to the chip mills (Audubon 1997:100; Henderson 8/24/97; Petersen 1997:38-38; Finch et. al. 1997:31; Hawes-Davis). Robert (Bobbie) Henderson from Miller & Company in Jackson, TN says:

...these outfits are chipping on land capable of growing high quality hardwoods. But the trees are never given a chance to mature. They just whack 'em down and go on to the next stand. Smaller companies ought to be buying and managing these forests, but they can't afford to compete against these giants (Petersen 1997:38).

A anxious western North Carolina sawmill owner says:

'They tell me we're growing more trees than we're cutting,' he said. 'But when I look at the side of a mountain that's been clearcut and I know it's going to take 75 to 80 years to mature again, that's hard to believe'" (Henderson 1997:1A).

Even though Mark Barford, Executive Vice-president of the Appalachian Hardwood Association, claims organizational members are not worried about chip mills chipping up high-quality timber; they are,

however, concerned about chip mills cutting the hardwood users' future growing stock (Henderson 1997:1A). And in spite of Bob Slocum's comment that no forests are clearcut for chip mills, some Alabama residents disagree:

Higher value trees struggle to find a place in today's Alabama. When they do, they don't survive long. Trees that within a few years could be cut for top-dollar lumber are sometimes pulled out along with everything else when loggers clearcut for pulp chips.

'You see some 12-to 14-inch-diameter cherrybark oaks going to the chipper,' said Glover Allgood of McShan Lumber Co. in Pickens County, west of Tuscaloosa.'That's what hurts.'

A good, big cherry bark oak would fetch the landowner \$400 or more for its potential as fine lumber. But a slim, young hardwood cut and mashed for pulp is worth only about \$4.50 (Finch et. al. 1997:31).

Pressure to present a unified industry front marginalizes those who would choose to speak out against clearcutting and chip mills; but some step forward anyway. Bobbie Henderson submits:

'I think our regions paper mills are worried,' he says, 'but they don't want to muddy the water in their own industry. Although we may be growing a lot of hardwood in this region, we are not growing enough to supply the existing solid wood industries, the already existing regional paper mills whose use of low grade hardwoods is increasing and these new outfits that are here to clearcut hardwood for chips for the rest of the world'" (Petersen 1997:38).

Even though Fred Boyd was not concerned about supplying the overseas market with wood chips from North Carolina forests, others are. International Paper Company spokesman, James Lee, equates loss of jobs and forests to chipping and exportation of raw wood:

'We have been through this in other parts of the country...where the (tree harvest) rate is faster than the growth rate, and that can be tied almost directly to the chip mills,' said spokesman James Lee. 'The exports are what are driving it' (Henderson 1997:1A).

Other concerns exist by those outside of the industry but impacted by clearcutting. One Ashe county timberland owner, Evelyn (pseudonym), who had no intention of having her timber harvested, is currently suing her neighbor who clearcut his timber. The neighbor's logging contractor mistakenly also cut approximately ten acres of Evelyn's trees. She thinks the neighbor and contractor were negligent and she wants restitution. Charles (pseudonym), an avid deer hunter, and hunt club member, was devastated after the landowner who owned the hunt-club lease clearcut about 700 acres. Charles exclaimed, "I couldn't believe my eyes, it looked like a warzone!" He rejected claims that this clearcut would enhance wildlife populations. Citizens in Oregon, Washington, and California claim that clearcuts promote landslides (Bernton 1996; Pacific Rivers Council 1996; San Francisco 1997). In a study by the Pacific Rivers Council findings noted:

...documenting 650 landslides...the analysis revealed that 71% of all landslides occurred on recent clearcuts, 23% occurred on older clearcuts, and only 6% occurred in 'unmanaged' areas --roadless areas and wilderness. On average, 36% of the landslides were associated with roads. Over 75% of the landslides went directly into streams (May 14, 1996 News Release).

Many foresters assert that clearcuts mimic impacts from natural disturbances (e.g., storms, hurricanes). Recent hurricane impacts on regional forests created a glut in most timber markets and altered normal merchandizing techniques (e.g., higher quality logs feeding the chip mills), (Buckley interview 10/23/97), as well as changed normal sourcing locations (Tursi 1997:A6).

The Paper Force addresses this issue:

However, one crucial difference must be pointed out: clearcutting, unlike natural disturbance, removes most or virtually all of the timber from a site. Moreover, what remains may be chopped, removed, or displaced by site preparation, which is made possible by clearcutting. As a result, clearcuts generally lack most or all of the important 'biological legacies' typically found after natural disturbance, including scattered remaining living trees, snags and downed logs and limbs (1995:158-159).

Impacts of natural disturbances vary in different regions (1995:159). Disturbance in the Appalachians usually reflect more localized and "small canopy gaps as single trees died." They warn that clearcuts are less acceptable in areas of "rare natural communities," habitats of important and/or endangered species, on steep slopes, and in areas where extreme climates could impede regeneration. Clearcuts in natural forests have greater ecological impacts than those on either reforested marginal lands or on plantations. The authors submit that biological diversity "is *inherently* important; it is among the defining elements of our world" (1995:161). They quote Aldo Leopold:

'A system of conservation based solely on economic self-interest is hopelessly lopsided. It tends to ignore, thus eventually to eliminate, many elements in the land community that lack commercial value, but that are (as far as I know) essential to its healthy functioning. It assumes, falsely, I think, that the economic parts of the biotic clock will function without the uneconomic parts' (1949, *The Land Ethic*).

Members of the timber industry, including the chip mill, seek a continuous supply of resources to maintain their livelihood. How is that interpreted in the woods? and at what scale can it be appropriate while protecting and enhancing biological diversity and human quality of life? And if it cannot contribute to biological diversity and human quality of life - is it sustainable? The answer is clearly no. In this case, the industry must be responsible for protecting and enhancing biological diversity as well as meeting their own market. Full allocation of environmental costs must be included in the product cost to consumers; if the industry cannot sustain itself in this light, it is not sustainable.

Shannon Buckley, Willamette's procurement forester, is a "staunch defender of clearcutting;" he believes that "the science" supports it for regeneration, and "the economics of it work" (Interview 10/23/97). But he acknowledges the complexity created by the social considerations, especially the aesthetics:

The social considerations are something the Industry has to be concerned about if we are going to continue to exist. I have in my own mind the last 2 years kind of turned over what it is that the public finds offensive, some things we can do something about and some we can't."

He suggests that when a total clearcut is done perhaps all "bent over whips and snags and broken off trees" be removed, that the future green-up will be smoother; therefore more attractive to the public. He also suggest applications of grass seeds on roads and landings, whether required, or not, by BMPs. In addition, loggers could more frequently redistribute slashpiles (created during the delimiting process)

back into the woods and onto skid roads. Smaller acreages can be cleared, as recommended by the Industry's Sustainable Forestry Initiative (SFI). However, he says, the economics and the "economies of scale" may dictate the size of the cut, as well as the landowners' objectives:

Sometimes the economics of getting to it dictates that you have to have a fairly sizeable acreage in order to build the road, or put in pipe, or build a bridge, or something to get to it. You have to have enough tonnage or boardfeet to dilute the cost of that so it's acceptable...but in general, I am all for 20, 30, 40 acre cuts. You get much smaller than that the logistics of moving loggers in and out for what volume is there; it gets pretty expensive. But I think the average tract size in Western NC is gonna' dictate fairly small cuts. More and more so in the future, than in the past.

One immediate change may be the size of clearcuts used to source timber for the industry and, therefore, for chip mills. So in spite of the industry's commonly expressed argument that shade intolerant species need sunlit openings, many agree that smaller clearcuts will reduce negative impacts (Petersen 1997:3940; Paper Task Force 1995:120-167; Forest Stewardship Council Principles; See [Table 6.3](#)). Stoddard and Stoddard (1987:74-83) recommend:

Small patch cuts surrounded by larger timber, not clearings of large acreages, are preferred in intolerant forest types.

In addition to clearcutting, conversion of hardwood forests to monoculture pine plantations, is a major concern in the area and region. Many area residents, including agency and timber industry personnel, expressed to me their concern about conversion. Several claimed that the Industry and the government should further incorporate hardwood forestry management into silvicultural methods. Ways to avoid conversion are being considered, e.g., The Governor's Forest Sustainability Task Force intends to investigate hardwood management. However, they have not addressed the issue from a totally new perspective since many of their suggestions still rest on the agricultural/plantation-mentality (1996:48) of which the public is weary.

Both of these problems, known as fragmentation from clearcutting and simplification of forestry-types, are not solved for the people in Union Mills, Rutherford County, and western North Carolina. Even though Shannon Buckley has given serious thought to the public's contempt of silvicultural methods, his and Willamette's responsibility to forest protection remains elusive through their practice of running a "gatewood" operation.

The Paper Task Force addresses this issue, from the pulp production end of it, and the paper purchaser's perspective (1995:120-167). They engage their audience to ask questions of their paper suppliers and producers about their management practices and activities (1995:162-164), including:

-cutting, regeneration methods used (e.g., types, investigation of alternatives, timely replanting, and monitoring);

-water quality protection (e.g., buffer strip planning, fertilizer use, and monitoring methods);

-training of personnel and their associations with conservation groups, forestry academics, and professional organizations;

-protection of biodiversity (e.g., employ wildlife biologists, provide habitat for late-successional species; landswaps or set-asides to enhance endangered species protection); and,

-landowner assistance information provided and participation in landscape level management.

But their point, most specific to this text, are the following important questions to ask of suppliers' about "Purchased Wood/Chips:"

-how have you promoted logger and forester certification?

-how do your sources comply with your company's policies, plus BMPs and SFIs?

-do you have a sufficient supply to continue environmentally safe operations during watershed constraints?

-can you identify your pulpwood sources?

-do you have the ability to audit pulpwood suppliers claims?

How much is 'gatewood' where the source is not known at the time of purchase? Are you taking steps to identify more of the sources of the pulpwood you purchase, and the forest management practices they use?

As Stan Petzoldt of a Missouri lumber company admits:

'We live in a fish bowl now. The public watches our every move. Good land stewardship is a cost of doing business' (Petersen 1997:41)

Water & wildlife (finding one's niche)

(or, if a tree falls in the forest, does anyone hear it?)

Water quality improvement and wildlife protection issues have been linked, especially since passage of the 1972 Federal Water Pollution Control Act and the 1977 amendments, the thus-named Clean Water Act (CWA). The Act authorizes EPA oversight authority (Pangman 1996:12-15;73; SAMAB 1996:107-109). Historical recognition that silvicultural practices impact watersheds compelled development of BMPs for non-point source pollution watershed protection. Most timber resource states have BMPs, some mandatory (18), some voluntary (about 20)(Paper Task Force 1995:165). As mentioned in Chapter 4, timber industry may also have point source pollution impacts. Escalation of forestry activities make protection more complex on issues of: mill construction, manufacturing operations, and transportation (e.g., chip mills, as well as pulp and paper mills) whether inland or on navigable waterways; stormwater runoff from mill operations; erosion and sedimentation from harvesting activities. Additional recent concerns include increased nitrates runoff caused from defoliation by exotic pests (Dishneau 1997), and invasion of exotic marine species through ballast water discharge from overseas forest product shipments (Jackson 11/6/97).

Charging fines for impaired water quality violations are re-active actions rather than pro-active approaches. Minimum oversight of timber harvesting, with the exception of cost-shares, reduces agents' abilities to even monitor the State's voluntary BMP practices. In Rutherford County and other counties in

the Broad River Basin, sedimentation and erosion have and continue to be major influences on water quality. Citizen concern about sedimentation caused by timber harvesting has been expressed in a variety of fora, including the Broad River Basinwide Plan meetings on Non-Point Source pollution, and during the August 1997 Division of Water Quality public hearing on reclassification (downgrading) of some county waterways. A proposed reclassification area in Union Mills appears in close proximity to the Broad River Chip Mill. Manipulation of the reclassified waterways and impacts by the mill (i.e., construction, operation, and any expansion), are yet to be seen. The new Broad River Basin, Basinwide Assessment Report of September, 1997 prepared by the Environmental Sciences Branch of DENR's Division of Water Quality, confirms that the major negative impacts to the basin are sedimentation. paradoxically, the NC Environmental Management Commission (EMC) approved the streams' declassification prior to receiving the Basinwide Assessment Report. Additional literature describes area conditions. A Rutherford Soil and Water Conservation District handout, "Good water quality is important" states:

In North Carolina, sediment is the major cause of surface water quality degradation. Sediments is most serious in the mountain regions of North Carolina where it is the cause of over 75% of stream miles degraded...PLAN before disturbing soil for any new or different uses. Use silt fences, settling basins, and vegetated buffer zones between areas of exposed soil and streams [document emphasis].

North Carolina's Environmental Policy Act of 1971 requires state agencies:

'encourage the wise, productive, and beneficial use of the natural resources of the State without damage to the environment' (Holton 1994:19).

Agencies are charged with the responsibility:

'to conserve and protect its natural resources and to create and maintain conditions under which man and nature can exist in productive harmony'.

Citizens expect their public servants to uphold that responsibility. However, a tremendous number of water quality concerns in the state cause citizens to question Division of Water Quality (DWQ) agents' willingness to accept that responsibility. Many citizens claim the DWQ supports an "unholy alliance" with industries rather than water quality conservation. A number of questionable incidences cause citizens to desire agency scrutiny on this chip mill issue.

Willamette Industries bought the proposed chip mill site from Bob Jordan and assumed Jordan's permits. At that point in history, considerable controversy already existed about the mill's construction and operation (See Chapter 1). After CCRC learned of Willamette's prior environmental non-compliance history, they asked DENR to re-examine Willamette's use of Jordan's stormwater discharge permit (NCGO40000). This request occurred in August of 1996 (Parker 1996). During early construction activities Willamette violated the NC Sedimentation Pollution Control Act and provoked citizens to again appeal to DENR for a stormwater permit hearing. This event occurred in January, 1997. In June of 1997 Willamette was again found in violation because they rip-rapped 280 feet of stream without acquiring federal or state permits. They intended to culvert in the wetlands to aid construction of a railroad crossing. The United States Army Corp of Engineers (COE) allowed Willamette to "grandfather" in Jordan's 1995 Nationwide Permit (NWP) #26 (Johnson, R.W. 1997). The COE justified their permitting because "...Willamette Industries, Inc. has made a significant investment of resources." A substantial investment likely made during the year following CCRC's requests for a stormwater permit hearing related to the

company's prior non-compliance history. The USACE used a circular argument that circumvents agency responsibility. Ironically Jordan's permit had already expired six months prior to this arrangement. Related to the same incidence, DWQ granted Willamette a 401 Water Quality Certification to disturb a 150 (maximum) linear feet of wetlands (Howard 1997). The company's original disturbance had to be hand-removed, and the streambanks revegetated with native species. During this series of events, the United States Fish and Wildlife Service (FWS) commented on the COEs permitting responsibilities related to NEPA and Section 7 of the Endangered Species Act of 1973 (Cole 1997). Cole expressed agency concerns about the increase in timber harvesting resulting from the increase in satellite chip mills and related cumulative off-site/indirect impacts to species and their habitat. The comments focused on biodiversity and included: harvest of younger and "unconventional" tree species; impacts to neo-tropical migratory birds, aquatic species, and mature forest terrestrial dwellers; impacts to Threatened and Endangered Species. He asked the COE not to issue a Nationwide permit, but that they should require "individual" permitting, which provides for public input. He also called for a Biological Assessment and asked the COE for interagency coordination. In various chip mill settings, a number of Federal and State agents have officially requested the COEs examination of indirect harvesting impacts (Barclay 1994 and 1997; Johnson, H.H. 1997; Hall 1997).

Charlie Taylor challenged Cole's comments; he wanted the FWS to justify its recommendations to the COE. He criticized the FWS's failure to consider the mill's economic impacts. Taylor would monitor, as a House Subcommittee Appropriations Committee member, FWS's actions "to make sure it was using its funding wisely" (Lewis 8/14/97). Dale Hall, FWS Regional Deputy Director, responded that the agency addresses biological issues; it is the COEs responsibility to consider economic benefits. Hall justified their position based on the previous Tennessee chip mill study, as well as NC Governor Hunt's upcoming commissioned chip mill study. One local citizen was outraged at Taylor's threat to the agency. He claimed the threat was a "serious breach of ethics, which should be looked into by his fellow congressmen" and "remembered" during the next election (*Daily Courier* 8/19/97).

Authority from Section 7 of the Endangered Species Act (ESA) forbids agencies actions that "jeopardize the continued existence of a listed species" (NCFCA P.17). Section 9 of the Endangered Species Act (ESA) mandates that one may not "take" a threatened or endangered species by "any action, administrative or real" (Pangman 1996:74). The "Landowner Guide to Forestry in North Carolina" reports that the Section 9 "taking" only applies to animal species, not plant species, on private lands (NCFCA Pp.16-17). Controversy in the Pacific Northwest developed over timber harvesting restrictions to protect the northern spotted owl and its habitat. The red-cockaded woodpecker seems to be the most frequently mentioned [blamed] indicator species in the Southeast.

A similar situation concerning stream disturbance activities occurred in Stokes County during Godfrey Lumber's construction of a chip mill (Ayers 1997). Godfrey failed to acquire a COE Nationwide #26 permit and two DWQ 401 Water Quality Classifications. Citizens and environmentalists charged the Governor with appropriate action against the firm and called for a permit hearing. In spite of the agency's authority to hold the hearing and the tremendous public outcry, Preston Howard, the DWQ Division Director, granted Godfrey the state permits (*Charlotte Observer* 10/18/97). The blatant disregard for public input caused DENR Secretary Wayne McDevitt to investigate his department's action. In late November, the permits were revoked (*Daily Courier* 11/25/98); DENR also pledged that any future chip mills would be required to apply for "individual" storm water permits. This process allows for public notice and permit commenting. On 10 December in a meeting with DENR staff, CCRC members learned that DENR intends to allow the 18 chip mills (under-construction/or operating) to continue their activities

until the chip mill impact study is completed. Public hearings to assess if chip mills should have general or individual storm water permits will contribute information to the chip mill impact study. However, the long overdue decision greatly disappoints CCRC members who so long ago asked for review of Willamette's general permit.

Late October, the state Division of Parks and Recreation also appealed to the Governor with their concerns of chip mill impacts on the environment, including wildlife and habitat (Hall 1997). While their focus is on the State Park System, the agency addresses private land issues:

Even is the *direct impacts* occur only within *privately owned tracts* - and it is not clear that timber production in national forests, state forests, state gamelands, and other public lands will be unaffected - the state has a responsibility to protect wildlife populations, *which are not the property of the individual owner* [my emphasis].

Their closing letter remarks:

We are concerned that this industry has the potential to rapidly and irreparably harm the state's natural heritage. We therefore strongly commend the decision by Governor Hunt and by the Department to conduct a thorough study of this industry's potential impacts.

Can forestry be done in a way that protects wildlife habitat? Jack Leake, a Tennessee consulting forester believes it can:

Mr. Leake's job is made easier by the fact that timber and wildlife habitat management go hand in hand throughout the eastern hardwood region. The most prized timber species - oak, cherry and walnut - are also the trees that produce food for squirrels, songbirds, deer, bear and wild turkeys.

'You can go out to create high quality wildlife habitat and end up creating a very valuable oak forest.' he says. 'Getting trees to grow is not a problem in our part of the country. The challenge comes in slowing growth long enough to get the right trees to grow. Trees that produce nuts and fruit are the ones wildlife need most' (Petersen 1997:40).

Newspaper articles documented the stress placed on bear populations this past summer that came from the forests into residential areas searching for food (Tager 9/4/97; *Daily Courier* 10/22/97). Fred Weisbecker, NC Fish and Wildlife agent for Rutherford County, confirmed that low mast production reduced food supplies. Years ago, he said, the chestnut tree would provide "no fail" food supplies for the bears. During the food searches over 40 bear were killed by cars in western North Carolina (12/11/97 interview). Five (5) were killed in McDowell County by cars in one day. Studies of a cross section of the killed bears' molar teeth provided age distribution data; the date showed mixed death quantities of old and young bears. Weisbecker submitted that if only the young die during the crossing, then we loose the future brood stock. Not only do highways increase risks to migrating bears during crossings, but highways and culverts can establish what he called "genetic barriers" for populations. Bears, he said, are the "losers" in clearcuts. While many other game animals (e.g., deer and turkey) flourish in Rutherford County; their "explosive" population numbers provide food and hunting recreation for area residents. Over 1600 deer were killed last year; each hunter is allowed to kill as many as six. Although non-existent in Rutherford County, 20/30 counties in NC have "Hunters for Hungry" organizations which address the hunger/social problem by providing food for the hungry.

CHAPTER 7. RECONSTRUCTING COMMUNITIES: EFFORTS TOWARD SOLUTION SEEKING AND CONFLICT RESOLUTION

Discussing conflicts in resolution meetings about forest sustainability is intended to seek solutions, not simply to pacify stakeholders and diminish their opportunities or dis-empower positions:

Under the prevailing system, Miller points out, 'conflict is made to look as if it *always* appears in the image of extremity, whereas, in fact, it is actually the lack of recognition of the need for conflict and provision of appropriate forms for it that leads to danger' (Miller quoted in Eisler 1988:192).

Many initiatives currently exist to promote more sustainable timber yields, as well as more sincere attempts at sustaining forests. Market-driven programs (e.g., FSC, The Paper Task Force) to sustain forests through certification of forestry methods provide a step, I believe, in the right direction. Government appointed panels (e.g., Taylor's Forest Health Science Panel, the Governor's Task Force on Forest Sustainability) to investigate forest conditions and future use-threats focus policymakers' attention on the forest sustainability issues. Their most important contributions include agreement that our forests are at risk from over-exploitation and that diverse stakeholders must be involved in the solution-seeking process. However, definitions of what is sustainable for many stakeholders is elusive. Reclift claims:

The constant reference to 'sustainability' as a desirable objective has served to obscure the contradictions that 'development' implies for the environment (1995:2).

Previous predictions about the well-being and abundance of forests reflect errors in judgement, "those who were responsible for earlier studies and projections" were mistaken (Hunt 1996:2). Current data, including appropriate inventories, are critical to provide adequate information for stakeholders' (e.g., industry, scientists, the public, policymakers) decision-making. But establishing current conditions are only a part of the tool to prepare for the future.

Noss in "Sustainable Forestry or Sustainable Forests?" describes the complexity in predicting what may be sustainable (1993:39). If unfounded predictions do not come true (e.g., spotted owl extinctions from timber harvesting), "We erred on the side of preservation." He claims that the asserting scientists may face the "legitimate concern" of losing credibility and political support. However, if we claim that, in this example, "logging poses no danger to spotted owls" the impact might be the specie's extinction.

Ideally, we strive to avoid both types of errors and seek the truth, however elusive. But we have an ethical obligation to favor biodiversity over industry in the face of uncertainty...It means experimenting cautiously the new approaches to forestry and being properly skeptical about claims for sustainability.

He continues: The prudent approach to sustainability puts forests above forestry.

Resistance by landowners to make available their lands for timber harvest (Hunt 1996, my findings in Chapter 6) reflect some suspicion that previous timber industry advice and silvicultural methods have not served the public well. Citizens respond to this failure in several ways: environmental protests ("Actions" and requests for public hearings), position papers (e.g., "The Beige Paper"), certification programs,

actions on legislation (e.g. LULU's), and choices of alternative landuses (e.g., easements). Scientists, including forest scientists, are therefore re-examining their fields' contributions, and how they can become improved and more effective (Dailey and Norton 1994:29-36; Cabbage 1997). Industry's that consume and/or produce timber products are investigating ways to have a lesser impact on the environment (The Paper Task Force, FSC, FSI). Governmental organizations related to timber resources and forest protection are addressing sustainability issues (e.g., Governor's Task Force on Forest Sustainability, FAO).

Each group uses a variety of traditional techniques as well as incorporating new ones. Citizens have become more informed and offer more significant contributions to policy makers, industry, and other citizens through a range of new technological advances (e.g., E-mail, SAFCs use of GIS, flyovers by Southwings). Their fora enlarge to include expertise from academics, scientists, industry (e.g., WNCAs Forest Health Day) for better decision-making opportunities. During this particular chip mill issue in Union Mills, citizens have participated in activities, like those mentioned above, and additionally access government agents and industry through public meetings. The meetings provide opportunities from the disparate opinions to be expressed in a relatively safe environment (e.g., CCRCs meetings with local timber industry representatives on trucking issues). Governments and industry have improved their decision-making by providing citizens, academics, and scientists, opportunities to contribute their knowledge and opinions (e.g., EPAs CBEP, National Forest Management Plans, Southern Center for Sustainable Forestry, Paper Task Force, DENR public hearings). Contributions by many:

1) encourage more appropriate behavior during joint meetings and the decision-making processes (Fisher and Ury 1983):

One logger commented to CCRC members during a lively conversation following a community meeting, "Hey, ya'll are not as bad as they said you are!" Responses like these show a slight reduction in polarization. People are face-to-face seeing each other, often for the first time, in less threatening fora. It also reduces the possibility of physical harm and threats for stakeholder participation.

2) spread the responsibility of the outcome, which reduces the potential for "backlash" (Dailey and Norton 1994; Cabbage 1997; SAMAB 1996, 1996b):

Hundreds of citizens across the state contributed comments to DENRs upcoming chip mills impact study and have the opportunity to continue that dialogue with the agency. It becomes the citizens (private or industry) responsibility to follow through on the project participation and, likewise, the agency's responsibility to embrace citizens' contributions in their impact analyses.

3) and provide opportunities for empowered positions and changed behavior (Fisher and Ury 1996).

Timber activist, Mary Worth, claims that environmentalists seek social change. Every initiative, environmental or not, is seeking new ways to address the relevant issues and opportunities for involvement. All of this involves social change, whether it is played out in government policies, industry activities, or consumer behavior (e.g., including landowner objectives). Buckley's comments about ways to minimize impacts from clearcutting (e.g., aesthetic) may or may not gain more social acceptance and better protect the environment, but it reflects industry re-evaluation of silvicultural methods. For many, it is becoming increasingly well accepted that the earth will continue to function whether or not humans continue to consume or exist; this calls for action (Noss 1993; Goodin 1992). In the documentary "SouthBound," Tennessee consulting forester Bill Hughes, submits:

I think we have the greatest opportunity to change the way that hardwood is harvested in this country. If the general public realizes what's going to happen if we don't; and we're not going to do that, in my opinion, voluntarily.

Another forest scientist comments:

The moral appeal of better landowner cooperation to meet public demands and achieve landscape-level forest resource goals is compelling. To realize such potential, however, there may need to be some creative institutionalization or transfer of property rights (Cubbage 1997:351).

Policy changes by agencies, industry re-evaluation of methodology, establishment of landowner objectives, are some of the important steps toward forest sustainability. In addition, the public at-large will have to assume less extractive behavior:

It means drastically reducing our demand for wood products, through conservation, re-use, recycling, and human population control, so the greatest possible amount of natural forest can be left wild and degraded forest lands have time to be restored to health (Noss 1993:39).

In the best case scenario, conflict resolution methods provide immediate and long term suggestions and actions contributed by as large as possible inclusion of stakeholders. In this chip mill and forest sustainability issue, it appears to be a very healthy step in the right direction.

CHAPTER 8. CONCLUSIONS AND RECOMMENDATIONS

Originally, policymakers in Union Mills told CCRC members that "this is a local issue" and rebuked the group's attempts to enlarge their efforts and coalitions. But woodchips and timber products extracted from the region and processed in timber industry facilities in Rutherford County are consumed by people outside of the area and often in the world market place. Participation in a world economy impacts not only local communities in the developing world, but local communities in this country, and in this case, the rural farming community of Union Mills, North Carolina.

Willamette Industries' Broad River Chip Mill acquires its timber from "gatewood" sources. This elusive raw material purchasing method makes more complex evaluation of resource extraction. It complicates identifying a "chain of custody" for products in industry certification programs. It also complicates other attempts by timber products purchasers to impact their suppliers' production methods (Paper Task Force). Further, woodchips are produced by many for many purposes. Historically, and currently, chips were/are used for pulp and paper, and as well as energy production for numerous manufacturing facilities. A revival of whole log chipping in the woods provides for many of the traditional uses; it does not as well provide for the high quality paper that Willamette wants to produce (Buckley interview 10/23/97).

What are our options?

Must consumers have high quality paper produced from sources that cannot adequately be examined for their impact and influence on the environment, and therefore, biodiversity and sustainability? Citizens in Union Mills, across North Carolina, throughout the South, and across the Nation, have formed coalitions

to protest further development of chip mills. Their concerns include environmental protection and quality of life concerns. When those issues negatively impact citizens, like those I have presented in this case study, what protects their rights? If the full environmental cost of a product is not paid by the consumer through the industry, how will the environmental cost be paid? It will be paid by current tax-paying citizens, or future generations. Future generations that likely do not have the same quality of natural resources to support that their needs or that payment. Do we have the luxury, in this sustainable forestry issue, to let the future depend on the economic market? Manipulations in the normal relationship between supply and demand of products are currently skewed because of subsidies (e.g., tax credits to ship chips from the state docks). Is shipping this natural resource overseas the highest and best use of the timber resource? It would be more forward thinking to develop more appropriate technology, use it in this country, and transfer (if they desire to receive it) that knowledge to foreign countries. When Australia began to deplete its forest resources through chipping operations to supply the Asian market, citizens protested so severely that the country set aside national forests. Already businesses are moving from the United States to overseas locations (Hunt 1996). In most cases this allows reduced production cost and avoids environmental legislation compliance. Improving the technology here and transferring that knowledge avoids constant shifting of manufacturing problems from one continent to another.

The industry claims that the western North Carolina forests need improving by removal of low quality trees. Is it possible that already existing local timber operators can provide, with lower impact equipment, an adequate material for woodchip users? Must the removals be accomplished by clearcutting? Does reforestation necessitate monoculture plantation? Are there opportunities for other silvicultural techniques (in addition to reducing clearcut tract sizes) that have fewer impacts on the environment, cultural resources, and members of the community?

Can industry require, or policymakers mandate, that those who participate in forestry activities be better able to meet the necessary challenges for sustainable forestry? Perhaps loggers should be certified, BMPs be made mandatory, and landowners required to have a timber management contract before cutting. Those responsible (e.g., state foresters) for properly monitoring compliance may need to receive enough public funding to do the work. If landowners need to have their work monitored, should they pay the cost, that cost also passed on to the consumer through industry. The tremendous increase in timber products consumption requires participation by stakeholders seriously seeking solutions to protect our environment, and our communities.

If we, all stakeholders, cannot begin to reasonably answer these questions, how will we determine if satellite chip mills are a sustainable industry? If the mills cannot enhance forest sustainability, it is not a sustainable industry.

I end my research with more questions than answers. Answers that I hope the North Carolina chip mill impact study team, with their greater expertise, will be better able to address.

Reduce, reuse, recycle are, and have been important steps to take for natural resource protection. Coordinating efforts and expertise, rethinking production methods, and changing consumer behavior will be the greatest contributors to forest sustainability. These contributions, may not guarantee sustainability, but they provide the best start we can make.

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APPENDICES

DOCUMENTS:

Informed Consent Document and Consent Form

Interview Questions to Foresters

Interview Questions to Lumbermill Owners

Survey for Land Use Options

PHOTOGRAPH CREDITS:

Cover: Welcome to Union Mills; Pre-Construction Chip Mill Site

All photographs designated with a circle in the corner were done by Gwen Parker.

INFORMED CONSENT DOCUMENT

Project Title: *The "Chip Mill" Issue: Sustainable Forestry?*

Investigator: Cheryl Darlene McClary

You are being asked to participate in a project conducted by a Society for Applied Anthropology Environmental Fellow, whose independent research work is funded by the Society for Applied Anthropology/Environmental Protection Agency (SfAA/EPA) Cooperative Agreement. Anthropology professional research ethics require that you give your signed agreement if you participate in the project. The investigator will explain to you in detail the purpose of the project, the procedures to be used, and the potential benefits and possible risks of participation. You may ask her any questions you have to help you understand the project. A basic explanation of the project is written below. Please read this explanation and discuss with the researcher any questions you may have. If you then decide to participate in the project, please sign on the "consent form" in the presence of the researcher. You will be given a copy of the form to keep.

Nature and Purpose of the Project:

The "chip mill" issue concerns a multitude of citizens in grassroots groups, members of environmental and wildlife organizations, forestry and pulp and paper industry personnel, and agents for states and the Federal government. The impacts of these issues compel re-examination of policies for all concerned on development and forestry-use methods.

I, Cheryl Darlene McClary (investigator/interviewer/researcher), intend to work on community-based environmental protection issues confronting the residents of Union Mills (especially as they impact the

people and the environment in Rutherford County and Western North Carolina), including the proposed construction of a chip mill, sustainable forestry alternatives, and related environmental protection and community development concerns; also to conduct interviews and other data collection methods to identify stakeholder concerns; to organize and facilitate consensus-building public meetings exploring potential impacts of the proposed chip mill; and, to develop a community-based conflict resolution model. Finally, I intend to document and disseminate information and study findings as required in my SfAA Environmental Anthropology Fellowship "scope of work," and in ways that enhance governmental and community-based stakeholders efforts to engage in environmental solution-seeking processes.

Explanation of Procedures:

After written consent is signed by you, the participant, the interviewer will ask a series of questions about the participant's involvement as a stakeholder in the chip mill issue, sustainable forestry and/or other sustainable development concerns. The interview will be held in the participant's home (or office), or some other place of the participant's preference. Before completion of the interview, the interviewer will review comments made by the participant to confirm accuracy in understanding the comments made. If the participant has no objections, the interview may be audio recorded. If the participant requests, the researcher will provide a summary of her interview notes to the participant for approval before publication. At project completion, the interviewer will present a written report to the Society for Applied Anthropology, her SfAA anthropology mentor, and her Environmental Protection Agency (EPA) mentor as required by her fellowship contract. If the participant would like to have a copy of the final report, it will be provided to her/him.

Discomfort and Risks:

The participant may have concerns about answering questions regarding her/his involvement in the chip mill issue, sustainable forestry and/or other sustainable development concerns for personal reasons (regarding self, family, community or professional position), the accuracy of the reported information, and the final preparation of the report.

Benefits:

The chip mill issue and sustainable forestry concerns permeate many cultures (e.g., the corporate industry culture, the environmental community, and the residential communities) in the South and Southeast for a variety of reasons. Growth and population increases cause ever greater stresses to the citizens and natural resources in this region. People have the desire to protect their quality of life, their financial livelihood, to maintain their family's property rights, and to continue work that they enjoy. The opportunity to participate in research that will show the many different stakeholders' feelings, questions, concerns, and ideas about this issue, may in the long-run allow people to live more safely and comfortably within their communities. Participation in solution seeking processes can enhance people's feeling of membership within the community; it is an action toward community building while addressing the value of ecological sustainability.

Confidentiality:

Participants will be given the option of anonymity; participants may prefer for the researcher to use pseudonyms instead of her/his name. Records of the interview will be kept in the interviewer's private files. The participant may tell the interviewer of specific comments she/he would not like to have included in the final research report.

Refusal/Withdrawal:

Refusal to participate in this study will have no effect on any future services you may be entitled to from the researcher, the Society of Applied Anthropology, or the Environmental Protection Agency. Anyone who agrees to participate in this study is free to withdraw from the study at any time with no penalty. I understand also that it is not possible to identify all potential risks in an experimental procedure, and I believe that reasonable safeguards have been taken to minimize both the known and potential but unknown risks.

Consent form:

I consent to serve as a participant in the research project entitled:

The "Chip Mill" Issue: Sustainable Forestry?

The project and the potential risks and benefits involved have been explained to me by Cheryl Darlene McClary. She is authorized to proceed with the understanding that I may terminate my service as a subject in this research at any time I so desire; I also understand that I may ask questions at any time. I understand also that it is not possible to identify all potential risks in an experimental procedure, and I believe that reasonable safeguards have been taken to minimize both the known and the potential but unknown risks.

Signature Date

Audio Recording Approval: I agree to having our interview taped today on an audio recorder. I understand that at any time, I may withdraw from the participation and I may retain the tape.

Signature

Confidentiality: The participant requests that her/his interview be identified only through a pseudonym.
Yes ___ No ___

PRINCIPAL INVESTIGATOR SIGNATURE:

I, Cheryl Darlene McClary, certify that to the best of my knowledge the information presented herein is an accurate reflection of the proposed research project.

Principal Investigator Date

Sample Interview questions for foresters:

Would you tell me a little about your forestry training/educational background?

Would you describe for me the general job expectations of a (position title) forester?

Are you a member of any professional forestry (trade) organizations?

Regional physical conditions require BMPs to vary to suit the terrain; would you describe to me some of the unique techniques required for mountain area forestry practices?

I continue to hear about the existence of BMPs, but the lack of BMP practice on non-industrial private lands.

How can this situation be avoided?

Do you have any suggestions on how more BMP practices can actually be put into place?

If educating the private landowners is one of your answers, how might that education take place?

Are you aware that the local Cooperative Extension office intends to have an educational meeting for local landowners in the Fall?

Will you attend that meeting? Will you participate?

Have you ever heard of the "pro logger" policies and meetings that the NC Forestry Association offers?

How do you contract a loggers (e.g., per cut, per year, as a permanent employee)?

How does a forester know if a contracted logger actually has BMP the BMP techniques?

Would you recommend or require that they attend these meetings?

Could you tell me a little about the State's cost-sharing program for replanting?

How do the landowners find out about this?

Many citizens in the region are concerned about the replacement of hardwood forests with loblolly pine farms.

Can hardwoods be replanted?

Is there any difference in the difficulty or cost of replanting hardwoods?

Many new clearcuts in the area can be seen from the roadsides. The negative esthetic impact concerns the public and those involved in the tourist industry.

How could that esthetic impact be changed so that future cuts would not be such a concern?

The controversy over the chip mill in Union Mills also reflects similar concerns about chip mills in other communities, especially in the Southeast.

What do you perceive to be some of the fears and concerns of those community members?

Can you tell me any ways that you think the communities and the forestry industry can find solutions on some of the controversy?

Do you see any benefits to you or your company in finding some solutions to these controversies?

Would you be willing to take a part in resolving any of the conflict in this community?

Do you feel that you have a professional role you would be willing to take in

this conflict resolution planning?

Do you have any questions you would like to ask of me?

Do you have any questions about my research or research activities?

Would you like to have a copy of my final research report?

Interview Question to Lumbermill Owners:

Would you tell me a little about your forestry training/educational background?

What does being a "registered" forester imply (with what organization are you registered)?

Would you describe for me the general job expectations of a registered forester?

Are you a member of any professional forestry (trade) organizations?

Regional physical conditions require BMPs to vary to suit the terrain; would you describe to me some of the unique techniques required for mountain area forestry practices?

I continue to hear about the existence of BMPs, but the lack of BMP practice on non-industrial private lands.

How can this situation be avoided?

Do you have any suggestions on how more BMP practices can actually be put into place?

If educating the private landowners is one of your answers, how might that education take place?

Are you aware that the local Cooperative Extension office intends to have an educational meeting for local landowners in the Fall?

Will you attend that meeting? Will you participate?

Have you ever heard of the "pro logger" policies and meetings that the State Forest Service offers?

How do you contract a logger (e.g., per cut, per year, as a permanent employee)?

How does a forester know if a contracted logger actually has BMP training or uses the BMP techniques?

Would you recommend or require that they attend these meetings?

Could you tell me a little about the State's cost-sharing program for replanting?

How do the landowners find out about this?

Many citizens in the region are concerned about the replacement of hardwood forests with loblolly pine farms.

Can hardwoods be replanted?

Is there any difference in the difficulty or cost of replanting hardwoods?

Many new clearcuts in the area can be seen from the roadsides. The negative esthetic impact concerns the public and those involved in the tourist industry.

How could that esthetic impact be changed so that future cuts would not be such a concern?

The controversy over the chip mill in Union Mills also reflects similar concerns about chip mills in other communities, especially in the Southeast.

What do you perceive to be some of the fears and concerns of those community members?

Can you tell me any ways that you think the communities and the forestry Industry can find solutions on some of the controversy?

Do you see any benefits to you or your company in finding some solutions to these controversies?

Would you be willing to take a part in resolving any of the conflict in this community?

Do you feel that you have a professional role you would be willing to take in this conflict resolution planning?

Do you have any questions you would like to ask of me?

Do you have any questions about my research or research activities?

Would you like to have a copy of my final research report?

Survey:

Hello, My name is Cheryl McClary. I am an environmental anthropologist, a social scientist. My current research concerns the "chip mill issue" and sustainable forestry in Western North

Carolina. I am investigating how people are affected by and affect our forest environment. Would you be willing to participate in my study - ANONYMOUSLY - by answering the

following question?

Imagine this scenario (pretend):

You own more than 50 acres, but less than 400 acres, in Western North Carolina. The land has hardwood timber on it. You need to generate some income from your landholding investment (e.g., for the children's college fund, expenses of a life threatening illness, or desire to take a vacation cruise).

Please list 3 (or more) land-use options you would consider to generate that income. (Please do not be intimidated by the research process. It is okay to list "cutting your timber for

sale," if that is a likely option.)

Thank You. Cheryl

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