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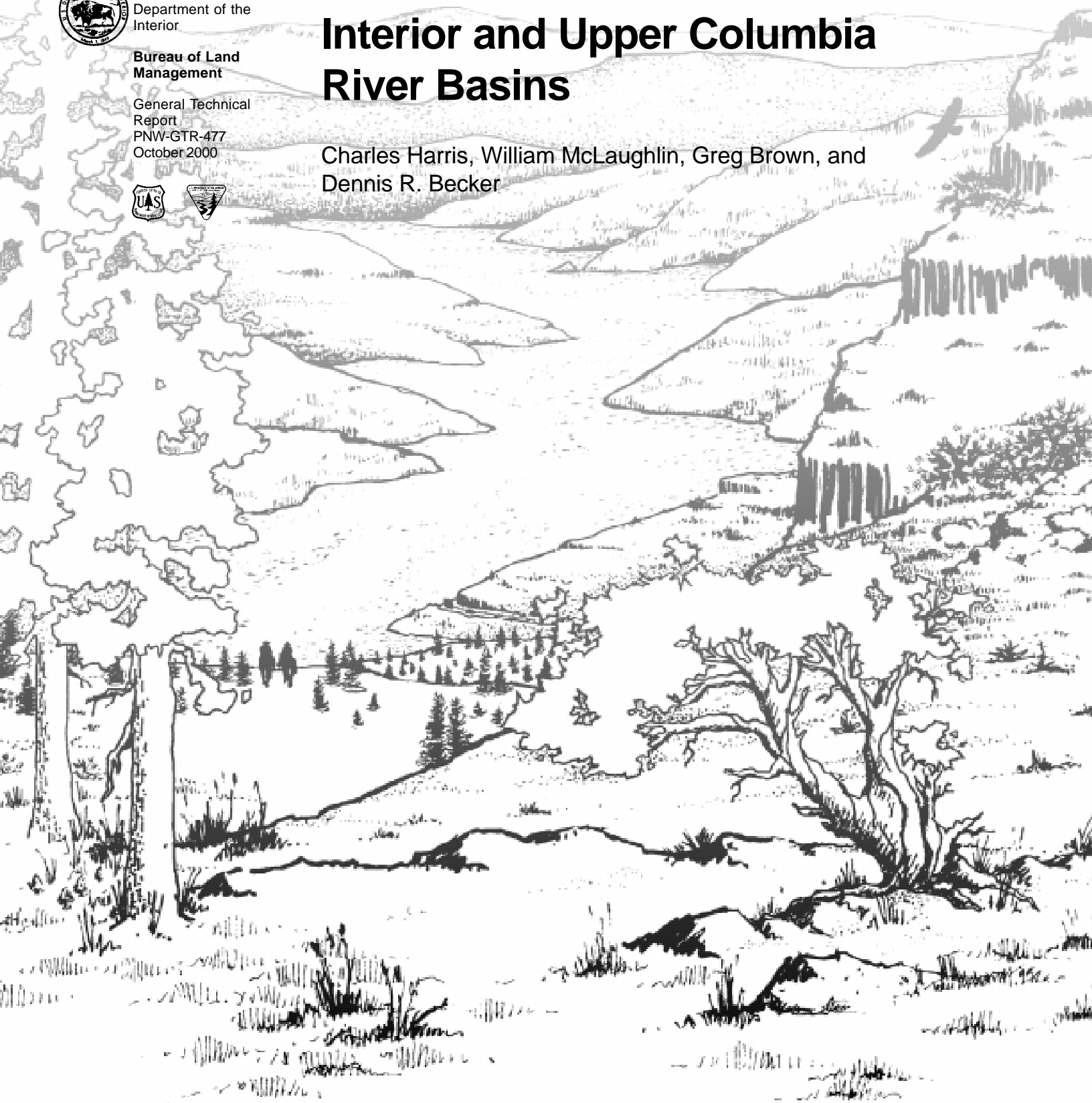
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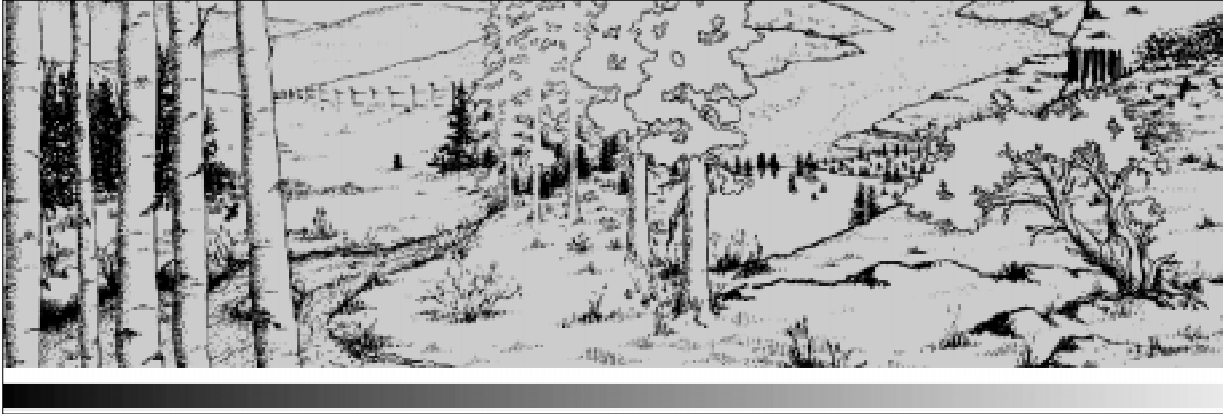
Rural Communities in the Inland Northwest: An Assessment of Small Rural Communities in the Interior and Upper Columbia River Basins

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Charles Harris, William McLaughlin, Greg Brown, and Dennis R. Becker

Interior Columbia Basin Ecosystem Management Project: Scientific Assessment

Thomas M. Quigley, Editor

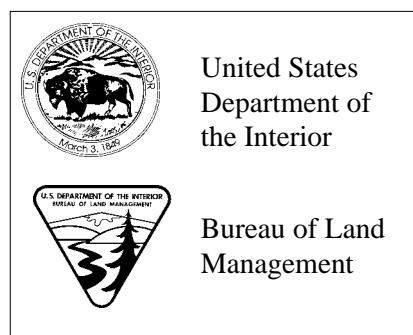
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Preface

The Interior Columbia Basin Ecosystem Management Project was initiated by the Forest Service and the Bureau of Land Management to respond to several critical issues including, but not limited to, forest and rangeland health, anadromous fish concerns, terrestrial species viability concerns, and the recent decline in traditional commodity flows. The charter given to the project was to develop a scientifically sound, ecosystem-based strategy for managing the lands of the interior Columbia River basin administered by the Forest Service and the Bureau of Land Management. The Science Integration Team was organized to develop a framework for ecosystem management, an assessment of the socioeconomic and biophysical systems in the basin, and an evaluation of alternative management strategies. This paper is one in a series of papers developed as background material for the framework, assessment, or evaluation of alternatives. It provides more detail than was possible to disclose directly in the primary documents.

The Science Integration Team, although organized functionally, worked hard at integrating the approaches, analyses, and conclusions. It is the collective effort of team members that provides depth and understanding to the work of the project. The Science Integration Team leadership included deputy team leaders Russel Graham and Sylvia Arbelbide; landscape ecology—Wendel Hann, Paul Hessburg, and Mark Jensen; aquatic—Jim Sedell, Kris Lee, Danny Lee, Jack Williams, Lynn Decker; economic—Richard Haynes, Amy Horne, and Nick Reyna; social science—Jim Burchfield, Steve McCool, Jon Bumstead, and Stewart Allen; terrestrial—Bruce Marcot, Kurt Nelson, John Lehmkuhl, Richard Holthausen, and Randy Hickenbottom; spatial analysis—Becky Gravenmier, John Steffenson, and Andy Wilson.

Thomas M. Quigley
Editor



Abstract

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An assessment of small rural communities in the interior and upper Columbia River basin was conducted for the Interior Columbia Basin Ecosystem Management Project (ICBEMP). The characteristics and conditions of the rural communities in this region, which are complex and constantly changing, were examined. The research also assessed the resilience of the region's communities, which was defined as a community's ability to respond and adapt to change in the most positive, constructive ways possible for mitigating the impacts of change on the community. The study found that a town's population size, autonomy, economic diversity, quality of life, and experience with change were all factors related to the town's resiliency and the extent to which it was changing and preparing for change.

Keywords: Rural communities, forest communities, resource dependence, community assessment, ecosystem assessment, social impact assessment, resiliency, Columbia basin.

Research Goal and Premises

The goal of the research described here was to assess the characteristics and conditions of small, rural communities in the interior and upper Columbia River basin (henceforth, the basin); the basin includes a lower basin in eastern Washington and Oregon and an upper basin that spans all of Idaho, western Montana, and western Wyoming. This research was based on several premises:

- The small, rural community is an important scale for social assessment. For most residents of rural regions such as the study area—even those people living outside the borders of incorporated towns and cities—the community where they socialize, shop, and perhaps work or go to church becomes the focus of their social lives.

Social sciences recognize the significance of this scale of social organization. Those sciences include sociology, which focuses on social groups, organizations, and communities as primary units of analysis, and for which conflict and cohesion are key forces underlying social change; and anthropology, which is centered on social groups, communities, subcultures, and sometimes entire cultures, with a focus on tradition (Machlis and Force 1988; Machlis et al., n.d.). Rural towns are too small to have neighborhoods, and the only other definable social grouping between individuals and communities is the sociocultural groups and organizations that often exist within communities. These groups can be influential in making things happen where they are located, but most of the governmental, civic, social, and in-frastructure mechanisms function at the community level.

The next highest level of social organization is one of polity: county government. Most data collected by Federal and state agencies are reported at the county level. Unfortunately, in many places, conditions and changes in conditions at this broader level mask the differences across communities and thus the impacts of change on their residents; this aggregation problem reflects the reality of the county as a political entity that, for many residents, may not be a meaningful social grouping and thus a relevant unit of analysis.

- The characteristics and conditions of small, rural communities in the region are complex and constantly changing. The present study examined the characteristics and conditions of the 387 small, rural, incorporated communities in the study area, in part with 1990 U.S. census data on those communities and, in part, with indepth, detailed data from a first-quarter 1995 survey of a systematic random sample of 198 communities. The data from the community self-assessments provide only a snapshot in time, and the indepth case studies of communities experiencing significant change since 1980 provide information on communities in transition.
- The research also examined the resilience of the region's communities, which was defined as a community's ability to respond and adapt to change in the most positive, constructive ways possible for mitigating the impacts of change on the community. This concept was developed by the Science Integration Team of the Interior Columbia Basin Ecosystem Management Project (ICBEMP).

The resilience of a community is relative, so the study focused on degrees of resilience—the communities can be thought of as representing a continuum from low to high resilience. Also, a community's resilience can change over time, depending on changing community conditions. Communities can undergo different stages in their development, and different stages of development can reoccur, as reflected by the ongoing boom-and-bust cycles of the American West, which results in different economic mixes and shifts in dominant industries at different times.

- The results on resilience presented here represent two kinds of information: residents' perceptions of their communities in 1995, and factual, documented information about community characteristics, such as their population size, actual response to change, and their actual economic structure in the first quarter of 1995. Both kinds of information are important: both the ways people see and know their community and believe it to be, and the ways the community actually is, can be important factors underlying a community's development and its responses to change.

Research Methods

Several sets of data were collected for assessing community characteristics and conditions: First, empirical data were gathered for all 387 small, rural, incorporated communities in the interior and upper Columbia River basin (data available from the Bureau of the Census). Secondly, a random sample of 198 communities was selected (about half of all small rural communities in the region), and 1,350 residents of these communities completed a community self-assessment workbook. These residents then participated in community self-assessment workshops to provide data on their community's current characteristics and conditions (i.e., community character and attractiveness, social cohesion, civic leadership, quality of life, business attractiveness, economic diversity and resource dependence, and the community's preparedness for the future). Second, community officials were contacted to provide other documented or recorded details about each community's character and conditions (e.g., rate of population growth, economic changes, school and utility capacities, distance from major transportation routes or nodes).

A third set of data consisted of profiles of the economic structure of each of the 476 communities (towns and cities) and census designated places (CDPs) in the basin, based on estimates of the proportion of a town's total employment attributable to each industrial sector contributing to that town's economy. These data, which were developed in collaboration with University of Idaho researchers specializing in community economics, provided a profile of each community's economy in terms of employment and earnings for industries, businesses, and agencies, which were aggregated into 21 major industrial sectors.

A component of the research also assessed and analyzed the characteristics and experiences of 145 communities in the regions identified as "significant change communities." These communities were indicated as undergoing major change by (1) state economic development officials, agricultural extension experts, USDA Forest Service forest planners, or economic development coordinators; or (2) U.S. census population estimates indicating changes of ± 20 percent since 1980. Collection of data on these communities focused on identifying the kinds of changes occurring in them, the kinds of community responses resulting, and the effects or characteristics of all these factors in terms of community conditions, activities, and lifestyles. A sample of 80 of these 145 communities was surveyed, with initial contacts made with city clerks, who were asked to suggest the name of the person who would have the greatest knowledge of the changes the town had experienced and its response to them. A structured telephone interview was then conducted with this representative of the town.

Of these communities, 10 were identified as having already undergone major changes of the kinds most prevalent in the study area since 1980, and indepth case studies of these communities were conducted to better understand the major changes influencing them, the impacts of these changes and the community responses to them.

Finally, a representative survey of residents of Chelan County, in central Washington, was conducted to assess the opinions and attitudes of one county's residents about growth and resource management issues in a rapidly growing county. From 700 questionnaires sent to a sample of residents randomly selected from local phone books, 222 completed questionnaires were returned, for a response rate of 32 percent. These data provided useful insights into the preferences and concerns of residents in a county typical of those in the interior West experiencing significant population growth and community development.

Major Findings

Initial analysis of these data indicated that:

- Small rural communities represent an important scale for gathering and analyzing social data on human populations. Analysis of the data collected from Chelan County residents confirmed that, although 38 percent of the county residents lived outside any community, most residents of the county (79 percent) reported that the city or town where they collect their mail was somewhat or very important in their lives (Harris 1996a).
- The economies of communities are complex, and citizen perceptions of them differ in accuracy. When the importance of industries in rural communities were assessed in terms of proportion of total employment, a complex picture of the economy of the Columbia River basin emerged: harvesting and processing (agriculture, timber) were important employers, especially in the smaller rural towns across the region, with government (Federal and state or local) and travel and tourism also among the region's largest employers. The majority (62 percent) of jobs in the average rural community is in service sectors: not counting government, which provides an average of 21 percent of all the jobs, they account for 41 percent of all employment in rural towns. A difference is found, however, between large and small towns in their employment in traditional economic base industries: the largest towns (over 3,000 in population) had a total of 18 percent of jobs, on average, in those sectors, and in the smallest towns, those sectors accounted for an average 34 percent of all jobs.
- The vast majority of rural communities are small (less than 1,500 in population), and a community's population size is significant. Generally, the larger communities in the region tended to be more resilient; not unexpectedly, those with larger populations tended to have a more developed, extensive infrastructure and workforce to build on. Also, the largest towns tended to have more diversified economies. These results support the 1993 analysis of the Forest Ecosystem Management Assessment Team (FEMAT 1993) community assessment, which suggested that communities with high capacity to adapt tend to be larger communities, and communities less able to adapt tend to have more limited infrastructure, less economic diversity, less active leadership, more dependence on nearby communities, and weaker links to centers of political and economic influence.
- The community resilience index indicates the ability of small rural towns to manage change. The current study found that a small town's population size is, in fact, the single best characteristic for predicting its current conditions and likely response to change: larger towns tended to be more economically diverse and thus stable. The smaller and less developed a town is, the less vital, attractive, friendly, and attractive for business it is likely to be perceived to be by its residents. Overall, the communities perceived to be more vital, attractive, and healthy generally were the larger ones. The conclusion here is consistent with the basic premise of the plethora of community development handbooks and workshops provided in the 1970s and 1980s: if members of a small rural community want to "develop" their town, they should work to attract new industries and expand its economic base (which will indirectly lead to an increase in population).

- Significantly, the findings of both the self-assessment study and the community economic profiles suggested that the impacts of this improvement extend beyond the economic aspects of community development, whose significance has long been recognized and is reaffirmed here, to its social elements as well. More autonomous rural communities and ones larger in population typically represent a more advanced stage of social and civic development than small ones. The importance for community vitality of active social groups and civic organizations, increased educational infrastructure, availability of services, success in obtaining development grants, and greater preparedness for the future—all of which increase with a town’s size—reflects the benefits that towns with a critical mass of social capital and infrastructure were more likely to realize. An interesting question for future research, however, is at what size and level of community development the net benefits of growth are maximized, beyond which the social costs of further growth begin to exceed its benefits.
- Finally, our assessments of resilience and significant change in communities make clear that change and resilience to it were found across the various economic types of communities. Interestingly, towns perceived as timber dominant tended to be farther from an interstate highway and relatively isolated, but they also tended to be relatively resilient compared to towns in which other industries were perceived to be dominant. The least resilient communities were those in which farming and ranching were perceived to be dominant. A complementary finding was that communities that have changed the most in the last 5 years tended to be more resilient, which was likely due to their greater experience in coping with change.

Also supporting these results were the findings on population changes in towns smaller than 10,000 where mills manufacturing wood or paper products have closed since 1980: although 52 percent of these towns declined in population, the populations of an almost equally large proportion (48 percent) increased. In total, the change in population of small towns in which mills closed was a net increase of 8 percent since 1980.

Communities, nonetheless, were unique in their characteristics and conditions, their experiences of change, and thus their responses to it. Given that the details of their situations differed, they must be assessed case by case to understand those details and their role in community change.

- The rates of growth of small rural communities differ across the region, and they are changing in other diverse ways. The population in the region is continually changing, but with a clear trend toward growth: U.S. census figures indicate that the population growth between 1988 and 1994 was 12 percent in Idaho, 7 percent in Montana, 8 percent in Oregon, and 9 percent in Washington; the U.S. population grew only 4 percent during that period. A large majority (70 percent) of the communities across the region reported that they had experienced a moderate to high degree of change since 1990. The kind of change reported by the largest proportion of Chelan County residents surveyed was growth and population increases, by a 2 to 1 margin (68 percent). Other important changes included the conversion of agricultural lands to residential and commercial development (32 percent), an increase in retail stores (26 percent), increased traffic (23 percent) and increased crime (22 percent). A majority, over 55 percent, was somewhat to extremely concerned about the overall changes in their community.
- Growth in employment in the region also far exceeded the national rate: employment increased 8 percent nationwide between 1988 and 1994, but it increased 28 percent in Idaho in that same period and around 17 percent in the other states in the region. Recent changes in communities were due to a variety of broader economic influences, such as global economic forces, economic diversification, plant modernization, and industrial downsizing (such as laying off company loggers and hiring independent loggers, or “gypos,” to reduce the costs of benefit payments).

Some Preliminary Conclusions

- Small rural communities in the Columbia River basin have always been in a process of change and will continue to be; the idea of community stability is a myth belying such influences as the volatility of markets for timber, mining, and other traditional extractive industries; the actions of private companies in modernizing or closing plants and periodically laying off or terminating workers; the decreased supply of timber from National Forests, sometimes due to past inaccuracies in estimates of existing timber supply, current regeneration, and future sustainability; decreasing employment in the industries as a result of all these changes; and the rapidly increasing in-migration of new kinds of workers and residents (retirees, new ethnic groups, etc.) into many of these communities.
- Although closures of mills, mines, and other resource-processing plants can have significant impacts in some communities, past closures have had few effects on other communities. Many mills, for example, have closed, been sold, been reopened, and been closed again in a series of changes over past decades that have not always been related to public land management. Community growth, as indicated by population increases, occurred in many communities that lost mills, but not in others.
- Rural communities tend to be more resilient (i.e., adaptive to change) than commonly assumed. Small towns in the Columbia River basin are unique and complex, though, and generalizing about the kinds of towns that are resilient to change is always contingent on the situation of each. For example, many “timber communities” are fairly highly resilient and healthy, especially in comparison to small ranching and farming communities. With their development of amenities, diversifying economies, and population growth, the face of these timber towns already is changing.

Importantly, even though a community’s resources, including its amenities and attractiveness, can be factors influencing development, a decisive, major determinant of a community’s resilience clearly is its residents—in particular, the willingness of residents to take leadership roles, organize, and realize their community’s potential. Community residents are a central defining element in creating the future of rural communities.

- New policy initiatives could help small communities cope with the changes facing them, and public policy analysts could view the role of resilience in one of two alternative ways. The first view is that, if government resources are to be expended on rural communities, those lowest in resilience—ranching and farming communities, in particular—are the ones most needing support. An alternative view is that, in the name of economic efficiency and equity, America should “cut its losses” in terms of communities that are “on the skids” and losing their human capital. According to this view, expending any more societal resources on these communities would not be worth the benefits derived. Rather, government resources would be more effectively used on communities at risk but that have the potential to benefit from those resources.
- The history of Forest Service commitments and impacts on rural communities has been a continually evolving process. The nature of this process, changing societal values, the changing Agency workforce reflecting those values, and the learning occurring within the Agency underscore the importance of sound forest planning; information such as this research can be important for revising Forest plans and planning individual projects. It also can be useful for the planning and management efforts of the towns themselves and those of the counties and states in which they are located.

Contents

- 1 **Context for the Assessment**
- 1 **Introduction**
- 2 **Why the Community Assessment?**
- 3 **The Social Impact Assessment Process in FEMAT**
- 4 **Why the Focus on Smaller Communities?**
- 6 **Recent Research Relating to Communities Dependent on Forest and Rangeland Resources**
- 6 **Research Goal and Premises**
- 8 **Review of the Literature**
- 8 **Introduction**
- 8 **Critical Dimensions of Community Characteristics and Conditions**
- 8 Community Character
- 9 Community Cohesiveness
- 9 Community Services
- 10 Community Autonomy
- 11 Economic Diversity
- 12 Resource Dependence
- 12 Attractiveness For Business
- 13 Quality of Life
- 13 Community Leadership and Effectiveness of Community Government
- 14 Community Preparedness for the Future
- 15 **Major Findings From the Literature on Social Impact Assessments**
- 19 **Methodology for Assessing Communities**
- 19 **Introduction**
- 19 **The Community Self-Assessment Study**
- 19 Developing a Strategy for Sampling Communities
- 20 Development of the Community Self-Assessment Process: What and Why?
- 21 The Community Self-Assessment Process: How?
- 23 **Assessment of Community Economies**
- 23 Profiles of the Economic Structure of Rural Basin Communities
- 25 Travel and Tourism Employment
- 26 **Surveys of Residents of Chelan County and Significant Change Communities**
- 27 **Analysis and Presentation**
- 28 **An Overview of the Status of Rural Communities in the Basin**
- 28 **Introduction**

28	Gathering and Analyzing Community Scale Social Data
30	Most Rural Communities Are Small
30	The Geography of the Communities
31	Characteristics of Participants in Community Self-Assessments
32	Perceived Characteristics and Current Conditions
33	Current Characteristics and Conditions of Rural Communities
43	Economics: Perceptions and Reality
43	Perceptions of Workshop Participants
46	Profiles of the Economies by Actual Employment
68	Comparing Perceived and Actual Industry Dominance
84	A Community Resilience Index
84	Development and Validation
88	Resilience Classes
95	Other Findings
99	Rural Economies and Community Resilience
101	Other Findings on Rural Communities
101	Timber-Dependent Communities
104	Is Bigger Better—Or Is Being More Autonomous?
106	Quality of Life in Small Communities
107	Change in Small Rural Communities
111	Conclusions
113	Acknowledgments
114	References

Context for the Assessment

Introduction

The management of natural resources in the Pacific Northwest has been changing direction in recent decades. Small rural communities in the region, many significantly affected by changes in resource management, also have been changing dramatically.

Recent signs of change in resource management have been most evident in renewed efforts to plan for the region's spotted owl forests west of the Cascade Range—a planning process that began with President Clinton convening a “forest summit” in 1993 and continued with the preparation of a scientific assessment for the west-side forests (Forest Ecosystem Management Assessment Team [FEMAT] 1993). Based on this scientific assessment, the USDA Forest Service selected option 9 as the preferred alternative of its plan for the Northwest's forests, and the Agency presented an analysis of that option in the environmental impact statement (EIS) it conducted for future forest management for the region's forests (USDA Forest Service 1994). A key objective of the west-side forest plan was to establish and implement ecosystem management as a dominant strategy for future management of the region's forest resources.

Fundamental to an ecosystem approach are several assumptions:

- Management priorities will include the protection and restoration of deteriorated ecosystems, as well as the traditional focus on providing multiple benefits for people (i.e., a variety of resource values, products, and services) within the capabilities of ecosystems.

- Any analysis of the uses of natural resources, the relation of these uses with local communities, and the effects of resource uses on the natural environment will be conducted at a landscape scale adequately accounting for the broad geographic, place-based nature of these relations and impacts.
- The management process will be an inclusive, collaborative one having grass-roots support and build on input from different communities of place and interest, rather than be a process that is exclusive and divisive.
- Management decisions will be based on sound science to ensure that management activities make use of the best available scientific data.

Other changes also have had major impacts on management of the Pacific Northwest's natural resources. Forest Service activities increasingly have focused on noncommodity resource management (Farnham 1995, Farnham et al. 1995), at the same time that the amount of timber offered, sold, and harvested from National Forests has significantly decreased since the late 1980s (Farnham and Mohai 1995). Most recently, the Forest Service has declared a moratorium on road building in National Forests while it reconsiders its forest harvesting and road-building policies. At the same time, heated debate over necessary steps to restore the region's wild salmon runs escalated in the late 1990s, mainly as a result of an evaluation by the U.S. Army Corps of Engineers on the impacts of breaching four dams on the Lower Snake River to aid in that restoration effort. In addition, the in-migration of large numbers of people, many of whom are ex-urbanites

building homes in forested areas, is increasing the region's population and the likelihood of conflicts. In light of these changes, a major concern of affected Federal managers, as well as other resource managers, industries, and local publics, has been with the impacts of changing resource outputs and management priorities on people living in the region and the small rural communities located there.

The scope of these impacts and concerns about them expanded scientifically as well as geographically when the Interior Columbia Basin Ecosystem Management Project (ICBEMP), a multiagency resource-management planning effort being led by the USDA Forest Service, began in 1993. This project, unlike the abbreviated FEMAT assessment, was more comprehensive and thorough in its assessment of the natural resources and socioeconomic conditions in the interior and upper Columbia River basin (or the basin). This region of the interior West, which is the size of Texas, is comprised of two basins: the interior Columbia River basin, which extends east from the Cascade crest across Washington and Oregon, and the upper Columbia River basin, which extends east from Idaho's western border to the Continental Divide and includes all of Idaho plus western Montana and Wyoming.

The ICBEMP has produced a broad management strategy for the region's public lands, as prescribed in the EIS for that strategy (USDA-FS and USDI-BLM 1997a, 1997b). That project was designed to:

- Develop "big-picture" ecosystem management strategies for restoring forest and rangeland health while providing sustainable resources and jobs for people.
- Address broad-scale problems crossing jurisdictional lines, including providing for species viability with an ecosystem approach rather than a species-by-species approach.
- Better protect fish and other species and provide management needed to reduce ecological risks in riparian and upland areas.

- Reduce polarization over concerns about conservation and public land management by providing a process that encourages interested and affected parties to cooperate with one another.

As part of the ICBEMP assessment, the project's Social Science Assessment Team recognized the need to look beyond the characteristics and conditions of ecosystems and natural resources to consider the situations of people and communities that are a part of those ecosystems and using those resources. Accordingly, as part of the social science assessment, research was started in 1994 to better understand the characteristics and conditions of small, rural communities in the region.

Why the Community Assessment?

Throughout history, communities and their residents have been shaped by the interplay of the forces that cause social change. The American West, for example, is sprinkled with ghost towns standing as monuments to the power such forces can exert on communities and their residents. In the United States, such changes have traditionally been viewed as part of the natural course of things, with the outcomes interpreted as demonstrations of economic forces that were beyond anyone's responsibility to control.

Branch et al. 1982:5

America's interior West has experienced changes that began with the region's settlement by immigrants from the Nation's coasts and continue today with a diversity of economic, cultural, and human migration trends unfolding in the Western United States. Changes in Federal land management practices, such as those being proposed by the ICBEMP, can affect the physical, cultural, social, political, legal, economic, and psychological nature of the human environment (Gramling

and Freudenberg 1992). These effects are especially pronounced in a region—such as the basin—having a large percentage of Federal land. Practitioners of social assessment presume that local, state, and Federal governments have a responsibility to help minimize the negative effects of the changes set in motion by social forces and shifts in land management policy, or at the least, to assist their citizens in preparing for those effects.

This report seeks to provide a better understanding of small rural communities in the basin faced with current and future changes in natural resource management. The assessment research addressed a variety of questions: What is the current character of communities in the inland Northwest and northern Rocky Mountains? What are their most notable attributes and characteristics, and what are the interrelations among the attributes of these towns? Do the region's communities want to remain largely as they are, or do they seek to change? What is the capability of communities to deal with change and prepare themselves for the future? What makes a community more or less resilient or adaptive to change? How might the communities be impacted by changes in the policy direction of the Forest Service and Bureau of Land Management (BLM)? How can government entities ease the transition for these communities and for the social, political, and cultural groups that are important components of them?

The Social Impact Assessment Process in FEMAT

The current assessment was built from the research conducted for the social science component of FEMAT (1993). The objectives of the FEMAT social impact assessment were to:

1. Describe the nature and distribution of the social values and uses found in the range of the northern spotted owl (*Strix caurina occidentalis*).
2. Describe how these values and uses would be affected by various management options.
3. Identify how different constituents could be affected by changes stemming from the options.

4. Identify opportunities or strategies for dealing with impacts of these consequences on people and their communities (FEMAT 1993:5).

The social assessment process conducted by the FEMAT team included the following components (1993:6-8):

1. Commissioned papers to obtain expert opinions on various issues having to do with the potential social impact of the range of Federal options for the spotted owl forests.
2. An examination of Forest Service and BLM public involvement records.
3. A survey of county extension agents throughout the region.
4. Two workshops with government employees and extension agents from around the region to assess the relative ability of communities to deal with possible management options and other changes in the region.
5. An assessment of the nature and value of the region's recreation, scenic, and subsistence values by conducting a number of information-gathering efforts:
 - A survey of BLM and Forest Service offices to see what information was available on these values. Recreational opportunities and visual quality objectives also were assessed, based on forest and district land-use allocations.
 - A case study of agency representatives from selected areas, including 2 days spent by BLM and Forest Service representatives to map the location and extent of various social values, with the purpose of assessing how management options could affect these values.
 - A nominal group exercise, the purpose of which was to identify barriers and impediments to integrated resource management as well as opportunities to overcome those impediments (FEMAT 1993).

Although the FEMAT team was severely constrained by time (only a few months were available to complete a full impact assessment of the extensive spotted owl forests), the team later

wrote, “While acknowledging the limits imposed by the above constraints, we also want to assert that this social assessment represents one of the most significant efforts ever undertaken to examine the social consequences of federal forest management” (FEMAT 1993:5). The present research, which expands on the FEMAT study of west-side communities, provides a start in gaining greater knowledge in the science and practice of social assessment.

Why the Focus on Smaller Communities?

A key premise of a regionwide, landscape-based assessment, such as that conducted for the ICBEMP, is that future resource management should be based on an integrated, multiresource analysis for promoting management of sustainable ecosystems. To realize sustainable management, the management region must be large enough to account for species interdependence, allow for long-term adaptation and catastrophic change, and assure the healthy functioning of the ecosystem at all levels. However, while nature knows no borders, humans do.

Human activities are conducted at various levels of scale: units of analysis can be based on different levels of social organization, and everyday human activities can be based on collectivities, geography, and political boundaries. Commonly recognized levels of social organization based on geography and human activities range from households to neighborhoods, communities (towns and cities), counties, multicounty regions, and states. Historically, bureaucratic, administrative, and political boundaries have been a common hindrance to confronting the challenges posed by achieving species conservation and healthy ecosystems. Regionwide, cross-agency coordination is critical for providing a consistent overall direction to communities that reflects changing priorities and approaches to resource management.

Although larger scale areas such as watersheds, ecological provinces, or whole regions may be important as a basis for ecosystem management, they may not be the most appropriate level for

conducting social assessment (Krannich et al. 1994). People experience the majority of their ties to other people, their work, the services they are provided, and their network of friends and family at the level of community. Local communities are more than just a place where people happen to live; they essentially and fundamentally “constitute the fabric of day-to-day life” (Krannich et al. 1994:48-49). Some analysts suggest that, indeed, the slower pace in rural communities provides their residents with a fundamental tie to social norms and traditions. As Branch and associates write, “The linkages between community resources, social organization, and well-being and the important role communities play as administrative and participatory units make it essential that social assessments utilize an analytic framework that effectively focuses attention on the community” (Branch et al. 1982:25-26).

The social sciences have long recognized the significance of the community as a key scale of social organization: included are sociology’s focus on social groups, organizations, and communities as primary units of analysis, and on conflict and cohesion as major forces of change; and anthropology’s attention to social groups, communities, subcultures, and sometimes entire cultures, with a focus on tradition (Machlis and Force 1988; Machlis et al., n.d.). Given that rural towns are too small to have neighborhoods, the only other definable social grouping between individuals and communities is the sociocultural groups and organizations that often exist within communities. Although these groups can be influential in making things happen where they are located, most of the governmental, civic, social, and infrastructure mechanisms function at the community level. The next highest level of social organization is one of polity: county government. But the concerns, activities, and impacts at this level primarily have to do with land-use regulation and provision of rural services that lack a social or cultural dimension.

The guidelines and principles for social assessment (hereafter, “guidelines and principles;” Interorganizational Committee on Guidelines and Principles for Social Impact Assessment 1994)

make the point that, “just as the biological sections of EIS’s devote particular attention to threatened or endangered plant and wildlife species, the socioeconomic sections of EIS’s must devote particular attention to the impacts on vulnerable segments of the human population” (1994:4). In the case of analyzing the effects of Federal land management actions and direction, the most critical impacts may be to small, rural communities.

In addition to the centrality of small communities in the lives of people living in rural areas, rural communities may be especially vulnerable when they lack the leadership necessary to weather a complex set of changes (Israel and Beaulieu 1990). As conditions worsen and resources become more limited, local governments often are forced to transfer their decisionmaking and become more reliant on state and Federal governments (Weeks 1990). This may further limit local initiative and creativity, especially in the face of economic downturns. In addition, small towns often lack the economic capacity to outlast downturns in a particular industry. They may not have enough skilled labor available to attract new business and compete (Malecki 1988, Power 1994). Rural communities also often lack adequate basic infrastructure (e.g., water, sewage), much less the communications and information infrastructure important for economic growth (Dillman et al. 1989). As a consequence of all these factors, the communities also may lack the financial resources and economic diversity to withstand changes impacting their economic base.

For all these reasons, rural communities are especially vulnerable to change. Consequently, the community of place is an especially important and relevant level for social assessment. Not all social scientists agree, however, that the geographically based community, or community of place, is always the appropriate level of analysis. Carroll, for instance, makes the point in FEMAT (1993) that a community is more than a municipality; when he refers to community, Carroll focuses on communities of interest:

groups of people such as Tar Heel shake and shingle workers, loggers, rural environmentalists, Native Americans and ethnic/cultural groups who gather special forest products. In many ways, the attachment these people have to each other, the land, special places and their life in common constitutes more of a sociologically definable community than the artificial boundaries of many towns.¹

In the light of his and other similar concerns, the FEMAT social scientists suggested a compromise position (Clark and Stankey 1994:33):

A definition of community has long troubled scholars, who recognize that even in specific locations shifting constellations of people comprise different communities with different purposes (for example, occupational communities such as loggers). However, geographic communities are important from an economic and policy standpoint, especially for isolated areas whose fortunes are linked to their location. They also embrace occupational communities; thus, programs directed at geographic communities likely will reach members of occupational communities and their families where they live.

In one sense, the present research deals with some of Carroll’s concerns over the importance of communities of interest by providing an inclusive process that sought to represent the diversity of perspectives and subcultures that potentially can exist within a community. It is not a complete solution to the problem. Other analyses conducted for the basin assessment focused on the level of stakeholders and special interest groups.

¹ Some early reviews of this process reflected a misunderstanding of it; they raised the concern that (1) by basing the assessment on a small sample of a community’s most informed residents, its results would be biased by those who believed participating would influence the results, and (2) the snowball sample would result in people “inviting” like-minded associates to participate. These concerns were found to be unfounded, as reflected in the diversity of participants and their perceptions of their community in each town.

Nonetheless, the community focus detailed here represents a wealth of information on the status, vulnerability, needs, and aspirations of local communities: the locus of everyday life and the fabric of our society.

Recent Research Relating to Communities Dependent on Forest and Rangeland Resources

Other studies assessing the social and economic situations of human populations and addressing their relation with forests and rangelands have recently been conducted. They include the work of Machlis and others (Force and Machlis, n.d.; Machlis and Force 1988; Machlis et al. n.d.) on resource-dependent towns and the use of county-based social indicators for mapping social conditions in the Pacific Northwest, Tarrant's (1995, 1996) social assessment research for the Appalachian Ecosystem Management Project, and the focus of Doak and Kusel (1996) on understanding human populations for the Sierra Ecosystem Management Project. Although some of these researchers suggest the need for an emphasis on human conditions at a community level, most have followed the lead of the FEMAT process and used secondary data, sometimes from the level of community groupings and sometimes from the county level: levels of scale that ironically do not allow for the kind of indepth analysis of the community as the unit of analysis that their conceptual frameworks call for.

In contrast, Beckley (1998) notes the importance of the community scale in research that provides a conceptual framework for understanding the components of forest dependence that need to be considered in resource management. The ongoing work of Carr et al. (1998a, 1998b) is building on assessments such as Beckley's and that presented here, which focus on the importance of communities and networks among them, with projects that seek to advance the substantive integration and consideration of community conditions and changes in resource management and planning.

Research Goal and Premises

The primary goal of our research was to assess the characteristics and conditions of small, rural, geographically based communities in the basin. Specifically, the communities to be studied were defined as incorporated towns in the region with less than 10,000 in population.

The intent of the research was not to assess the residents' preferences and attitudes concerning their community and issues affecting it. These feelings could well differ among different groups of residents, including those active, knowledgeable citizens who are highly involved in the activities of their community. The research did not focus on personal feelings and values (as in the case of preferences and attitudes about various sides of various issues). Rather, the research focused on residents' beliefs about the characteristics and conditions of their community, and on providing knowledgeable community residents with an opportunity to share their information and perspective on their communities. By obtaining a group assessment of the community's current situation from people representing a variety of perspectives (via sharing information in the workshop as described in the chapter, "Methodology for Assessing Communities"), the research process sought to provide a neutral, balanced, and objective assessment of each community's characteristics and conditions by those most qualified to provide it.

The research was based on several other premises, as well:

- The small, rural community is an important scale for social assessment.

As noted above, for most residents of rural regions such as the study area (including those people living well outside the borders of incorporated towns and cities), the community where they pick up their mail, socialize, shop, and perhaps work or go to church is an important social and economic focus of their lives. Despite this reality, most data collected and reported at a local level are from Federal and state agencies and for entire counties. Consequently, in many places,

efforts at the county level to track changing conditions only mask the differences in those conditions in individual communities; thus, the kinds and degrees of impacts that changing policies have on local residents are muted. This aggregation problem reflects the reality of the county as a political entity that, for many residents, may not be a meaningful social grouping and thus a relevant unit of analysis.

- The characteristics and conditions of small, rural communities in the region are complex and constantly changing and need to be examined over time.

Our study examined the characteristics and conditions of the 387 small, rural, incorporated communities in the study area, in part with U.S. census data for all communities (U.S. Department of Commerce, Bureau of the Census 1995a, 1995b), and in part with in-depth, 1995 first-quarter data from a systematic random sample of 198 communities that was collected by the authors. The census data from past decades provided a basis for longitudinal analysis of community change over time, while the community data we collected provided a unique baseline for future efforts to track the sociocultural and economic impacts of the complex forces, both internal and external, shaping the region's communities.

- Along with objective, documented, and recorded data (e.g., as collected and reported by the U.S. Bureau of the Census), a process of community self-assessment is critical.

The assessment of rural communities designed and conducted for ICBEMP, which collected these data, followed the recommendations of the west-side team (e.g., FEMAT 1993, Krannich et al. 1994): first, that an on-the-ground assessment of the situation of rural communities across the region be conducted and, second, that these communities conduct their own self-assessments of their conditions and characteristics. Accordingly, the major primary-data collection effort for the research was a community self-assessment study that examined a random sample of half of the region's 387 rural communities. The results pre-

sented here thus represent two kinds of information: residents' perceptions of their communities in 1995, and factual, documented information about community characteristics, such as their population size, actual response to change, and their actual economic structure in the first quarter of 1995. Both kinds of information are important: both the ways people see and know their community and believe it to be, and the ways the community actually is, are important factors underlying a community's development and its responses to change.

Because every community is unique, each needs to be studied and understood on its own terms, in light of its unique history and current situation. The resulting data were a set of ratings of people's perceptions based on the levels of attributes in comparison with other small towns. Having communities compare themselves to others on the community dimensions assessed in the research also provided a basis for exploring patterns in these comparative data. The patterns, in turn, enabled researchers to generalize about different kinds or categories of towns.

- In addition to describing community characteristics and conditions, the research also assessed the resilience of the region's communities.

Resilience was defined as a community's ability to respond and adapt to change in the most positive, constructive ways possible for mitigating the impacts of change on the community. The concept of resilience was developed by the Science Integration Team of ICBEMP. A community's resilience is relative, so the study focused on degrees of resilience; the communities can be thought of as representing a continuum from low to high resilience. Also, a community's resilience can change over time, depending on changing community conditions. Communities undergo different stages in their development, and different stages of development can reoccur, as reflected by the ongoing boom-and-bust cycles of the American West that have resulted in changes in different economic mixes and shifts in dominant industries at different times.

Review of the Literature

Introduction

Two surveys of recent research were completed for the assessment. One was a telephone survey of researchers currently studying topics relevant to the assessment. Its purpose was to ascertain the most current state of knowledge on rural communities, and particularly on resource-based communities. The second survey was a literature search that reviewed published research on communities, their key characteristics, and their assessment. The results of the telephone survey provided much of the background and discussion found elsewhere in this report, and the results of the literature review are the focus of this section, which is divided into discussions of findings on key community attributes and assessment research. The various articles, books, and other research cited here provide recent findings on the characteristics of communities in general and the characteristics of rural communities in particular. Although the literature review was not exhaustive, it provided a solid theoretical and empirical basis for understanding the key community constructs (ones representing key dimensions of community characteristics) assessed with the research.

Critical Dimensions of Community Characteristics and Conditions

Community Character

Every community is unique: each community has its own character and ambiance. A community's attractiveness, a key component of its character, is a combination of many factors that are often highly subjective, ranging from the community's

visual appearance (or attractiveness) to the places outside the community that contribute to its attractiveness. The attractiveness of a community has generally been couched in terms of the areas surrounding the community. The "appropriately aesthetic setting" (Pulver 1989:6) or "environmental integrity, and physical beauty" (Johnson 1993:7) of the surrounding areas have been identified as an important draw for new residents and businesses. Castle (1991:47) states that "an important part of rural development strategy is to make the rural areas attractive as places to live." Power (1994:9) asserts that "attractive qualities associated with the social and natural environments become both important determinants of local economic well-being and important source[s] of local economic vitality." Thus, the attractiveness of a community's surroundings is viewed as a potentially important factor in that community's economic well-being.

Another important aspect of community character is the level of attachment that residents have for a community. Attachment to place is an important component in how people feel about the character of their community and is generally characterized as having several different components. Recent literature on community attachment has emphasized its multidimensional nature (e.g., Stinner et al. 1990). Indicators used by O'Brien et al. (1991) to measure residents' attachment to their community include their perceptions that a community is an ideal place to live, satisfaction with the community as a place to live, having a lot in common with other people living in the community, and feelings that they fit in the community. Brown (1993) distinguishes between community satisfaction and community attachment. Community

satisfaction can be measured by evaluation of a community as an ideal place to live, the desirability of the community as a place to live, and satisfaction with life in the community. Community attachment can be measured by social interaction, the degree to which residents feel they fit in the community, and how much residents have in common. Brown also includes length of residence and organizational involvement and membership as variables. Goudy (1990) uses local bonds (i.e., friend and relative networks and organizational memberships) and local sentiment, which referred to feeling at home in the community, interest in knowing what's going on in the community, and response to the possibility of moving away, as indicators of community attachment.

Community Cohesiveness

The ability of a community to manage ongoing changes in society can be greatly affected by the capacity of its residents to work together to accomplish projects and take action (Johnson 1993). This capacity to work together is referred to as the "cohesiveness of a community" or, more generally, as a "sense of community." Communities with greater cohesiveness are more willing and able to work together to achieve goals, complete projects, and particularly important today, manage change.

The cohesiveness of a community, as defined above, has been addressed by several authors in the literature and consists of several components. One component focuses on residents' ability to organize and cooperate to take action (Howell and Bentley 1986, Johnson 1993, Lackey et al. 1987, Poplin 1979). A second component is the capacity to actually move to completion, achieve goals, or complete projects (Lackey et al. 1987, Shaffer 1990). The availability and quality of local leadership also are cited as important factors in the ability of communities to get things done (Lackey et al. 1987, O'Brien et al. 1991). Shaffer cites a "positive attitude toward experimentation" (1990:76) as being important, asserting that "the greatest asset communities have in their struggle to maintain economic viability is

not distance, natural resource base, or current economic structure but their own creativity and insight" (p. 85). Thus, a willingness by community residents to take chances and try new things also has been recognized as an important factor in promoting community well-being.

An additional insight reported in the literature merits special attention. Communities that have successfully engaged in community action in the past will be more likely (and more capable) to do so in the future (O'Brien et al. 1991, Shaffer 1990). The idea here is that with community action, as with many other things, practice makes perfect. This conclusion received support from the findings of the rural community assessment for the ICBEMP, as will be discussed later in this paper.

Community Services

Community services are those things, whether businesses, nonprofit or government institutions, facilities, or programs, that are provided by either the private or public sectors and that contribute to the livability and desirability of a community by helping meet people's needs. Community services include fire and police protection, schools, medical facilities and personnel, retail facilities, recreational facilities, and churches. The presence or absence of these various kinds of services combine to make a community more or less livable in the minds of current or potential community residents.

A search of the literature showed that others did not use the same comprehensive operational definition of community services as we used in our study. The majority of the literature referring to community services focuses on medical services, in general, and on mental health services, in particular.

There were exceptions to this focus, however, including that of Pulver (1989:6), who describes a "high-quality living environment [as including] access to good schools, excellent health care, physical security, recreational and cultural opportunities, [and] satisfactory housing and public

amenities.” Christenson (1976) includes libraries, education, law enforcement, medical services, state parks, cultural activities, public parks, recreation, childcare, food stamps, industry, apartments, and family doctors in his research on the quality of community services. In a study of satisfaction with local services, Rojek et al. (1975) performed a factor analysis yielding four clusters of service types: medical services, including hospital-medical facilities, medical doctors, and dentists; public services, including streets and roads, water supply, fire protection, and police protection; educational services, including elementary and high schools; and commercial services, including shopping facilities, recreational facilities, job opportunities, and educational services for the physically and mentally handicapped.

Two important points about services appeared in the literature. One was that the availability of services can play an important role in attracting retirees to an area, and retirees can have a significant, positive effect on economic stability (Cook 1990). It is likely that services play a role in attracting other types of individuals (“urban refugees,” for example) to an area, as well. The second important point was that “the evaluation of whether a service is adequate or not is clearly a value judgment based upon the preferences and expectations of the person making the evaluation” (Williams 1976:204). In our research, the section of the workbook on community services simply asked if each of a variety of kinds of services were available in the community, and if not, the distance (in miles) to the service of each kind most typically used by the community. A final question in that section then asked respondents to rate their community based on the overall adequacy of the services available in it.

Community Autonomy

A concept related to the availability of local services is that of community autonomy, which has been defined as the extent to which a community is economically, socially, and physically linked to neighboring communities and to the region. The more self-reliant and independent a community is in relation to other communities, the more auton-

omous that community is. Community autonomy, then, refers to the control that a community has over “events and activities that occur within [its] boundaries” (Poplin 1979:150). In the past, rural communities had great control over their own destinies, but now these communities—and particularly their economies—are being affected by forces “far broader than those that originate within or can be controlled by the communities themselves” (Freudenburg 1992:328). Today’s small rural communities frequently can be at the mercy of decisions made in boardrooms in distant cities.

This situation means that the concept of community autonomy is not without a certain duality. On the one hand, autonomy can be viewed as a positive and necessary community characteristic. Warren states (1972:16) that a “barrier to effective community action is the loss of community autonomy over specific institutions or organizations located within it and closely intermeshed with the community’s welfare.” He asserts that the increase in bureaucratic policymaking has further eroded the ability of communities to determine their own destinies and stresses the importance of autonomy as a positive attribute.

On the other hand, a high degree of community autonomy also has been portrayed negatively. Castle states (1991:41) that the “rural areas that are the most prosperous are those that have close economic links with more densely populated areas, frequently large urban centers.” Wilkinson asserts (1986:8) that “what most small towns and rural areas need is to become somewhat more urban and less isolated from resources and institutions of our essentially urban society.” In each of these cases, autonomy as the lack of connections to the larger, more urban society is conceived as being detrimental to the well being of a community.

A recent Forest Service report (USDA 1998), which used some of the data on communities in the inland West described here, focuses on community autonomy in terms of the concept of the isolation of a town. Forest Service analysts assert that (p. 10):

Economic development specialists generally agree that smaller communities geographically isolated from larger population centers have fewer economic choices than more populated areas. They are less likely to be economically diverse and more likely to depend on a few major industries for their economic prosperity.

For its report, the Forest Service differentiates among communities differing in their size and degree of isolation (p. 10-11):

Rules were developed to determine... [whether] a community is...geographically isolated. Distance from larger cities, measured by a circle drawn around each city, was the primary factor used. The circle size was chosen to represent a reasonable commuting distance. The logic of the "city circle" approach is that proximity to larger towns conveys some advantages to social and economic opportunity. These advantages include job choices, access to air and surface transportation, access to education opportunities, and access to cultural amenities and higher order goods and services....

The Forest Service analysis designates towns not in a circle of a certain number of miles as being isolated, except where they had "a relatively larger population (above 1,900 people)." These larger isolated towns were designated as "isolated 'trade center' towns" (p. 11):

The idea is that some larger isolated "small towns" take the form of small trade centers that serve many of the shopping and business needs of rural residents who live long distances from larger cities. These towns may exhibit different characteristics than other isolated towns.

Our assessment examined the condition of geographic isolation in the larger context of community autonomy. Although geographic isolation may be an important factor for some rural communities, many are being affected by other kinds of forces not controllable by the communities themselves. The definition of autonomy as ap-

plied here focused on those communities perceiving themselves to be less autonomous; i.e., more closely linked socially, economically, and politically to other communities and the region as a whole. Thus, they have less control over activities and events affecting them. Community autonomy therefore refers here to the control that a community has over events and activities influencing its development and ability to respond positively to societal and local changes. Some isolated communities could be autonomous, vital, and resilient communities, and the significance of the issue of isolation was addressed in this research.

Economic Diversity

The economic diversity of a community is the mix of types of industries and businesses in a community, the variety of those kinds of industries and businesses, and the number and variety of employment opportunities that the mix represents (Belzer and Kroll 1986). In the past, rural communities had economies dependent on a particular industry (often an extractive one), with the economic well-being of those communities subject to local, national, and global changes in that industry (Freudenburg 1992, Gramling and Freudenburg 1992, Johnson 1993). Economic diversity in small rural communities thus is closely related to the concept of natural resource dependence, which is discussed as a key construct in the following section.

Gramling and Freudenburg (1992) suggest the concept of "economic overadaptation" as an indicator of a lack of economic diversity, where "a straightforward measure of economic overadaptation involves the degree to which a region's economic fortunes have become tied to a single industry" (1992:229). Many of the industries to which communities have overadapted have been subject to national and global policy and economic fluctuations, with these communities less able to maintain control over their local economies. Freudenburg (1992) uses the metaphor of an "addictive economy" to describe communities unable to break the habit of dependence on industries that have been the traditional mainstays of

the local economy. As Johnson notes (1993:3), “in recent years, rural communities have sought to diversify their economies to avoid excessive reliance on a single resource such as timber.”

All these researchers emphasize the value of a variety of industries and employment opportunities in a community. Regardless of whether a community’s economy is centered on a natural resource, such as timber, or on a large industrial plant, the lack of economic diversity is viewed as problematic for the community. Diversifying its economy can help a community minimize the damage caused by a downturn in any particular industry.

Resource Dependence

Many small rural communities depend on natural resources found on the land surrounding their communities. The resources can include forest products, mining and minerals, grazing and ranching, farming and agriculture, outdoor recreation and tourism, and commercial fisheries and aquaculture. Some communities depend on two or more natural resources. As noted above, the concept of resource dependence is closely related to the concept of economic diversity. In many communities dependent on a single industry, that industry is natural resource related.

Most of the definitions used for resource dependency are presented in economic terms (Machlis and Force 1988). The revised Economic Research Service (ERS) county typology (Cook and Mizer 1994) places counties in categories of resource dependency by percentages of total labor and proprietor incomes in those counties. (Although the ERS typology is a county typology, the definitions used are relevant for communities, as well.) An emphasis on economic definitions of resource dependency can result in the failure to adequately recognize and consider the social and cultural implications of resource dependence, as well as the noneconomic meanings that people attach to natural resource occupations (Machlis and Force 1988). Dependence, on single industries in gen-

eral and on natural resource industries in particular, has been linked with economic instability (Power 1994, 1996), and resource-dependent communities face the same problems as any community lacking economic diversity.

Many of the natural resources that communities in the Western United States depend on are associated with Federal lands. Changes in Federal natural resource policy therefore can have important implications for those resource-dependent communities. Given that the values of the larger society are changing, the public’s interest in how the public lands are managed is increasing, and concerns over ecological issues raised by resource production are growing. Changes in attitudes toward resource extraction, which is increasingly perceived as being ecologically undesirable, “is foreign to [the] traditions [of rural communities]; their jobs and businesses have depended on natural resources extraction and use” (Castle 1991:49). As a result, along with being subject to national and global economic changes, resource-dependent communities are now subject to the effects of significant changes in how the public views the management of public lands.

Attractiveness for Business

As the role of computers has increased and the communications infrastructure has been improved and extended into rural areas, businesses increasingly are relocating to areas where they want to be, as opposed to where they have to be. The physical beauty and other characteristics of many rural locations are a large major draw for businesses wishing to relocate, often from large cities (Barkley et al. 1991, Johnson 1993, Pulver 1989). In addition to scenery and small-town congeniality, these areas must provide the kinds of other services that companies need to do business and prosper. The greater the availability of a variety of amenities and services, the greater the attractiveness of rural communities.

The literature describes several needs and considerations important to firms wishing to relocate or to people interested in starting new firms in rural communities. Although access to transportation has long been deemed important for certain kinds of businesses (Pulver 1989), new kinds of business services, such as overnight delivery service (Malecki 1988), are increasingly considered a necessity. The availability of capital, of bankers willing to lend it to new ventures, and of tax breaks provided to attract new business also are key considerations (Fendley and Christenson 1989, Pulver 1989). Access to knowledge (Pulver 1989) and to technical personnel (Malecki 1988) traditionally has been a draw for new businesses wishing to relocate, and a well-developed communications and information infrastructure also is now cited as a critical business need (Dillman et al. 1989, Pulver 1989). Communications infrastructure, increasingly viewed as a necessity in the computer age, is linking businesses to their head offices, clients, and customers via fax, the Internet, and email.

Quality of Life

Quality of life refers to those factors that make a community either a safe, comfortable place to live or a tense, dangerous place. Quality of life is a catchall phrase of sorts that encompasses factors ranging from environmental features (clean air and water) to social support networks (the presence of friends and family) (Campbell and Converse 1972, U.S. Environmental Protection Agency 1973). For some time now, the concept of quality of life has been viewed as having many aspects that relate to a wide range of factors. As Campbell and Converse noted (1972:441) several decades ago,

The meaning of [quality of life] obviously differs a good deal as it is variously used but, in general, it is intended to refer either to the conditions in which people live or to some attribute of people themselves. The first case includes concern with pollution of the air and water, overcrowding in the cities, poor housing, the inadequacy of recreation areas, and similar aspects of

living. The second typically includes references to health, family stability, educational achievement, artistic and cultural concerns, and other such dimensions on which people differ.

Taking a similarly broad approach, the U.S. Environmental Protection Agency (1973) defined quality of life with six categories of environmental qualities contributing to it. These include a region's economic, political, physical, social, health, and natural environments (the last referring to pollution and toxic wastes). Included under these main categories are 31 component parts ranging from work satisfaction to toxicity and noise.

Pulver more recently focused on quality of life as it applied to local communities. He defined a high-quality living environment as (1989:6) "includ[ing] access to good schools, excellent health care, physical security, recreational and cultural opportunities, satisfactory housing and public amenities, clean air and an appropriately aesthetic setting."

Community Leadership and Effectiveness of Community Government

The assessment research distinguished between local government leadership and a more generic concept of community leadership. Local government leadership focused on the ability of local government to make plans and bring them to completion, to act according to the community's wishes, and to have the trust of community residents. The more generic "community leadership" referred to considerations of the effectiveness and leadership of nongovernmental organizations (e.g., the business community, service clubs, local unions) and nonlocal governmental agencies (e.g., the USDA Forest Service, Natural Resource Conservation Service), as well as of local elected officials. The availability and strength of local leadership significantly influences a community's ability to meet the demands of a changing world (Fendley and Christenson 1989, O'Brien et al. 1991). Effective leadership is more than simply electing a mayor, however, and it is important to

look at both the quantity and the quality of local leaders in determining how effective the leadership is likely to be in a given situation.

One major feature of effective community leadership is that it is broad based, including a number of different types of leaders (Lackey et al. 1987). Lackey and others assert that “healthy communities are characterized by broad based leadership in which many people have opportunities to perform leadership roles” (1987:10). Likewise, Poplin (1979) notes that leadership does not come from a single source (although elected officials often are in key positions of information gathering and decisionmaking). Rather, different people often lead in different situations. Poplin identified three types of leaders: institutional leaders, who hold a formal leadership position within the community (e.g., elected officials); grassroots leaders, who rise up to lead in some particular situations; and the power elite, who lead based on positions of wealth and influence (Poplin 1979).

A second important aspect of leadership concerns its quality and effectiveness. Walzer (1991:113) defines rural leaders as those who “attempt to influence or motivate others, to build problem-solving capabilities, in order to bring about social or economic change in a democratic environment.” It is important for people to feel as if their leaders are paying attention to what they have to say. Ayres and Potter (1984:14) state that “the more residents felt that town leaders listened to them, the more confidence they felt regarding the ability of community decision makers to deal with change effectively.” Effective leaders are ones who involve the community’s residents, listen to and respond to them, and work toward meeting the needs of all residents, rather than the needs of a powerful few.

Israel and Beaulieu (1990:182) also emphasize the importance of placing the community’s well being over that of the individual’s. They note that communities that act effectively on matters of local concern are graced with leadership that (1) involves a diverse set of actors in local decision-making activities, (2) operates on the basis of democratic principles, and (3) places the welfare

of the total community above the needs of any given special interest. Interestingly, O’Brien and others (1991) report that the experience of local leaders is an important factor: leaders who have successfully solved problems in the past are more likely to be able to do so in the future.

Local community governments differ in the degree to which they are effective. To the extent that cities and towns depend on processes of government for their maintenance and growth (Penn 1993), the effectiveness of local government plays an important role in determining whether a community grows or declines. In cases where leaders are elected officials, the effectiveness of these leaders becomes representative of the effectiveness of the local government. Warren (1972:231) warns that “delegated governmental authority...can become extremely insensitive to the wishes of the electorate, even to the extent of defeating or debilitating the efforts of newly elected officials who presumably have a mandate to change things.”

Community Preparedness for the Future

Not only are communities changing from within, but society also is constantly changing, and these changes can have major effects at the community level (Poplin 1979). Constant change necessarily results in a certain amount of uncertainty for communities trying to plan for their futures. By assuming a proactive rather than reactive role in looking at and shaping the future, communities can better deal with changes taking place locally, nationally, and internationally.

Most small, rural communities are fairly traditional socially and economically, reflecting a conservatism rooted in the small town way of life. Inherently, change in this way of life often is not viewed favorably, and some researchers have posited that the leaders in rural communities are generally more open to change than are other community residents (Ayres and Potter 1989).

It also has been suggested that “those rural areas that are prepared to evaluate the offering of nontraditional goods and services are the most likely to prosper” (Castle 1991:53). Castle notes

that “this does not mean that the traditional [extractive] industries will be abandoned” (1991:53), but it does suggest that a willingness to take chances and try new things is an important strategy for rural communities faced with change. Shaffer (1990:76) states that “a positive attitude toward experimentation” is an essential characteristic of an economically viable community. He further asserts (p. 85) that “the greatest asset communities have in their struggle to maintain economic viability is not distance, natural resource base, or current economic structure but their own creativity and insight.” In a key observation, Littrell and Littrell (1991:199-200) point out that “through a process of envisioning a future and asking what work needs to be performed or action taken, people can learn to anticipate the future and deal effectively with it.” Communities need to be proactive in creating the future they desire, rather than being at the mercy of changes over which they have little or no control.

Major Findings From the Literature on Social Impact Assessments

The literature review also identified some of the more important, relevant conclusions found in the literature on social impact assessments. The following points summarize these conclusions.

- Public participation in social impact assessments is essential.

In addition to the aggregation of data on the critical variables from secondary sources, a face-to-face exchange of information and ideas among active, involved community members was achieved with the workshop approach we used (reasons for this approach are detailed in the “Methodology for Assessing Communities” section, below). A wide body of research suggests that public participation in social impact assessments is more effective in both the long and short term than a hands-off, technocratic approach to collecting data. Taylor and Bryan (1990: 43), for

instance, observed that “the most effective practitioners of SIA [social impact assessments] have been those who have moved away from established work environments to undertake their work.”

The practical ramifications of the research approach taken here is that the local population is treated as truly being a source of expert opinion, especially in the case of unrecorded, undocumented information for assessing communities and their current situations. Residents can be lay experts about their communities. Local perceptions and attitudes, the organization of the community, and how its citizens think, perceive, and respond can sometimes be as important for understanding the potential impacts of a project as the details of the project itself (Branch and others 1982, Interorganizational Committee on Guidelines and Principles for Social Impact Assessment 1994).

The Interorganizational Committee on Guidelines and Principles for Social Impact Assessment (1994) point out the tendency to dismiss concerns of the local population as being imagined or perceived—as if they were irrelevant. Yet the positions of various interests are all formed by perceptions. How can officials and managers respond to them if perceptions are summarily dismissed? Dismissing a group or individual as emotional or misinformed only increases the resistance and conflict in a community over proposed or unfolding change.

Nonetheless, we realized it would be costly and of questionable value to sample all individuals in each of the communities examined. Equally important, we sought, through the assessment, the informed understanding of the particular structures and processes of small communities that some community residents simply would not have. Answers to many of the questions about communities were clearly beyond the knowledge of residents only superficially involved in their communities.

This is not to say that the widely divergent views of community residents are not valuable and important for understanding potential impacts: “Although individuals of different ideological persuasions can be expected to differ greatly over what they would prefer, such people can be expected to arrive at reliable estimates as to what will happen, regardless of their preferences” (Freeman and Frey 1986:236). This same point can be made about perceptions of general recent conditions in their community. The community assessment workbook and workshops for our research took advantage of this wealth of knowledge of lay experts and involved a diversity of community residents with a variety of experiences and perspectives on their communities.

- The extent to which rural economies are dependent on natural resource extraction is being questioned.

Changes that shifting demographics, evolving technologies, clashing values, and conflicts over resource uses have brought to the rural West are closely tied to the region’s shifting economic base and priorities. Traditionally, a common assertion has been that resource extraction industries are the economic linchpin of rural economies. Recently, however, some researchers have suggested that, with changing rural economies and the growing importance of retirement incomes, this assertion is no longer true for many economies (Power 1994, 1996; Rasker 1993, 1995).

Rasker (1993) examined what he calls the two myths about the Greater Yellowstone Ecosystem: (1) agriculture and the resource extractive industries are the region’s only basic industries; and (2) promotion of the extractive sectors is often deemed to be necessary and desirable, because all that rural communities have available to them is the timber, oil, gas, and minerals found on the land. Rasker concludes that retirement income in the Greater Yellowstone Ecosystem area is a larger part of the regional economy than grazing, mining, and timber combined. Furthermore, he warns that continued emphasis on resource-dependent and export-oriented development “places the local economy at the mercy of economic forces outside its control” (1993:117).

Johnson (1993) goes so far as to suggest that some rural Northwest communities resemble “developing countries,” where resource-management decisions are made by agencies or corporations headquartered elsewhere, resources are exported with little value-added processing, and much of the generated income flows out of local communities.

Power’s (1994) conclusions from his study of the North Cascades Ecosystem were similar to Rasker’s. He found that, in 1991, retirement-related income was 11 times as large as income derived from lumber and mining in the North Cascades. Power argues that healthy environments result in healthy economies, and environmental quality is anything but noneconomic: “The primary economic resource should be seen as the high quality natural environment, and extractive activities that threaten to degrade the environment should be assumed to be incompatible with local economic stability” (1994:12).

Power expands on this argument in his 1996 book. Even though the common assertion in the literature had been that resource-extraction industries are essential for rural economic survival, he and other researchers (e.g., Power 1988, 1994; Rasker 1993, 1995) assert another view: rural economies have been changing in fundamental ways, with traditional extractive industries decreasing in economic importance. This view postulates that much of the recent economic activity in the inland Northwest has been stimulated by environmental amenities (in particular, increasing recreation and tourism and in-migration of people relocating to areas with high amenity values) resulting in additional sales and jobs from outside the region (Harris and Robison 1993). Taken to the extreme, the view of some (e.g., Power 1988) is that the West’s economic prosperity depends on environmental quality: not only is the region’s prosperity uncoupled from resource extraction but it also may suffer when environmental amenities are reduced by commodity production. Recent analysis to support the validity of this thesis has focused on a regionwide perspective on economic analysis, rather than on the importance of traditional extractive industries in particular rural

communities. Importantly, analyses by researchers such as Power and Rasker typically have characterized only part of the current situation in the region. By focusing on the region as a whole and, in particular, on regional data from the U.S. Bureau of the Census on income and employment in the aggregate, their findings overlook significant differences in the varied and unique economies of small rural communities, focusing instead on broader trends in a larger region that includes rapidly growing population centers such as the Puget Sound, Portland, Boise, and Spokane.

The focus on this theory of regional economics to the exclusion of any competing view has been controversial (see, for example, Miller 1998). Although past forecasts of economic disaster may not be occurring on statewide levels,² the impacts of declining resource supplies in particular communities and individual industries cannot be disregarded. Also, some noneconomists have suggested that arguments of minimum impacts on rural communities are highly questionable (Lee 1991, Lee et al. 1991), especially where social and cultural disruptions are considered in addition to economic changes; e.g., some researchers note that economic changes also bring lifestyle changes that may be significant. As Krannich et al. (1994:52) suggest: "In some cases... alternative economic activities may be incongruent with the social meanings associated with resource use and the lifeways of some cultural groups." A purely economic analysis overlooks some impacts on certain occupational groups and individuals less able to change and adapt as their circumstances change (Carroll and Lee 1990:152).

² Significantly for the thesis proposed by researchers like these, the economic calamity forecast for the Northwest following the imposition of option 9 has never occurred. Egan (1994) reported in the *New York Times* that "three years into the drastic curtailment of logging in federal forests, Oregon, the top timber-producing state, has posted its lowest unemployment rate in a generation, just over 5 percent." The newspaper article notes that, although Oregon had lost 15,000 jobs in the forest industry in the previous five years, the predicted number was 100,000 job losses, and the state had gained 20,000 jobs in high technology, with workers being retrained for some of those jobs.

- Much of the social impact assessment literature focuses on social responses to a specific project and its consequences; FEMAT focused on the capacity of communities to adapt to an array of possible changes in forest management activities.

The FEMAT social science team termed the ability of a community to weather a change in Federal land management "community capacity." The panel it convened from Washington, Oregon, and California identified several factors that affected the capacity of a community to adapt to change, including but not limited to economic diversity (the most often mentioned), the degree of timber dependence (including employment and the availability of private timber), local leadership, location, history of community-based improvement efforts, community cohesion and conflict, civic involvement, local control of resources, community attitude, cultural identity, population size, and income levels (FEMAT 1993).

Unfortunately, the history of the literature on risks to communities has focused mainly on economic analysis (FEMAT 1993). The current research on the basin presented here acknowledges the importance of economic studies (this report includes an economic analysis of the region), but the community approach taken for this research reflects the concerns of the FEMAT investigators that economic analysis alone provides a narrow definition of how communities depend on natural resources. Timber dependence or any kind of economic or industrial dominance in a town, although important for some communities within the study region, was not the sole focus of the current assessment. The west-side analysis, it might be noted, concentrated on forest management issues and attempted to transcend simplified polarizations such as "owls vs. jobs" to explore how "communities are more than just bedrooms for wood workers" (FEMAT 1993:66). That assessment stressed that the connection of a rural community to natural resources is more than just a paycheck; it often has been the basis of the community's customs and culture.

Exploring these connections means that community assessment must move beyond easily measurable, objective data to subjective attitudes and perceptions such as measures of quality of life. Branch et al. (1982), for instance, recommend an approach to measuring social well-being that combines objective and subjective measures, including rates of the usual indicator behaviors, the access to resources by various groups, and the perceptions of community and individual well-being. In a similar vein, many of the factors that the FEMAT panelists identified as affecting community capacity have to do with the hard-to-define concept of “quality of life.” Branch et al. (1982:7) likewise suggest some factors affecting quality of life:

Among other things, these factors can include feeling a part of the community where you live; knowing where you stand in relationship to other people; having a sense that you and people in your community have control over the decisions that affect your future; knowing that your government strives to act in ways that benefit everyone equitably, rather than benefiting just a privileged few; living without undue fear of crime, personal attack, or environmental hazard; and feeling confident that your children will get a fair start in life.

Researchers with limited time and money can go only so far in measuring these factors within a community, but our assessment reflects concerns of Krannich et al. (1994) with the well-being and quality of life experienced by affected individuals, groups, and populations. Our assessment research shares their suspicion of reliance on easily measured social indicators, such as employment and income levels, crime rates, and divorce rates.

These kinds of concerns were integrated into our focus on key dimensions of community conditions (key constructs), the indices developed to

measure them, and the approach used to assess a community’s capacity to weather change (resilience of a community). Also, other kinds of connection and dependence, such as how community members value the special places in and around their communities, were examined, and the ways they form other components of community capacity or cohesiveness were considered. Central to our approach was development of an assessment process that extended beyond simplistic indicators to measuring key community constructs—one that reflected and incorporated the results of the literature review summarized above.

- Social impact assessments need a temporal component.

A shortcoming of many social impact assessments is that they are conducted before the start of a project but not throughout the life of the project (Geisler 1993, Gramling and Freudenberg 1992). Variables, including Federal policy, changing regional developments, human populations, land ownership, land value, and human values (Geisler 1993), can change over the life of a project and in the long term. A change in any one of the variables can significantly alter the impact of a project or policy change. Also, the impacts of a project or policy can begin at the time a project or policy is initially proposed and at any time during the actual implementation of the project or policy (Gramling and Freudenberg 1992).

Our assessment examined a variety of communities and provides a snapshot of them at one point in time. It does not forecast the potential impacts of any particular policy or project on the communities, but rather provides an overview of the current situation for those communities. Nonetheless, by examining many communities in different stages of development, the temporal issue raised here could be addressed. Such an analysis, however, was beyond the scope of this research.

Methodology for Assessing Communities

Introduction

Our assessment of communities, as initially conceived, focused on the sociodemographic, cultural, and civic aspects of the rural towns in the region. The research also analyzed secondary data on the total population of 387 rural communities in the region; these data included estimates of population characteristics from the 1990 census, as well as 1992-94 state population projections.

Economic conditions in these communities were approximated through resident perceptions of the economic diversity of their communities and their dependence on various resource-based industries. Other kinds of information on the economies of the individual communities were not initially available (such as employment or income estimates for particular economic sectors), although the value and significance of obtaining this information at a community level for the entire region were recognized partway through the research process.

Details of the methods used for the assessment can be found in a companion publication.³ It provides examples of the materials developed for the research (i.e., workbooks, other forms, instructions), and it describes the procedures developed and applied in the use of those materials.

³ Harris, C.C.; McLaughlin, M.J.; Brown, G. A detailed methodology for assessing characteristics and conditions of small rural communities. Manuscript in preparation.

The Community Self-Assessment Study

Developing a Strategy for Sampling Communities

Originally, the scope of work outlined for the rural community assessment was to identify counties in the region whose populations are growing the most, along with counties declining the most. To keep the number of assessed communities to a reasonably small number, the research was to focus on two communities from each county for study, for a total of 40 communities.

The specified reliance on counties eventually was abandoned as a frame of analysis with the recognition that political boundaries have little to do with sociocultural, economic, or resource-management factors. The focus was shifted to the communities themselves, and a list of the 40 fastest growing and fastest declining communities was generated. This change, however, led to another consideration: What about communities whose population remained constant? A third category of communities having this kind of minimal population change was added. Three categories of communities would be sampled, 20 communities from each category, for a total of 60 communities.

This approach led to a lopsided selection of communities that could not represent or allow generalizations about the region. For instance, the

declining communities consisted mainly of communities with populations less than 100 people, where a relatively minor loss of population can have a significant effect on any percentage of change in population.

The sampling strategy based on population change therefore was abandoned. Instead, a research design based on a simple random sample, without considering population change, was developed that would yield a representative sample of communities from across the region, with random variation in populations and other characteristics. This research design required a sufficiently large sample of communities from which inferences could be drawn and generalizations made about all communities in the study area.

A final issue considered was the inclusion of census designated places (or CDPs), which are unincorporated communities comprising densely settled concentrations of population that are identifiable by name but are not legally incorporated places; examples are suburbs of cities or towns within American Indian reservations. To qualify as a CDP for the 1990 census, an unincorporated area must have met the following criteria (in all states except Alaska and Hawaii): 1,000 or more persons if the CDP is outside the boundaries of an urbanized area delineated for the 1980 census or a subsequent special census; 2,500 or more persons if it is inside the boundaries of an urbanized area; and 250 or more persons if it is outside the boundaries of an urbanized area delineated for the 1980 census and within the official boundaries of an American Indian reservation recognized for the 1990 census. Although the Bureau of the Census has identified and delineated boundaries for CDPs since 1950, these boundaries have no legal status, and they also do not have officials elected to serve traditional municipal functions. It was decided that CDPs that were suburbs of cities would not be sampled in the present assessment, based on the assumption that the fate of a suburb of a city—Spokane, for instance—would rise and fall largely with its city and not, as with a smaller,

isolated community, on its own. Given that CDPs are unincorporated areas, the only ones included in the present study were those associated with towns on reservations.

The sampling element that was finalized for the study, then, was the community. Thus, the present research focused on the 387 small rural communities in the interior and upper Columbia basin that were incorporated towns with populations estimated to be less than 10,000 residents in 1995. To ensure statistical significance and an adequate number of cases to conduct multivariate analyses, a sample was needed of as many of those communities in the region as possible. Half, or about 194 communities, were targeted as a reasonable number given potential budgeting and logistical constraints. These communities were selected randomly.

Development of the Community Self-Assessment Process: What and Why?

We recommend that further region-wide assessment should include a community self-assessment component. Self assessment is a logical part of any mitigation measure as it will reflect the values of people living in the communities; provide a vehicle for integrating local knowledge in policy decisions; and contribute to a sense of community-level ownership in the resulting recommendations...self-assessment may prove beneficial by stimulating dialogue about local conditions among locals that can lead to community self-development.

FEMAT (1993:75)

Because of time constraints, the FEMAT social assessment team was limited in its assessment of communities to a survey of extension agents to gather information about the communities they worked in and around. For our assessment, we visited the study communities and learned directly from opinion leaders about their communities: these opinion leaders were lay experts active and involved in their communities and possessing

a good knowledge of the workings of their communities and attributes, such as politics, history, businesses, and social cohesiveness. As an analogy, it likely would be difficult to hold a meeting of citizens to obtain specific expert medical or legal information, as opposed to a meeting with a group of doctors or lawyers. In our approach, insider insights and informed judgment counted for something.

We decided, then, that the most effective and efficient way to involve the local public was to organize focus groups comprised of an optimum number of these community opinion leaders representing various backgrounds and viewpoints. This approach would enable the opinion leaders to express their views of themselves and where their communities were going from a broad range of backgrounds and viewpoints within that community. The information sought from these groups, then, was not observable, recorded data, but the perceptions of community members and their beliefs about their community's situation. As Branch et al. (1982:36) note,

Residents' perceptions often do not correspond exactly to objective changes, but perceptions can have a powerful influence on individual and social action. If people perceive that they do not have access to resources, for example, they can be as closed off from the resources as if a formal system blocked their availability.

A community self-assessment workbook was designed to enable community members to dispassionately describe the characteristics of their communities and the changing conditions in them in a careful, thoughtful, balanced way. There are a number of sound reasons for seeking this insider perspective. Common sense suggests that active, involved community members will know their community best and are the best source of information. The researchers, moreover, can have their own set of outsider's assumptions and biases about the functioning of different communities. As Palinkas et al. (1985:15) caution,

Unless the investigator can take into account his own culturally constituted set of theoretical and methodological limitations, he can never hope to understand the present pattern of social relations or make projections concerning future changes in the social, cultural, economic, and institutional life of the communities. In order to secure this understanding and make projections with any confidence, an insider's perspective is necessary.

Neutral investigators can play an important role in gathering a variety of opinions about a community, facilitating the sharing of information, and filtering through the various viewpoints within a community. Although community members may, of course, have their own viewpoints and perceptions, they are the views and understandings of insiders, of actively involved community members who are the most knowledgeable about their communities. As Branch et al. (1982:8) observe, in addition to knowing what changes will be occurring, "it is also necessary to know what those changes will mean to the people who will be affected by them."

It is unclear why anyone from the communities would accept results about local communities if at least some of the local lay experts weren't consulted. "People will not support what they don't understand," Clark and Stankey (1994:35) observe, "and they cannot understand that in which they are not involved." Who could blame a community for being suspicious about a study conducted from afar that treats them as little more than demographic data, or where outsiders discuss with outsiders what must be occurring in that community?

The Community Self-Assessment Process: How?

In sum, the community self-assessment study was the major primary-data collection effort for the assessment research. For each of the 198 small towns sampled, we organized a focus group targeted for composition of eight different kinds of residents. The residents asked to participate were

knowledgeable, active opinion leaders identified by fellow residents in each community as best representing eight specified categories of interests, specialties, and perspectives, including local government, education, health and human services, and business.

A modified snowball sampling design was developed and applied, whereby five people in each community (including the city or town clerk, an elected official, the Chamber of Commerce executive or administrative secretary, an officer in a major civic group, and the superintendent of schools or a principal of a school in town) were asked to provide a list of people to fit the specified categories (some provided more than one name for each role, and others provided names for certain roles only). The people whose names were provided also were contacted and asked to provide a list of eight, until five names for each category were identified. The person mentioned most often for each role was asked to participate in the assessment.

Although it was not always possible to find someone for each category in some of the smaller communities, we included as many of them as possible. This factor of finding willing participants was an important one. It was not always easy to find people identified as being active and involved who were willing to donate the effort and time needed to participate in the workshop process, much less uninvolved, or even apathetic or otherwise occupied, people. Occasionally, even some of these involved, committed people would agree to attend a workshop but then would not do so. It thus is likely that residents already less involved than others in their community would be even less likely to agree to participate in a time-consuming process or even a community workshop. Indeed, people less knowledgeable about their town would likely be much less motivated to participate in a workshop.

Each workshop was facilitated to gather and synthesize information about a sample community on the basis of responses to the community self-assessment workbooks completed before the workshop. The workbook responses provided

information on the perceptions and insights of 1,350 active and involved community members across the 198 communities.

Each participant in the assessment was asked, first, to fill out the community self-assessment workbook (which took about an hour to complete). The purpose of the workbook was to help community members describe the characteristics of their communities and their aspirations for their towns, providing indepth information on 13 key constructs depicting their town's situation in terms of various dimensions of characteristics and conditions. The key constructs were:

- Attractiveness of the community
- Attractiveness and amenities of the region surrounding the community
- Community attachment (personal attachment to the community)
- Community cohesiveness (sense of community)
- Adequacy of community services
- Community autonomy
- Economic diversity
- Resource dependence
- Ability to attract business
- Quality of life
- Strength of the community's civic leadership
- Effectiveness of the community's government
- The community's preparedness for the future (regardless of whether residents wanted their community to change or remain the same)

The workbook was an instrument to obtain ratings for the key constructs. Its format was a series of questions for each construct. Each section was organized in the same general way: Most sections began by asking an open-ended question related to the central dimension of a particular construct to help the respondent start thinking in broad terms about that dimension of their community. Then, a series of more specific questions were asked by using seven-point, bipolar scales to

elicit quantitative ratings of the community on specific aspects of that dimension. A more general, multiple choice question with descriptions of alternative options was then asked whose purpose was to help respondents think about how they would describe their community on that construct in general terms. Finally, a standard seven-point scale to measure the overall key construct was presented to obtain an overall rating for it. In most cases, the question set alluded to the questions just answered: “Keeping in mind the answers you have given above, how would you rate the ___ in your community?”

After completing the workbook, the community participants attended a 2-hour community workshop to discuss the answers given individually in their workbooks. The purpose of the workshops was to bring together a focus group representing the diversity of knowledge and perspectives within each community and explore the depth and complexity of conditions within the community. In the workshop, community residents met with one another to share and discuss the answers. Comparisons of their comments and the results were used to aid the group to better describe their community. After discussing their ideas and information, they were asked to rate the 13 key constructs a second time.

Thus, rather than simply aggregating the individual ratings of community members on the key constructs for each town, the workshop was conducted so that the members themselves could provide a group rating after sharing ideas and information. Some members of the workshop might have more information on a variable or know more about factors affecting it (for instance, an economic development official might have greater knowledge about the community’s economic diversity). In other cases, a participant might remind others of something they had not considered in rating a variable. The role of the workshop facilitator was to clarify the questions in the workbook, ask participants to discuss their individual rating for each construct variable, and conduct the group rating. The intention in this process was not to compel the group to reach consensus, although this sometimes happened.

The goal was to facilitate the sharing of information and ideas that might affect an individual’s rating of a construct variable and ensure a group rating that was as reliable and valid as possible.

Assessment of Community Economies

The economics group for the ICBEMP social assessment team decided early in the assessment process that regional information on the area’s economy would be sufficient for its analysis. Although the value of data on the economies of each of the communities was recognized, the collection of these data was incorporated into the study only later in the research process. Consequently, the assessment of community economies that eventually was conducted was somewhat constrained by time and resources available.

Profiles of the Economic Structure of Rural Basin Communities

The economic assessment of the region’s communities (cities and towns) provided profiles of the economic structure of each of the 476 communities and CDPs in the region. These profiles consisted of estimates of the proportion of total employment in a community attributable to each industrial sector contributing to that community’s economy. The profiles were based on an inventory of all firms, businesses, and agencies in or otherwise affiliated with each community. For the purposes of the profiles, all employment in these job-producing organizations was attributed to a community if the firm or agency had its address in the community.

Trade, service and professional businesses, and government offices typically are located physically in a given community, and their employees are likely to reside in that community. Primary producers, secondary processors, and other manufacturers, however, may have their address in one town but have a plant located between it and one or more other towns and employ residents from all of them. Likewise, farmers and ranchers may have farms and ranches located some distance from the town where they get their mail and

socialize, and most of their economic activity (i.e., their purchasing of goods and services for both business and household and their selling of their produce) takes place in trade centers or “central places” further up the trade hierarchy from these “home towns.”

The data in these profiles, therefore, do not represent the results of economic base or economic impact models. They represent the economic base of a community only in a very rough way, in that a town’s economic base depends to varying degrees on primary producers and secondary processors located beyond city limits (one could theorize that the closer a mill or plant is to a town, the greater its likely contribution to that community’s economic base, although this was not investigated here). Given the interconnectedness of industrial links across communities, and the important role of central places in trade hierarchies that are especially relevant in rural regions such as the study area, the economic importance of primary producers and secondary processors for a given town cannot be surmised from our data. The data also do not indicate what the impact on the town would be if a plant or mill closed. Different small towns located in farming country, for example, might be impacted to various degrees and in various ways if, say, the multitude of small family farms and ranches in the area were consolidated into one or two large ones, as has been the trend in recent decades. Nonetheless, the data compiled and reported here provide a rough indicator of importance of various industries for specific towns and thus provide a starting point for further economic analysis.

The profile of employment for each of the 476 communities (cities and towns) and CDPs in the region provided a representation of the economic structure of these communities. These data, (estimates of the proportion of a town’s total employment attributable to each industrial sector contributing to that town’s economy) were developed in collaboration with University of Idaho economists (see, for example, Robison 1998, Robison and Peterson 1995). These data provide a profile of each community’s economy in terms of 22 categories of industrial sectors: agriculture, agricultural services, wood and paper products

manufacturing, food processing, miscellaneous manufacturing, sand and gravel mining, other mining, construction, public utilities, communication, business and personal services, transportation, wholesale trade, retail trade, food and beverage, lodging, amusement and recreation, medical and social services, Federal Government, state and local government, and finance, insurance, and real estate.

These major categories represent an aggregation of all industrial activities included under the subcategories for each standard industrial category (SIC); e.g, the major category of wood and paper products manufacturing includes lumber milling, paper milling, and logging activities among the various subcategories of industrial activity that the main category represents.

This data set represents an updating and disaggregation of 1992 employment and earnings data from the U.S. Bureau of Economic Analysis REIS (Regional Economic Information System; 1994) and the Forest Service’s IMPLAN data (REIS data updated and estimated at the county level for all counties in the study area; see Robison 1998). These data were resolved and allocated to all communities (towns, cities, and CDPs) in the region. This disaggregation was completed by using local sources such as phone listings for businesses (InfoUSA, Inc. 1995) and recent directories of businesses for the relevant states. (For a discussion of the methods used and their theoretical basis, see Robison and Peterson 1995.)

The only addition in the current research to the methodology described by Robison and Peterson (1995) was the ground-truthing of the employment estimates through interviews conducted by telephone with city clerks, U.S. Postal Service employees, county extension agents, and representatives of major businesses for each town. This ground-truthing updated the employment data to the extent possible to the first quarter of 1995, so that it would be temporally consistent with the period when the community assessments were conducted. This consistency ensured that valid comparisons between the results of the two databases could be made.

Travel and Tourism Employment

The sectors above did not include estimates of employment for the travel and tourism industry. Consequently, although estimates of employment attributable to other resource-related industries were available for comparison, this was not the case for employment related to outdoor recreation, travel, and tourism. Yet much of the employment in travel and tourism is directly resource linked, as in the case of economic activity resulting from recreation trips to the natural resources in the region. Part of this travel and tourism employment also is indirectly resource linked, as in the case of business travel by firms in various resource-linked industries.

In the present analysis, a rough estimate of employment attributable to travel and tourism was obtained from an indirect measure based on an economic base technique applied at the level of the small community: the minimum requirements approach (Tiebout 1962; Ullman and Dacey 1960, as cited in Tiebout 1962). This approach to estimating the economic base of a community focused on redistributing the proportion of employment in the communities initially attributed to other sectors that could be attributed to the travel and tourism sector.

As Tiebout (1962) explains, this approach assumes that a minimum amount of employment in a given sector of a community's economy can be attributed to local requirements (nonbasic employment), with the remaining employment attributable to the production of exported goods or services (i.e., basic employment). In the case of travel, tourism, and recreation, for which key sectors include lodging, food and beverage, retail trade, and amusements, an estimate of the contribution of this industry to a community's economy can be derived from estimates of the basic portion of employment in these travel and tourism subsectors. All lodging employment could be assumed to be basic (scarcely ever do residents of a town stay in the motels, hotels, etc., in their own town), while the contributions of residents

to the other sectors needed to be estimated. Once the local requirements for consumption of food and beverages, retail trade, and amusements were determined in proportion to each town's total employment, these proportions for each sector were subtracted from the proportion of employment for that sector in each town. The remainder could then be attributed to either basic employment or the travel and tourism sector. Thus, the proportion of employment in the travel and tourism sector was the sum of the proportions attributable to basic employment for all the travel and tourism subsectors.

For our research it was assumed, following Tiebout (1962), that the smallest communities of the basin might not be typical of either the location or the economies of the target population of rural communities. Accordingly, the smallest 5 percent of the basin's communities were excluded from the analysis of minimum requirements for employment in the sectors under consideration. Next, to calculate a town's minimum requirements, the mean proportion of employment in each of the travel and tourism subsectors for the remaining towns was calculated, along with a display of these proportions by quartiles. After the lowest quartile proportions were compared with the mean proportions for the subsectors, it was decided that the former proportion (i.e., the cutoff proportion for the 25 percent of the towns with the smallest proportions of employment in a given subsector) would provide the more sound and conservative estimate of nonbasic employment needed to meet local service needs.

A constant proportion of employment representing the local requirement for consumption in each of the food and beverage, retail trade, and amusement subsectors was determined, and each of these constants was subtracted from employment for each sector in each town. As table 1 shows, these constants included 2 percent for the food and beverage subsector, 6 percent for the retail trade subsector, and 1 percent for the amusements subsector.

Table 1—Estimated mean proportion of total employment in rural Columbia basin communities that is attributable to the travel and tourism sector, with mean proportions of total employment attributable to basic and nonbasic employment for subsectors

Sectors of travel and tourism	Total employment	Nonbasic employment	Basic employment
	<i>Percent of jobs</i>		
Lodging	2	0	2
Food beverage	6	2	4
Retail trade	11	6	5
Amusement recreation	2	1	1
Total			12

The remainder then could be attributed to basic employment, or the travel and tourism sector. The average “excess” proportion of total employment, or basic employment, across the small rural towns in the basin included 2 percent for lodging, 4 percent for food and beverage, 5 percent for retail trade, and 1 percent for amusement and recreation (table 1). When these percentages for basic employment in these subsectors were totaled, they provided an estimate of an average of 12.2 percent of total employment attributable to travel and tourism across all rural communities in the region.

Because the estimation of travel and tourism employment lumps both recreational travel (outdoor recreation, tourism, etc.) and business travel together, the comparability of the travel and tourism sector with, say, the outdoor recreation and tourism industry assessed in the community self-assessment workbooks was somewhat limited. The travel and tourism sector actually was most closely related to the workbook question asking the extent to which an economy centered primarily around retail stores or tourism services.

Surveys of Residents of Chelan County and Significant Change Communities

A representative survey of residents of Chelan County, located in central Washington, was conducted to assess the opinions and attitudes of one county’s residents about growth and resource

management issues in a rapidly growing county. Following Dillman’s (1978) survey procedures, a mail questionnaire was used to collect data from a population defined as adult representatives of all households in the county. A total of 700 questionnaires was sent to a sample of residents randomly selected from local phone books. Eight were undeliverable. After two questionnaire mailings and a postcard-reminder mailing, 222 completed questionnaires were returned, for a response rate of 32 percent. These data provided useful insights into the preferences and concerns of residents in a county typical of those in the interior West experiencing significant population growth and community development.

A fourth component of the assessment research was to examine and analyze the characteristics and experiences of 145 communities in the regions identified as “significant change communities.” These communities were indicated as undergoing major change by (1) state economic development officials, agricultural extension experts, and Forest Service forest planners or economic development coordinators; or (2) U.S. census population estimates of changes of ± 20 percent since 1980. Data collection on these communities focused on identifying the kinds of changes occurring, the kinds of community responses, and the effects or characteristics of all these factors in terms of community conditions, activities, and lifestyles. A random sample of 80 of the 145 communities indicated them to be

significant change communities, which were surveyed about the major changes affecting them and the impacts of these changes and their response to them. Initial contacts were made with city clerks, who were asked to suggest the name of the person who would have the greatest knowledge of the changes the town had experienced and its response to them. The survey was conducted with a structured telephone interview of this representative of the town.

The primary purpose of collecting these initial data was to better identify communities to study as part of the indepth case studies of 10 towns also conducted as part of the assessment, as well as to better understand factors or variables to consider in those case studies. The findings for the 10 communities identified as having undergone major changes in recent decades of the kinds most prevalent in the study area are reported elsewhere (Harris 1996). Harris describes the indepth case studies of these communities, which focused on gaining greater understanding of the major changes influencing a diversity of communities, the impacts of those changes, and responses by the community.

Analysis and Presentation

Quantitative data were gathered for the assessment and were analyzed statistically with the “Statistical Package for the Social Sciences”

software (SPSS, Inc. 1989). Univariate analyses were performed on the census data, economic profiles, and data obtained at the community workshops. Mean values for relevant variables are presented in the following sections of this paper.

Where the data analyses presented here were from the community self-assessment, they represent a community’s overall response; i.e., the community is the unit of analysis. In the case of continuous data collected with numerical scales, the data reported in the following sections are the mean values of the workshop responses. Frequencies for the nominal-level data were obtained from the workbook results for all 198 sampled communities. Where only one value is reported for these kinds of data, it represents the mode for responses from the workshop participants. The initial results of the survey of significant change communities also are presented in tabular form.

Multivariate analyses were performed on continuous data with one-way analysis of variance (with appropriate posthoc tests of difference), stepwise regression, and cross-tabulations (with appropriate tests of strength of relationship). The level of statistical significance used was $p < 0.05$.

An Overview of the Status of the Rural Communities in the Basin

Introduction

This chapter describes some of the initial major findings of the rural community assessment. Given the extensiveness of the data collected, this paper focuses on providing an overview of the status of small rural communities in the basin and the influences of public land management on the region's rural communities. Further analysis and reporting will explore the full breadth and depth of these data and their implications for understanding the region's rural communities.

Gathering and Analyzing Community Scale Social Data

Various possible levels of scale for studying human beings and their sociocultural and economic organizations and processes were considered in the assessment research. Units for such an analysis can be based on levels of social organization and everyday human activities—individuals as well as collectivities, geography, and political boundaries. Levels of social collectivities include groups of individuals in service clubs, civic groups, and special interest groups, and the locus for each of these groups and their activities can range from the local level to state, regional, and national levels. Commonly recognized levels of social organization based on geography and human activities range from households to neigh-

borhoods, communities (towns and cities), counties, multicounty regions, and states.

Communities were selected as the most appropriate unit of analysis primarily because towns and cities typically are the center of daily life for most people living in rural America. Rural communities are the places where individuals and groups of individuals carry on much of their work, play, and civic activities as well as the places where they go for services important in their lives (school, church, shopping, health, sports, and recreation). Because of these important factors, social scientists studying social groups (for instance, sociologists and anthropologists) most often focus on the community as the primary unit of analysis.

Results of the Chelan County survey are instructive here. The analysis of that survey confirms that, although 38 percent of county residents lived outside a recognized town or city, most (79 percent) felt that the town or city where they collect their mail was a somewhat to very important aspect of their lives. Only 18 percent of those surveyed rated the community where they collect their mail as being only slightly important in their lives. These results affirm that, although many residents of a county live outside the city limits of any town or cities, nearby communities are important elements of rural living for all but a small segment.

Table 2—Population changes in 3 communities in Wallowa County, Oregon

County and communities	1980 population	1990 population	Population change (1980-1990) ^a	1994 population	Population change (1990-2000) ^a
			<i>Percent change</i>		<i>Percent change</i>
Wallowa County:	7,273	6,911	-5	7,200	10
Enterprise	2,003	1,905	-5	1,935	5
Joseph	999	1,073	7	1,165	21
Wallowa	847	762	-10	755	-2

^a Straight-line projections based on 1990 and 1994 population estimates obtained from the Oregon Center for Population Research and Census (1995).

A secondary reason for choosing the community as a scale of analysis for an assessment is that higher levels of scale can always be examined by aggregation of community data, which themselves represent the aggregation of individual and household data. The primary locus for the relationship between residents of rural areas and place is the community. Rural towns are sufficiently small that neighborhoods are not the meaningful unit of analysis that they are in larger cities. County-level activities and responses can be examined by aggregating community-level data, but county-level aggregation cannot depict the differences in characteristics of different communities within a given county or the impacts of Federal, state, and county policies on them. Further, communities are composed of both the individual residents and the social groups they join or become a part of, and an accurate understanding and description of communities requires data on these elements.

The results of our research confirm that, in many places, social conditions and key changes in those conditions, when depicted at the broader level of counties, mask important differences in those conditions and changes across communities. For instance, the population of a county and its growth may not represent the situation for towns within that county, as in the example of three rural communities in Wallowa County, Oregon (table 2). As table 2 shows, changes in past and future trends in, say, population clearly differ by community and are not reflected in county-level data.

The economic links among communities in different counties and even different states may be equally significant. An initial analysis of the social networks linking communities confirmed that these networks are as important as political and economic ties. Thus, the issue of scale underscores that the county as a sociocultural reality may not be meaningful for many residents and thus not as relevant a unit of analysis.

A final reason for the focus on small towns relates to policy development and its real-world consequences. Many people are concerned about the impacts of resource planning on their communities, as well as on individuals, families, and a region's customs and cultures. During the 1980s, when significant impacts of changes in Federal resource management began to be felt in communities, the focus of resource management reflected the concerns of communities in transition and the concept of community stability. Although many people may not want to return to the kinds of conditions that resulted in the boom-and-bust cycles once characterizing many communities in the American West, the reality is that rural communities will continue to evolve and change. Accordingly, it is important to remember that any description of a community's characteristics and conditions is a snapshot of its situation at one point in time and the context in which that particular situation unfolded. Looking at the recent past and current conditions surrounding a particular situation can provide a better understanding of where a community has been and where it seems to be heading.

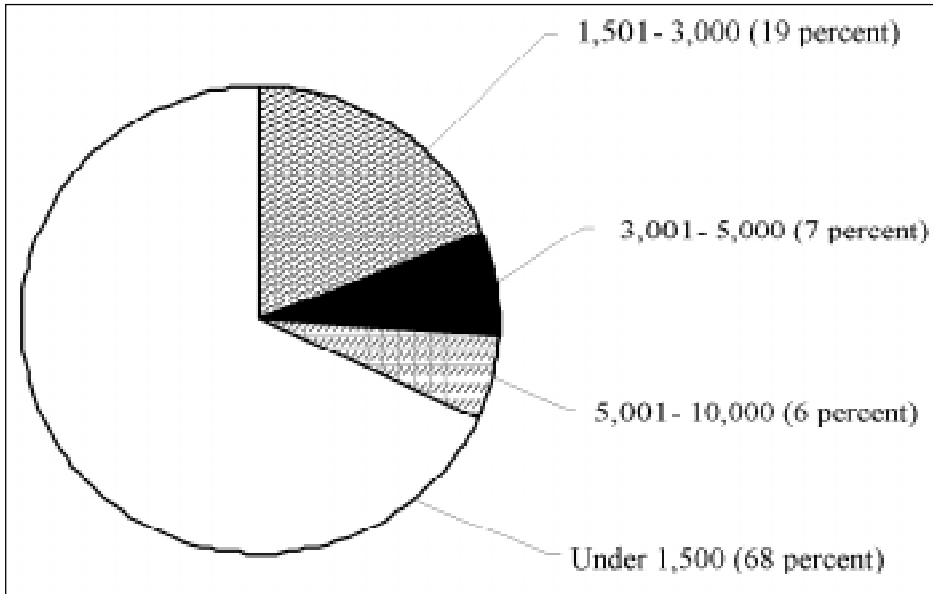


Figure 1—Population size of rural communities across the Columbia basin with size class proportions.

Most Rural Communities Are Small

At the time the research was being conducted in the region, the 387 small rural communities ranged from 26 to 9,760 in population (1992-94 population estimates). Differences in the communities based on their population size were analyzed for a subsample of 198 towns by categorizing communities into one of four population size classes: towns with fewer than 1,500 people; 1,501 to 3,000 people; 3,001 to 5,000 people; and more than 5,001 people (fig. 1).

As figure 1 displays, the majority of the towns had fewer than 1,500 residents (68 percent) and were classified as rural villages by Johansen and Fuguitt (1984). Within this class, communities ranged from 22 to 1,500 people with an average of 520. The second class of towns ranged from 1,501 to 3,000 residents. These communities comprised 19 percent of all communities in the basin, with an average size of 2,162. The third largest class, which ranged from 3,001 to 5,000 people, accounted for 7 percent of the communities and were on average 3,974 in population. The remaining 6 percent of the communities were in the largest class, ranging from 5,001 to 10,000 people, with an average of 7,087.

The Geography of the Communities

The role of geographic location in characterizing communities and assessing community resilience was considered in the analysis of the community data. The selection and study of a large random sample of towns across the region ensured an assessment representative of the entire basin. When analyzed by state boundaries, the survey of 198 communities indicated that the largest proportion of small rural towns were in Idaho (41 percent, or 81 towns), with major proportions in eastern Washington (28 percent, or 55 towns) and Oregon as well (23 percent, or 46 towns). A much smaller proportion of small towns were in western Montana (7 percent, or 14 towns) and Wyoming (1 percent, or 2 towns).

The Forest Service denotes major geographical regions based on the ecology of the landscape by classifying regions into ecological reporting units (ERUs). These ERUs are aggregations of individual watersheds within major ecosystem types. Thirteen ERUs, some spanning parts of two or more states, were identified for the study area (fig. 2).



Figure 2—Distribution of rural communities across ecological reporting units (ERUs) in the Columbia basin.

In terms of the largest number of rural communities within different ERUs, the most significant unit was the Columbia Plateau ERU, where more than 32 percent of all the communities were located. Another 15 percent of the region’s rural communities were in the Northern Glaciated Mountains ERU, 9 percent were in the Owyhee Uplands ERU, and another 9 percent were in the Blue Mountains ERU. The Central Idaho Mountains ERU followed closely with 8 percent of rural communities, and the Upper Snake, Snake Headwaters, and Lower Clark Fork ERUs had the next highest numbers of rural communities, with between 5.1 and 6.1 percent. The Northern and Southern Cascades, the Upper Clark Fork, and the Upper Klamath ERUs accounted for the remaining communities in the region with between 2.0 and 3.5 percent. Only a few communities (0.5 percent) were located in the Northern Great Basin ERU.

Characteristics of Participants in Community Self-Assessments

The characteristics of residents who participated in the community assessment workshops were analyzed and the results compared with those from the survey of all Chelan County residents. This comparison was based on the assumption that similarities between the characteristics of the general populace of a randomly selected county and those of the workshop participants would minimize concerns about how representative “opinion leaders” were of other citizens in their communities. As discussed previously, a concern of people who reviewed and commented on the assessment methodology was that the participants selected may not have adequately represented the residents of their communities or those residents

living outside the city limits (many residents live outside an incorporated town, and they can comprise the majority of people living in a county). A major objective of the survey of Chelan County residents was to address these concerns and, to the extent possible, assess their validity (see Krull 1995).

Data collected on characteristics of the workshop participants showed that 43 percent of participants were female and 57 percent were male. The average age was 51, with ages ranging from 23 to 94 years and a median age of 49 years. Individuals aged 40 to 60 years old constituted the largest age class, with nearly 60 percent of all participants. In addition, a greater percentage of older individuals (over 60 years of age) participated in the study than younger ones (less than 30 years of age). Similarly, the mean age of Chelan County respondents was 53 years old, with the proportion of males and females found to be 53 and 47 percent, respectively.

Consistent with the age of the workshop participants, about 37 percent of the participants had lived in their community for 25 years or more. We targeted relative newcomers to elicit their perspectives as well. About 21 percent of the workshop participants had lived in their communities 5 years or less. In addition, workshop participants also represented a number of practical and philosophical perspectives that differed with occupation and civic activity within their community. To identify their ideological perspectives, workshop participants were asked to rate themselves on a scale from 1 (liberal) to 7 (conservative) that allowed them to define these concepts themselves. The resulting distribution was skewed toward the conservative end of the scale with a median rating of 5 and a mode of 6 (see fig. 3). Similarly, the same mean and median were obtained for the Chelan County residents, affirming the ideological representation by the workshop participants of other residents.

Workshop participants also were asked to select the one category that best reflected the role or position in their community or the perspective

they brought to the workshop. As figure 4 shows, the two largest segments were elected officials (272, or 20 percent of all participants) and business leaders (271, or 20 percent). Other roles represented by the participants included educational leaders (171, or 13 percent), civic group leaders (117, or 9 percent), retired individuals (44, or 3 percent), self-identified environmentalists (40, or 3 percent), and individuals involved in the community health services (38, or 3 percent). The remaining 29 percent of workshop participants were “other leaders” and people of miscellaneous backgrounds and perspectives, including farmers, ranchers, firemen, policemen, appointed city officials, community volunteers, and individuals active in church affairs.

The gross household income of workshop participants ranged from less than \$5,000 (0.4 percent) to more than \$100,000 (6.7 percent). Most participants’ household incomes fell within the \$25,000 to \$34,999 range (21.5 percent), the \$35,000 to \$49,999 range (22.0 percent), and the \$50,000 to \$74,999 range (22.8 percent).

Perceived Characteristics and Current Conditions

The geography and ecology of the landscape are important for describing communities in the basin and understanding differences and similarities in their characteristics and experiences. The geography of these communities in large part predetermines their economic base and thus their economic structure. This condition along with location and interrelations with other communities underlies a community’s way of life and subsequently its social condition. In many cases, this geographic basis for community characteristics and conditions transcends political boundaries (e.g., counties and states) and, in some cases, several ERUs. Based on geography alone and the attendant uniqueness of each community, the community becomes the scale for understanding the varied characteristics and conditions in the region.

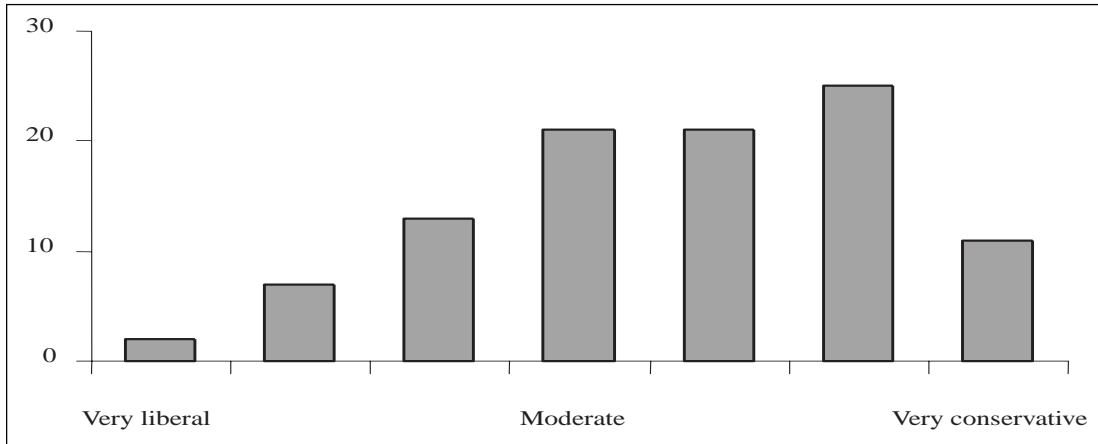


Figure 3—Ideological perspectives of workshop participants.

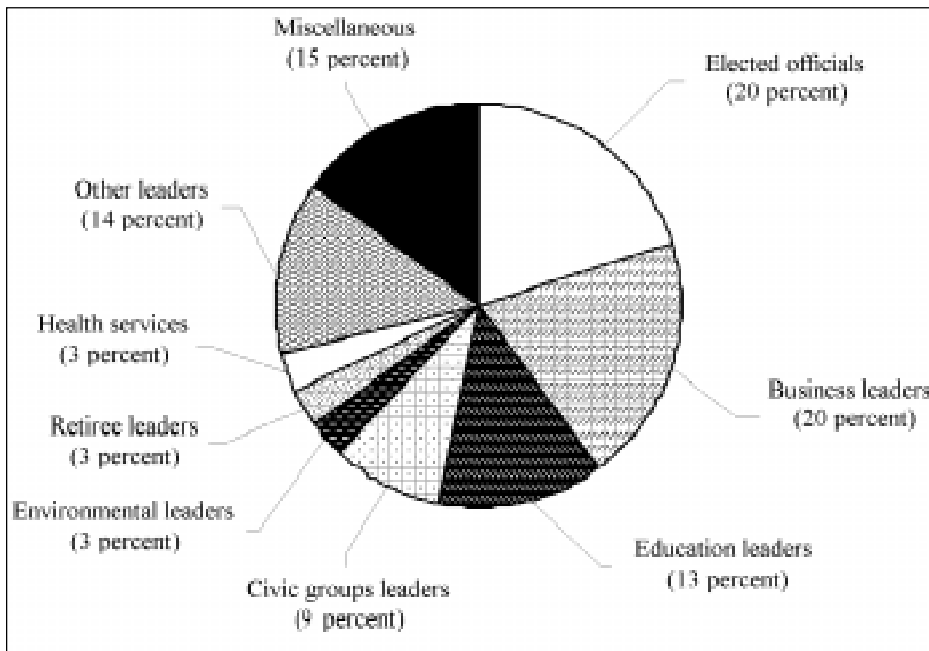


Figure 4—Percentage of workshop participants by position held within the community.

Current Characteristics and Conditions of Rural Communities

Primary data were provided on the community's current characteristics and conditions by the participants in the community assessment workshops. These data included responses on the key community constructs described in "Methodology for Assessing Communities," above. The results discussed below reflect the end points, or anchoring descriptors, used in the seven-point scales for the overall construct ratings, which helped work-

shop participants rate their community on each construct. These responses represent the result of a cumulative assessment for each dimension of community.

Community attractiveness—A community's character was defined as a combination of attributes ranging from a town's visual appearance to special places in the region where the town is located. One key dimension of community character is a town's physical attractiveness, as perceived by its residents. As figure 5 shows, the

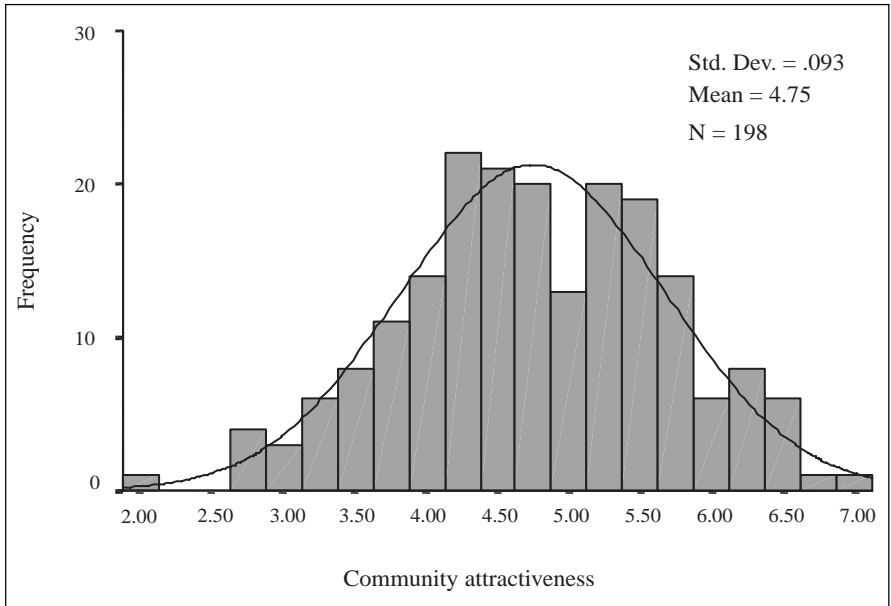


Figure 5—Distribution of mean ratings for community attractiveness across rural Columbia basin communities.

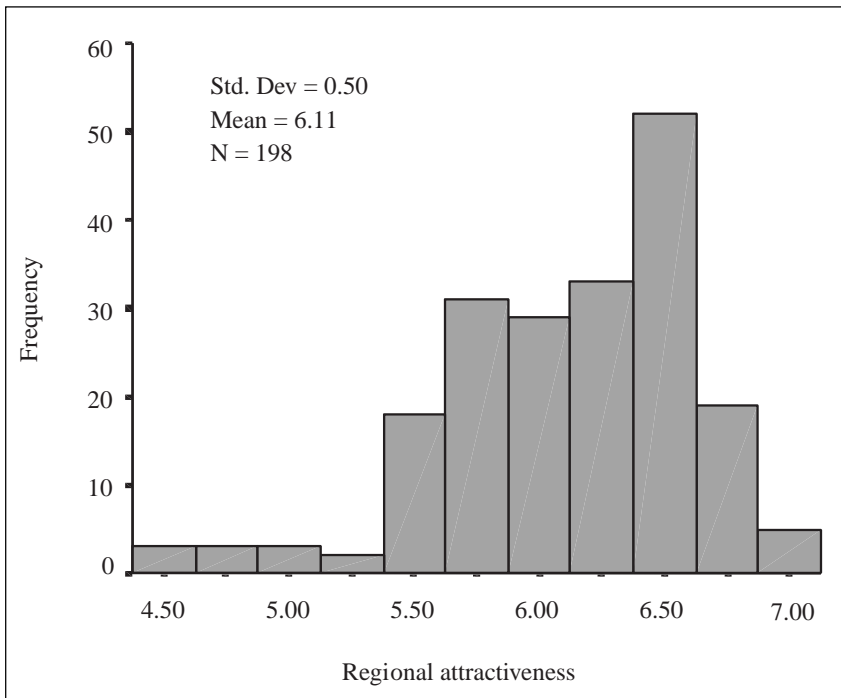


Figure 6—Distribution of mean ratings for regional attractiveness across rural Columbia basin communities.

distribution of ratings for community attractiveness tended to be on the high end (extremely attractive) of the scale (above the midpoint of 4), with a mean rating of 4.8 on a seven-point scale (ranging from 1, extremely unattractive, to 7, extremely attractive). The distribution of attractiveness scores ranged from values of 2.0 to 7.0 with a bimodal distribution of towns concentrated just

below and above the mean value. These results confirm that many communities in the region perceived themselves to be as attractive as other communities, and in some cases, more so.

Regional attractiveness—Another characteristic contributing to a community’s character was its regional attractiveness. This characteristic refers

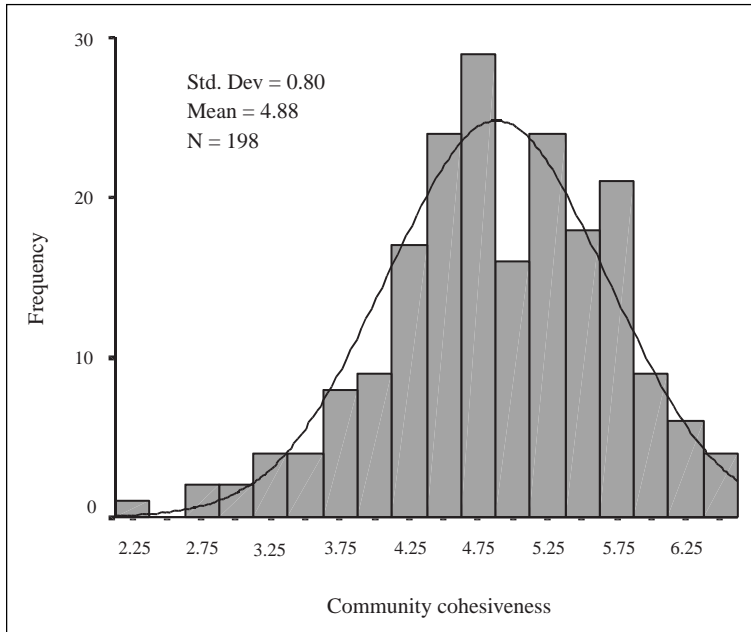


Figure 7—Distribution of mean ratings for community cohesiveness across 198 rural Columbia basin communities.

to the attractiveness of the area beyond the community’s city limits for a distance of 100 miles. Attractiveness in this case referred to a variety of attributes, including the importance of the scenery and outdoor recreational opportunities in the region where a community is located.

As figure 6 shows, the distribution of ratings for community attractiveness tended to be very high (close to the extremely attractive end of the scale), with a mean rating of 6.1 on a seven-point scale (ranging from 1, extremely unattractive, to 7, extremely attractive). This mean was the highest of any key construct, indicating the relative abundance of scenery and amenities that was perceived across the region, regardless of specific location. Likewise, the distribution of the regional attractiveness scores ranged from values of 4.4 to 7.0, with a normal distribution of towns, except for a concentration of communities around the mean value, and a standard deviation of 0.76. These results confirmed that most communities in the study area perceived the region in which they were located to be as attractive as that for other communities, if not more so.

Community cohesion—A community’s social cohesiveness was defined as “the degree to which the residents of a community work together to get things done” and their “sense of community.”

The distribution of mean values for the region’s social cohesion scores was relatively small (standard deviation of 0.78), with ratings ranging from 2.3 to 6.6 and a mean of 4.9 on a seven-point scale (ranging from 1, an extremely weak sense of community, to 7, an extremely strong sense of community) (fig. 7).

Table 3 shows that, in response to a categorical question on the extent of a strong sense of community, a very small segment of communities was so diverse with respect to the values of the communities’ residents that there was no agreement among those values. Alternatively, in about half of the remaining communities, residents were not only in agreement but also held similar values.

Community services—Community services included those provided by either the government or the private sector. The mean rating of the adequacy of services in the sampled communities was 4.7 on a seven-point scale (ranging from 1, extremely adequate services and facilities, to 7, extremely inadequate services and facilities), with values ranging from 1.7 to 6.4 (fig. 8). The distribution of responses for satisfaction with community services was skewed with a disproportionate share of towns between 4.7 and 5.8.

Community autonomy—The autonomy of a community was defined as “the degree to which a

Table 3—Extent of a sense of community in 198 Columbia basin study communities

Sense of community	Frequency	Percentage	Cumulative percentage
Most residents hold similar values and are in agreement	90	45.5	45.5
The community has diverse values, but residents have learned to work together	96	48.5	94.0
The community is very diverse and there is no real agreement in the community	12	6.0	100.0
Total	198	100.0	100.0

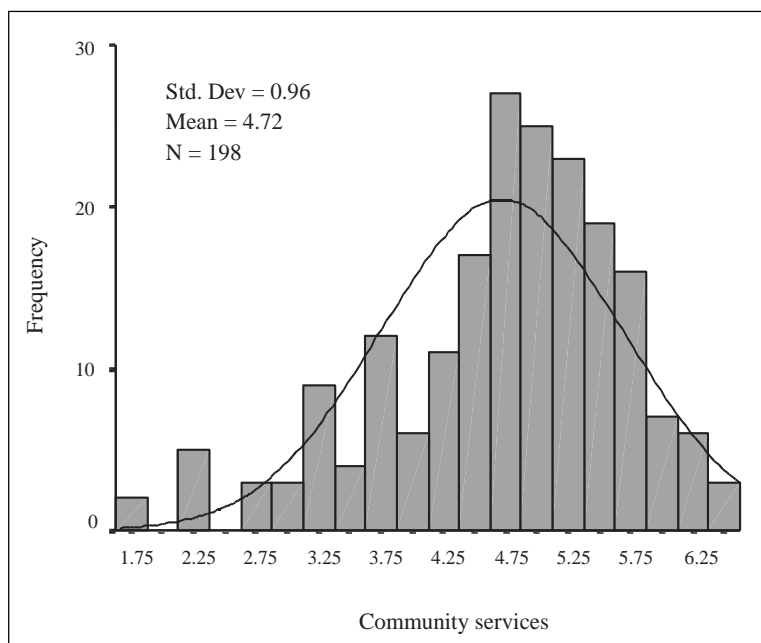


Figure 8—Distribution of mean ratings for community services across 198 rural Columbia basin communities.

community is linked economically, socially, and physically to neighboring communities and to the region as a whole.” For instance, a community that perceived itself as lacking autonomy considered itself highly linked and dependent on surrounding towns for its economic and social well-being. On the other hand, a community perceiving itself as being highly autonomous was one that considered itself to be very independent, economically, socially, and physically, of other communities.

On a seven-point scale (ranging from 1, not at all autonomous, to 7, extremely autonomous), the community autonomy construct was comparatively low with a mean rating of 3.4. This finding

underscores the relative dependence of small rural communities on other towns. As figure 9 shows, however, a comparatively large standard deviation (1.14) and the rectangular distribution of the ratings, with a wide range of values from 1.1 to 6.3, indicate a wide spread of means across the scale for the community autonomy construct. This result suggests that autonomy may not have been conceived of strictly in terms of economics or the supply of goods and services, but in the broader social context the concept was meant to represent.

In comparison with constructs for other key dimensions of community characteristics and conditions, the mean rating for community autonomy was found to be the lowest: 3.4 on a

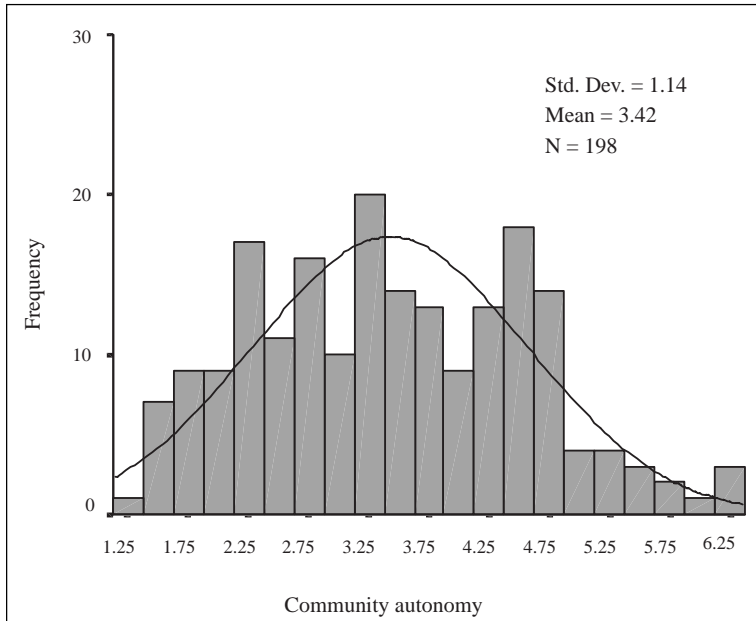


Figure 9—Distribution of mean ratings for community autonomy across rural ICRB communities.

Table 4—Levels of community autonomy in 198 Columbia basin study communities

Level of community autonomy	Frequency	Percentage	Cumulative percentage
The community is very dependent on other communities	87	43.9	43.9
The community depends on other towns for some things but is independent on other things	108	54.5	98.5
The community stands alone and functions relatively independently of other communities	3	1.5	100.0
Total	198	100.0	100.0

seven-point scale, in comparison with means ranging from the next lowest mean of 3.9 for attractiveness for business to a high of 6.1 for regional attractiveness. This low mean rating indicates that the towns in the region have a relatively low level of autonomy.

Table 4 confirms that the region’s communities are split between those very dependent on other towns and those dependent on other towns for some things but not for others. When workshop participants were asked to categorize their towns, those sampled were split between those saying their community was very dependent on other

towns (43.9 percent), and those saying their community was dependent on other towns for some things but independent in terms of other things (54.5 percent). Only three towns, or 1.5 percent, reported themselves to be highly autonomous (i.e., the community stands alone and functions pretty independently of other communities). These three towns—St. John, Washington; Stanley, Idaho; and Sandpoint, Idaho—range in population from 70 to 5,725 (1992-94 estimates).

Table 5 indicates that a community’s autonomy was significantly related to a variety of other characteristics and conditions. It confirms that various aspects of community life, such as social

Table 5—Pearson correlation coefficients of characteristics of 198 Columbia basin study communities significantly correlated with community autonomy

Variable	Community autonomy
Availability of services	0.52**
Attractiveness	.52**
Attractiveness for business	.40**
Social cohesion	.40**
Economic diversity	.45**
1992-94 population	.35**
Quality of life	.32**

** = correlation is significant at the 0.01 level (2-tailed).

cohesion, community attractiveness, and population size were as important as economic constructs (e.g., economic diversity and attractiveness for business) for understanding a community's sense of self-reliance and independence, and consequently that autonomy is moderately related to a community's quality of life.

Quality of life—The quality of life of a community refers to a range of physical and social aspects reflecting how good the good life is within a community and includes air and water quality, traffic congestion, perceived safety, social problems, overall friendliness, and the abundance of stimulating social activities. Most communities rated themselves as having a high quality of life, with a mean rating of 5.7 on a seven-point scale (ranging from 1, extremely poor quality of life, to 7, extremely high quality of life). A small standard deviation of 0.56 for the mean (half of that for the community autonomy construct) and the concentration of mean ratings between 4.0 and 6.5 confirmed this construct's narrow distribution and the high quality of life perceived by residents of most towns in the region (see fig. 10). Additionally, when asked if their communities were safe, friendly, and good places to live, more than 80 percent of the respondents felt that few other rural communities could match their quality of life

(table 6). Together, these results indicate that the vast majority of towns surveyed perceived their quality of life to be quite high.

Community leadership—Community leadership referred to leadership from a variety of sources, including the business community, government agencies, other organizations, active individuals, and elected officials. A relatively normal distribution was obtained from the mean ratings of the study communities on the construct effectiveness of community leaders. On a seven-point scale (ranging from 1, extremely ineffective leadership, to 7, extremely effective leadership), the mean response was 4.8 with a range of 2.4 to 6.4 and a standard deviation of 0.76 (fig. 11).

Community government—Workshop participants also rated the effectiveness of their community government, which referred to their perceptions of their local government's ability to make and carry out plans and projects, as well as its performance in acting in accordance with the will of the citizens and in ways that earned trust in the government. The resulting distribution was characterized by a mean rating of 4.8 on a seven-point scale (ranging from 1, extremely ineffective, to 7, extremely effective), with a range of 1.8 to 6.4 and a standard deviation of 0.85 (fig. 12). These results are consistent with the findings shown in table 7, which indicate that less than 5 percent of the communities felt that their government did not know what to do, or that it did only what influential people wanted it to do.

Not surprisingly, ratings of the effectiveness of the community's government were highly correlated with ratings of the effectiveness of the community's leadership (Pearson correlation coefficient, $r = 0.72$). It also was significant that the perceptions of elected officials about their performance differed statistically from other participants' perception of the effectiveness of the community's government. Analyses comparing mean values for the two groups revealed a statistically significant difference ($p < 0.05$) of about 0.5 in the scale means for effectiveness of community government and the community's leadership. This difference may be explained by the

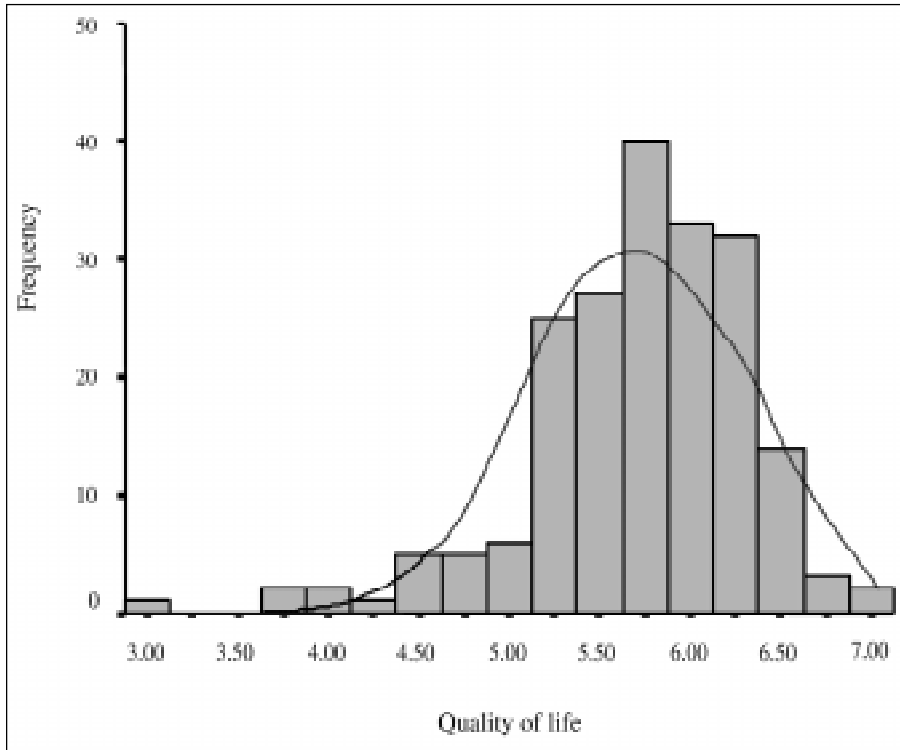


Figure 10—Distribution of mean ratings for quality of life across rural Columbia basin communities.

Table 6—Levels of quality of life in 198 Columbia basin study communities

Level of quality of life	Frequency	Percentage	Cumulative percentage
The community is safe, friendly, and a good place to live; few rural communities can match its quality of life	159	80.3	80.3
The community is not the best place to live for health, safety, or social reasons, but it offers a reasonable quality of life	38	19.2	99.5
The community has serious social problems; most other communities offer a better quality of life	1	.5	100.0
Total	198	100.0	100.0

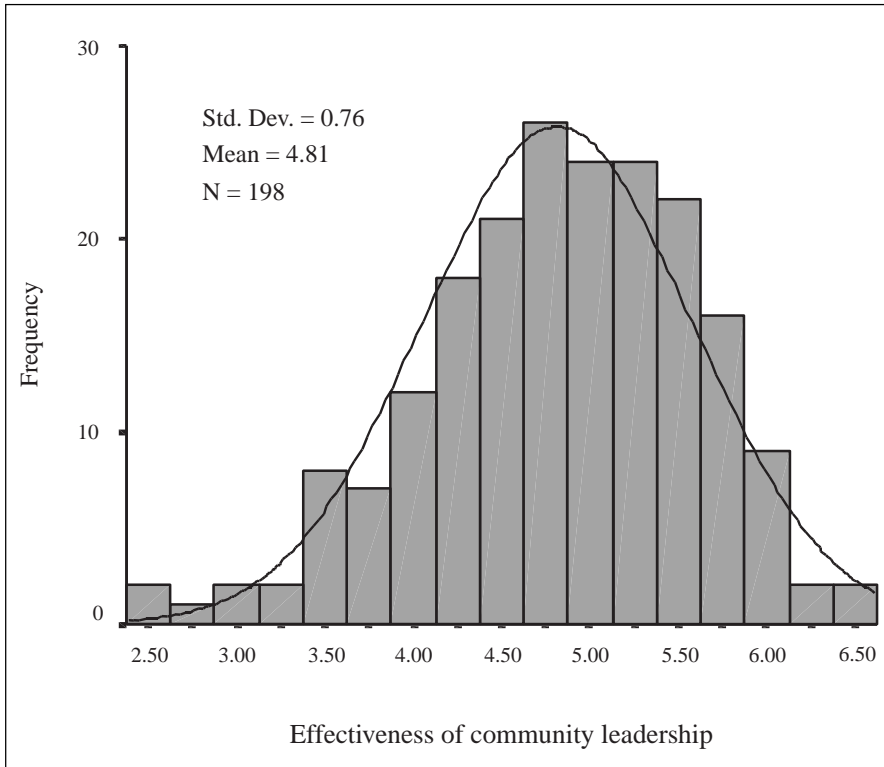


Figure 11—Distribution of mean ratings for the effectiveness of community leaders across rural Columbia basin communities.

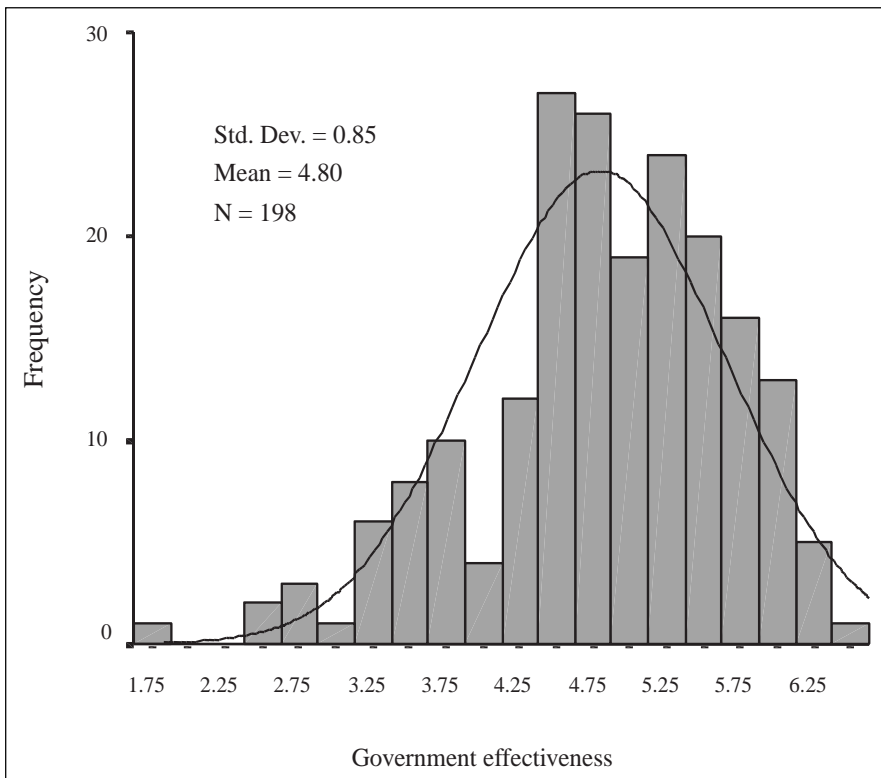


Figure 12—Distribution of mean ratings of government effectiveness across rural Columbia basin communities.

Table 7—Levels of government effectiveness in 198 Columbia basin study communities

How the community's government operates	Frequency	Percentage	Cumulative percentage
Does pretty much what the citizens want	63	31.8	31.8
Does what some influential people want	15	7.6	39.4
Does what it thinks is best for the citizens	117	59.1	98.5
Does not know what to do	3	1.5	100.0
Total	198	100.0	100.0

fact that the elected officials have a different, but valid, perspective on the effectiveness of their leadership than do other workshop participants. An alternative explanation is that the systematic differences in ratings on leadership effectiveness represent a self-interested bias in the perceptions of elected officials in evaluating their performance and the extent to which they represent the views and desires of their constituents.

Preparedness for the future—Community preparedness for the future is defined in the self-assessment workbook as the “degree to which a community is looking towards the future and preparing for its future.” The section devoted to this key construct focused on questions about the ways community members perceived their communities were already changing, the extent of those changes, and how much residents were discussing whether or how they wanted their community to change.

The mean rating of the extent to which communities perceived being prepared for the future was relatively low (4.1) on a seven-point scale (ranging from 1, or totally unprepared, to 7, totally prepared). In fact, only the autonomy construct had a lower mean rating. The distribution of the preparedness for the future construct across rural communities was relatively normal (fig. 13). More communities fell at the upper end of the scale, however, and perceived themselves as being more prepared for the future than others. Table 8, which looks at the results for a fixed-response question about a community's prepared-

ness for the future, indicates that about a third of the communities ($3.5 + 30.8 = 34.3$ percent) were ones where citizens had plans and projects for realizing some desired future. An additional 39.4 percent of the towns were ones where citizens had begun identifying future directions for their community, but they were yet to identify any actions, much less take any. In contrast, more than one-fourth of the towns ($18.2 + 8.1 = 26.3$ percent) had little or no discussion about their future, or about whether or how they wanted to change. These data reveal that, while nearly 22 percent of the communities in the region had decided they wanted to stay the same ($3.5 + 18.2 = 21.7$ percent), more than 38 percent wanted to change ($30.8 + 8.1 = 38.9$ percent). Of those communities already actively making plans and taking action (34.3 percent), 90 percent had done so to allow them to change to achieve a desired future. Conversely, of the little more than a quarter (26.3 percent) of the towns whose citizens had not as yet made any plans or taken any action, only 31 percent were open to changing to achieve a desired future, and 69 percent wanted to stay the same.

A conclusion from these results is that the proactive communities were the ones that had realized change was coming and were readily moving forward in dealing with that change and trying to manage it. Communities desiring not to change tended to be ones that were ignoring their situation, or at least were not discussing or considering change.

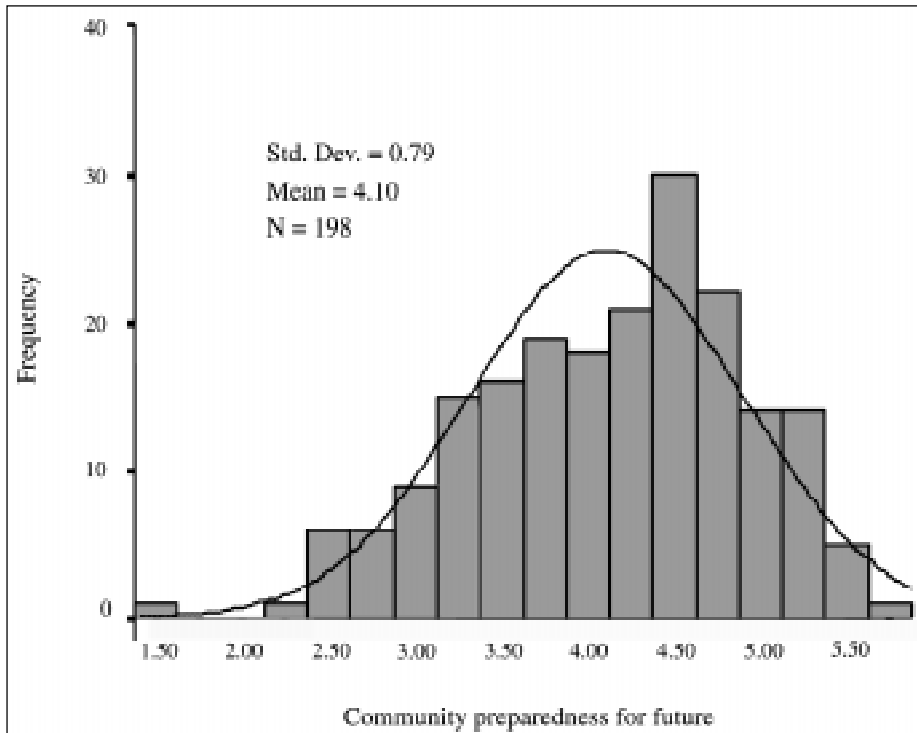


Figure 13—Distribution of mean ratings for community preparedness for the future across the Columbia basin.

Table 8—Extent of community preparedness for the future in 198 study communities

How prepared for the future is your community?	Frequency	Percentage	Cumulative percentage
Citizens have plans and projects identified that will allow them to stay the same	7	3.5	3.5
Citizens have plans and projects identified that will allow them to change to achieve a desired future	61	30.8	34.3
Citizens have discussed and identified future directions for the community, but no actions identified	78	39.4	73.7
Citizens have not had much discussion about the town's future, but they want to stay the same	36	18.2	91.9
Citizens have not had much discussion, about the town's future, but they are willing to change	16	8.1	100.0
Total	198	100.0	100.0

Table 9—Mean ratings of perceived dependence of rural Columbia basin communities on resource-based industries

Industry	Mean rating ^a
Farming and agriculture	5.1
Grazing and ranching	4.4
Outdoor recreation and tourism	4.3
Wood products	3.6
Mining and minerals	1.7

^aMean ratings based on results from community self-assessment workshops in 198 communities in the basin.

Economics: Perceptions and Reality

The perceptions of workshop participants about the economy of their community were assessed with a variety of questions. These perceptions could then be compared to the actual economic structure of the region’s communities.

Perceptions of Workshop Participants

Perceptions of community’s dependence on resource-based industries—In the section of the workbook on the economy of a community, workshop participants first were asked to name the major businesses and industries in their communities. The residents then were asked to rate the extent to which their towns were dependent on various industries for their economic stability, a seven-point scale ranging from 1 (extremely independent) to 7 (extremely dependent). The results for the major resource-based industries, which included farming and agriculture, wood products manufacturing, grazing and ranching, outdoor recreation and tourism, and minerals and mining, are reported in table 9 across all 198 communities for each of these industries.

Overall, residents of the rural communities of the region perceived farming and agriculture as the most important natural resource industry in terms of their economic dependence, followed by graz-

ing and ranching and outdoor recreation and tourism. Also significant is the finding that, on average across the total sample of workshop participants, the outdoor recreation and tourism sector was perceived as being more important than wood products as a contributor to small rural economies. The validity of these perceptions was assessed by comparing the industries in terms of the actual contribution of the different industrial sectors to rural economies, which was based on proportions of total employment, as discussed in a later section of this paper.

Figure 14 shows that perceptions of overall dependence of the region’s communities on natural resource industries was rated very highly by the workshop participants, with a comparatively high mean rating of 5.8 on a seven-point scale (from 1, extremely independent, to 7, extremely dependent). The distribution of mean ratings was skewed, with an overall mean of 6.0; only 25 percent of the informants indicated a rating of 5.4 or less.

Classification of communities by dominant industry—Many people have promoted the idea of classifying communities on the basis of their economic structure (Branch et al. 1982, Gale and Cordray 1991). Here, just one application of the community typology idea is presented, with communities identified as resource dependent and classified by the industrial sector that residents perceived their community was most dependent on. This sector was termed the “dominant industry.”

To operationalize this classification, communities that were highly resource dependent were first identified. These were communities with a mean rating of 5.0 or higher on the seven-point scale rating their perceived resource dependence. Communities meeting this criterion then were classified in terms of the dominant industry as perceived by residents; this classification was based on that industry receiving the highest rating on the economic dependence scale. Table 10 shows the number and proportion of all communities that citizens indicated as having economies dominated by particular natural resource industries.

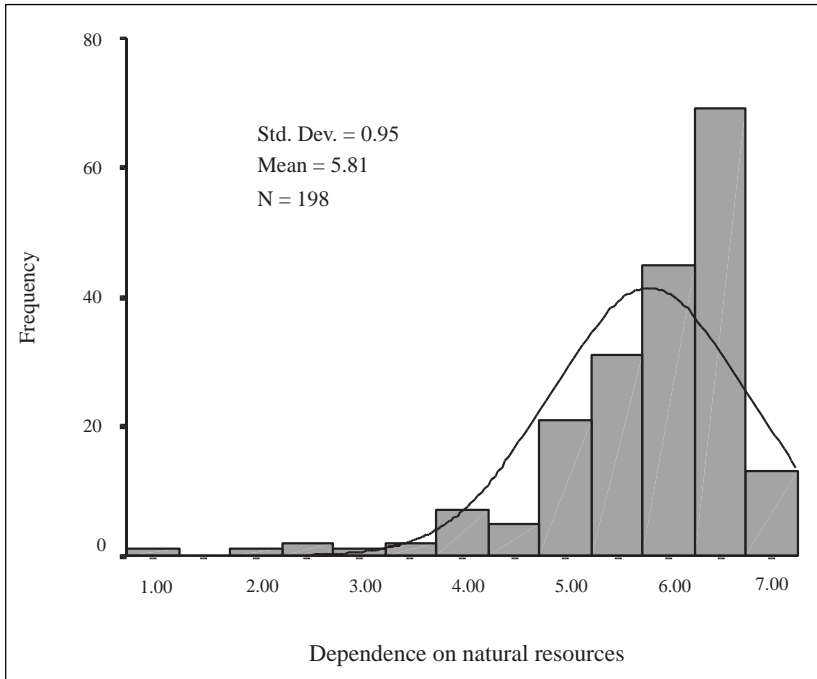


Figure 14—Distribution of mean ratings of dependence on natural resources across rural Columbia basin communities.

Table 10—Classification of 198 Columbia basin study communities by perceived industry dominance

Perceived dominant industry ^a	Frequency	Percent	Cumulative percentage
Farming	90	45.5	45.5
Ranching	16	8.1	53.6
Timber	47	23.7	77.3
Travel and tourism	34	17.2	94.5
Not resource dependent	11	5.5	100.0
Total	198	100.0	100.0

^a Because of the small number of communities rated highly dependent on mining and minerals (1 community), it was not broken out for this analysis.

Only 11 towns, or 5.5 percent of all towns in the region, were perceived as not being significantly dependent on natural resources. Of the other communities, residents perceived them to be most dependent on one of four types of natural resource-based industries: farming, ranching, timber, and recreation and tourism. Only four communities were found to be mining dominant; given this small sample size, any results of statistical analysis must be viewed as tentative.

Based on residents' perceptions of their communities, about 46 percent of all communities in the region could be labeled as primarily farming dominated, and another 8 percent perceived themselves to be primarily ranching communities. In addition to these farming- and ranching-dominated communities, another 10 percent of the region's communities reported that they were moderately highly dependent to very highly dependent on agriculture. Many of these communities also were dependent on wood products, tourism and recreation, and mining.

Nearly 24 percent of the region's communities were perceived by participants as being timber-dominant communities. Many of these, however, also perceived themselves to be dependent on mining and outdoor recreation and tourism. Fully two-thirds of all communities in the region perceived themselves as being somewhat dependent to highly dependent on wood products.

Communities perceiving themselves as having economies dominated primarily by tourism and recreational activities totaled 17 percent of all towns in the region. Another 11 percent perceived themselves as being moderately highly dependent to very highly dependent on tourism and recreation.

Yet another 11 percent of the communities described their economy as primarily based on government jobs.

Although the region's towns were classified in this way, most had mixed economies that were perceived as being at least somewhat dependent on a number of resource-based industries. For example, only 9 percent of the communities examined were reported to be highly independent of farming and ranching, only 13 percent were reported to be highly independent of outdoor recreation and tourism, and 37 percent of the communities were not dependent on wood products to a significant extent. Almost one-quarter of all communities in the region (22 percent) were perceived by workshop participants as having primarily a mixed economy with no particular dominant industry.

The relation of the ratings of perceived dependence on resource industries to community population size also was examined. As described above, the towns were classified by four size classes (i.e., less than 1,500 people, 1,501 to 3,000 people, 3,001 to 5,000 people, and 5,001 to 10,000 people). Statistical differences ($p < 0.05$) in communities' ratings of perceived dependence on timber, mining, or farming in relation to population size classes were not found. An analysis of towns based on their dominant industry classification, however, indicated that different kinds of industry-dominated communities did indeed differ in their population size.

The majority (58 percent) of communities in the smallest size category (communities under 1,500 in population) were ones in which agriculture (farming, ranching, and food processing) was perceived to be the dominant industry. Moreover, the perceived dominant industry in the largest segment of towns in every size category also was farming.

Towns perceived as timber dominant were well represented across each size category, with proportions ranging from 20 to 38 percent of communities in each class. In contrast, most of the ranching-dominant communities (87 percent) were among the smallest towns (under 1,500 in population); the other ranching-dominant communities fell under the next smallest size class (1,500 to 3,000 in population).

Interestingly, outdoor recreation and tourism was particularly dominant in the smallest (under 1,500 in population) and the mid-sized (3,000 to 5,000 in population) communities with 19 and 29 percent, respectively. Not surprisingly, the largest communities in the region, which were among the most economically diverse, were the ones most likely to be perceived as not being highly natural resource dependent.

In a related question, communities were asked which best characterized their economic base: (1) one centered mainly around the growing, gathering, or harvesting of raw materials; (2) one centered around adding value to or processing raw materials; (3) one centered primarily around retail stores or tourism services; (4) one centered primarily around government jobs; or (5) one too diverse to be described by the preceding categories of economic activity. As table 11 shows, nearly 16 percent of the communities identified themselves as too diverse to classify, and the majority (58 percent) perceived themselves to be dominated by traditionally extractive or agriculturally based sectors. Only 8 percent reported themselves to be dominated by manufacturing industries or ones adding value to or processing raw or harvested materials. Twelve percent reported themselves to be dominated by retail and tourism services, much the same proportion as the average employment in that sector, which is reported in the next section.

Table 11—Types of industries perceived to dominate the economies of 198 Columbia basin study communities

Industry	Frequency	Percentage	Cumulative percentage
Growing, gathering, or harvesting of raw materials	114	58.8	58.8
Adding value to or processing raw materials	15	7.7	66.5
Retail and tourism services	24	12.4	78.9
Government services	11	5.7	84.5
Too diverse to classify	30	15.5	100.0
Total	198	100.0	100.0

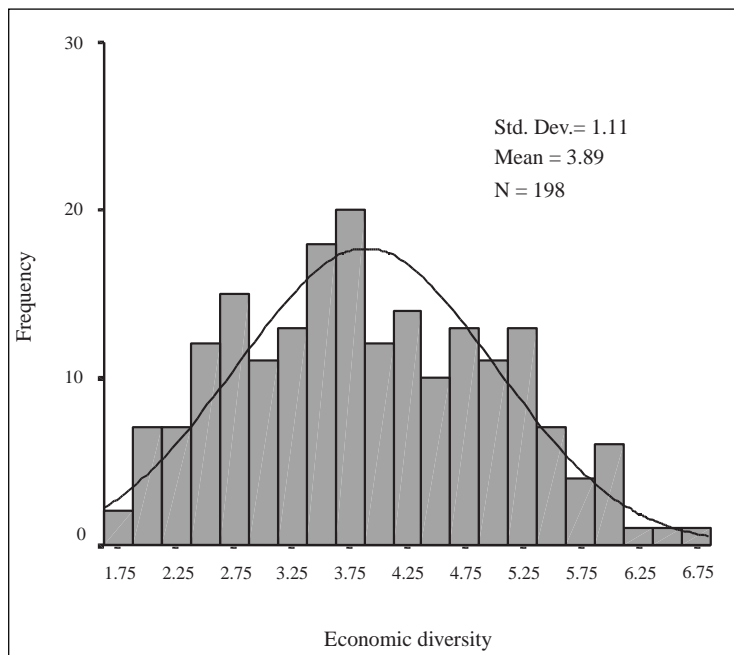


Figure 15—Distribution of mean ratings of the diversity of the economies of rural Columbia basin communities.

Perceptions of the economic diversity of communities—A related focus of the community self-assessment was on perceptions by the workshop participants of their community’s economic diversity. These perceptions were rated on a seven-point scale (ranging from 1, extremely non-diverse, to 7, extremely diverse). As shown in figure 15, responses were broadly distributed with a comparatively low mean of 3.91 and a range of 1.83 to 6.67.

Community’s attractiveness for business—Perceptions by residents of the attractiveness of their communities for business were rated on a seven-point scale (ranging from 1, extremely un-

attractive, to 7, extremely attractive). Responses were skewed toward the low end of the scale; with a comparatively low mean of 3.85 and a range of 1.57 to 6.0 (fig. 16) indicating that a majority of the communities assessed themselves as being more unattractive than attractive for business.

Profiles of the Economies by Actual Employment

A profile of each community’s actual economic composition was developed for the assessment research, based on the estimated proportion of a town’s total employment in each industrial sector.

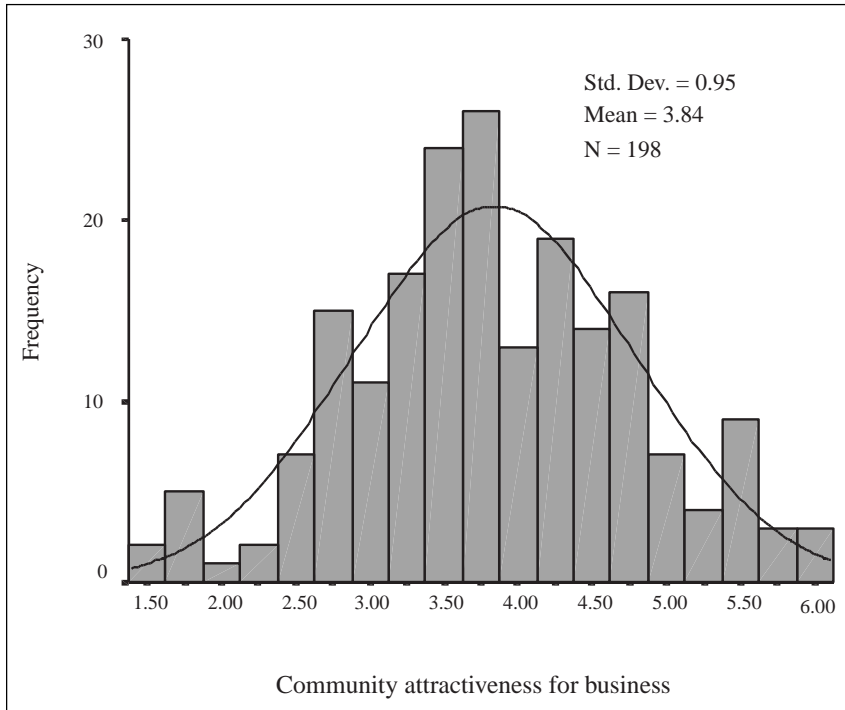


Figure 16—Distribution of mean ratings of community attractiveness for business across rural Columbia basin communities.

Table 12—Percentage of total employment across rural Columbia basin communities by industrial sector^{a b}

Industrial sector	Type of sector	Total employment
		<i>Percent</i>
Agriculture	Basic industry and processing	23.1
State and local government	Service	15.2
Travel and tourism	Service	12.4
Retail trade (nontourism related)	Service	11.1
Food and beverage (nontourism related)	Service	5.1
Federal Government	Service	4.8
Medical and social services	Service	4.7
Mining and minerals	Basic industry and processing	3.3
Harvesting and manufacturing of wood products	Basic industry and processing	5.6
Other		14.4
Total		100.0

^aRural communities with 1992-94 population between 20 and 10,000 people (N=387).

^bBased on the 1995 disaggregated regional employment (REIS) database.

These profile data were then used to assess differences among communities based on their size and actual economic diversity. The actual economic structure of communities also could be compared with perceptions by the residents of their community's economy.

Employment profiles of the region's communities—Table 12 shows the extent to which different industrial sectors directly contributed to rural economies in the first quarter of 1995, as indicated by the average proportion of total employment in each sector across the region's rural communities. These results provide support for the proposition that both resource-based industries (i.e., farming, ranching, timber, and travel and tourism) and various service sectors are important components of rural economies. Of the industries displayed, agriculture, manufacturing of wood products, and mining and minerals are the more traditional, extractive (or basic) resource-related industries, and the others listed are service industries.

Agriculture is the region's top employer (at an average of 23.1 percent of total employment in rural communities), and state and local government (15.2 percent) is the second largest employer. An average of 12.4 percent for the travel and tourism industry places it third: This includes employment attributable to such sectors as lodging, nonlocal retail trade, and nonlocal food and beverage. Other significant employers in the region's rural communities are a number of service sectors, including locally based (nontourism related) retail trade and food and beverage. The wood manufacturing and timber harvesting sector, on average, accounts for 5.6 percent of rural community employment, and the mining and minerals sector accounts for 3.3 percent.

In terms of jobs in the average rural community, the majority (62.1 percent) are ones in the service sector. Excluding government jobs, which provide 21.4 percent of all jobs, other service jobs account for 40.7 percent of all employment in rural communities. A difference is found, however, between large and small communities in the proportion of total employment in traditional economic base industries. Those towns having more than 3,000 people had, on average, 18.4 percent

of all jobs in those sectors; in smaller towns, fewer than 3,000 people, those sectors accounted for 34 percent of all jobs.

Economic profiles of communities based on size class—Table 13 presents the results of the economic profiles of the region's towns, based on an analysis of employment in different industrial sectors in towns grouped by population size. Mean proportions of employment in each industrial sector are reported for each of the four size classes of towns. For this analysis, which would be indicative of the extent to which towns of different sizes (based on population) were economically diverse, the 198 communities were classified according to the population size classes described earlier (i.e., less than 1,500 people; 1,501 to 3,000 people; 3,001 to 5,000 people; and 5,001 to 10,000 people). (The results presented in table 13 are for only the 198 communities for which complete community assessment data exist, for the sake of comparability, and not for all 387 small rural communities; nonetheless, the large sample size ensures the representational value of these results for all towns in the region.)

Table 13 suggests that larger communities are, indeed, somewhat less dependent on one or a few industrial sectors and thus are more economically diverse. Smaller communities are more dependent on a number of natural resource industries for employment, including agriculture and wood products, than are larger communities; a major exception here is the mining and minerals sector. Just as telling was the finding that the proportion of employment in the other industries category was much greater for the two larger size classes of communities (20.0 and 21.2 percent) than the smaller town classes (9.2 and 15.0 percent).

In the smallest size class of communities (less than 1,500), employment in agriculture accounted for the greatest percentage of jobs (26.0 percent), followed by state and local government (16.2 percent) and the travel and tourism sector (13.7 percent). Agriculture accounted for only 9.1 percent of all jobs in communities having between 3,001 and 5,000 people and 6.2 percent in communities with 5,001 to 10,000 people. The harvesting of timber and manufacturing of wood products accounted for similar proportions of

Table 13—Percentage of 1995 total employment by industrial sector and population size in 193 Columbia basin communities

Population size (N) ^a	Agriculture	Wood products	Travel and tourism	State and local government		
				State government	Local government	Federal Government
	<i>Percent</i>					
Less than 1,500 (128)	26.0	6.3	13.7	16.2		5.6
1,501 to 3,000 (36)	14.4	6.8	11.7	17.7		4.4
3,001 to 5,000 (16)	9.1	4.8	12.5	15.9		4.8
5,001 to 10,000 (13)	6.2	5.0	17.4	11.9		6.0
Mean	21.3	6.2	13.5	16.2		5.3
	Mining and minerals					
	<i>Percent</i>					
Less than 1,500 (128)	2.0	11.4	5.9	3.4		9.5
1,501 to 3,000 (36)	4.2	12.0	4.6	9.1		15.1
3,001 to 5,000 (16)	4.5	12.5	4.9	11.0		20.0
5,001 to 10,000 (13)	3.5	13.2	7.4	8.2		21.2
Mean	2.7	11.7	5.7	5.4		12.0
	Food and beverage ^b					
	<i>Percent</i>					
Less than 1,500 (128)	2.0	11.4	5.9	3.4		9.5
1,501 to 3,000 (36)	4.2	12.0	4.6	9.1		15.1
3,001 to 5,000 (16)	4.5	12.5	4.9	11.0		20.0
5,001 to 10,000 (13)	3.5	13.2	7.4	8.2		21.2
Mean	2.7	11.7	5.7	5.4		12.0
	Medical and social services					
	<i>Percent</i>					
Less than 1,500 (128)	2.0	11.4	5.9	3.4		9.5
1,501 to 3,000 (36)	4.2	12.0	4.6	9.1		15.1
3,001 to 5,000 (16)	4.5	12.5	4.9	11.0		20.0
5,001 to 10,000 (13)	3.5	13.2	7.4	8.2		21.2
Mean	2.7	11.7	5.7	5.4		12.0
	Other industries					
	<i>Percent</i>					
Less than 1,500 (128)	2.0	11.4	5.9	3.4		9.5
1,501 to 3,000 (36)	4.2	12.0	4.6	9.1		15.1
3,001 to 5,000 (16)	4.5	12.5	4.9	11.0		20.0
5,001 to 10,000 (13)	3.5	13.2	7.4	8.2		21.2
Mean	2.7	11.7	5.7	5.4		12.0

^aNumber of study communities with complete data on relevant variables (N=193).

^bNontourism related.

employment: regardless of community size, this sector accounted for 6.3 and 6.8 percent of all jobs in communities with less than 1,500 people and 1,501 to 3,000 people, respectively, and for only 5.0 percent in large communities (5,001 to 10,000 people). Sectors providing the greatest percentage of jobs in larger communities (3,001 to 5,000 and 5,001 to 10,000 people) were primarily service oriented. In the largest class of communities (5,001 to 10,000 people), the travel and tourism sector provided the largest proportion of jobs (17.4 percent), followed by the retail sector (13.2 percent), state and local government (11.9 percent), medical and social services (8.2 percent), and food and beverage establishments (7.4 percent).

Development of an economic diversity index—

A rough-and-ready indicator of actual economic diversity was developed from the above employment data to measure the degree to which the 387 small rural communities in the region actually were economically diverse. This index is a summative one of relative economic diversity. It was calculated with two measures of the extent to which a community actually was dependent on a wide variety of industries as opposed to only a few.

One component of the index was a measure of the extent to which a given community's economy was comprised of only a few or, alternatively, many sectors. This measure was an average number of industrial sectors having some proportion of employment in that community and ranged from an average of 0.04 for communities with one sector (one-twenty-third of all 23 sectors) to 1.0 for all 23 sectors. This average was recorded as a standardized score.

The second component of the index was a measure of the preponderance of total employment in any one sector: this measure was first set at zero and then increased by one for each sector for which the proportion of a community's total employment exceeded one-third (33 percent). The most sectors for which the proportion of employment for any community exceeded this amount was two, so a community average was calculated

for this measure that included 0.0, 0.5, and 1.0. The higher this average, the less diverse the economy, so its sign was changed to provide an indicator consistent with the first measure. Again, the average was standardized. Then, both measurements were summed for a cumulative index of economic diversity.

The towns were classified by their level of economic diversity, based on the index score calculated for each. Levels of economic diversity based on the index ranged from low (-1.00 to 0.01) and medium-low (0.01 to 0.35) to medium-high (0.35 to 0.90) and high (0.90 to 1.00). These levels were relative ones with ranges based on quartiles of the towns' economic diversity index scores, and each class thus representing an equal proportion of the communities under study (25 percent each). The one-quarter of the towns receiving the lowest economic diversity index scores (less than 0.01) were labeled as "low," and so forth.

For example, Conconully, Washington, was a town in which employment was found for only 7 of the 23 industrial sectors estimated, and 2 of those sectors accounted for over 33 percent of the town's employment. Accordingly, it was very low in economic diversity, receiving a standardized score of -0.65 that ranked it 15 of all the region's towns and cities in being economically diverse (in the lowest quartile), so it was classified in the "low" economic diversity class. At the other end of the diversity scale, a highly diverse community like Bend, Oregon, was found to have employment in 20 sectors, with no sectors having a major predominance of employment (over 33 percent). It received a diversity index score of 1.00 that ranked it 442—in the highest quartile as one of the region's most diversified towns—and it was included in the high economic diversity class. A more moderate level of diversity was found for Troy, Idaho, which had employment in 15 sectors; but because one of those sectors had a major predominance of employment, it was ranked as 192 in economic diversity with an index score of 0.25, placing it in the medium-low category of being economically diverse.

Text continues on page 68.

Table 14—Economic diversity index scores and levels of direct employment by industrial sector (based on proportions of employment) by rural Columbia basin community, with 1992-94 population estimates (N=387)

State and town	1992-94 population	Levels of direct employment by industrial sector ^a									
		Economic diversity index	Agriculture	Timber	Travel and tourism	State and local government	Federal Government	Mining and minerals			
Idaho:											
Aberdeen	1,548	Med. high	Med. high	Low	Low	Med. low	Med. low	Low	Low	Low	
Acequia	103	Low	High	Low	Low	High	Low	High	Low	Low	
Albion	293	Low	High	Low	Low	High	Low	High	Low	Low	
American Falls	4,008	Med. low	Med. high	Low	Low	Med. high	Low	Med. high	Low	High	
Ammon	5,469	Low	Med. high	Low	High	Low	Low	Low	Low	Low	
Arbon Valley	628	Low	High	Low	Low	High	Low	High	Low	Low	
Arco	1,029	Med. high	Low	Low	Low	Low	Med. high	Low	Med. high	High	
Arimo	314	Med. low	Med. high	Low	Low	High	Low	High	Low	Low	
Ashton	1,104	Med. high	Med. high	High	Med. low	Low	Low	Low	Low	Low	
Athol	409	High	Low	Med. high	High	Med. high	Low	Med. high	Low	Low	
Atomic City	26	Low	High	Low	Low	Low	Low	Low	Low	Low	
Bancroft	417	Med. low	High	Low	Med. high	Med. high	Low	Med. high	Low	Low	
Banks	570	Low	Low	Low	High	Low	Low	Low	Low	Low	
Basalt	450	Low	Low	Low	Low	Low	Med. high	Low	Med. high	Low	
Bellevue	1,433	Med. high	Med. high	Low	High	Med. low	Low	Med. low	Low	Low	
Blackfoot	10,628	High	Low	Low	Med. high	Med. high	Low	Med. high	Low	Low	
Bliss	196	Med. high	High	Low	High	Med. high	Low	Med. high	Low	Low	
Bloomington	184	Low	High	Low	Low	Low	Low	Low	Low	Low	
Boise	135,506	High	Low	Low	Med. high	Med. high	Low	Med. high	Low	Med. low	
Bonnars Ferry	2,244	High	Med. low	Med. low	Med. high	Med. high	Low	Med. high	Low	Low	
Buhl	3,743	Med. high	Med. high	Low	Med. low	Low	Low	Low	Low	Low	
Burley	8,918	High	Low	Low	Med. high	Med. high	Low	Med. high	Low	Low	
Butte City	65	Low	High	Low	Low	Low	Low	Low	Low	Low	
Caldwell	20,800	High	Low	Low	Med. low	Med. high	Low	Med. high	Low	Med. high	
Cambridge	367	Med. high	High	Med. high	Med. low	High	Low	High	Low	Low	
Carmen	0	Low	High	Low	Med. high	High	Low	High	Low	Low	
Cascade	1,001	High	Low	Med. low	Med. high	High	Med. high	High	Med. high	Low	
Castleford	176	Med. high	High	Low	Low	High	Low	High	Low	Low	

Table 14—Economic diversity index scores and levels of direct employment by industrial sector (based on proportions of employment) by rural Columbia basin community, with 1992-94 population estimates (N=387) (continued)

State and town	1992-94 population	Economic diversity index	Levels of direct employment by industrial sector ^a						
			Agriculture	Timber	Travel and tourism	State and local government	Federal Government	Mining and minerals	
Challis	995	High	Med. high	Low	Med. low	Med. high	Med. low	High	
Chatcolet	73	Low	High	Low	Low	Low	Low	Med. low	
Chubbuck	8,354	Med. high	Med. high	Low	High	Med. high	Med. high	Low	
Clark Fork	471	Med. low	Low	Med. low	Med. high	High	Low	Low	
Clayton	20	Low	Med. low	Low	High	Low	High	Low	
Coeur d'Alene	26,611	High	Low	Low	Med. high	Med. high	Med. low	Med. low	
Cottonwood	852	Med. high	Med. high	Low	Med. high	High	Low	Low	
Council	951	Med. high	Med. high	Low	Med. high	Med. low	Med. high	Low	
Craigmont	571	Med. low	High	Low	Med. low	Med. low	Low	Low	
Culdesac	289	Med. low	High	Low	Med. high	High	Low	Low	
Dalton Gardens	2,170	NA	NA	NA	NA	NA	NA	NA	
Dayton	382	Low	High	Low	Low	High	High	Low	
Deary	548	Med. high	Low	High	Med. high	High	High	Med. low	
Declo	289	Low	High	Low	High	Low	Low	Low	
Dietrich	129	Low	High	Low	Low	High	High	Low	
Dingle		Low	Low	Low	Low	Low	Low	Low	
Donnelly	155	Med. low	Low	Low	High	Med. low	Low	Low	
Dover	335	Low	Low	Low	High	Low	Low	High	
Downey	672	Med. high	Med. high	Low	High	High	Low	Low	
Driggs	980	High	Med. high	Low	Med. high	Med. high	Low	Low	
Drummond	33	Low	High	Low	Low	Low	Low	Low	
Dubois	480	Med. low	High	Low	Low	Med. high	Med. low	Low	
Eagle	3,694	High	Med. low	Low	Med. high	Med. low	Low	Low	
East Hope	231	Low	Low	Low	Low	Low	Low	High	
Eden	329	Med. low	High	Low	Low	Med. low	Low	Low	
Elk City		Med. high	High	High	Med. high	Low	High	Low	
Elk River	153	Low	High	Low	Med. low	Low	Med. low	Low	
Ellis		Low	Low	Low	Med. high	Low	High	Low	
Emmett	4,888	High	Med. high	Med. high	Med. low	Med. high	Low	Low	

Table 14—Economic diversity index scores and levels of direct employment by industrial sector (based on proportions of employment) by rural Columbia basin community, with 1992-94 population estimates (N=387) (continued)

State and town	1992-94 population	Economic diversity index	Levels of direct employment by industrial sector ^a						
			Agriculture	Timber	Travel and tourism	State and local government	Federal Government	Mining and minerals	
Fairfield	376	High	High	Low	Low	Med. high	Low	Low	Low
Ferdinand	141	NA	NA	NA	NA	NA	NA	NA	NA
Fernan Lake	186	Low	Low	High	Low	Low	Low	Low	Low
Filer	1,716	High	Med. high	Low	Med. low	Med. high	Low	Low	Low
Firth	456	Med. low	High	Low	Low	Low	Low	Low	Low
Fishhaven		Low	Low	Low	High	Low	Low	Low	Low
Fort Hall	1,453	Med. low	Med. low	Low	Med. low	Med. low	High	Low	Low
Franklin		Med. low	Low	Low	High	Low	Low	Low	Low
Fruitland	2,668	High	Med. high	Med. high	Med. low	Med. low	Low	Low	Low
Garden City	7,034	Low	High	Low	Low	Low	Low	Low	Low
Garden Valley		Med. low	Low	Low	High	Low	Low	Low	Low
Genesee	783	Med. low	High	Low	Low	High	Low	Low	Low
Geneva		Low	High	Low	Low	Low	Low	Low	Low
Georgetown	659	Low	High	Low	Low	Med. high	Low	Low	Low
Gibsonville		Low	High	Low	Low	Med. high	Low	Low	Low
Glenns Ferry	1,359	Med. low	Low	Low	High	Med. high	High	Low	Low
Glifton		Low	Med. high	Low	Low	Med. high	Low	Low	Low
Gooding	3,066	High	Med. low	Low	Low	Med. high	Med. low	Low	Low
Grand View	355	Med. low	High	Low	Med. low	Med. high	Med. low	Low	Low
Grangeville	3,208	High	Med. low	Med. low	Med. high	Med. high	Med. high	Med. high	Low
Greenleaf	681	Low	Low	Low	High	High	Low	Low	Low
Hagerman	669	High	Med. high	Low	Med. low	Med. low	High	Low	Low
Hailey	4,252	High	Low	Low	Med. high	Med. high	Low	Low	Low
Hamer	86	Med. low	High	Low	Med. low	Med. low	Low	Low	Low
Hansen	946	Med. low	Med. high	Low	Med. high	High	Low	Low	Low
Harrison	232	Med. high	High	Low	Med. low	Med. low	Low	Low	Low
Hauser	427	Low	Low	Low	High	High	Low	Low	Low
Hayden	4,693	Med. low	Low	Low	High	High	Low	Low	Low
Hayden Lake	374	Med. high	Low	Low	High	High	Low	Low	Low

Table 14—Economic diversity index scores and levels of direct employment by industrial sector (based on proportions of employment) by rural Columbia basin community, with 1992-94 population estimates (N=387) (continued)

State and town	1992-94 population	Economic diversity index	Levels of direct employment by industrial sector ^a						
			Agriculture	Timber	Travel and tourism	State and local government	Federal Government	Mining and minerals	
Hazelton	426	Med. low	High	Low	Low	Med. high	Low	Low	Low
Heyburn	2,836	Med. low	High	Low	Low	Med. low	Low	Low	Low
Holbrook		Low	High	Low	Low	Med. low	Low	Low	Low
Hollister	151	Low	High	Low	Low	Low	Low	Low	Low
Homedale	2,097	High	Med. high	Low	Low	Med. high	Low	Low	Med. high
Hope	116	Med. low	Low	High	High	Med. low	Low	Low	Low
Horseshoe Bend	726	Med. high	Med. low	High	High	Med. low	High	High	Low
Huettner	85	Low	Low	High	High	Low	Low	Low	Low
Idaho City	373	Med. low	Low	Low	High	High	Low	Low	Low
Idaho Falls	48,226	High	Low	Low	Med. high	Med. high	Low	Low	Low
Indian Valley		Low	High	Low	Low	Low	Low	Low	Low
Inkom	753	Med. high	Low	Low	Med. low	High	Low	Low	High
Iona	1,107	Med. low	Low	Low	high	Low	Low	Low	Low
Irwin	116	Med. low	Low	Low	High	Low	Low	Low	Low
Island Park	163	Med. low	Low	Low	Med. low	High	High	High	Low
Jerome	7,077	High	Med. high	Low	Med. low	Med. low	Med. low	Low	Med. low
Julietta	514	Med. low	Med. high	High	Low	High	High	Low	Low
Kamah	1,190	Med. high	Med. low	High	Med. high	Med. high	Med. high	Low	Low
Kellogg	2,495	High	Low	Low	Med. high	Med. low	Med. low	Low	Med. high
Ketchum	2,685	Med. high	Low	Low	High	Low	Low	Low	Low
Kimberly	2,656	Med. high	High	Low	Med. high	Low	Low	Low	Low
Kooskia	708	Med. high	High	Low	Med. low	Med. high	Low	Low	Low
Kootenai	317	Med. low	High	Low	Med. high	Low	Low	Low	Med. low
Kuna	2,238	High	Med. high	Low	Med. low	High	High	Low	Low
Lakefork		Low	Med. high	Low	Low	High	High	Low	Low
Lapwai	1,006	Med. low	Med. high	Low	Low	Med. high	Med. high	Low	Low
Lava Hot Springs	464	Med. low	Med. low	Low	High	Low	Low	High	Low
Leadore	85	Med. low	High	Low	Med. low	High	High	Low	Low
Lemhi		Low	High	Low	Low	Med. high	Med. high	Low	Low

Table 14—Economic diversity index scores and levels of direct employment by industrial sector (based on proportions of employment) by rural Columbia basin community, with 1992-94 population estimates (N=387) (continued)

State and town	1992-94 population	Economic diversity index	Levels of direct employment by industrial sector ^a						
			Agriculture	Timber	Travel and tourism	State and local government	Federal Government	Mining and minerals	
Lenore		Low	High	Low	Low	Low	Low	Med. high	Low
Letha		Low	High	Low	Low	Low	Low	Low	Low
Lewiston	29,119	High	Low	Med. high	Med. high	Med. high	Med. high	Low	Med. low
Lewisville	549	Low	High	Low	Low	Low	Low	Low	Low
Mackay	592	Med. high	High	Low	High	Med. low	High	Med. high	Low
Malad City		High	High	Low	Low	High	Low	Low	Med. low
Malta	180	Med. low	Med. high	Low	Low	High	High	Low	Low
Mansfield	365	Med. high	High	Low	Low	Med. high	High	Low	Low
Marsing	809	Med. high	High	Low	Low	Low	Med. high	Med. low	Low
May		Low	High	Low	Low	Low	High	Low	Low
McCall	2,329	High	Low	Low	Low	High	Med. low	Low	Low
McCammon	763	Med. low	High	Low	Low	Med. high	Low	Low	Low
Melba	272	Med. low	Med. high	Low	Low	Med. low	High	Low	Low
Menan	768	Med. low	High	Low	Low	Low	Low	Low	Low
Meridian	11,181	High	Low	Low	Low	Med. low	Med. low	Low	Med. low
Middleton	2,081	Med. high	High	Low	Low	Med. low	Med. low	Low	Low
Midvale	116	Low	High	Low	Low	Low	Med. low	Low	High
Mimidoka	64	Low	High	Low	Low	Low	High	Low	Med. Low
Montour		Low	High	High	Low	Low	Low	Low	Low
Montpelier		High	Med. low	Low	Low	High	Med. high	Med. low	Med. low
Moore	196	Low	Low	Low	Low	Low	Low	Low	Low
Moscow	19,122	Med. high	Low	Low	Low	High	High	Low	Low
Mountain Home	8,107	Med. high	Med. low	Low	Low	Med. low	Med. low	High	Low
Moyie Springs	435	Med. low	Med. low	High	High	Med. low	Med. low	Low	Low
Mud Lake	182	Med. high	Med. high	Low	Low	Low	High	Med. low	Low
Mullan	815	Low	Low	Low	Low	Low	Low	High	High
Murtaugh	141	Med. low	High	Low	Low	Low	Med. high	Low	Low
Nampa	31,416	High	Low	Low	Low	Med. high	Low	Low	Med. low
New Meadows	620	Med. low	Low	High	Low	Low	High	Med. low	Low

Table 14—Economic diversity index scores and levels of direct employment by industrial sector (based on proportions of employment) by rural Columbia basin community, with 1992-94 population estimates (N=387) (continued)

State and town	1992-94 population	Economic diversity index	Levels of direct employment by industrial sector ^a						
			Agriculture	Timber	Travel and tourism	State and local government	Federal Government	Mining and minerals	
New Plymouth	1,465	Med. low	High	Low	Low	Low	Low	Low	Med. low
Newdale	361	Low	High	Low	Low	Low	High	Low	Low
Nez Perce	471	Med. low	High	Low	Med. low	Med. low	Med. low	Low	Low
North Powder	515	Low	High	High	Low	Med. high	Med. high	Med. low	Low
Notus	411	Med. high	High	Low	Med. high	High	High	Low	Low
Oakley	607	Med. high	High	Low	High	High	Low	Low	Med. low
Ola	0	Low	High	Low	Med. high	Med. high	High	Low	Low
Oldtown	166	High	Med. high	Med. high	Med. high	Med. high	Low	Med. high	Low
Onaway	208	NA	NA	NA	NA	NA	NA	NA	NA
Orofino	3,010	High	Med. low	Med. high	Med. low	Med. low	High	Med. low	Low
Osburn	1,507	Med. high	Low	Med. low	Med. high	Med. high	High	Low	Med. low
Ovid		Low	Low	High	Low	Low	Low	Low	Low
Parker	314	Low	High	Low	Low	Low	High	Low	Low
Parma	1,702	High	High	Low	Low	Low	Med. low	Low	Low
Paul	1,000	Med. high	High	Low	Low	Low	Med. high	Low	Low
Payette	6,170	High	Low	Med. high	Low	Low	Med. high	Low	Low
Peck	166	Med. high	Med. high	Low	Med. high	Med. high	Med. high	Low	Med. high
Pierce	755	Med. low	Low	High	Low	Low	Med. low	Low	Low
Pilot Rock	1,540	Med. high	Med. high	High	High	High	High	Low	Low
Pinehurst	1,785	High	Low	Med. high	Med. high	Med. high	Med. high	High	Low
Plummer	763	Med. high	Med. high	High	High	High	High	High	Low
Pocatello	47,914	High	Low	Low	Med. high	Med. high	High	Low	Med. low
Ponderay	491	Med. low	High	Med. low	High	High	Med. low	Low	High
Post Falls	8,494	High	Low	High	Low	High	Low	Low	Med. low
Potlatch	743	Med. high	Med. low	Med. high	Med. high	Med. high	Med. high	Low	Med. high
Preston		High	Med. high	High	High	High	Med. high	Low	Med. high
Priest River	1,679	High	High	High	Med. low	Med. low	Med. high	Low	Low
Rathdrum	2,382	High	Low	High	High	High	Med. low	Low	Low
Rexburg	14,497	High	Low	Med. low	High	High	Med. high	Low	Med. low

Table 14—Economic diversity index scores and levels of direct employment by industrial sector (based on proportions of employment) by rural Columbia basin community, with 1992-94 population estimates (N=387) (continued)

State and town	1992-94 population	Levels of direct employment by industrial sector ^a									
		Economic diversity index	Agriculture	Timber	Travel and tourism	State and local government	Federal Government	Mining and minerals			
Richfield	380	Med. low	High	Low	Low	Med. low	Low	Low	Low	Low	Low
Rigby	2,950	High	Med. low	Low	Med. high	Med. high	Low	Med. high	Low	Low	Low
Riggins	460	Med. high	Med. high	Low	High	Med. high	Low	Med. high	Med. high	Med. high	Low
Ririe	665	Med. low	Med. high	Low	Low	Med. high	Low	Med. high	Med. high	Low	Low
Roberts	647	Med. high	High	Low	Med. low	High	Low	High	Low	Low	Low
Rockland	305	Low	High	Low	Low	High	Low	High	Low	Low	Low
Rupert	5,636	High	Med. low	Low	Med. low	Med. high	Low	Med. high	Low	Low	Low
Salmon	3,093	High	Med. low	Med. low	Med. high	Med. high	Med. low	Med. high	Med. low	Med. low	Low
Sandpoint	5,725	High	Low	Med. low	High	Med. high	Med. low	Med. high	Low	Low	Low
Shelley	3,744	High	Med. high	Low	Med. low	Med. high	Med. low	Med. high	Low	Med. low	Low
Shoshone	1,273	High	High	Low	Low	High	Low	High	Med. low	Med. low	Low
Smelterville	453	Med. low	Low	Low	High	Med. low	Low	High	High	Low	Med. high
Smiths Ferry		Low	High	Low	High	Low	Low	High	Low	Low	Low
Soda Springs	3,182	High	Med. high	Low	Med. high	Med. high	Low	Med. high	Low	Low	High
Spalding		Low	Low	Low	Low	Low	Low	Low	High	Low	Low
Spirit Lake	883	Med. high	Low	Low	High	Med. high	Low	High	Med. low	Med. low	Low
St. Anthony	3,393	Med. high	High	Med. low	Med. high	Med. high	Med. low	Med. high	Low	Low	Low
St. Charles	205	Low	High	Low	High	High	Low	Low	Low	Low	Low
St. Marie	2,669	High	Low	High	Low	High	Low	Med. Low	Low	Low	Low
Stanley	70	Med. low	Low	Low	High	Med. low	Low	Med. high	Low	Low	Low
Sugar City	1,410	Med. low	High	Low	Med. low	Med. low	Low	Med. high	Low	Low	Low
Sun Valley	997	Med. high	Low	Low	High	Med. high	Low	Med. low	Med. low	Med. high	Low
Swan Valley	139	Low	High	Low	High	High	Low	Low	Low	Low	Low
Sweet		Low	High	Med. low	Low	High	Med. low	Low	Low	Low	Low
Tendoy		Low	Low	Low	High	Low	Low	Low	Low	Low	Low
Tensed	91	Low	High	Low	Med. low	Med. low	Med. low	Med. low	Med. low	Med. low	Low
Teton	563	Low	High	Low	Low	Low	Low	Med. low	Low	Low	Low
Tetonia	153	Med. low	High	Med. low	High	Med. low	Med. low	Med. low	Low	Low	Low
Troy	782	Med. low	High	Med. low	High	High	Med. low	High	Low	Low	Low

Table 14—Economic diversity index scores and levels of direct employment by industrial sector (based on proportions of employment) by rural Columbia basin community, with 1992-94 population estimates (N=387) (continued)

State and town	1992-94 population	Economic diversity index	Levels of direct employment by industrial sector ^a						
			Agriculture	Timber	Travel and tourism	State and local government	Federal Government	Mining and minerals	
Twin Falls	29,684	High	Low	Low	Med. high	Med. high	Low	Low	
Ucon	932	Low	High	Low	Low	Low	Low	Low	
Victor	341	Med. low	High	Low	Med. high	Med. low	Low	Low	
Wallace	994	Med. low	Low	Low	Med. high	High	Med. low	Med. high	
Wardner	247	Low	High	Low	Low	Low	Low	Low	
Weippe	523	Med. low	Med. low	High	Low	High	Low	Low	
Weiser	4,891	High	Med. high	Low	Med. low	Med. high	Low	Med. low	
Wendell	2,179	Med. high	High	Low	Low	Med. low	Low	Low	
Weston	426	Low	High	Low	Low	Low	Low	Low	
White Bird	109	Med. low	High	Med. low	Med. high	Low	High	Low	
Wilder	1,426	High	High	Low	Low	Med. high	Med. low	Low	
Winchester	272	NA	NA	NA	NA	NA	NA	NA	
Worley	194	Med. low	High	Low	Med. high	Med. high	Med. high	Low	
Montana:									
Alberton	358	Med. low	Low	Med. low	High	High	Low	Low	
Anaconda	10,037	High	Low	Low	High	High	Low	Low	
Arlee	486	Med. high	Low	Low	Med. high	Med. high	Med. low	Low	
Bonner-W. Riverside	1,654	Med. low	Low	High	Med. low	Med. high	Low	Low	
Butte	33,555	High	Low	Low	High	Med. high	Low	Med. low	
Charlo	406	Med. low	High	Low	Low	High	Low	Low	
Columbia Falls	3,044	High	Low	Med. high	Med. high	Med. low	Low	Med. high	
Darby	679	High	Med. low	High	Med. low	Med. low	Med. high	Low	
Deer Lodge	3,494	High	Low	Med. low	High	High	Low	Med. high	
Drummond	270	Med. high	Med. high	High	Med. low	Med. high	Low	Low	
Eureka	1,039	High	Low	High	Med. low	High	Low	Med. high	
Finley Point	376	Med. low	High	High	Med. low	Med. high	Med. high	High	
Hamilton	3,023	High	Med. low	Low	Med. high	Med. high	Low	Low	
Hot Springs	413	Med. low	Med. low	Low	High	Med. high	Low	Low	
Kalispell	12,456	High	Low	Med. low	Med. low	Med. low	Low	Low	

Table 14—Economic diversity index scores and levels of direct employment by industrial sector (based on proportions of employment) by rural Columbia basin community, with 1992-94 population estimates (N=387) (continued)

State and town	1992-94 population	Levels of direct employment by industrial sector ^a							
		Economic diversity index	Agriculture	Timber	Travel and tourism	State and local government	Federal Government	Mining and minerals	
Kicking Horse	288	Low	Low	Low	Low	Low	Low	Low	Low
Libby	2,541	High	Low	Med. low	Med. high	Med. high	Med. low	Med. low	Low
Lolo	2,746	High	Low	Low	High	Med. high	Low	Low	Low
Missoula	44,522	High	Low	Low	Med. high	Med. high	Low	Low	Low
Orchard Homes	10,317	Low	High	Low	Low	Low	Low	Low	Med. low
Pablo	1,264	Med. high	Low	High	Low	High	Low	Low	Med. low
Philipsburg	902	High	Med. high	Med. high	Med. high	Med. low	Med. low	Med. low	Low
Pinesdale	665	Low	Low	Low	High	High	Low	Low	Med. high
Plains	1,014	High	High	Low	Med. high	Med. low	Med. high	Med. high	Low
Polson	3,621	High	Med. low	Low	High	Med. low	Low	Low	Low
Rexford	134	Med. low	Med. low	High	Low	Low	Low	Low	Low
Ronan	1,630	High	Med. high	Low	Med. high	Med. high	Low	Low	Low
St. Ignatius	849	High	High	Low	Low	Low	Med. low	Med. low	Low
Stevensville	1,340	High	Med. high	Low	Med. high	Low	Med. low	Med. low	Low
Superior	879	High	Low	High	High	Med. high	Med. low	Med. low	Low
Thompson Falls	1,313	High	Low	High	Med. high	Med. high	Low	Low	Low
Troy	1,054	Med. high	Low	Med. low	High	Med. high	Med. high	Med. high	Low
Walkerville	573	Low	Low	Low	High	Low	Low	Low	Low
Whitefish	4,551	High	Low	Low	High	Med. low	Low	Low	Low
Oregon:									
Adams	245	Low	High	Low	Low	Low	Med. low	Med. low	Low
Adrian	135	Low	High	Low	Low	Med. high	Low	Low	Low
Altamont	18,591	Low	High	Low	Low	Low	Low	Low	Low
Antelope	35	Low	High	Low	Low	Low	Low	Low	Low
Arlington	460	Med. high	High	Med. low	Med. high	High	Low	Low	Low
Athens	1,050	Med. high	High	Low	Med. low	Med. high	Low	Low	Low
Baker City	9,585	High	Med. low	Med. low	Med. high	Med. low	Med. low	Med. low	Low
Bend	29,425	High	Low	Med. low	High	Med. low	Low	Low	Low
Boardman	2,145	Med. high	Med. high	Low	Med. low	Med. high	Med. low	Med. low	Low

Table 14—Economic diversity index scores and levels of direct employment by industrial sector (based on proportions of employment) by rural Columbia basin community, with 1992-94 population estimates (N=387) (continued)

State and town	1992-94 population	Economic diversity index	Levels of direct employment by industrial sector ^a						
			Agriculture	Timber	Travel and tourism	State and local government	Federal Government	Mining and minerals	
Bonanza	355	Med. low	High	Low	Med. low	Med. low	Med. low	Med. high	Low
Burns	2,870	High	Med. high	Med. low	Med. high	Med. high	Med. high	Low	Low
Canyon City	660	Med. low	High	Low	Low	High	High	Low	Low
Chiloquin	700	Med. high	Med. low	Low	Med. low	Med. low	Med. low	Med. low	Low
Condon	725	High	High	Low	Med. high	Med. high	Med. high	Low	Low
Cove	570	Med. low	High	Low	Low	Low	Low	Med. low	Low
Culver	660	Med. high	Med. high	Low	Med. low	Med. low	Med. low	Low	Med. high
Dayville	145	Med. low	Med. high	Med. low	Med. low	High	High	High	Low
Dufur	580	Med. low	High	Low	Med. high	Med. high	Med. high	Med. low	Low
Echo	515	Med. high	High	Low	Med. high	Med. high	High	Med. low	Low
Elgin	1,655	Med. high	Med. high	High	Med. high	Med. high	Med. high	Low	Low
Enterprise	1,935	High	Med. high	Low	Med. high	Med. high	High	Med. high	Med. low
Fossil	470	Med. low	High	Low	Low	Low	High	Low	Low
Granite	10	Low	Low	Low	Low	Low	Low	Low	Low
Grass Valley	160	Med. low	High	Low	Med. high	Med. low	Med. low	Low	Low
Greenhorn	3	Low	High	Low	Low	Low	Low	Low	Low
Haines	410	Med. low	High	Low	Low	Med. high	Med. high	Low	Low
Halfway	340	High	Med. high	Low	Med. high	Med. high	Med. high	Low	Low
Helix	155	Low	Low	Low	Med. low	High	High	Low	Low
Heppner	1,465	Med. high	High	Med. low	Med. low	High	High	Med. low	Low
Hermiston	10,330	High	Med. low	Low	Med. high	Med. low	Med. low	Low	Low
Hines	1,445	Med. high	High	High	Low	Med. low	Med. low	High	Low
Hood River	4,875	NA	NA	NA	NA	NA	NA	NA	NA
Huntington	560	Low	Med. high	Low	Med. high	High	High	Low	High
Imbler	310	Med. high	Med. low	Med. high	Med. high	Med. high	Med. high	Med. high	Low
Ione	250	Low	Med. high	Low	High	High	High	Low	Low
Irrigon	890	Med. low	Med. low	Low	Med. low	High	High	Low	Low
Island City	825	Low	Low	Low	Low	Low	Low	Low	Low
John Day	1,900	High	Med. low	High	Med. high	Med. high	Med. high	Med. high	Low

Table 14—Economic diversity index scores and levels of direct employment by industrial sector (based on proportions of employment) by rural Columbia basin community, with 1992-94 population estimates (N=387) (continued)

State and town	1992-94 population	Levels of direct employment by industrial sector ^a							
		Economic diversity index	Agriculture	Timber	Travel and tourism	State and local government	Federal Government	Mining and minerals	
Jordan Valley	400	Med. high	Med. high	Low	Med. high	High	Med. high	Med. high	Med. low
Joseph	1,165	Med. low	High	High	Med. high	Med. high	Low	Low	Low
Klamath Falls	18,405	High	Low	Low	High	Med. high	Low	Low	Low
La Grande	12,195	High	Low	Med. low	Med. high	Med. high	Low	Low	Low
Lakeview	2,575	High	Med. low	Med. high	Med. high	Med. high	Med. high	Med. high	Low
Lexington	285	Med. low	High	Low	Low	Low	Low	Low	Low
Lonerock	20	Low	High	Low	Low	Low	Low	Low	Low
Long Creek	240	Med. high	High	Med. high	High	High	Low	Low	Low
Lostine	230	Med. high	Low	High	Med. high	Low	High	High	Med. low
Madras	4,290	High	Med. low	Med. high	Med. high	Med. high	Low	Low	Low
Malin	740	Med. low	Med. high	High	Low	Low	Low	Low	Low
Maupin	485	Med. high	High	Low	High	Med. low	Med. high	Med. high	Low
Merrill	835	High	Med. high	Med. high	Med. low	Med. high	Low	Low	Low
Metolius	545	Low	Low	Low	Low	Low	Low	Low	Low
Milton-Freewater	5,865	High	Med. low	Low	High	Med. high	Low	Low	Low
Mitchell	165	Med. low	High	Med. low	Med. high	High	Low	Low	Low
Monument	170	Low	High	Low	Med. low	Med. high	Low	Low	Low
Moro	295	Med. high	High	Low	Med. high	High	Low	Low	Low
Mosier	275	Med. high	Low	Low	Med. high	High	Low	Med. high	Low
Mount Vernon	625	Med. low	Low	High	Med. low	High	Low	Low	Low
Northfork		Med. low	Low	Low	High	Low	Low	Low	Low
Nyssa	2,675	High	Med. high	Low	Med. high	Med. high	Low	Low	Low
Ontario	9,760	High	Med. high	Low	Med. high	Med. low	High	High	Low
Paisley	345	Med. low	High	Med. low	Low	Low	Low	Low	Low
Paris		Med. low	High	Low	Low	High	Low	Low	Low
Pendleton	15,715	High	Low	Low	Med. high	Med. high	Med. low	Med. low	Med. low
Prairie City	1,160	Med. high	Med. high	Med. high	Med. low	Med. low	High	High	Low
Primeville	5,945	High	Med. low	High	Med. low	Med. low	Med. low	Med. low	Low
Redmond	9,650	High	Med. low	Med. low	High	Med. low	Low	Low	Low

Table 14—Economic diversity index scores and levels of direct employment by industrial sector (based on proportions of employment) by rural Columbia basin community, with 1992-94 population estimates (N=387) (continued)

State and town	1992-94 population	Economic diversity index	Levels of direct employment by industrial sector ^d						
			Agriculture	Timber	Travel and tourism	State and local government	Federal Government	Mining and minerals	
Richland	180	Med. high	High	Low	High	Med. high	Low	Low	
Rufus	290	Med. low	High	Low	High	Med. low	High	Low	
Seneca	190	Med. low	Low	Low	Low	Med. low	Low	Low	
Shaniko	30	Low	High	Med. low	Low	Low	Low	High	
Sisters	765	Med. high	Med. low	Low	High	Med. low	Low	Low	
Spray	155	Med. low	High	Med. low	Med. low	Med. high	Low	Low	
Stanfield	1,620	Med. low	High	Low	Med. low	High	Low	Low	
Summerville	150	Med. low	Low	High	Low	Low	Low	Med. high	
Sumpter	165	Med. high	Med. high	Med. low	High	Med. high	Low	Med. high	
Terrebonne	1,083	Med. low	Low	Low	High	Low	Low	Low	
The Dalles	11,325	High	Low	Low	High	Med. high	Low	Med. low	
Three Rivers	1,230	Low	High	Low	Low	Low	Low	Low	
Ukiah	260	Low	High	Low	High	Med. low	Low	Low	
Umatilla	3,155	Med. high	High	Low	Med. high	High	Med. low	Low	
Union	1,915	High	High	Low	Med. high	High	Low	Low	
Unity	110	Med. high	Med. high	Med. low	Low	Med. low	High	Low	
Vale	1,495	Med. high	High	Low	Low	High	Low	Low	
Wallowa	755	Med. low	High	Med. high	Med. high	Med. high	Med. low	Med. low	
Warm Springs	2,287	Med. low	Med. high	High	Low	Low	Med. low	Med. low	
Weston	640	Med. low	Low	Low	Low	Med. high	Low	Low	
Washington:									
Afton	1,534	High	Med. high	Low	Med. high	High	Low	Low	
Airway Heights	2,520	Med. high	Low	Low	High	High	Low	Low	
Albion	655	Low	High	Low	Low	Low	Low	Low	
Almira	315	Low	High	Low	Low	High	Low	Low	
Alpine	222	Med. low	Low	Low	High	Med. low	Low	Low	
Asotin	1,108	Low	High	Low	High	High	Low	Low	
Benton City	2,090	Med. high	High	Low	Med. high	Med. high	Med. low	Low	
Bingen	660	High	Med. high	Med. high	Med. low	Med. high	Med. low	Low	

Table 14—Economic diversity index scores and levels of direct employment by industrial sector (based on proportions of employment) by rural Columbia basin community, with 1992-94 population estimates (N=387) (continued)

State and town	1992-94 population	Levels of direct employment by industrial sector ^a									
		Economic diversity index	Agriculture	Timber	Travel and tourism	State and local government	Federal Government	Mining and minerals			
Brewster	1,645	Med. high	Med. low	Low	Med. high	Low	Low	Low	Low	Low	
Bridgeport	1,705	Med. high	High	Low	Low	Low	Med. high	Low	Low	Low	
Burbank	1,695	Med. low	Med. high	Low	Low	Low	High	High	High	Low	
Cashmere	2,660	High	High	Low	Med. low	Low	Med. low	Med. low	Low	Med. high	
Chelan	3,200	High	Med. high	Low	Med. high	Low	High	High	Low	Low	
Cheney	8,220	High	Low	Low	Med. high	Low	High	High	Low	Low	
Chewelah	2,243	High	Med. high	Med. low	Med. high	Low	Med. low	Med. low	Low	Med. low	
Clarkston	6,750	High	Low	Low	High	Low	Med. high	Med. high	Low	Low	
Cle Elum	1,785	High	Med. low	Low	High	Low	Med. high	Med. high	Low	Low	
Colfax	2,810	Med. high	Low	Low	Med. low	Low	Med. low	High	Low	Low	
College Place	6,710	Med. low	Med. high	Low	Low	Low	Med. high	Med. high	Low	Med. low	
Colton	350	Low	High	Low	Low	Low	High	High	Low	Med. low	
Colville	4,440	High	Low	Med. low	Med. high	Low	High	High	Low	Med. low	
Conconully	180	Low	High	Low	High	Low	High	Med. high	Low	Low	
Connell	2,640	High	High	Low	Med. low	Low	High	Med. low	Low	Low	
Coulee City	612	Med. high	High	Low	Med. low	Low	High	High	Low	Low	
Coulee Dam	206	Med. low	Low	Low	Med. high	Low	High	High	Med. high	Low	
Country Homes	5,126	Low	Low	Low	Low	Low	Low	High	High	Low	
Creston	239	Low	High	Low	Low	Low	High	High	Low	Low	
Cusick	256	Med. high	Low	Med. low	Med. high	Low	Low	High	Med. high	Low	
Davenport	1,550	High	Med. high	Low	High	Low	High	High	Low	Low	
Dayton	2,505	High	Med. high	Low	Med. low	Low	High	High	Low	Low	
Deerpark	2,570	High	Med. low	Low	High	Low	Med. low	Med. low	Low	Low	
East Wenatchee	4,010	High	Med. high	Low	Med. high	Low	High	High	Low	Low	
Electric City	945	Med. low	Low	Low	Med. high	Low	High	High	Low	Low	
Ellensburg	12,860	High	Low	Low	High	Low	High	High	Low	Low	
Elmer City	310	Low	Low	Low	High	Low	Med. high	Med. high	Low	Low	
Endicott	360	Med. low	Med. high	Low	Med. low	Low	High	High	Low	Low	
Entiat	545	Med. low	High	Low	Low	Low	High	High	Med. high	Low	
Ephrata	5,585	High	Med. high	Low	Med. low	Low	Med. low	High	Low	Low	

Table 14—Economic diversity index scores and levels of direct employment by industrial sector (based on proportions of employment) by rural Columbia basin community, with 1992-94 population estimates (N=387) (continued)

State and town	1992-94 population	Economic diversity index	Levels of direct employment by industrial sector ^a						
			Agriculture	Timber	Travel and tourism	State and local government	Federal Government	Mining and minerals	
Fairchild	4,854	Med. low	Low	Low	Low	Low	High	Low	
Fairfield	599	Med. high	High	Low	Low	High	High	Low	
Farmington	130	Med. low	High	Low	Low	High	High	Low	
Garfield	594	Med. low	Med. high	Low	Low	High	High	Med. low	
George	365	Med. low	High	Low	Low	Low	Low	Low	
Goldendale	3,425	High	Med. high	Med. low	Low	Med. high	Med. high	Med. high	
Grand Coulee	1,045	Med. high	Med. low	Low	High	High	High	Low	
Grandview	7,690	Med. high	High	Low	Med. low	Med. high	Med. high	Low	
Granger	2,085	Med. high	Med. high	Low	Low	Med. high	Med. high	Med. high	
Greenacres	4,626	High	Low	Low	Low	Med. low	Med. low	Low	
Harrah	453	Med. low	High	Low	Med. low	High	High	Low	
Harrington	492	Med. low	High	Low	Low	Med. high	Med. high	Low	
Hartline	185	Low	High	Low	Low	Low	Low	Low	
Inchelium	392	Med. low	Low	Med. high	Med. low	Med. low	Med. low	Low	
Ione	501	Med. high	Low	High	High	Med. high	Med. high	Low	
Kahlotus	200	Med. high	High	Low	Low	Low	High	Low	
Kennewick	46,960	High	Low	Low	Med. high	Med. low	Med. low	Low	
Kettle Falls	1,435	Med. high	Med. low	High	Med. high	Med. low	Med. low	Low	
Kititas	1,060	Med. low	High	Low	Med. high	High	High	Low	
Krupp	65	Low	High	Low	Low	Low	Low	Low	
La Crosse	390	Med. low	High	Low	High	Low	Low	Low	
Lamont	93	Low	High	Low	High	Low	Low	Low	
Latah	211	Med. low	High	Low	Low	Low	Low	Low	
Leavenworth	2,020	High	Med. high	Low	High	Med. low	Low	Low	
Liberty Lake	2,036	Low	Low	Med. low	Med. low	Low	Low	High	
Lind	470	Med. high	High	Low	Low	Med. high	Low	Low	
Mabton	1,615	Med. low	High	Low	Low	High	Low	Low	
Malden	215	Low	High	Low	Low	Low	Low	Low	
Marcus	154	Med. low	Low	Low	High	Med. low	Low	Low	
Mattawa	1,535	Med. low	High	Low	Low	Med. high	Low	Low	
Medical Lake	3,660	Med. high	Low	Med. high	Med. high	High	Med. low	Med. high	

Table 14—Economic diversity index scores and levels of direct employment by industrial sector (based on proportions of employment) by rural Columbia basin community, with 1992-94 population estimates (N=387) (continued)

State and town	1992-94 population	Economic diversity index	Levels of direct employment by industrial sector ^a						
			Agriculture	Timber	Travel and tourism	State and local government	Federal Government	Mining and minerals	
Mesa	315	Med. low	High	Low	Med. high	Med. high	Low	Low	Low
Metaline	193	Low	Low	Low	High	High	Low	Low	Low
Metaline Falls	227	Med. low	Low	Low	Low	High	High	High	Low
Moses Lake	12,190	High	Low	Low	Med. low	Med. low	Med. low	Low	Low
Moxee	925	Med. high	High	Med. low	Med. high	Low	Low	Low	Med. high
Naches	689	High	Med. low	Med. high	High	High	Low	Low	Low
Nespelem	225	Med. low	Low	Low	Low	High	High	High	Low
Newport	1,780	High	Med. high	Low	Med. low	High	High	Low	Med. high
Northport	342	Med. high	Med. high	High	Low	Med. high	High	High	Med. low
Oakesdale	433	Med. high	High	Low	Low	High	High	Low	Low
Odessa	957	High	High	Low	Low	Med. high	Med. high	Low	Low
Okanogan	2,400	Med. low	Med. high	Low	Med. low	High	High	Med. low	Low
Omak	4,220	High	High	Med. low	Low	Med. low	Med. low	Med. low	Low
Opportunity	22,326	Med. low	High	Low	Low	Low	Med. high	High	Med. high
Oroville	1,520	High	High	Med. low	Med. low	Med. low	Med. high	Low	Low
Othello	4,780	High	Med. high	Low	Low	Med. high	Med. high	Low	Low
Otis Orchard	5,790	High	Low	Low	High	Low	Low	Low	Med. low
Palouse	960	Med. low	High	Low	Low	High	High	Low	Low
Pasco	22,170	High	Med. low	Low	Med. high	Med. high	Med. high	Low	Low
Pateros	585	High	Med. low	High	Med. high	Med. low	Low	Low	Low
Pomeroy	1,460	High	High	Low	Low	High	High	Med. high	Low
Prescott	305	Med. high	High	Low	Med. low	Med. low	High	Low	Low
Prosser	4,630	High	High	Low	High	High	High	Low	Low
Pullman	23,770	Med. high	Low	Low	Med. high	High	High	Low	Low
Quincy	3,860	High	High	Low	Med. low	Med. low	Med. low	Low	Low
Reardan	497	Med. high	Med. high	Low	Med. high	High	High	Med. low	Low
Republic	1,080	High	Med. high	Med. high	Med. low	High	High	Low	Med. high
Richland	35,430	Med. high	Low	Low	Med. high	Med. high	Med. high	Low	Low
Ritzville	1,750	Med. low	High	Low	Med. high	Med. high	Med. high	Low	Low
Riverside	250	Med. high	High	Low	High	High	Med. low	Low	Low
Rock Island	555	Med. high	High	Low	Med. low	High	High	Med. low	Low

Table 14—Economic diversity index scores and levels of direct employment by industrial sector (based on proportions of employment) by rural Columbia basin community, with 1992-94 population estimates (N=387) (continued)

State and town	1992-94 population	Economic diversity index	Levels of direct employment by industrial sector ^a						
			Agriculture	Timber	Travel and tourism	State and local government	Federal Government	Mining and minerals	
Rockford	505	Med. high	High	Low	Med. low	High	Low	Low	Low
Rosalia	620	High	Med. low	Low	High	Med. high	Low	Low	Low
Roslyn	885	Med. high	Med. high	Low	High	High	Low	Low	Low
Royal City	1,200	Med. high	High	Low	Med. low	High	Low	Low	Low
Selah	5,170	Med. high	Med. low	Low	Med. low	High	Low	Low	Med. low
Soap Lake	1,300	Med. high	Low	Low	High	High	Low	Low	Low
South Broadway	2,843	Low	Low	Low	Low	Low	Low	Low	Low
Spangle	245	Med. high	High	Low	Low	High	Low	Low	Med. low
Spokane	185,600	High	Low	Low	Low	Low	Low	Low	Low
Sprague	465	Med. low	High	Low	Low	Med. high	Low	Low	Low
Springdale	355	Med. low	High	Med. low	Low	High	Low	Low	High
St. John	508	Med. high	Med. low	Med. low	Low	Low	Low	Low	Low
Starbuck	165	Low	High	Low	Low	Med. high	High	Low	Low
Sunnyside	11,660	High	Med. high	Low	Med. low	Med. high	Med. high	High	Low
Tekoa	870	Med. low	Med. high	Low	Med. low	High	Low	Low	Low
Terrace Heights	4,223	Low	Low	Low	Low	Low	Low	Low	Low
Tieton	891	Med. high	Med. high	Low	Low	Med. high	Low	Low	Low
Tonasket	1,020	Med. low	High	Low	Med. low	Med. high	Low	Low	Low
Toppenish	7,734	High	Low	Low	Med. low	High	Med. high	Med. high	Low
Twisp	910	High	Med. high	Low	High	Med. low	High	Low	Low
Union Gap	3,220	High	Med. low	Med. low	High	Med. high	Med. high	Low	Low
Uniontown	305	Med. low	High	Low	Low	High	High	Low	Low
Veradale	7,836	High	Low	Low	High	Med. low	Med. low	Low	Med. low
Waitsburg	1,130	Med. high	High	FP	High	Med. low	Med. low	Low	Low
Walla Walla	28,730	High	Low	Low	Med. high	Med. high	Med. high	Low	Med. low
Wapato	3,790	High	High	Low	Med. low	Med. high	Med. high	Low	Low
Warden	1,765	Med. low	High	Low	Med. low	Med. high	Med. high	Low	Low
Wasco	385	Med. high	High	Low	Med. low	Med. high	Med. low	Low	Low
Washtucna	270	Med. low	High	Low	High	High	High	Low	Low

Table 14—Economic diversity index scores and levels of direct employment by industrial sector (based on proportions of employment) by rural Columbia basin community, with 1992-94 population estimates (N=387) (continued)

State and town	1992-94 population	Economic diversity index	Levels of direct employment by industrial sector ^a						
			Agriculture	Timber	Travel and tourism	State and local government	Federal Government	Mining and minerals	
Waterville	1,065	Med. low	High	Low	Low	Low	Low	Low	Low
Waverly	111	Low	High	Low	Low	Low	Low	Low	High
Wenatchee	23,460	High	Med. low	Low	Med. high	Med. low	Med. low	Low	Med. low
White Salmon	1,915	High	Low	Med. low	Med. low	High	Med. low	Med. high	Low
White Swan	2,755	Med. low	High	Med. low	Med. low	Med. high	Med. high	Med. low	Low
Wilbur	875	Med. high	Med. high	Low	Med. high	Med. high	Med. low	Low	Low
Wilson Creek	224	Med. low	High	Low	Low	Med. low	Low	Low	Low
Winthrop	345	High	Med. high	Med. low	High	Low	Med. low	Med. low	Low
Yakima	59,740	High	Med. low	Low	Med. high	Low	Low	Low	Low
Zillah	2,190	Med. high	High	Low	Low	Med. low	Low	Low	Med. Low
Wyoming:									
Jackson	5,605	Med. high	Low	Low	High	Med. low	Med. low	Low	Low
Thayne	288	Med. high	Low	Low	Med. low	Low	Low	Low	High

NA = not available.

^a A “low” level of direct employment represents 5 percent of total employment in a given industry, or less; “medium-low,” 6 to 10 percent; “medium high,” 11 to 19 percent; and “high” 20 percent or more of total employment in a given industry.

Table 14 displays all the region's cities and towns and gives their 1992-94 population estimates, scores on the economic diversity index, and levels of employment per industrial sector. For this analysis, the levels of actual employment developed were low (5 percent of total employment in a given industry, or less), medium low (6 to 10 percent), medium high (11 to 19 percent), and high (20 percent, or more, of total employment in a given industry). These levels, which were based on a comparison of quartiles for all industries, provided absolute—as opposed to relative—indicators of the level of community dependence on the various industries for employment. That is, few communities would be rated highly in construction employment, which represented a low proportion of employment across most communities, but the levels would be much more revealing for sectors representing higher proportions and greater variation, such as agriculture or wood products.

Overall, as table 14 shows, although larger towns and cities tended to have a comparatively higher degree of economic diversity, many of the region's smaller towns also were found to be comparatively diverse economically. For instance, Bonners Ferry, Idaho, was found to have a highly diverse economy, yet had only 2,244 residents in 1992-94.

Comparing Perceived and Actual Industry Dominance

An analysis of industry employment by dominant industry classifications—Economic-profile data for the 198 communities were analyzed to identify differences in actual employment in various sectors in those towns classified as dominated by the various natural resource industries (i.e., farming, ranching, timber, and outdoor recreation and tourism; see the earlier discussion on classification of communities by dominant industry). As table 15 shows, the percentage of actual employment within each of the major industrial sectors is reported for each type of town classified as dominated by a particular industry.

As one would expect, the 93 communities that perceived themselves to be farming and ranch-

ing dependent had higher percentages of employment in the agricultural sector (28.5 percent). Similarly, the 45 communities perceiving themselves to be timber dependent were primarily represented by the higher levels of employment (16.7 percent) in the harvesting of timber and manufacturing of wood products. Additionally, within the 33 communities that perceived themselves to be primarily dependent on travel and tourism, over one-quarter of all jobs, on average, were directly related to that industry. Higher proportions of employment in travel-related service-oriented sectors, such as food and beverage and retail trade, that were attributed to local (nontourism related) trade, also were found for travel and tourism communities as well. This finding suggests that the attribution of nonlocal (or tourism) jobs in these travel-related service sectors based on the minimum requirements approach may be conservative; that is, the travel and tourism sector may account for higher levels of employment than indicated by the minimum requirements approach applied here. In addition, the travel and tourism sector was an important provider of jobs in both timber- and ranching-dependent communities (13.0 and 14.3 percent, respectively, of total employment), reflecting the important role that resource amenities are playing in many rural areas in the basin. The Federal Government was also a comparatively important sector in these towns, with nearly double the mean estimate of employment as other kinds of industrial-dominant towns.

Alternatively, industries such as wood products and Federal Government are relatively unimportant to travel and tourism communities. Likewise, mining and minerals was a relatively unimportant economic sector, in terms of direct jobs provided, in farming-, ranching-, and timber-dependent communities. However, wood products manufacturing had the second-highest proportion of total employment, next to timber-dependent towns, in ranching communities. Aside from these timber-dependent communities having the largest percentage of manufacturing of wood and paper products, they also had the most diverse economies based on relatively high proportions of jobs in each of the major industries.

Table 15—Percentage of total employment in selected economic sectors, by industry dominance classification, Columbia basin

Perceived dominant industry (N) ^a	Agriculture	Wood products	Travel and tourism	State and local government	Federal Government
Farming (93)	28.5	2.0	9.1	17.9	4.0
Ranching (18)	26.4	7.7	14.3	15.6	8.4
Timber (45)	12.6	16.7	13.0	14.9	8.5
Travel and tourism (33)	11.6	2.6	26.5	13.3	3.6
Mining (4)	7.0	5.8	10.0	17.7	2.1
Mean	21.3	6.2	13.5	16.2	5.3
	Mining and minerals	Retail trade ^b	Food and beverage ^b	Medical and social services	Other industries
	<i>Percent</i>				
Farming (93)	1.5	9.8	4.7	4.4	18.1
Ranching (18)	1.2	13.5	6.1	5.3	1.5
Timber (45)	3.2	12.5	4.8	7.1	6.7
Travel and tourism (33)	5.1	15.0	9.5	5.2	7.6
Mining (4)	13.5	12.4	3.6	10.0	17.9
Mean	2.7	11.7	5.7	5.4	12.0

^aTotal number of rural communities in each class based on a sample of 193 communities that participated in a self-assessment workshop.

^bNontourism related.

How accurately do perceptions of residents match the reality of a community's employment profile?—The preceding discussion of residents' perceptions of their community's economy and its actual composition in terms of employment provides insight on the question, How well and how accurately do these perceptions reflect the reality of any given community's actual employment base? One indication can be found in comparing perceived levels of dependence on natural resource industries in the 198 sample communities with levels based on proportions of actual employment for those communities (see table 16). For this comparison, the levels of actual employment applied again ranged were low (5 percent of total employment in a given industry or less), medium low (6 to 10 percent), medium high (11 to 19 percent), and high (20 percent or more, of total employment).

Table 16 indicates that the accuracy of perceived dependence with actual dependence in terms of jobs differed greatly, depending on community. The perceptions by some communities (e.g., Genessee or Bellevue, Idaho) were consistent with levels of employment, and those for other communities (e.g., Clayton or Lava Hot Springs, Idaho) were not.

An analysis of the match between perception and reality on two traditionally important resource-related industries—One difficulty with assessing the accuracy of resident perceptions of their community's economy and its diversity is that of determining an acceptable standard for declaring a community "resource dependent." As a Forest Service (1977) policy statement notes, "The definition of dependency has long been debated...[with] no clear-cut definition of dependency." The criterion in the 1977 memorandum on dependent communities establishes that, "if mills and/or communities utilize at least 50 percent of the annual capacity from National Forest timber sales and have at least 10 percent of their total employment in this industry, then the mills and/or communities are dependent upon National Forest timber sales." Another approach is presented by Bender et al. (1985), whose study of mining-dependent counties classified all counties with 20 percent or more of total county in-

come attributable to the mining industry as mining dependent. Our analysis used the broader, more inclusive criterion used by the Forest Service of 10 percent.

Our analysis focused in particular on data on two key resource-based industrial sectors, wood products and agriculture, as well as on the relation of perceptions to reality for all sectors of a community's economy. The economic profile data were analyzed by using this benchmark of 10 percent or more of employment in an industry as an indicator that the industry was a major one in a town's economy. The analysis indicated that a much higher percentage (about 70 percent) of the towns were ones in which farming and ranching were major industries than were perceived by community residents (58 percent) to be agriculture dominant. (In the economic profile data, ranching is combined with farming as part of the agricultural sector for comparison with the employment data for that sector.) When the average proportion of employment in agriculture (20 percent) was applied as the benchmark across all communities, the percentage of towns in which agriculture was the major industry (58 percent) was much closer to the proportion based on perceptions. In contrast, a lower percentage of the towns (17 percent) were found to be ones in which timber was a major industry than were perceived by workshop participants (23 percent) to be timber dominant. Communities in which timber played a significant role, as indicated by having more than 10 percent in manufacturing of wood products, included 71 communities representing 15 percent of all towns and cities in the region (see table 17).

Of the 198 sample communities for which data on resident perceptions of resource dependence were collected, 37 (18.7 percent) had high employment (10 percent or more of all jobs) in manufacturing of wood products. As table 18 shows, workshop participants in 3 (8 percent) of these 37 communities that actually had high dependence on wood products manufacturing for employment (greater than 10 percent of all jobs) perceived them to have fairly low dependence on this sector.

Text continues on page 80.

Table 16—Comparisons of perceived and actual levels of dependence on natural resource industries (based on proportions of actual employment) in the 198 study communities, Columbia basin

State and town	Agriculture			Timber and wood products			Travel and tourism			Mining and minerals		
	Perceived dependence ^a	Total employment ^b	Perceived dependence	Total employment	Perceived dependence	Total employment	Perceived dependence	Total employment	Perceived dependence	Total employment	Perceived dependence	Total employment
Idaho:												
Ammon	Low	Med. high	Low	Low	Low	High	Low	High	Low	High	Low	Low
Ashton	High	Med. high	High	High	High	High	High	Med. low	Low	Med. low	Low	Low
Athol	Low	Low	High	Low	Med. high	High	High	High	Low	High	Low	Low
Bancroft	High	High	Low	Low	Low	Low	High	Med. high	High	Med. high	High	Low
Bellevue	High	Med. high	High	Low	Low	Low	High	High	Low	Med. high	Low	Low
Blackfoot	High	Low	High	Low	Low	Low	High	High	Low	Med. high	Low	Low
Bliss	High	High	Low	Low	Low	Low	High	High	Low	High	Low	Low
Bonnors Ferry	High	Med. low	High	High	Med. low	Med. low	Low	Med. high	Low	Med. high	Low	Low
Cascade	Low	Low	High	High	Med. low	Med. low	High	Med. high	Low	Med. high	Low	Low
Challis	High	Med. high	Low	Low	Low	Low	High	Med. low	High	Med. low	High	High
Chubbuck	High	Med. high	Low	Low	Low	Low	Low	High	Low	High	High	Low
Clark Fork	Low	Low	High	High	Med. low	Med. low	High	Med. high	High	Med. high	Low	Low
Clayton	High	Med. low	High	High	Low	Low	Low	High	Low	High	Low	Low
Craigmont	High	High	High	High	Low	Low	Low	Med. low	Low	Med. low	Low	Low
Culdesac	High	High	High	High	Low	Low	Low	Med. high	Low	Med. high	Low	Low
Dalton Gardens	Low	NA	Low	Low	NA	NA	High	NA	High	NA	Low	NA
Declo	High	High	Low	Low	Low	Low	Low	High	Low	High	Low	Low
Donnelly	High	Low	High	High	Low	Low	Low	High	Low	High	Low	Low
Driggs	High	Med. high	High	High	Low	Low	High	Med. high	High	Med. high	Low	Low
Dubois	High	High	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low
Elk River	Low	High	High	High	Low	Low	High	Med. low	High	Med. low	Low	Low
Emmett	High	Med. high	High	High	Med. high	Med. high	High	Med. low	High	Med. low	High	Low
Ferdinand	High	NA	Low	Low	NA	NA	Low	NA	Low	NA	Low	NA
Filer	High	Med. high	High	Low	Low	Low	Low	Med. low	Low	Med. low	Low	Low
Firth	High	High	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low
Fort Hall	High	Med. low	Low	Low	Low	Low	High	Med. low	High	Med. low	Low	Low
Fruitland	High	Med. high	High	High	Med. high	Med. high	High	Med. low	Low	Med. low	Low	Low
Genesee	High	High	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low
Grangeville	High	Med. low	High	High	Med. low	Med. low	High	Med. high	High	Med. high	Low	Low

Table 16—Comparisons of perceived and actual levels of dependence on natural resource industries (based on proportions of actual employment) in the 198 study communities, Columbia basin (continued)

State and town	Agriculture			Timber and wood products			Travel and tourism			Mining and minerals		
	Perceived dependence ^a	Total employment ^b	Perceived dependence	Total employment	Perceived dependence	Total employment	Perceived dependence	Total employment	Perceived dependence	Total employment	Perceived dependence	Total employment
Hagerman	High	Med. high	Low	Low	High	Low	High	Low	Low	Low	Low	Low
Hailey	Low	Low	Low	Low	High	Low	High	Med. low	Low	Low	Low	Low
Harrison	High	High	High	Low	Low	Low	Low	High	Low	Low	Low	Low
Hazelton	High	High	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low
Homedale	High	Med. high	Low	Low	High	Low	High	High	Low	Low	Med. high	Med. high
Idaho City	Low	Low	High	Low	Low	Low	High	High	Low	Low	Low	Low
Irwin	High	Low	Low	Low	High	Low	High	High	Low	Low	Low	Low
Island Park	Low	Low	High	Low	High	Low	High	Med. low	Low	Low	Low	Low
Kamahia	High	Med. low	High	High	High	High	High	Med. high	Low	Low	Low	Low
Kellogg	Low	Low	High	Low	High	Low	High	Med. high	High	High	Med. high	Med. high
Ketchum	Low	Low	Low	Low	Low	Low	High	High	Low	Low	Low	Low
Kooskia	High	High	High	High	High	High	High	Med. low	Low	Low	Low	Low
Kootenai	Low	High	High	Low	High	Low	High	Med. high	Low	Low	Low	Low
Lapwai	High	Med. high	High	Low	High	Low	High	High	Low	Low	Low	Low
Lava Hot Springs	High	Med. low	Low	Low	Low	Low	High	High	High	High	Low	Low
Leadore	High	NA	High	NA	High	NA	High	NA	Low	NA	NA	NA
McCammon	Low	High	Low	Low	Low	Low	Low	Med. high	Low	Low	Low	Low
Melba	High	Med. high	Low	Low	Low	Low	Low	Med. low	Low	Low	Low	Low
Meridian	Low	Low	Low	Low	Low	Low	Low	Med. low	Low	Low	Med. low	Med. low
Mountain Home	High	Med. low	Low	Low	Low	Low	High	Med. low	Low	Low	Low	Low
Moyie Springs	High	Med. low	High	High	High	High	Low	Med. low	Low	Low	Low	Low
Murtaugh	High	High	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low
New Meadows	High	Low	High	High	High	High	High	Med. high	Low	Low	Low	Low
Oldtown	Low	Med. high	High	High	High	Med. high	High	Med. high	Low	Low	Low	Low
Onaway	Low	NA	High	NA	High	NA	Low	NA	Low	NA	NA	NA
Orofino	Low	Med. low	High	Med. high	High	Med. high	High	Med. low	Low	Low	Low	Low
Osburn	Low	Low	High	Med. low	High	Med. low	High	Med. high	High	High	Med. low	Med. low
Parker	High	High	Low	Low	Low	Low	High	Low	Low	Low	Low	Low
Parma	High	High	Low	Low	Low	Low	High	Low	Low	Low	Low	Low

Table 16—Comparisons of perceived and actual levels of dependence on natural resource industries (based on proportions of actual employment) in the 198 study communities, Columbia basin (continued)

State and town	Agriculture			Timber and wood products			Travel and tourism			Mining and minerals		
	Perceived dependence ^a	Total employment ^b	Perceived dependence	Total employment	Perceived dependence	Total employment	Perceived dependence	Total employment	Perceived dependence	Total employment	Perceived dependence	Total employment
Payette	Low	Low	Low	Med. high	Low	Med. high	Low	Low	Low	Low	Low	Low
Pierce	Low	Low	High	High	High	High	High	High	High	Low	Low	Low
Pilot Rock	High	Med. high	High	High	High	High	Low	Low	Low	Low	Low	Low
Priest River	Low	Low	Low	High	High	High	High	High	High	Low	Low	Low
Rathdrum	Low	Low	Low	Med. low	High	Med. low	Low	High	High	Low	Med. low	Med. low
Richfield	High	High	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low
Riggins	High	Med. high	High	Low	High	Low	High	High	High	Low	Low	Low
Ririe	High	Med. high	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low
Roberts	High	High	High	Low	Low	Low	Low	Low	Low	Low	Low	Low
Salmon	High	Med. low	High	Med. low	High	Med. low	High	Med. high	High	High	Low	Low
Sandpoint	Low	Low	High	Med. low	High	Med. low	High	High	High	Low	Low	Low
Shoshone	High	High	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low
Smelterville	Low	Low	Low	Low	High	Low	High	High	High	High	Med. high	Med. high
Stanley	Low	Low	Low	Low	High	Low	High	High	High	High	Low	Low
Sugar City	High	High	High	Low	High	Low	Low	Low	Low	Low	Low	Low
Swan Valley	Low	High	Low	Low	Low	Low	High	High	High	Low	Low	Low
Tensed	High	High	High	Low	Low	Low	Low	Low	Low	Low	Low	Low
Teton	High	High	High	Low	Low	Low	Low	Low	Low	Low	Low	Low
Tetonia	High	High	High	Low	Low	Low	Low	Low	Low	Low	Low	Low
Wallace	Low	Low	Low	Med. low	High	Low	High	High	High	High	Med. high	Med. high
Weippe	High	Med. low	High	High	High	High	High	High	High	Low	Low	Low
Weiser	High	Med. high	High	Low	High	Low	High	High	High	Low	Med. low	Med. low
Winchester	High	NA	High	NA	Low	NA	High	High	High	Low	NA	NA
Worley	High	High	High	Low	High	Low	High	High	High	Low	Low	Low
Montana:												
Alberton	Low	Low	High	Med. low	High	Med. low	High	High	High	Low	Low	Low
Columbia Falls	Low	Low	High	Med. high	High	Med. high	High	High	High	High	Med. high	Med. high
Darby	High	Med. low	High	High	High	High	High	High	High	Low	Low	Low
Deer Lodge	High	Low	High	Med. low	High	Med. low	High	High	High	Low	Low	Med. high

Table 16—Comparisons of perceived and actual levels of dependence on natural resource industries (based on proportions of actual employment) in the 198 study communities, Columbia basin (continued)

State and town	Agriculture			Timber and wood products			Travel and tourism			Mining and minerals		
	Perceived dependence ^a	Total employment ^b	Perceived dependence	Total employment	Perceived dependence	Total employment	Perceived dependence	Total employment	Perceived dependence	Total employment	Perceived dependence	Total employment
Drummond	High	Med. high	High	High	High	Med. low	High	Med. low	Low	Low	Low	Low
Eureka	High	Low	High	High	High	High	High	Med. low	Low	Low	Low	Med. high
Libby	Low	Low	High	High	High	Med. low	Low	Med. high	High	High	High	Low
Plains	High	High	High	High	High	High	High	Med. high	Low	Low	Low	Low
Polson	Low	Med. low	High	High	High	Low	High	High	High	Low	Low	Low
Ronan	High	Med. high	High	High	High	Low	High	Med. high	High	Low	Low	Low
St. Ignatius	High	High	High	High	High	Low	High	Low	High	Low	Low	Low
Stevensville	High	Med. high	High	High	High	Low	High	Med. high	High	Low	Low	Low
Superior	Low	Low	High	High	High	High	High	High	High	Low	Low	Low
Whitefish	Low	Low	High	High	High	Low	High	High	High	Low	Low	Low
Oregon:												
Adams	High	High	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low
Adrian	High	High	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low
Antelope	High	High	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low
Arlington	High	High	Low	Low	Low	Med. low	Low	Med. high	Low	Low	Low	Low
Baker City	High	Med. low	High	High	High	Med. low	High	Med. high	High	High	High	Low
Burns	High	Med. high	High	High	High	Med. low	High	Med. high	High	High	High	Low
Chiloquin	High	Med. low	High	High	High	Low	High	High	High	Low	Low	Low
Dayville	High	Med. high	High	High	High	Med. low	High	Med. low	High	Low	Low	Low
Dufur	High	High	Low	Low	Low	Low	High	Low	High	Low	Low	Low
Echo	High	High	Low	Low	Low	Low	Low	Med. high	Low	Low	Low	Low
Enterprise	High	Med. high	High	High	High	Low	High	Med. high	High	Low	Low	Med. low
Grass Valley	High	High	Low	Low	Low	Low	High	Med. high	High	Low	Low	Low
Halfway	High	Med. high	Low	Low	Low	Low	High	Med. high	High	Low	Low	Low
Helix	High	Low	Low	Low	Low	Low	Low	Med. low	Low	Low	Low	Low
Heppner	High	High	High	High	High	Med. low	High	Low	High	Low	Low	Low
Hood River	High	NA	High	High	High	NA	High	NA	High	Low	Low	NA
Imbler	High	Med. low	High	High	High	Med. high	High	Med. high	Low	Low	Low	Low
Irrigon	High	Med. low	Low	Low	Low	Low	High	Med. low	High	Low	Low	Low

Table 16—Comparisons of perceived and actual levels of dependence on natural resource industries (based on proportions of actual employment) in the 198 study communities, Columbia basin (continued)

State and town	Agriculture		Timber and wood products		Travel and tourism		Mining and minerals	
	Perceived dependence ^a	Total employment ^b	Perceived dependence	Total employment	Perceived dependence	Total employment	Perceived dependence	Total employment
John Day	High	Med. low	High	High	Low	Med. high	Low	Low
Jordan Valley	High	Med. high	Low	Low	High	Med. high	High	Med. low
Joseph	High	High	High	High	High	Med. high	Low	Low
Lakeview	High	Med. low	High	Med. high	Low	Med. high	Low	Low
Long Creek	High	High	High	Med. high	Low	High	Low	Low
Malin	High	Med. high	Low	High	Low	Low	Low	Low
Maupin	High	High	Low	Low	High	High	Low	Low
Merrill	High	Med. high	Low	Med. high	Low	Med. low	Low	Low
Mosier	Low	Low	Low	Low	High	High	Low	Low
Nyssa	High	Med. high	Low	Low	High	Med. high	Low	Low
Paisley	High	High	High	Med. low	High	Low	Low	Low
Prairie City	High	Med. high	High	Med. high	Low	Med. low	Low	Low
Prineville	High	Med. low	High	High	High	Med. low	Low	Low
Redmond	High	Med. low	High	Med. low	High	High	Low	Low
Richland	High	High	High	Low	High	Low	Low	High
Shaniko	High	High	Low	Med. low	High	High	Low	Low
Sisters	Low	Med. low	Low	Low	High	High	Low	Low
Spray	High	High	High	Med. low	Low	Med. low	Low	Low
Stanfield	High	High	Low	Low	Low	Med. low	Low	Low
Sumpter	Low	Med. high	High	Med. Low	High	High	High	Med. high
Umatilla	High	High	Low	Low	High	Med. high	Low	Low
Union	High	High	High	Low	High	Med. high	Low	Low
Unity	High	Med. high	High	Med. low	High	Low	High	Low
Wallowa	High	High	High	Med. high	High	Med. high	Low	Med. low
Warm Springs	Low	Med. high	High	High	High	Low	Low	Med. low
Weston	High	Low	Low	High	High	Low	Low	Low
Washington:								
Airway Heights	Low	Low	Low	Low	Low	High	Low	Low
Almira	High	High	Low	Low	Low	Low	Low	Low
Benton City	High	High	Low	Low	Low	Med. high	Low	Low

Table 16—Comparisons of perceived and actual levels of dependence on natural resource industries (based on proportions of actual employment) in the 198 study communities, Columbia basin (continued)

State and town	Agriculture		Timber and wood products		Travel and tourism		Mining and minerals	
	Perceived dependence ^a	Total employment ^b	Perceived dependence	Total employment	Perceived dependence	Total employment	Perceived dependence	Total employment
Burbank	High	Med. high	High	Low	High	Low	Low	Low
Cashmere	High	High	Low	Low	High	Med. low	Low	Med. high
Chelan	High	Med. high	Low	Low	High	Med. high	Low	Low
Chewelah	High	Med. high	High	Med. low	High	Med. high	High	Med. low
Cle Elum	High	Med. low	High	Low	High	High	Low	Low
Colfax	High	Low	Low	Low	Low	Med. low	Low	Low
Colville	High	Low	High	Med. low	High	Med. high	Low	Low
Conconully	High	High	Low	Low	High	High	Low	Low
Creston	High	High	Low	Low	High	Low	Low	Low
Dayton	High	Med. high	High	Low	High	Med. low	Low	Low
Elmer City	Low	Low	Low	Low	Low	High	Low	Low
Endicott	High	Med. high	Low	Low	Low	Med. low	Low	Low
Entiat	High	High	High	Low	High	Low	Low	Low
George	High	High	Low	Low	High	Low	Low	Low
Grand Coulee	Low	Med. low	Low	Low	High	High	Low	Low
Granger	High	NA	Low	NA	Low	NA	Low	NA
Harrah	High	NA	Low	NA	Low	NA	Low	NA
Harrington	High	High	Low	Low	High	Low	Low	Low
Hartline	High	High	Low	Low	Low	Low	Low	Low
Inchelium	High	Low	High	Med. high	High	Med. low	Low	Low
Ione	Low	Low	High	High	High	High	Low	Low
Kettle Falls	High	Med. low	High	High	High	Med. high	Low	Low
Kittitas	High	High	Low	Low	High	Med. high	Low	Low
Krupp	High	High	Low	Low	Low	Med. high	Low	Low
Mabton	High	NA	Low	NA	Low	Low	Low	NA
Mattawa	High	High	Low	Low	Low	NA	Low	Low
Medical Lake	Low	Low	Low	Low	High	Med. high	Low	Med. high
Mesa	High	High	Low	Low	Low	Med. high	Low	Low
Newport	Low	Med. high	High	Low	High	Med. low	Low	Med. high
Odessa	High	High	Low	Low	Low	Low	Low	Low

Table 16—Comparisons of perceived and actual levels of dependence on natural resource industries (based on proportions of actual employment) in the 198 study communities, Columbia basin (continued)

State and town	Agriculture			Timber and wood products			Travel and tourism			Mining and minerals		
	Perceived dependence ^a	Total employment ^b	Perceived dependence	Total employment	Perceived dependence	Total employment	Perceived dependence	Total employment	Perceived dependence	Total employment	Perceived dependence	Total employment
Okanogan	High	Med. high	High	Low	High	Med. low	Low	High	Low	Med. low	Low	Low
Othello	High	Med. high	Low	Low	High	Low	Low	High	Low	Low	Low	Low
Palouse	High	High	Low	Low	High	Low	Low	Low	Low	Low	Low	Low
Pomeroy	High	High	Low	Low	High	Med. low	Low	High	Low	Med. low	Low	Low
Prescott	High	High	Low	Low	High	Med. low	Low	High	Low	Med. low	Low	Low
Quincy	High	High	Low	Low	High	Med. low	Low	High	Low	Med. low	Low	Low
Republic	Low	Med. high	High	Med. high	High	Med. high	Med. high	Low	High	Med. low	High	Med. high
Ritzville	High	High	Low	Low	High	Med. low	Low	Low	Low	Med. low	Low	Low
Rock Island	High	High	Low	Low	High	Med. low	Low	Low	Low	Med. low	Low	Low
Rosalia	High	Med. low	Low	Low	High	Med. low	Low	Low	Low	High	Low	Low
Selah	High	Med. low	Low	Low	High	Med. low	Low	Low	Low	High	Low	Med. low
Sprague	High	High	Low	Low	High	Med. low	Low	Low	Low	Low	Low	Low
St. John	High	Med. low	Low	Low	High	Med. low	Low	Low	Low	Med. low	Low	Low
Tekoa	High	Med. high	Low	Low	High	Med. low	Low	Low	Low	Med. low	Low	Low
Tieton	High	Med. high	Low	Low	High	Med. low	Low	Low	Low	Med. low	Low	Low
Tonasket	High	High	Low	Low	High	Med. low	Low	High	Low	Med. low	Low	Low
Toppenish	High	Low	Low	Low	High	Med. low	Low	High	Low	Med. low	Low	Low
Twisp	High	Med. high	High	Low	High	Med. low	Low	High	Low	High	Low	Low
Wasco	High	High	Low	Low	High	Med. low	Low	Low	Low	High	Low	Low
Washtucna	High	High	Low	Low	High	Med. low	Low	Low	Low	Low	Low	Low
White Salmon	High	Low	High	Med. low	High	Med. low	Low	High	Low	Med. low	Low	Low
Wilson Creek	High	High	Low	Low	High	Med. low	Low	High	Low	Med. low	Low	Low
Winthrop	Low	Med. high	High	Med. low	High	Med. low	Low	High	Low	High	Low	Low
Wyoming:												
Jackson	Low	Low	Low	Low	Low	High	High	High	High	High	Low	Low
Thayne	High	Low	Low	Low	Low	High	High	High	High	Med. low	Low	High

NA = no estimates of employment available.

^a A rating of “low” represented a numerical rating of 4 or less on a 7-point scale (from 1, extremely independent, to 7, extremely dependent), and a rating of “high” represented a numerical rating of more than 4 on that 7-point scale.

^b A “low” level of direct employment represents 5 percent of total employment in a given industry, or less; “medium low,” 6 to 10 percent; “medium high,” 11 to 19 percent; and “high,” 20 percent or more of total employment in a given industry.

Table 17—Rural Columbia basin communities with high percentages of total employment in wood products with levels based on economic diversity index scores (N=71)

State and town	Employment in wood products	Level of economic diversity ^a
	<i>Percent</i>	
Idaho:		
Ashton	20	Med. high
Athol	12	High
Cambridge	17	Med. high
Deary	30	Med. high
Elk City	27	Med. high
Emmett	14	High
Fernan Lake	89	Low
Fruitland	18	High
Hayden	21	Med. low
Hope	21	Med. low
Horseshoe Bend	32	Med. high
Huetter	100	Low
Juliaetta	33	Med. low
Kamiah	22	Med. high
Kooskia	30	Med. high
Lewiston	11	High
Montour	63	Low
Moyie Springs	64	Med. low
New Meadows	37	Med. low
North Powder	44	Low
Oldtown	16	High
Orofino	12	High
Ovid	86	Low
Payette	11	High
Pierce	64	Med. low
Pilot Rock	33	Med. high
Pinehurst	12	High
Plummer	20	Med. high
Potlatch	25	Med. high
Priest River	29	High
St. Marie	30	High
Weippe	42	Med. low
Montana:		
Bonner-W. Riverside	47	Med. low
Columbia Falls	11	High
Darby	30	High
Drummond	26	Low
Eureka	22	High
Pablo	22	Med. high
Philipsburg	11	High
Rexford	55	Med. low
Superior	21	High
Thompson Falls	21	High

Table 17—Rural Columbia basin communities with high percentages of total employment in wood products with levels based on economic diversity index scores (N=71) (continued)

State and town	Employment in wood products	Level of economic diversity ^a
	<i>Percent</i>	
Oregon:		
Elgin	31	Med. high
Hines	20	Med. high
Imbler	12	Med. high
John Day	20	High
Joseph	34	Med. low
Lakeview	11	High
Long Creek	12	Med. high
Lostine	31	Med. high
Madras	11	High
Malin	66	Med. low
Merrill	16	High
Mount Vernon	38	Med. low
Prairie City	16	Med. high
Prineville	27	High
Summerville	33	Med. low
Wallowa	19	Med. low
Warm Springs	51	Med. low
Washington:		
Bingen	17	High
Inchelium	12	Med. low
Ione	27	Low
Kettle Falls	22	Med. high
Naches	11	High
Northport	31	Med. high
Pateros	21	High
Republic	12	High

^aLevels of economic diversity based on the index ranged from low (-1.00 to 0.01) and medium low (0.01 to 0.35) to medium high (0.35 to 0.90) and high (0.90 to 1.00).

Table 18—Number and percentage of rural Columbia basin communities with a high actual degree of dependence on wood products (based on 10 percent or more employment in wood products), by perception of dependence (N=37)

Perceived dependence	High employment dependence	
	Number of cases	Percentage
High	34	92
Low	3	8
Total	37	100

In contrast, as table 19 shows, 162 communities had less than 10 percent of their total employment in the wood products manufacturing sector and could not be deemed timber dependent by this measure. Of these, 58 (36.6 percent) were perceived by key informants to have fairly high dependence on wood products manufacturing.

Table 20 shows the names and statistics of towns perceived to be independent of timber harvest and wood products manufacturing but that actually did have a significant proportion of employment in wood products manufacturing. Table 21 shows the names and statistics for towns perceived to be dependent on timber, but that were found to have no significant proportion of employment in wood products manufacturing.

The correlation between perception of community dependence on timber harvesting and processing and empirical data on actual amount of employment in manufacturing of wood products as opposed to other industrial sectors (i.e., relative proportion) was measured with a Pearson correlation coefficient, which produced a moderately strong correlation of 0.50. Although this result suggests some degree of consistency between resident perceptions of the wood products industry's importance and its actual significance, over a third of the region's communities perceived that they were dependent on the timber industry to an extent that they really were not.

In the case of agriculture, the 321 communities in the region with high employment in agriculture (10 percent or more of all jobs) represented 68.0 percent of the total of 476 communities. Of the 198 communities sampled and for which data were gathered on resident perceptions of resource dependence, 60 communities (25 percent) were characterized by a moderately small proportion (less than 10 percent) of employment in agriculture. Of the 60, the citizens of 35 of them (58.3

percent) indicated that they perceived that their towns had a fairly high dependence on agriculture (table 22).

Table 23 shows that, of the 138 sample communities characterized by a high proportion (more than 10 percent) of employment in agriculture, only 12 (8.6 percent) had residents who perceived them to have a low rating of dependence on agriculture.

Pearson correlation coefficients were calculated to indicate the strength of the relation of citizen perceptions of community dependence on farming and ranching to actual results of empirical data on agricultural employment. These coefficients were calculated to be 0.36 for farming and 0.24 for ranching, which were statistically significant ($p < 0.05$) but indicated only a moderately weak relation between perceived and actual economic dependence.

These results suggest that residents in some of the region's communities misperceived the extent to which they were dependent on farming and ranching. An alternative explanation is that this question focused workshop participants' attention on dependence on particular industries, and that this represented a different, more comparative measure that focused on resource-related industries, which could be expected to provide different results from the employment profiles.

In summary, the empirical data suggest that most workshop participants perceive their communities to be dependent on traditional resource industries. However, 37 percent of all communities in the case of timber and 58 percent for agriculture perceived themselves to be moderately to highly dependent on timber and agriculture, yet these industries employed less than 10 percent of total employees in those towns. The discrepancies between perceptions and realities in these communities suggest that their economies may actually be more diverse than first perceived.

Text continues on page 84.

Table 19—Number and percentage of rural ICRB communities with a low actual degree of dependence on wood products (based on 10 percent or more employment in wood products), by perception of dependence (N=162)

Perceived dependence	Low employment dependence	
	Number of cases	Percentage
High	59	37
Low	103	63
Total	162	100

Table 20—Rural Columbia basin communities perceived to be independent of timber but with a significant proportion of employment in wood products (N=3)

Town	Perceived timber dependence ^a	Wood products employment
		<i>Percent</i>
Malin, Oregon	3.29	0.66
Merrill, Oregon	3.38	.16
Payette, Idaho	.83	.11

^aPerceived dependence based on a 7-point scale that ranged from 1 (not dependent) to 7 (very dependent).

Table 21—Rural Columbia basin communities perceived to be dependent on timber but with no significant proportion of employment in wood products (N=64)

State and town	Perceived timber dependence ^a	Employment in wood products
		<i>Percent</i>
Idaho:		
Bonnors Ferry	6.50	10
Cascade	6.43	9
Clark Fork	5.57	10
Clayton	5.80	0
Craigmont	5.13	3
Culdesac	4.86	0
Donnelly	5.25	0
Driggs	4.20	3
Elk River	5.00	4
Grangeville	5.14	8
Harrison	5.43	2
Idaho City	5.33	0
Island Park	4.43	0
Kellogg	5.67	2
Kootenai	5.00	0
Lapwai	5.00	0
Leadore	6.13	0
Osburn	5.67	8

Table 21—Rural Columbia basin communities perceived to be dependent on timber but with no significant proportion of employment in wood products (N=64) (continued)

State and town	Perceived timber dependence ^a	Employment in wood products
		<i>Percent</i>
Rathdrum	5.00	7
Riggins	5.63	3
Salmon	6.00	7
Sandpoint	6.00	8
Smeltonville	5.17	0
Stanley	5.29	0
Wallace	5.63	0
Weiser	4.17	0
Worley	4.33	0
Montana:		
Alberton	4.75	9
Deer Lodge	5.63	7
Libby	6.50	9
Plains	5.40	0
Polson	5.33	4
Ronan	5.14	2
St. Ignatius	4.38	0
Stevensville	4.57	4
Whitefish	4.86	5
Oregon		
Baker City	6.20	7
Burns	5.75	10
Chiloquin	6.33	2
Dayville	4.29	6
Enterprise	6.38	2
Heppner	6.63	7
Paisley	7.00	6
Redmond	5.00	8
Richland	4.50	2
Spray	5.86	6
Sumpter	4.67	8
Union	5.71	2
Unity	6.57	6
Washington:		
Burbank	6.17	0
Chewelah	6.00	8
Cle Elum	4.57	3
Colville	6.00	8
Dayton	4.71	1
Entiat	4.17	0

Table 21—Rural Columbia basin communities perceived to be dependent on timber but with no significant proportion of employment in wood products (N=64) (continued)

State and town	Perceived timber dependence ^a	Employment in wood products
		<i>Percent</i>
Harrah	4.43	0
Newport	5.17	2
Okanogan	6.40	0
Pomeroy	4.63	0
Selah	4.29	0
Tonasket	5.00	0
Twisp	4.00	3
White Salmon	6.29	7
Winthrop	4.43	7

^a Perceived dependence based on a 7-point scale that ranged from 1 (not dependent) to 7 (very dependent).

Table 22—Number and percentage of rural Columbia basin communities with a low actual degree of dependence on agriculture (based on 10 percent or more employment in agriculture), by perception of dependence (N=60)

Perceived dependence	Low employment dependence	
	Number of cases	Percentage
High	35	58
Low	25	42
Total	60	100

Table 23—Number and percentage of rural Columbia basin communities with a high actual degree of dependence on agriculture (based on 10 percent or more employment in agriculture), by perception of dependence (N=138)

Perceived dependence	High employment dependence	
	Number of cases	Percentage
High	126	91
Low	12	9
Total	138	100

A Community Resilience Index

The concept of community resilience refers to a town's ability to manage change and adapt to it in positive, constructive ways relative to other communities. A measure of this construct, termed the "community resilience index" (CRI), was developed to indicate a town's likely response to change. The higher the index, the greater the community's resilience in comparison to that of other communities, and the more vital, attractive, and healthy the community was compared to other communities in the region. The index was based on community characteristics critical to a town's capacity to adapt to future changes, including strong civic leadership, a highly cohesive social organization, local amenities and attractiveness, and a diversified or stable economy, all reflecting or contributing to civic pride, excitement, and typically proactive responses to changes facing a community.

Development and Validation

The CRI was developed in the course of the research as a relative indicator of the degree of a community's resilience, based on patterns in the perceptions of residents of their community's characteristics and current conditions. Community resilience emerged as a function of a number of major dimensions of the attributes and characteristics of communities. Specifically, a high degree of resilience reflects:

- Strong civic leadership. A high commitment of individual leaders and groups to community and active involvement in creating or responding to change; a strong sense of local control regardless of external events or influences.
- Positive, proactive attitude toward change. Either residents promote change and thus vitality in community development, or if

change is occurring on its own, residents respond positively and create a desirable alternative future.

- Strong social cohesion. A high degree of consensus in values and goals for desired future; working together to achieve goals.
- Strong economic structure. A high continuity or endurance in a few major industries, or a high degree of diversity in economic base, or some combination that provides a stable economy in the community.
- High degree of physical amenities. The historic character of a community's downtown; the attractiveness of its downtown, surrounding scenery, and region.
- Larger population. The larger the population in rural towns (all other things being equal), the more developed the infrastructure is and the greater the resilience.

The CRI was an additive function of scales based on the dimensions above. The relative importance placed on the various scales, applied in the index through the weighting of these scales, was based on the results of empirical analysis—specifically, factor analysis—as detailed in the next section. The most important construct was civic leadership, which was weighted by a factor of 4, relative to the least important factor, physical amenities and attractiveness; also important were social organization (weighted by a factor of 3.3 over physical amenities) and economic structure (weighted by a factor of 2.7).

Significantly, the weightings applied to these scales were mirrored by their overall importance for a community's response to change, as rated by workshop participants in the 10 significant change communities examined in depth with case studies. As part of the case studies, retrospective workshops were held at which residents involved in their community when it underwent recent

major changes were asked to assess the importance of various community characteristics for managing those changes. During the workshops, participants were asked to list responses of their community to the changes they had experienced. These responses were then broadly categorized, and participants were asked to indicate the three most important for responding to change. Across all 10 communities, the results of this process were highly consistent with results of the factor analysis: the economic diversity construct was indicated to be more important by a magnitude of 2+ than the attractiveness construct, the cohesiveness construct was more important by a magnitude of 3+, and the leadership construct was more important by a magnitude of about 4. This cross-validation of the weightings used for the CRI lent important additional support for the validity of this index.

Developing an index for measuring resiliency—The specifics in developing an index for measuring community resilience were as follows: An initial analysis was conducted to assess the validity of the particular dimensions theorized to contribute to the community resilience concept. All the workbook items for the key constructs were analyzed through factor analysis (principal components, varimax rotation). The first four factors reflected the findings of earlier research:

Construct	Variance
	<i>Percent</i>
Civic leadership	32.7
Economic structure	12.3
Social organization	7.4
Physical amenities	5.5

These factors, whose component items are detailed in table 24, became the basis for constructing the four scales comprising the CRI and that roughly corresponded to several key constructs (amenities, economic structure, social organization, and civic leadership) measured in the community workshops:

Scale	Starting construct from workshop
Civic leadership	Community leadership
Social organization	Community cohesiveness
Economic structure	Economic diversity
Regional amenities	Regional attractiveness

The four scales developed are displayed in table 25.

Each scale was developed with a scale reliability analysis, which ensured that its component items achieved the maximum Cronbach's alpha possible. (Items that did not contribute to the greatest alpha value were dropped from the scales.) As a final check, factor analysis (principal components, varimax rotation) was run against the complete set of workbook and workshop variables. Again, the four scales emerged as the most important factors, although the percentage of variance explained by each scale was slightly reduced:

Construct	Variance
	<i>Percent</i>
Civic leadership	26.9
Social organization	7.1
Economic structure	11.4
Physical amenities	5.2

Finally, from results of the full factor analysis, loadings were examined to see if any variables should be included that did not appear in the previous steps. An adjustment was made to the economic structure scale by adding two items: business attractiveness and economic diversity. When the scale reliability analysis was performed a second time, the two additional items (business attractiveness and economic diversity) adjusted Cronbach's alpha upward slightly for the economic structure scale. Table 25 shows the final scales and the items comprising them.

Mean values for the items in each scale were averaged for each community, to produce a scale score for each community. Then the scores were weighted and totaled to provide a resilience score for each community.

Table 24—Results of the factor analysis of workshop ratings in 198 Columbia basin study communities

Factor	Factor items	Factor loadings
Government effectiveness		
q10 2	Extent of competence of community government	0.86
q10 3	Level of trust in community government	.82
q10 4	Extent to which government's positions reflect those of community	.85
q9 2a	Contribution of elected officials to leadership	.82
q9 3	How visionary community leaders are	.76
q9 4	How flexible and creative community leaders are	.78
q9 5	Consistency of opinions and values of community leaders with your own	.81
Eigenvalue = 13.75		Percent of variance = 26.4
Economic structure		
q4 3	Extent that people shop inside the community	.79
q4 4	Extent that people work inside the community	.72
q5 2	Extent that the community's economy is comprised of different types of businesses	.78
q8 8	Abundance of social activities in community	.63
q1A 2	Attractiveness of community's downtown area	.53
q9 2b	Contribution of business community to leadership in the community	.70
q9 2c	Contribution of government agency to community leadership	.57
q9 2d	Contribution of nongovernment organizations to community leadership	.66
q9 2e	Contribution of other active individuals to community leadership	.52
	Economic diversity index	.66
Eigenvalue = 6.44		Percent of variance = 12.4
Social organization		
q2 2	Extent to which people work together to get things done	.70
q2 3	Extent to which people are supportive of one another	.74
q2 4	Extent to which people are committed to the community	.74
q2 5	Extent that people's beliefs and values are similar	.69
q2 6	Extent to which people identify with community	.64
q8 10	Social problems	.51
q1A 3	Attractiveness of community's residential neighborhoods	.53
Eigenvalue = 3.49		Percent of variance = 6.7
Regional amenities		
q1B 2	Importance of scenery outside the community	.43
q1B 4	Importance of nearby recreation areas to community's character	.46
q1B 5	Importance of wilderness, parks, etc., to community's character	.69
q1B 6	Importance of history, customs, and cultures to community's character	.58
q1B 7	Uniqueness of region in special qualities and travel attractions	.80
q6 1e	Community's dependence on recreation and tourism	.49
Eigenvalue = 2.81		Percent of variance = 5.4

Tables 25—Scales comprising the community resilience index, with component scale items, alphas (index of scale reliability), and item-total scale correlations

Scale item		Item-scale correlation
Civic leadership scale (alpha = 0.95)		
q9 4	How flexible and creative community leaders are	0.84
q9 5	Consistency of opinions and values of community leaders with your own	.83
q10 2	Extent of competence of community government	.80
q10 3	Level of trust in community government	.79
q10 4	Extent to which government's positions reflect those of community	.79
q9 3	How visionary community leaders are	.79
Construct	Government effectiveness	.73
Construct	Community leadership	.68
q9 2a	Contribution of elected officials to leadership	.62
Social organization scale (alpha = 0.92)		
Construct	Community cohesion	.80
q2 3	Extent to which people are supportive of one another	.74
q2 4	Extent to which people are committed to the community	.74
q2 2	Extent to which people work together to get things done	.70
q2 6	Extent to which people identify with community	.64
Economic structure scale (alpha = 0.90)		
q5 2	Extent that the community's economy is comprised of different types of businesses	.82
q4 3	Extent that people shop inside the community	.77
Construct	Community autonomy	.76
q9 2b	Contribution of business community to leadership in the community	.68
q4 4	Extent that people work inside the community	.66
q9 2d	Contribution of nongovernment organizations to community leadership	.63
q9 2c	Contribution of government agency to community leadership	.57
Construct	Attractiveness for business	.57
Construct	Economic diversity	.57
Regional amenities scale (alpha = 0.82)		
q1B 7	Uniqueness of region in special qualities and travel attractions	.80
q1B 4	Importance of nearby recreation areas	.73
q1B 2	Importance of scenery outside the community	.67
Construct	Attractiveness of region	.59
q1B 3	Abundance of special places	.51
q1B 5	Importance of wilderness and parks to community's character	.50

Resilience Classes

For ease in interpreting and displaying the results of the community resilience index, the 198 study communities were classified with a continuum of levels of different community resiliences: low, medium low, medium high, and high. The towns were classified by their level of resilience, based on the CRI score calculated for each; these resilience classes helped to clarify a community's comparative resilience and its implications. These levels were relative ones with ranges based on quartiles of the towns' index scores, and each class thus representing an equal proportion of the communities under study (25 percent each). The one-quarter of the towns receiving the lowest CRI scores were labeled low, and so forth. The range of index scores for each class were low, 240.1 to 348.61; medium low, 348.69 to 374.54; medium high, 375.64 to 402.51; and high, 402.8 to 466.98.

Statistical analysis of the CRI revealed that, although population size was significantly correlated to the resilience index (Pearson correlation coefficient of 0.325; $p < 0.05$), the relation is a moderate one. There is evidence, then, that the smaller a community, the less resilient it tends to be, as might be theorized, although this evidence is not strong. The proposition that there may be some critical mass in terms of a population threshold that is related to community growth and development needs to be further examined.

Unquestionably, several small communities were rated as highly resilient, again affirming the qualification underlying the assessment that all communities are unique and all generalizations about them have their exceptions. Further, the results suggest that several large towns were less healthy and resilient than some of the smaller towns characterized by a greater degree of social organization and civic leadership. For example, several small "timber communities" in the Blue Mountains region of northeast Oregon were rated as highly resilient (e.g., Joseph, pop. 1165; Wallowa, pop. 755; and Weston, pop. 640), while other larger towns in the "scablands" of southeastern Washington and north-central Oregon were rated as being less so (Umatilla, Oregon,

pop. 3155; Benton City, Washington, pop. 2090; and Othello, Washington, pop. 4730). The CRI scores for all 198 communities, along with the component scale ratings and their resilience class, are displayed in table 26; figure 17 shows geographic locations and the levels of resilience classifying the 198 communities in the basin.

The spatial mapping of resilience ratings indicates that communities in particular types of geographic areas tended to be higher or lower in resilience, depending on physical characteristics of the surrounding area (fig. 17). Analysis of community resilience by ecoregion suggests that different communities in the same basic type of ecosystem may differ in their resilience. In the ecosystems of the Blue Mountains of northeast Oregon, for example, several "timber communities" are rated as highly resilient (John Day, Joseph, Enterprise), while others are judged to be less so (Long Creek, Prairie City, Unity). Patterns of a greater prevalence of lower resiliency are apparent, however, for communities in the agricultural and ranching regions of the Snake River Plain in southern Idaho and the Columbia Plateau in north-central Idaho and eastern Washington and Oregon. Results of the spatial mapping of resilience scores are discussed further later in this section.

Of the 198 surveyed communities, 10 communities were examined in depth (table 27). Of the 10 communities, 6 were among those rated as being highly resilient, 2 were classified as moderately high in resilience, and the remaining 2 communities were rated as moderately low. Interestingly, one inference from the case studies is that communities experiencing major changes in the past (for instance population growth or decline, timber mill closures, or major business closures) are more prepared for the future and better able to adopt to change. Results of an analysis of change in these communities since 1990 affirms this conclusion, as do the results of the indepth case studies (see Harris 1996 for additional details concerning the results of the community case studies). Table 27 summarizes the resiliency index results for the case-study communities as well as results from the retrospective workshops.

Text continues on page 95.

Table 26—Level of community resilience for 198 Columbia basin study communities, with levels of scores on scales comprising the community resilience index

State and town	Levels of scores on community resilience index ^a	Levels of scores on scales comprising community resilience index ^a			
		Civic leadership	Social cohesion	Economic structure	Physical amenities
Idaho:					
Ammon	Med. high	High	High	Low	Med. low
Ashton	High	High	Med. high	Med. high	High
Athol	Low	Low	Low	Low	High
Bancroft	Med. high	Med. high	Med. high	Med. low	Med. low
Bellevue	Med. low	Med. high	Low	Med. low	Med. high
Blackfoot	Med. high	Med. low	Low	High	Med. low
Bliss	Med. low	High	Low	Low	Low
Bonnors Ferry	High	High	High	High	Low
Cascade	High	High	Med. high	High	High
Challis	Med. low	Low	Med. high	High	Med. high
Chubbuck	Med. high	High	Med. high	Med. high	Med. low
Clark Fork	Low	Med. low	Low	Med. low	Med. low
Clayton	High	Med. high	High	High	Med. low
Craigmont	Med. high	Med. high	Med. low	Med. high	Low
Culdesac	Med. low	High	Med. high	Low	Low
Dalton Gardens	Low	Med. low	High	Low	Med. low
Declo	High	High	High	Low	High
Donnelly	Med. low	Med. high	Med. high	Med. low	Med. low
Driggs	Med. low	Low	Med. low	Med. high	Med. high
Dubois	Med. high	Med. low	Med. low	High	Low
Elk River	Low	Low	Low	Low	Med. low
Emmett	High	High	Med. high	High	Med. high
Ferdinand	Med. low	Med. high	Low	Med. low	Med. high
Filer	Low	Low	Low	Low	Med. high
Firth	Med. high	High	Med. low	Med. low	Med. low
Fort Hall	Low	Low	Low	Med. low	Med. high
Fruitland	Med. high	High	Med. high	Med. high	Low
Genesee	Med. low	Med. low	Med. high	Low	Low
Grangeville	Med. high	Med. low	Med. high	High	High
Hagerman	Low	Low	Low	Med. high	High
Hailey	High	High	High	High	High
Harrison	Med. low	Low	Med. high	Med. low	Med. high
Hazelton	Low	Med. low	Med. high	Low	Low
Homedale	Med. low	Med. low	Med. low	Med. low	Low
Idaho City	Low	Low	Low	Med. low	High
Irwin	Med. low	Med. high	Med. low	Low	High
Island Park	Med. low	Low	Med. low	Med. low	High
Kamiah	High	Med. high	High	High	High
Kellogg	High	High	High	High	High
Ketchum	High	Med. high	High	High	High

Table 26—Level of community resilience for 198 Columbia basin study communities, with levels of scores on scales comprising the community resilience index (continued)

State and town	Levels of scores on community resilience index ^a	Levels of scores on scales comprising community resilience index ^a			
		Civic leadership	Social cohesion	Economic structure	Physical amenities
Kooskia	High	High	Med. high	Med. high	Med. high
Kootenai	Med. high	High	Med. low	Med. Low	High
Lapwai	Med. low	Low	Med. low	Med. Low	Med. low
Lava Hot Springs	Low	Low	Low	Low	Low
Leadore	Med. low	Med. low	High	Med. low	Low
McCammon	Med. low	High	Med. low	Low	Med. low
Melba	Med. low	Med. low	Med. high	Med. low	Med. low
Meridian	High	High	High	High	High
Mountain Home	High	High	Med. low	High	Med. low
Moyie Springs	Med. low	Med. high	Low	Low	Med. high
Murtaugh	Med. low	Med. low	High	Low	Med. high
New Meadows	Med. low	Low	Med. low	Med. high	Med. high
Oldtown	Med. high	High	Low	Med. low	Med. high
Onaway	Low	Med. low	Med. low	Low	Med. low
Orofino	Med. high	Med. low	Med. low	High	Med. high
Osburn	High	High	High	Med. high	High
Parker	Low	Med. high	Med. low	Low	Med. high
Parma	Med. high	Med. low	Med. high	Med. high	Med. low
Payette	Med. low	Low	Low	Med. high	Med. high
Pierce	Med. low	Low	Low	Med. high	Med. high
Pilot Rock	Med. low	Med. high	Med. low	Med. low	Med. low
Priest River	High	High	Med. high	High	High
Rathdrum	Med. low	Med. high	Low	Med. low	High
Richfield	Med. high	High	High	Med. low	Low
Riggins	High	High	High	Med. high	High
Ririe	Med. low	Med. low	Med. high	Med. low	Med. high
Roberts	Low	Low	Low	Low	Med. low
Salmon	High	Med. high	High	High	High
Sandpoint	Med. low	Low	Med. low	High	Med. high
Shoshone	Low	Low	Low	Med. low	Low
Smeltonville	Med. high	Med. high	Med. low	Med. high	Med. low
Stanley	High	Med. high	High	High	High
Sugar City	Med. high	High	High	Low	Med. high
Swan Valley	Low	Low	Low	Med. low	High
Tensed	Low	Low	Low	Low	Low
Teton	Med. high	High	High	Low	Med. high
Tetonia	Low	Low	Low	Low	Med. low
Wallace	High	High	High	High	High
Weippe	High	High	Med. low	Med. low	High
Weiser	Med. high	Med. low	Med. high	Med. high	Med. high

Table 26—Level of community resilience for 198 Columbia basin study communities, with levels of scores on scales comprising the community resilience index (continued)

State and town	Levels of scores on community resilience index ^a	Levels of scores on scales comprising community resilience index ^a			
		Civic leadership	Social cohesion	Economic structure	Physical amenities
Winchester	High	High	Med. high	Med. low	High
Worley	Low	Med. low	Low	Low	Med. low
Montana:					
Alberton	Med. low	Med. low	Med. low	Low	Med. high
Columbia Falls	Med. high	Med. low	Med. high	High	High
Darby	Med. high	Med. low	High	Med. high	High
Deer Lodge	High	High	Med. high	High	Med. high
Drummond	Low	Low	Med. low	Med. high	Med. high
Eureka	Med. high	Med. low	High	Med. high	High
Libby	High	Med. high	High	Med. high	High
Plains	Med. high	Med. low	Med. high	High	Med. high
Polson	Med. high	Med. low	Low	High	High
Ronan	High	Med. low	Med. high	High	High
St. Ignatius	Med. low	Med. low	Med. low	Med. low	High
Stevensville	Med. high	Med. low	High	Med. high	High
Superior	Med. high	Med. low	Med. high	Med. high	Med. high
Whitefish	Med. low	Low	Med. low	Med. high	High
Oregon:					
Adams	Low	Med. low	Low	Low	Low
Adrian	Low	Low	Med. high	Med. low	Low
Antelope	Low	Low	Low	Low	Low
Arlington	Med. low	Med. low	Low	Med. low	Low
Baker City	High	High	High	High	High
Burns	Med. high	Med. high	Med. low	Med. high	Med. low
Chiloquin	Low	Low	Low	Med. low	High
Dayville	Low	Low	Med. high	Low	Low
Dufur	High	Med. high	Med. high	High	Med. low
Echo	Med. low	Med. high	Low	Low	Low
Enterprise	Med. high	Med. low	Med. low	High	Med. high
Grass Valley	Med. high	Med. high	High	Med. low	Med. low
Halfway	High	High	High	Med. high	Med. high
Helix	Med. low	High	High	Low	Low
Heppner	High	High	High	High	Low
Hood River	Med. high	Med. low	Med. low	High	High
Imbler	Med. low	Med. low	High	Med. low	Med. low
Irrigon	Low	Low	Low	Low	Low
John Day	High	Med. high	Med. high	Med. high	Med. high
Jordan Valley	Med. low	Med. low	High	Low	Low
Joseph	High	Med. high	Med. high	High	High
Lakeview	High	High	High	High	Low
Long Creek	Low	Med. high	Low	Low	Low

Table 26—Level of community resilience for 198 Columbia basin study communities, with levels of scores on scales comprising the community resilience index (continued)

State and town	Levels of scores on community resilience index ^a	Levels of scores on scales comprising community resilience index ^a			
		Civic leadership	Social cohesion	Economic structure	Physical amenities
Malin	Med. high	Med. high	High	Med. high	Low
Maupin	Med. high	Med. high	Med. low	Med. high	Med. high
Merrill	Med. low	Low	Med. high	Med. high	Med. low
Mosier	Low	Low	Med. low	Low	Med. low
Nyssa	Med. low	Med. high	Med. low	Med. low	Med. low
Paisley	Med. high	Med. low	High	Med. high	Med. low
Prairie City	Med. low	Low	Med. high	Med. high	Med. high
Prineville	Med. high	Low	Med. high	High	High
Redmond	High	High	High	High	High
Richland	Med. high	Med. high	High	Med. high	Med. high
Shaniko	High	High	High	Med. high	High
Sisters	Med. high	Med. low	Med. high	Med. high	High
Spray	Low	Low	Med. low	Low	Low
Stanfield	Low	Low	Low	Low	Med. low
Sumpter	Med. low	Med. high	Med. high	Low	High
Umatilla	Low	Med. low	Low	Med. low	Low
Union	Med. low	Med. high	Low	Med. low	Low
Unity	Med. low	Med. low	Med. high	Med. low	Med. low
Wallowa	High	High	High	Med. high	High
Warm Springs	Low	Low	Low	Med. low	Med. low
Weston	High	High	High	Med. high	Med. low
Washington:					
Airway Heights	Low	Low	Low	Med. low	High
Almira	Med. low	Med. high	Med. low	Med. low	Low
Benton City	Low	Med. high	Med. low	Low	Low
Burbank	Low	Low	Low	Low	Low
Cashmere	High	Med. high	High	High	High
Chelan	Med. high	Med. low	Med. low	High	Med. high
Chewelah	High	Med. high	High	High	Med. low
Cle Elum	Low	Low	Low	Med. high	Med. high
Colfax	High	High	Med. high	High	Med. low
Colville	Med. high	Med. low	Med. low	High	Med. low
Conconully	Low	Low	Low	Low	Med. low
Creston	Low	Med. low	Med. high	Low	Med. low
Dayton	High	Med. high	High	High	High
Elmer City	Med. low	Med. high	Med. low	Low	Med. low
Endicott	Med. high	High	Med. low	Med. low	Low
Entiat	Med. low	Med. low	Med. low	Med. low	Low
George	Med. low	Med. high	High	Low	Low
Grand Coulee	High	Med. high	Med. high	Med. high	High
Granger	Low	Med. low	Low	Med. low	Med. low

Table 26—Level of community resilience for 198 Columbia basin study communities, with levels of scores on scales comprising the community resilience index (continued)

State and town	Levels of scores on community resilience index ^a	Levels of scores on scales comprising community resilience index ^a			
		Civic leadership	Social cohesion	Economic structure	Physical amenities
Harrah	Low	Med. high	Low	Low	Low
Harrington	Low	Med. low	Med. low	Med. low	Low
Hartline	High	High	High	Med. low	Med. high
Inchelium	Low	Med. low	Med. low	Med. low	Med. low
Ione	Low	Low	Med. low	Med. low	Med. high
Kettle Falls	Low	Low	Low	Med. high	Med. low
Kittitas	Low	Low	Low	Low	Med. high
Krupp	Low	High	Med. high	Low	Low
Mabton	Low	Med. high	Low	Low	Low
Mattawa	High	Med. high	Med. high	High	Low
Medical Lake	Med. high	High	Med. low	Med. low	Med. low
Mesa	Med. low	Med. high	Low	Med. low	Low
Newport	Med. high	Med. low	Med. low	High	Med. high
Odessa	High	Med. high	High	Med. high	Med. low
Okanogan	Low	Low	Med. high	Med. high	Low
Othello	Med. low	Med. low	Low	Med. high	Med. low
Palouse	Med. low	Med. high	Med. low	Med. low	Med. high
Pomeroy	Med. high	Med. low	High	Med. high	Low
Prescott	Low	Med. low	Low	Low	Low
Quincy	High	Med. high	Med. low	High	Med. high
Republic	Med. low	Low	Med. high	High	Med. low
Ritzville	Med. high	Med. low	Med. high	High	Med. low
Rock Island	Low	Med. high	Low	Low	Med. low
Rosalia	Med. high	High	High	Med. low	Med. high
Selah	High	High	Med. high	Med. high	Low
Sprague	Low	Med. low	Low	Low	Low
St. John	High	High	High	High	Low
Tekoa	Low	Low	Med. low	Med. high	Med. high
Tieton	Med. low	High	Low	Low	Med. low
Tonasket	Med. high	Med. high	Med. high	Med. high	Med. low
Toppenish	High	High	Med. low	High	Med. low
Twisp	High	Med. high	High	High	Med. high
Wasco	Low	Low	Low	Low	Med. low
Washtucna	Med. high	Med. high	Med. high	Med. high	Low
White Salmon	Low	Low	Low	Med. low	High
Wilson Creek	Med. high	Med. high	High	Med. low	Low
Winthrop	Med. high	Med. low	High	Med. high	Med. high
Wyoming:					
Jackson	Med. high	Med. low	Med. high	High	High
Thayne	Med. low	Med. high	Med. low	Med. low	Med. high

^a Levels of community resilience scores and scores on component scales based on quartiles across 198 communities.

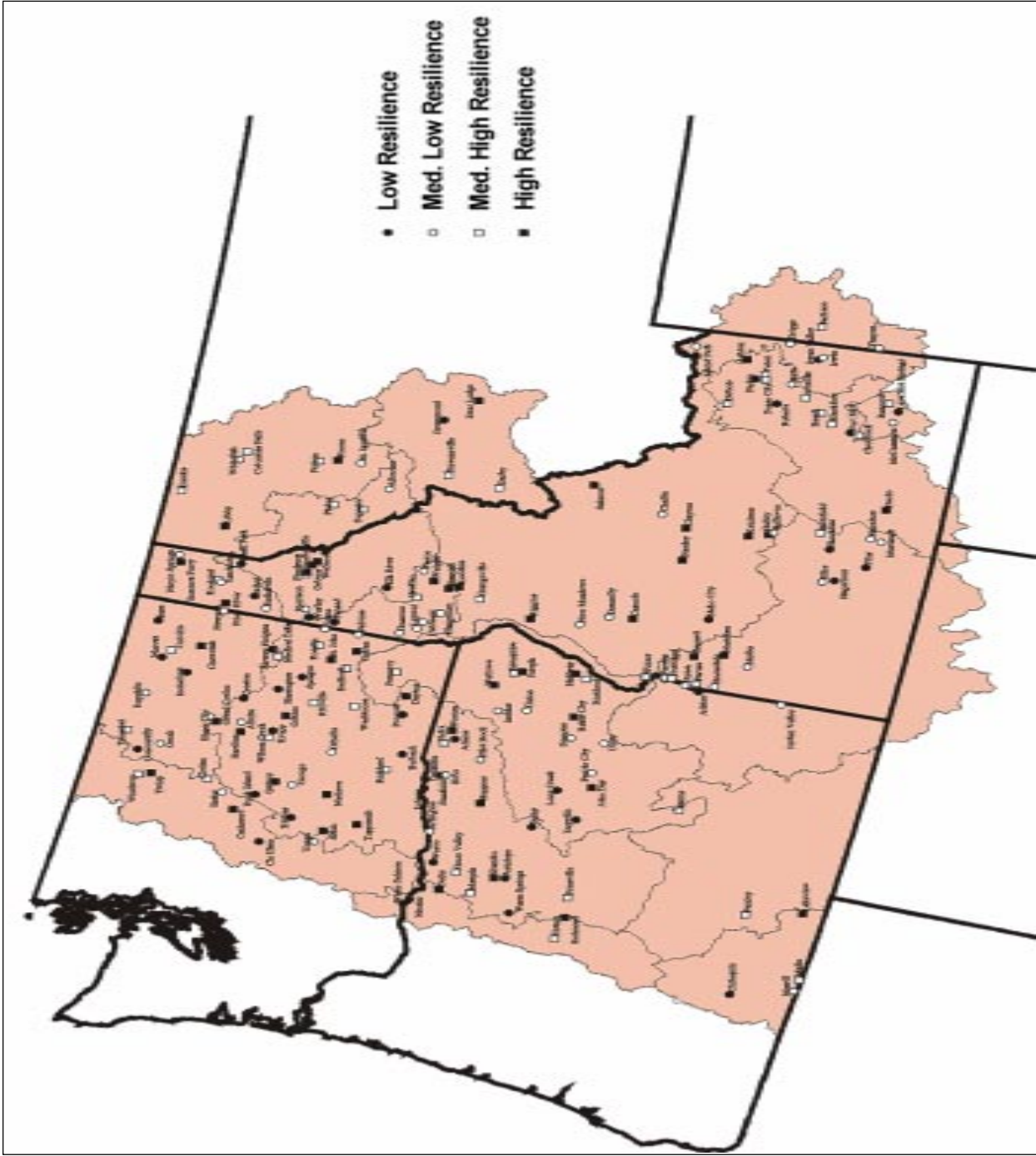


Figure 17—Location and resilience levels of the 198 study communities in the Columbia basin, with ERU boundaries.

Table 27—Community resilience scores, ranks, and resilience classes for 10 case study communities, Columbia basin

Town ^a	1992-94 population	Resilience		
		Score ^b	Rank ^c	Class ^d
Baker City, Oregon	9,585	457	4	High
Salmon, Idaho	3,093	438	9	High
Joseph, Oregon	1,165	433	14	High
Riggins, Idaho	460	429	17	High
Kellogg, Idaho	2,495	425	20	High
Mattawa, Washington	1,535	404	46	High
Pomeroy, Washington	1,460	399	57	Med. high
Burns, Oregon	2,870	396	64	Med. high
Whitefish, Montana	4,551	354	132	Med. low
Driggs, Idaho	980	351	139	Med. low

^a Towns are listed in order of magnitude of resilience, from highest to lowest.

^b Resilience scores based on summation of social cohesion, civic leadership, economic structure, and physical amenities scales of rural communities.

^c Resilience rankings based on 198 communities.

^d Levels of community resilience scores based on quartiles across 198 communities.

The CRI (i.e., a community’s ability to manage change and mitigate its impacts) was used to assess rural communities and their likely responses to change, as well as the nature and possible extent of impacts. Tables 28 and 29 provide examples of communities that differ in population size, the dominant industry characterizing them, and resilience ratings. Examples include a comparative listing of the sampled communities and their dominant industries from highest to lowest in terms of resilience scores. They affirm that different kinds of communities, regardless of different economic bases and sizes, can have resilience levels from low to high, depending on the unique situation within each town.

Other Findings

An analysis of the resilience of communities with different industry dominance classifications found that a community’s economy was related to its resilience (table 30). Larger proportions of communities in which timber and outdoor recreation and tourism were perceived dominant were rated as moderately high and high in resilience, and ranching communities were rated as lower in resilience.

Communities also were classified by actual industry dependence, where employment proportion greater than 10 percent for a given sector meant that it was important to the community’s economy. Table 31 shows that economically diverse communities were perceived to have changed the most since 1990 and to have had the highest resilience scores; farming and ranching changed the least and had the lowest resilience scores. Interestingly, timber towns also were perceived to be changing while resilient; the rapid population growth of tourism and recreation towns had also caused them to undergo significant change but resulted in lower resilience. An important complementary finding was that communities that had changed the most since 1990 tended to be more resilient, which likely was due to their greater experience in coping with change. Analysis of the variance in communities’ ratings of the amount they had changed since 1990 indicated that the most resilient towns were rated with a mean of 4.7, and the least resilient towns were rated with a mean of 3.5 (statistically significant, $p < 0.05$).

Table 28—A sample of communities having different dominant industries, by extent of resilience and population size, Columbia basin

Town	1992–94 population	Perceived dominant industry	Community resilience score	Community resilience class
Stanfield, Oregon	1,620	Farming	284	Low
Chiloquin, Oregon	700	Timber	300	Low
Spray, Oregon	155	Ranching	310	Low
Lava Hot Springs, Idaho	464	Travel and tourism	320	Low
Whitefish, Montana	4,551	Travel and tourism	354	Med. low
Republic, Washington	1,080	Timber	365	Med. low
Challis, Idaho	995	Ranching	373	Med. low
Almira, Washington	315	Farming	366	Med. low
Sisters, Oregon	765	Travel and tourism	385	Med. high
Paisley, Oregon	345	Timber	390	Med. high
Burns, Oregon	2,870	Ranching	396	Med. high
Pomeroy, Washington	1,460	Farming	399	Med. high
Halfway, Oregon	340	Ranching	415	High
Baker City, Oregon	9,585	Timber	457	High
St. John, Washington	508	Farming	459	High
Wallace, Idaho	994	Travel and tourism	467	High

Table 29—A sample of Columbia basin communities typed by industries perceived as dominant, by community resilience class and ratings on community construct scales

Towns by type of dominant industry	Community resilience class	Community construct scales			
		Economic diversity	Social cohesion	Civic leadership	Preparedness for future
Towns where ranching is perceived as dominant:					
Spray, Oreogn	Low	3-	5-	3+	2+
Challis, Idaho	Med. low	3+	6-	4-	2+
Burns, Oregon	Med. high	4-	5-	5+	3+
Halfway, Oregon	High	4-	5+	5+	4+
Towns where farming is perceived as dominant:					
Stanfield, Oregon	Low	4-	4-	3+	3-
Almira, Washington	Med. low	2+	5-	4+	4+
Pomeroy, Washington	Med. high	3+	6-	5-	4-
St. John, Washington	High	5+	6+	6-	5-

Table 29—A sample of Columbia basin communities typed by industries perceived as dominant, by community resilience class and ratings on community construct scales (continued)

Towns by type of dominant industry	Community resilience class	Community construct scales			
		Economic diversity	Social cohesion	Civic leadership	Preparedness for future
Towns where travel and tourism is perceived as dominant:					
Lava Hot Springs, Idaho	Low	3+	4-	4+	4-
Whitefish, Montana	Med. low	4+	4+	4+	4+
Sisters, Oregon	Med. high	5-	5-	4+	4-
Wallace, Idaho	High	4+	6-	6-	5+
Towns where timber is perceived as dominant:					
Chiloquin, Oregon	Low	3-	6-	3+	4-
Republic, Washington	Med. low	6-	6+	4-	4-
Paisley, Oregon	Med. high	3-	7-	3+	2+
Baker City, Oregon	High	6-	6-	6+	5+

Table 30—Percentage of 198 Columbia basin study communities by perceived industry dominance classification and level of community resilience

Towns by industry dominance classification	Level of community resilience	
	High	Low
	<i>Percent</i>	
Timber (N=44)	62	38
Travel and tourism (N=34)	53	47
Farming (N=90)	48	52
Ranching (N=16)	37	63
Not resource dependent (N=11)	27	73

Table 31—Average community resilience scores of Columbia basin study communities and ratings of perceived change since 1990, by perceived industry dominance classification (N=198)

Dominant industrial sector ^a	Average community resilience score	Perceived change rating
Farming and ranching (N=81)	361	3.8
Timber (N=20)	380	4.3
Travel and tourism (N=49)	386	4.6
Economically diverse (N=36) ^b	392	4.6

^a Only 3 communities reported mining as a dominant industry and were not included here.

^b Communities with 2 or more dominant industries with similar employment totals.

Several relations between the community resilience scores and community characteristics were statistically significant ($p < 0.05$). The higher a community's resilience rating, the more autonomous the town was, the larger its population, the higher the towns' perceived quality of life, and the more likely its economy was perceived to be diverse. Other factors related to resilience were that, in the more resilient communities, governments were more likely to be rated as doing what the public wants and that the town had developed plans involving future change.

Of the factors related to community resiliency, respondents' perceived community autonomy was found to be the strongest predictor (Pearson correlation coefficient of 0.63; $p < 0.05$). Autonomy was defined in the self-assessment workbooks and community workshops as the degree to which a community is linked, economically, socially, and physically, to neighboring communities and to the region as a whole. Not surprisingly, given that correlational analyses suggest that larger towns are somewhat more autonomous than small ones, the larger communities in the region were generally more resilient. Analysis of variance conducted on the 1992-94 population estimates based on CRI class indicated a statistically significant difference ($p < 0.05$) between the average size of communities in the medium-low and low resilience classes (764 and 1,131 people, respectively) and the medium-high and high resilience classes (2,028 and 2,420 people, respectively).

The largest towns in the region also tended to have more diversified economies, as did the more resilient communities, which had a mean economic diversity rating of 1.4 in comparison with a mean of -0.30 for the least resilient towns (statistically significant difference, $p < 0.05$). In FEMAT (1993), the community assessment suggested that communities with high capacity to adapt tended to be larger communities; as indicated above, those with larger populations tended to have a more developed, extensive infrastructure and workforce to build on. It is noted in FEMAT (1993) that communities less able to adapt tend to have less developed infrastructure, less economic diversity and active leadership, and fewer links to centers of political and economic influence, with greater dependence on nearby communities. In contrast to these findings, our research documented that autonomous communities were more resilient, with spatial factors (e.g., transportation corridors, isolation) being relatively insignificant in their adaptive capacity; in fact, a statistically significant, positive, though weak, relation (0.19, $p < 0.05$) between distance from an interstate highway and community resilience was found. These findings were consistent with the relation between resilience and industry dominance indicated by table 31. Interestingly, towns perceived as timber dominant tended to be farther from an interstate highway and relatively isolated, and they also tended to be relatively resilient compared to towns in which other industries were perceived to be dominant.

No statistically significant relation ($p < 0.05$) was found between the CRI score and community growth in the 1980s (0.09); the strength of the relation between the CRI score and perceived degree of change in community in the 1990s was a moderate 0.37 (as indicated by a Pearson correlation coefficient). The former result clarifies that resilience is not simply a matter of a community's growth in population, and the latter suggests it may be coupled with change, but of a more complex kind than simply population increases. Supporting these results were the findings on population changes in towns smaller than 10,000 where mills manufacturing wood or paper products have closed since 1980: 52 percent of these towns have suffered population declines, although the populations of 48 percent have increased. In total, the change in population of small towns in which mills have closed has been a net increase of 8 percent since 1980.

Rural Economies and Community Resilience

The match between the perceived and actual importance of particular industries in rural communities—The results described earlier for matching workshop participants' perceptions with the actual economic profiles for those communities suggested some inconsistency between the two. In spite of this, however, a strong positive relation was found between the scores calculated to measure perceptions of the economic structure of communities and the economic diversity index based on actual employment figures: a Pearson correlation coefficient of 0.62 ($p < 0.05$) was found across the 198 study communities. This finding suggests that most participants in the community workshops were reasonably accurate in their assessment of the relative extent to which their towns' economies were diverse. This finding lends support to the suggestion made earlier that the measure of perceived dependence on resource-related industries focused the attention of workshop participants on their perceptions of the absolute (noncomparative) importance of these industries. In contrast, percentages of total employment and the economic diversity data re-

flected the relative importance of these industries vis a vis all the other manufacturing, service, and industrial sectors. Nonetheless, the lack of an even stronger relation between the mean scores on the economic structure scale and the scores on the economic diversity index could be due to inaccurate perceptions by workshop participants in those towns perceived to be dependent on industries such as farming and timber harvesting and milling.

The past prominence of these industries or their high visibility in a community may be the basis for residents' assumptions that these industries are more important than they actually are. To test this hypothesis, Pearson correlation coefficients between perceived diversity and actual diversity were calculated for those communities found to have high agriculture and timber employment totals. These coefficients were only 0.32 and 0.44; and although statistically significant ($p < 0.05$), they indicated only a weak to moderate strength of relation. Further, when the 48 agricultural and 46 timber communities were omitted from the analyses owing to overestimates or underestimates of workshop participants' perceived dependence on the respective industries, the resulting correlation coefficients increased to 0.65 ($p > 0.05$) for agriculture communities and 0.70 ($p > 0.05$) for timber communities. Thus, this analysis indicated possible merit in the above hypothesis.

Actual employment and community resilience—Proportions of total employment in natural resource industries such as agriculture, manufacturing of wood and paper products, travel and tourism, mining, Federal and state government, and others did not differ significantly by degree of community resilience, with a few exceptions (table 32). In general, towns rated higher in resilience tended to be more dependent, in terms of total employment, on a mix of service sectors (e.g., medical and social services, retail trade, and travel and tourism) and less dependent on some basic industries, such as agriculture and mining. This relation did not exist, however, for the wood products manufacturing sector: consistent with previous findings, communities with

Table 32—Percentages of total employment in Columbia basin communities in industrial sectors, by community resilience class (N=198)

Level of community resilience (N)	Agriculture	Wood and paper products	Travel and tourism	State and local government	Federal Government
High (47)	14.9	7.4	14.5	15.2	5.4
Medium High (48)	22.7	6.0	13.8	13.5	4.5
Medium Low (51)	20.2	6.6	12.6	17.8	4.7
Low (47)	27.5	4.5	13.2	18.2	6.7
Mean	21.3	6.2	13.5	16.2	5.3
	Mining and minerals	Retail trade ^a	Eating and drinking ^a	Medical and social services	Other industries
High (47)	3.6	13.8	5.1	8.2	11.9
Medium High (48)	2.8	12.8	4.9	5.5	13.5
Medium Low (51)	3.3	10.1	6.9	4.6	13.2
Low (47)	1.3	10.4	5.7	3.2	9.3
Mean	2.7	11.7	5.7	5.4	12.0

^a Nontourism related.

higher resilience ratings also had a higher percentage of wood products manufacturing employment. Conversely, towns with lower degrees of resilience tended to be more dependent on state, local, and Federal governments for employment, as well as on the mining and mineral industry. Less resilient towns typically had less employment in the travel and tourism industry, as well as in the wood products manufacturing industry, compared to communities that were more resilient.

The picture provided by these findings is not as clear and definitive as that provided by people's perceptions, which suggest that the more resilient towns are the ones perceived as timber dominant and less resilient ones are those in which farming, especially ranching, is dominant. Perhaps it is the case that, regardless of the actual employment structure of the communities, those towns perceiving themselves as timber towns have been undergoing change and increasing in resilience, and the towns perceived as agriculture dominant have not. The situation for timber-dependent communities is examined in greater depth in the next section.

Other Findings on Rural Communities

Timber-Dependent Communities

Of the 198 rural communities sampled for the community assessment in the basin, 34 were identified by Forest Service policy analysts as timber dependent (USDA Forest Service 1996). Workshop participants from 20 of these perceived their communities as timber dominant, 3 as diverse and extractive, 7 as nonresource dependent, 2 as travel and tourism, and 1 each as agriculture and government dominant. Analysis of direct employment in the wood products manufacturing industry indicated that only 40 percent of the Forest Service-designated towns were actually dependent on wood products manufacturing for a significant amount of their employment (employment in the wood products manufacturing indus-

try greater than 10 percent of total community employment). Equally significant, 40 percent of the 198 communities in the study region that had more than 10 percent of their employment in the wood products industry were not designated by the Forest Service as timber dependent. Therefore, an important use of these data is to clarify the situation for communities designated by the Forest Service as not timber dependent but having a large percentage of their total employment in the wood products industry.

In general, communities designated as timber dependent by the Forest Service were rated higher in resilience than other, nondesignated communities, although the difference from other communities was not statistically significant on the economic structure scale discussed as part of the CRI. Higher proportions of timber-dependent communities were moderately small (1,500 to 3,000 people) to moderately large (3,000 to 5,000 people) in size. But these communities generally did not differ significantly from other communities in their economic structure, or in average population size.

Communities in the study region designated by the Forest Service as timber dependent differed from other communities in the proportions of employment across several key industries, such as agriculture, wood products and Federal Government. They did not differ from towns perceived by their residents to be timber dependent (table 33). Interestingly, these Forest Service-designated communities were rated as actually being more economically diverse (in their average score on the economic diversity index) than towns perceived to be timber dependent. In addition, the average index scores for both kinds of towns were much greater than the mean score for other kinds of communities. Given these comparable diversity ratings, mean levels of employment in the travel and tourism sector were about as high in both the Forest Service-designated timber communities and towns perceived to be timber dependent as they were in other kinds of communities.

Table 33—Percentage of total employment in Columbia basin communities, by industrial sectors and type of community with mean economic diversity scores

Community type	Economic diversity index	Agriculture	Wood products	Travel and tourism	Federal Government	Medical and social services	Percent	
							Score	Percent
Designated by USDA Forest Service, as “timber dependent”	1.20	14.0	16.6	12.2	7.6	6.5		
Perceived timber dependent, but nondesignated	1.01	12.6	16.7	13.0	8.5	7.1		
Other communities	.34	21.0	6.4	14.0	5.5	5.4		

Not surprisingly, communities across the basin were found to have significant differences in their characteristics associated with their biophysical geography and their location relative to specific ERUs (table 34). In examining communities in each of the 13 ERUs by level of resilience, it was found that a high proportion of communities in the Southern Cascades, the Upper Clark Fork, and the Central Idaho Mountains ERUs had a high level of resilience (fig. 17). Many of the communities in these ERUs are in mountainous regions possessing a high degree of physical amenities, and these communities are responding constructively and proactively to a changing economic structure and growing population.

Other ERUs having communities with high levels of resilience include the Blue Mountains of northeastern Oregon, the Lower Clark Fork, and the Upper Snake River ERUs. These ERUs also are well endowed with amenity resources and increasingly diversified economies. In contrast, the Columbia Plateau, Snake River Headwaters, and the Owyhee Uplands ERUs generally had lower resilience ratings and were dominated by farming and ranching industries. These ERUs are characterized by high plains deserts and “scablands” that are perceived as comparatively lacking in physical amenities.

Communities in these 13 ERUs show consistent patterns in characteristics and conditions for perceived and empirical data that are most easily displayed by combining the units into four major regions: a Coastal Mountains ERU (comprised of the Northern and Southern Cascades ERUs), a High Plains Desert and Prairie ERU (Columbia Plateau and Owyhee Uplands ERUs), a Northern Rocky Mountains ERU (the Northern Glaciated Mountains, the Blue Mountains, the Central Idaho Mountains, the Lower Clark Fork, and the Snake Headwaters ERUs), and the Upper Snake ERU. The Upper Klamath and Northern Great Basin ERUs, which accounted for only 2.5 percent of all communities, were not included in the analysis.

Table 34—Percentage of Columbia basin study communities in ecological reporting units, with majority proportions in high or low community resilience classes

Ecological reporting unit	Percentage of all communities (N=387) ^a	Majority proportions of communities by resilience class
		<i>Percent</i>
Columbia Plateau	32	60 – low
Northern Glaciated Mountains	15	NA
Owyhee Uplands	9	56 – low
Blue Mountains	9	60 – high
Central Idaho Mountains	8	60 – high
Upper Snake	6	58 – high
Snake Headwaters	6	63 – low
Lower Clark Fork	5	60 – high
Northern Cascades	4	NA
Southern Cascades	3	67 – high
Upper Clark Fork	2	75 – high
Upper Klamath	2	NA
Northern Great Basin	1	NA

NA = not applicable: a large majority of communities in the ecological reporting unit was classified as neither low nor high in resilience.

^aNumber of rural communities with less than 10,000 population, based on 1992-94 estimates (Oregon Center for Population Research and Census 1995).

An analysis of the trends in responses on perceived community characteristics revealed the following differences in absolute scale ratings or in the number of communities across different ERUs:

- Statistically significant increases in community attractiveness from towns of the High Plains Desert and Prairie and the Upper Snake ERUs to the Northern Rocky Mountain and Coastal Mountain ERUs.
- Statistically significant increases in community autonomy from the Upper Snake and High Plains Desert and Prairie ERUs to the Coastal Mountain and Northern Rocky Mountain ERUs.
- Increases in regional attractiveness, uniqueness of community, and community resilience from the High Plains Desert and Prairie and the Upper Snake ERUs to the Coastal Mountain and Northern Rocky Mountain ERUs.

- Increases from the Upper Snake and the High Plains Desert and Prairie ERUs to the Northern Rocky Mountain and Coastal Mountain ERUs in perceived levels of economic diversity, dependence on travel and tourism and timber, degree of perceived change in communities between 1990 and 1995, and population migration patterns as indicated by the percentage of households living in a different house but in the same state (perhaps indicating a migration within the state to more residentially attractive areas).
- Increases from the Upper Snake and High Plains Desert and Prairie ERUs to the Coastal Mountain and Northern Rocky Mountain ERUs in distance in miles to an interstate highway.
- Increases from the Coastal Mountain and Northern Rocky Mountain ERUs to the High Plains Desert and Prairie and the Upper Snake ERUs in percentage of households with farm income and dependence on ranching.

- Increases from the Coastal Mountain and the Northern Rocky Mountain ERUs to the Upper Snake and High Plains Desert and Prairie ERUs in traffic congestion.
- Increases from the Northern Rocky Mountain and Coastal Mountain ERUs to the Upper Snake and High Plains Desert and Prairie ERUs in percentage of people employed in agriculture, forestry, fisheries.
- No statistical differences were found in perceived characteristics such as social cohesiveness, services, business attractiveness, dependence on natural resources, government and civic leadership, preparedness for the future, or quality of life.

Is Bigger Better—Or Is Being More Autonomous?

Analyses of both the documented data obtained from town officials and perceptions gathered from the community self-assessment workshops indicated that population size is among the variables that are related to a community's current condition and likely responses to change. As previously indicated, however, even though population size is statistically related to a community's level of resilience, this relation is not a strong one. Therefore, any strategic decision by a community to grow in size should not necessarily be made to increase its resilience, which depends on a variety of interrelated factors.

Nonetheless, as the variety of statistically significant findings on a community's population size suggests, the size of a community is statistically related to a number of different community characteristics and conditions.

Documented community data:

- The larger the community, the more churches ($r = 0.65$) and civic groups ($r = 0.28$) it has, and the more economically diverse its economy, as indicated by the relation between a community's population size and its score on the economic diversity index ($r = 0.45$).
- Statistically significant but weak correlations were found for several characteristics: The larger the community, the more successful it

was in obtaining grant funding for community improvement ($r = 0.28$), the more it grew in the 1980s ($r = 0.24$), the lower the proportion of households receiving social security income ($r = -0.22$), and the higher the cost of housing ($r = 0.15$).

- The economies of rural communities, in terms of proportions of employment in various sectors, were not significantly different based on their population size: the only statistically significant correlations were those between population size and proportions of employment in agriculture and medical services. The strongest of these correlations were found for communities with high proportions of employment in farm and ranching, with those towns showing some tendency to be smaller in population, but even that correlation was relatively weak ($r = -0.18$).
- Characteristics for which population size made no statistically significant difference included geographic isolation and the proportion of households receiving public assistance income or retirement income.

Community perception data:

- The larger the community, the lower its rating of traffic congestion ($r = -0.53$), and the greater its attractiveness for business ($r = 0.49$), social and economic changes since 1990 ($r = 0.42$), and autonomy ($r = 0.35$).
- Statistically significant but weak correlations were found for several perceived characteristics of rural communities: the larger the community, the higher the rating of its overall resilience ($r = 0.29$), its preparedness for the future ($r = 0.26$), the adequacy of its services ($r = 0.25$), its attractiveness ($r = 0.22$), and how interesting it is as a community ($r = 0.22$).
- Characteristics for which population size made no statistically significant difference included the extent of a community's social cohesion, friendliness, leadership, quality of life, regional attractiveness, and how safe the community is perceived to be.

In general, then, rural communities perceived to have greater suitability and capability for economic development tended to be larger ones; that is, larger towns were somewhat more likely to have a more developed infrastructure, increased availability of services, especially education, and greater preparedness for the future. A rural town's population size is related to its current conditions and likely response to change: statistical analyses indicated that larger towns tend to be more economically diverse, autonomous, and attractive for business. The conclusion here is consistent with the basic premise of the plethora of community development handbooks and workshops provided in the 1970s and 1980s: if members of a small rural community want to "develop" their town, they should work to attract new industries and expand the economic base, which would result in population increase.

Significantly, the findings of both the self-assessment study and the community economic profiles suggest that the impacts of this improvement extend beyond the economic aspects of community development, whose significance has long been recognized and is reaffirmed here, to its social elements as well. Larger rural communities tend to represent a more advanced stage of social and civic development than small ones. The importance for community vitality of active social groups and civic organizations, increased educational infrastructure, availability of services, success in obtaining development grants, and greater preparedness for the future—all of which increase with a town's size—reflects the benefits that towns with a critical mass of social capital and infrastructure are more likely to realize. An interesting question for future research, however, is at what size and level of community development the net benefits of growth are maximized, beyond which the social costs of further growth begin to exceed the benefits.

A factor as important as a community's size for its future development is its autonomy, which has been defined in terms of the extent to which communities are linked—economically, socially, and politically—to neighboring communities and the region as a whole. (The following discussion is

excerpted from the work of Harris and Russell,⁴ which focused on "timber communities," those having some employment in the wood products sector.)

The more autonomous a community is, the less it is linked to the "outside." Implicitly, then, use of the term "autonomy" underscores a community's independence, self-reliance and ability to function as a cohesive and functional unit. Community autonomy is a complex, multidimensional construct, as reflected in the duality of its definition. The autonomy of a town can reflect a state of isolation and remoteness, which can be viewed negatively, as well as a condition of independence and self-reliance that are positive attributes—and this duality can suggest ambiguous implications for change in rural communities.

Many researchers (e.g., Lackey et al. 1987, Warren 1971), nonetheless, emphasize the positive connotation of autonomy as a community attribute characteristic of strong, healthy communities, and our research results support this assessment. The autonomy construct was most strongly correlated with residents' perceptions of the availability of services in their communities ($r = 0.52$), their communities' overall attractiveness ($r = 0.52$), their attractiveness for business ($r = 0.40$), and the social cohesion and quality of life in their communities ($r = 0.40, 0.32$). The autonomy construct also was strongly correlated with documented data, such as economic diversity ($r = 0.45$) and, as noted above, population size ($r = 0.35$). It is not significantly related to employment in most key industries, such as tourism or wood products, and it is negatively related, although fairly weakly, to agriculture ($r = -0.28$). There is some tendency, then, for more agriculturally dominated towns to be less autonomous, but even this is not the case for all such towns; autonomy is not as strongly tied to any particular kind of economy as it is to economies that have a more diverse mix of sectors on which they are dependent.

⁴ Russell, K.; Harris, C.C. [In press]. Economic, social and political dimensions of community autonomy in timber towns. *Society and Natural Resources*.

These results suggest that autonomous communities, whether isolated or not, are those that have developed the service and economic infrastructure to provide residents with goods, services, and jobs. Our results also indicate that community residents perceive that the most autonomous towns are those that not only have a diversity of services and economy but also have a social resiliency that enables them to manage the changes they experience. This result challenges the notion that autonomous communities are either higher order communities with an ability to provide for citizens internally or isolated towns; rather, towns that are autonomous are likely to be isolated, have a strong sense of community, and have healthy, diversified economies.

Quality of Life in Small Communities

Most communities in the region, whether large or small, rated themselves as having a high level of

quality of life. As previously shown, fully 80 percent of the communities rated their quality of life as very high, and another 19 percent indicated it was moderately high; only one of the 198 communities indicated that their quality of life was low (see table 6). Part of a community's quality of life is due to the presence of scenic and recreational amenities in the surrounding area that are related to the natural resources. The results of regression analysis, as shown below, confirm that a town's quality of life is partially dependent on the attractiveness of the region where it is located. Even more important, however, are social factors, such as how interesting a community is, the extent a community is plagued with social problems, how safe its residents feel, and the social cohesiveness. Significantly, the extent of a town's quality of life is strongly related to its resilience ($r = 0.50$):

Multiple R	R-square	Df	Analysis of variance		
			Sum of squares	Mean square	
Adjusted R-square	0.5863	Regression	5	35.9624	7.1925
Standard error	0.3593	Residual	188	2.2737	0.1291
			F = 55.7058	Significant F = 0.000	
Variable	B	Standard error	Beta	t	Significant t
(Constant)	0.7679	0.4057		1.893	0.0599
How interesting the community is	.2815	.0417	0.3651	6.751	.0000
Social problems	.2058	.0357	.3339	5.769	.0000
Community safety	.2216	.0619	.2131	3.578	.0004
Social cohesion	.1004	.0396	.1400	2.533	.0121
Regional attractiveness	.1420	.0551	.1279	2.579	.0107

Table 35—Percentage of Columbia basin communities with increasing populations

State	Communities with increasing populations
	<i>Percent</i>
Idaho	85
Montana	73
Washington	86
Wyoming	100
Average, all communities	86

Sources: State departments of administration, finance, and information.

Also significant is the finding that a town’s size is unrelated to its quality of life, which begs the question of the goal or desired future for towns seeking to become more viable, healthy, vital, and thus resilient in the face of change. But it also suggests that, just because a town grows, this change does not mean that a community’s quality of life is necessarily compromised.

Change in Small Rural Communities

Workshop participants in a large majority of communities (70 percent) in the basin reported that they had experienced a moderate to high degree of change since 1990. Similarly, the indepth case study of Chelan County, Washington, residents found that a majority (68 percent) perceived that their communities had experienced a moderate to high degree of change in the 1980s. When asked about the kinds of change that had occurred, 68 percent of Chelan County residents reported growth and population increases as one of the major changes. Other important changes included the conversion of agricultural lands to residential and commercial development (32 percent), increase in retail stores (26 percent), increased traffic (23 percent), and increased crime (22 percent). More than half of the residents (55 percent) were somewhat to extremely concerned about the overall changes taking place in their community (for instance, population growth and economic structure).

Population changes—U.S. census data for the communities in the study area indicate that, on average, the populations of these towns increased by 7 percent between 1980 and the early 1990s. (The most recent population estimates available from the states at the time of this analysis were from 1992 or 1994, depending on the state; see citations in next paragraph). Population-change proportions range from a minimum of a 60 percent decline to a maximum increase of 413 percent, but the distribution of these proportions is skewed toward population growth: 60 percent of all towns in the region increased in population between 1980 and 1992-94, with the bottom 20 percent of all towns in the region decreasing in population by -9.6 percent and the top 20 percent increasing by over two times as much, or 19.9 percent.

In the 1990s, this trend accelerated. The average populations of rural communities in all five states in the Columbia River basin are estimated to have increased since 1990, although in different amounts: these increases ranged from an average of about 3 percent in communities in Montana (Montana Department of Commerce 1995) and 4 percent in Idaho communities (Idaho Division of Financial Management 1995), to a high of an average 12 percent in communities in Wyoming (Wyoming Department of Administration and Information 1995). Likewise, as table 35 shows, the vast majority (86 percent) of all towns in the region have been growing since 1990—a significant change from the ingrowth in the 1980s.

Recent estimates also indicate that, statewide, the population growth between 1988 and 1994 has been 12 percent in Idaho, 7 percent in Montana, 8 percent in Oregon, and 9 percent in Washington (Idaho Division of Financial Management 1995, Montana Department of Commerce 1995, Oregon Center for Population Research and Census 1995a, Washington Office of Financial Management 1994, Wyoming Department of Administration and Information 1995). In contrast, the U.S. population grew only 4 percent during this same period. Significantly, even for as short a period as

1990 to 1994, the present study indicates that residents of larger towns are more likely to report that their town has changed (Pearson correlation coefficient of 0.44; $p < 0.05$).

In addition to population growth, a multiplicity of changes and influences are affecting the character of rural communities in the study area. They include not only changing natural resource supplies and resource-management policies, but also social changes due to aging populations and the immigration of commuters, welfare recipients, retirees, and new ethnic groups. In many instances, these new types of residents are changing the social makeup and character of communities, along with their traditions, customs, and cultures.

Economic changes—The assessment of the 145 communities identified as having changed significantly in recent years affirmed that the economies of the region's small communities have changed throughout their history and continue to change (see previous section, "Surveys of Residents of Chelan County and Significant Change Communities"). Significantly, our assessments of community resilience and significant change communities made clear that change and resilience to it are found across the various economic types of communities. Government policies on public lands clearly have affected the economies of some rural communities in significant ways, thereby influencing their resilience. Other influences, including the decisions and actions of small business owners and large corporations, and the methods with which the public sector has subsidized these industries (e.g., crop payment programs, logging road construction, bidding-preference systems for small sawmills), also have long affected the development of small rural communities in the region.

For towns with wood products mills, mining and minerals processing, and the like, concerns of residents and agency resource managers have traditionally focused on "community stability" in terms of the economic stability assured by a steady, dependable flow of resources from public

lands and the resulting stable employment base. Some congressional acts (e.g., Organic Administration Act of 1897, Multiple Use-Sustained Yield Act of 1960, Forest and Rangeland Renewable Resources Planning Act of 1974, and National Forest Management Act of 1976) reflect this concern and, as a Forest Service policy memorandum notes, they mandate that the Forest Service provide a continuous supply of outputs for the nation (USDA Forest Service 1977). This document, while noting that "none of the language [in these acts] specifically addresses 'community stability,'" also recognizes that "the basic charge [of the agency] to provide the goods and services is well ingrained" (USDA Forest Service 1977:1).

Recent changes in communities have resulted from a variety of broader economic influences, such as global economic forces, economic diversification, plant modernization, and industrial downsizing (e.g., laying off company loggers and hiring independents to reduce the costs of benefit payments). Significantly, growth in employment in the Pacific Northwest has far exceeded the national rate: employment increased nationwide 7.7 percent between 1988 and 1994, but it increased 27.7 percent in Idaho in that same period, and around 17 percent in the other states in the region (Idaho Division of Financial Management 1995, Montana Department of Commerce 1995, Oregon Center for Population Research and Census 1995a, Washington Office of Financial Management 1994, Wyoming Department of Administration and Information 1995).

As discussed in "Context for the Assessment," key characteristics of communities include economic ones, such as the levels of economic development of a town, its economic diversity (Belzer and Kroll 1986, Freudenburg 1992, Gramling and Freudenburg 1992, Johnson 1993), and its resource dependence (Castle 1991, Machlis and Force 1988, Power 1994). Although the literature has often asserted that resource-extraction industries are essential industries for

rural economic survival, some researchers (e.g., Power 1994; Rasker 1993, 1995) note that traditional extractive industries are decreasing and service industries increasing in importance across the Pacific Northwest; for example, The Wilderness Society (Rasker 1995), examines U.S. Bureau of the Census statistics on income and employment in the Columbia River basin since the late 1960s. These statistics clearly document that, across the region as a whole, traditional, extractive economic base industries (e.g., agriculture, forestry, and mining) have remained at fixed levels over the last two decades, while the major increases in the region's economy have occurred in service sectors.

The analysis conducted by The Wilderness Society reflects only part of the current situation in the region, however. By focusing on the region as a whole, their analysis overlooks the significant differences between the economic base of small rural communities vs. that of large cities. When our research assessed the importance of industrial sectors in rural communities in 1995 as proportions of the total employment, a different picture of the region's economy emerges: harvesting and processing (e.g., agriculture, timber) were among the most important employers in small rural towns across the region. So too are newer industries, such as travel and tourism, with retail trade and food and beverage (mainstays of tourism as well as important for meeting local needs) and the Federal and local governments becoming increasingly important. Yet analyses like Power's (1994), which ostensibly focus on the region's rural communities, present few data representing that scale.

In some cases, the total dependence of a town on a particular industry may be less important than the proportion of that industry controlled by one entity, such as a government agency's control of timber supply or a company's control of processing plants. Finally, economic sectors are often complementary rather than substitutable or competitors for one another; consequently, economic diversification began occurring long before public policy started restricting commodity supplies

on public lands and companies in extractive industries began plant improvements and employee layoffs to increase company competitiveness. A key point here is that the economies of these communities are more complex and unique than simplistic, ideologically driven analyses may suggest.

Significant change communities—Another component of the research focused on assessing and analyzing the characteristics and experiences of 145 towns in the region identified as significant change communities. These communities were identified as undergoing major economic or social change, or both, by state economic development officials, agricultural extension experts, Forest Service forest planners or economic development coordinators, and population estimates indicating changes of greater than 20 percent since 1980, from the U.S. Bureau of the Census (1995a, 1995b). Data collection focused on identifying the types of changes occurring in rural communities, community responses to these changes, and the effects or characteristics of all these factors in terms of community conditions, activities, and lifestyles. Of the 145 identified communities having experienced significant change, 80 communities (55 percent) were surveyed. The following is a brief summary of those findings. (For more detailed results of significant change communities, see Harris et al. 1996.)

- Of the 80 significant change communities surveyed, 3 percent were perceived as non-resource dependent, 13 percent as having predominately ranching economies, 20 percent as farming based, 29 percent as primarily travel and tourism based, and 35 percent as predominately timber based.
- Of the surveyed communities, 35 percent had populations that were growing, and 39 percent had populations that had decreased.
- In addition, 36 percent of the surveyed communities were not responding to change, and the other 64 percent were much more proactive in responding to change.

Results from the surveyed communities suggest that the impacts of population growth, and the social and land-use changes that have come about as a result of that growth, were as critical or more so than any recent changes in resource management. Additionally, a community's degree of resilience was more related to how it responded to changes than to its economic structure. More resilient communities were more likely to take proactive actions to respond to changes affecting their quality of life. Of the sample of 80 communities, 34 percent were rated as being highly resilient, and 26 percent and 21 percent were rated as being moderately high to moderately low in resilience, respectively. Of those having a high resilience rating, 44 percent were perceived as predominantly timber dependent, 30 percent as

travel and tourism, 22 percent as agricultural, and 4 percent as not resource dependent. Conversely, of the communities having a low level of resilience, 52 percent were perceived as predominantly agricultural based and only 20 percent as timber dependent.

Among communities having undergone significant changes, higher proportions of communities in the higher resilience classes were perceived as timber dependent, and they reported activities suggesting that they were proactive in responding to change. The number of respondents perceiving their communities as travel and tourism dependent were represented equally across the four resilience classes, as were trends in population changes, thereby reaffirming that these characteristics do not fully predict resiliency.

Conclusions

The structures and functions of small rural communities in the region are more complex than some analyses would suggest, especially those conducted at a regional level or that used county data to assess local conditions. The extent to which communities depend on different industries differs, both in the perceptions of active and involved residents and in actual employment numbers. Generalizations about individual communities or industries must be made with care.

To develop constructive strategies for managing changes, it is important to assess the current characteristics and conditions of communities in the region, changes affecting them, and the major factors influencing responses to change. If communities are to develop in a coherent, managed, and well-planned way, residents must deal with the realities and potentialities of their towns, including their social, economic and political advantages and disadvantages, attractions and drawbacks. Importantly, although a community's resources, including its amenities and attractiveness, can be a factor influencing development, a decisive, major determinant of a community's resilience clearly is its residents, in particular, the willingness of residents to take leadership roles, organize, and realize their community's potential. Community residents are a central defining element in creating the future of rural communities.

Some major conclusions of the research are:

- Small, rural communities in the interior and upper Columbia River basin have always been changing and will continue to change. The idea of community stability is a myth belying various influences: the volatility of markets for timber, mining, and other traditional ex-

tractive industries; the actions of private companies in modernizing and closing plants and periodically laying off or terminating workers; the decreasing supply of timber from National Forests; and the rapidly increasing in-migration of new workers and residents (e.g., retirees and new ethnic groups).

- Although closures of mills, mines, and other resource-processing plants have had a significant impact on many communities, past closures have had little social and economic effects on other communities. Many mills, for example, have been closed, sold, reopened, and closed again as a result of a series of changes over past decades not necessarily related to public land management decisions. Community growth, as indicated by population increase, has occurred in many communities that have lost mills.
- Rural communities tend to be more resilient (able to adapt to change in positive, constructive ways) than is commonly assumed. Small communities in the basin are unique and complex; generalizing from the types of towns that are resilient thus should be done with great care.
- Many of the region's timber towns had a relatively high level of resilience and were perceived to be healthy when compared to small ranching and farming towns. With their amenities, diversified economies, and degree of population growth, the face of many of these communities is changing. New policy initiatives are needed to help small communities cope with the external forces resulting in change.

- Public policy analysts could view the role of resilience in one of two ways. One is that, if government resources (i.e., funding, workforce, and other kinds of subsidies) are to be expended on rural communities, those lowest in resilience (ranching and farming communities, in particular) are the ones most needing support.
- The second alternative view is that, in the name of economic efficiency and equity, America should “cut its losses” in terms of communities that are “on the skids” and losing their human capital. Expending any more societal resources on these communities would not be worth the benefits derived; rather, government resources would be most effectively used on communities that are at risk but have the potential to benefit most from those resources.
- The history of Forest Service commitments and impacts on rural communities has continually evolved. The nature of this evolution, along with changing societal values, a changing Agency workforce reflecting those values, and the learning that occurs within the Agency, underscores the importance of sound forest planning (for example, see Blattner et al., in press; Brown 1994; Clark and Stankey 1994; FEMAT 1993; Gale and Cordray 1991; Grumbine 1994; Krannich et al. 1994; Lee et al. 1990; Machlis and Force 1988; Rasker 1995; Waggener 1977). Information such as that provided in this research may be an important tool for revising forest plans and planning individual projects. Additionally, it also may be useful for planning and management efforts of the communities themselves and their counties and states.

Various approaches may help rural communities adapt to their changing environments and conditions. The CRI suggests that different communities require different mixes of solutions or re-

sponses, depending on the nature of the changes affecting them and their strengths and weaknesses as indicated by the resilience index. From the index, solutions and responses could be tailored to the situations of individual communities. They might include programs for rebuilding social networks and increasing a community’s social cohesion; leadership training programs; growth management strategies; investments in improving physical infrastructure; and financial and infrastructure support for traditional industries to maintain their role in local economies. Mitigation programs could include a process for indepth community self-assessment that further clarifies and details community needs. This process could help communities and their leaders assess their current conditions, evaluate the challenges and opportunities facing their community, and develop short- and long-range strategies to respond to changes that make the most effective, efficient use of outside funding.

As detailed in the research done on significant change communities (see Harris 1996a, 1996b), distrust of government, issues of self-reliance versus dependence on public resources, concerns with private property rights, and conflicts over resource uses of Federal lands are commonplace in the interior and upper Columbia basins. Accordingly, resource management agencies need to take actions that advance a positive, proactive approach promoting consensus building and collaborative problem solving across the region, rather than one that fans the flames of conflict, confrontation, and divisiveness among the various publics in the inland Northwest. Recent social changes are altering small rural communities across the basin as much as the changing supplies of natural resources. Residents of these rural communities need to focus their attention and efforts on dealing with the many coming changes constructively and resolving resulting problems as expediently as possible.

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