AN ABSTRACT OF THE DISSERTATION OF

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Title: The Impact of Social Capital on Well-being in Rural Communities

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This study seeks to explore the relationship between social capital and well-being in

the rural Western United States. Mixed methods were employed to understand the

concepts from multiple angles, using both profile and process indicators. An

econometric approach used profile indicators and relied on data from 414 counties in

the Western United States. A case study approach used process indicators and relied

primarily on qualitative data from three rural communities and their respective

counties in Washington State. Results from the econometric approach indicated that

social capital is not a significant factor in determining poverty rates, one indicator of

community well-being. Poverty rates were similarly shown to not be significant in

explaining social capital levels in a community. The econometric approach tested a

variety of model estimators, including ordinary least squares, two stage least squares,

and two stage least squares with spatially lagged dependent variables and spatially

correlated error terms. The results underscore the importance of accounting for

simultaneity and spatial dimensions in studies of community well-being. Because

many factors that contribute to well-being are jointly determined with well-being and

indicators of well-being are frequently spatially clustered, this situation is likely to be

more common than has been typically recognized in the literature. The depth of the case study findings enhance our understanding of the impacts of social capital on community well-being by dividing the concept of social capital into three types, making it clear that simple aggregation of civic organizations or evidence of civic behavior is insufficient to understand the scales at which social capital works. More social capital is not necessarily better. Generally, interviewees stressed the importance of bridging social capital to achieve community-wide desired outcomes. Yet, strong bonding and bridging social capital had no potency when linking social capital with key powerbrokers was absent. Although the econometric results did not indicate a significant relationship between social capital and poverty rates, the case study approach revealed social capital to be a critical ingredient in the resolution of diverse economic opportunities and disturbances. Finally, the case study approach revealed how social capital is created and can be built up or depleted. My hope is that the findings are useful for community development practitioners, rural community leaders, and public land managers that interface with rural communities.

The Impact of Social Capital on Well-being in Rural Communities


by
Jane L. Harrison



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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF TABLES (Continued)

**CHAPTER 1**

INTRODUCTION

Rural America faces many socioeconomic challenges as traditional

employment opportunities shrink, conservation issues take a higher priority, and the

culture of these communities changes. Distance from population centers and

dependence on natural resources often define rural places. Yet, urban encroachment on

rural places and less direct ties from the local economy to natural endowments have

made the distinctions between rural and urban less obvious. Agriculture, timber, and

mineral markets continue to consolidate and shed workers due to technological

advances and international competition. Concerns over biodiversity, clean waterways,

and ecosystem health have contributed to greater demand for outdoor recreation, eco-

tourism, and ecosystem preservation in rural areas. Finally, population growth in some

communities and decline in others have altered the social fabric of these rural places.

Affluent urbanites have moved into high-amenity communities and bring with them

different educational and career experiences, values, and visions for the community's

future.  Population decline in other rural communities has decreased the level of

human capital available.

The goal of this study is to explore the relationship between social capital and

well-being in the rural Western United States. Social capital is defined as the norms

and networks that facilitate collective action (Woolcock 2001).  In an era of

globalization and a loss of U.S. labor-intensive resource-dependent industries, rural

communities are forced to reconsider their development paths and the types of assets that are needed to adapt in a rapidly changing society. I am particularly interested in social capital's role in rural community well-being because it is a variable that community members have the power to transform. Communities can hold potential or dormant social capital, which in the right social conditions or faced by a particular development challenge or shock, could be used to improve well-being (Fukuyama 2001). Local people and business entities in rural communities may not control large stocks of physical, financial, or natural capital. Social capital, as well as human capital, is a mobilizing asset which has the potential to improve existing stocks of physical, financial, and natural capital.

Social capital can be considered a stock of assets (e.g. networks, institutions) that can produce a flow of services (e.g. social participation, collective action) aimed at reinforcing existing social capital and achieving community actions and outcomes (Tiepoh and Reimer 2004). For example, rural community members in the West frequently rely on their neighbors to help control wildfires. Community norms may dictate that residents provide a fire break around their home, preserving their own homes as well as their neighbors. Networks or relationships between community leaders and public land agencies may facilitate access to resources for wildfire prevention.

This study assesses social capital and community well-being using both profile and process indicators (Beckley et al. 2002). Profile indicators are static, descriptive indicators that portray a community at one point in time, such as poverty and

unemployment rates. Process indicators deal more with causal effects than outcomes and include concepts like social cohesion and trust. Beckley et al. (2002, p. 631) elaborates, "Profile indicators are useful for illustrating *how things are,* but not all that useful for discovering *how things came to be that way* or *what needs to happen for things to be different."* The combination of profile and process indicators is increasingly used to assess community well-being of rural communities (Nadeau et al. 1999).

I employ a quantitative approach using profile indicators, and a qualitative approach which uses process indicators. The quantitative approach employs an econometric analysis of a spatial, simultaneous equation model of social capital and poverty in Western US counties. The qualitative approach uses interviews, observation, and document analysis in a case study framework to explore the impact of social capital on adaptive capacity in three rural communities. The strength of the quantitative approach is that it facilitates systematic comparison across communities. The econometric analysis uses data available for a large number of communities (i.e. counties), permitting tests of statistical significance. The strength of the case study approach is that it allows us to go inside the black box of cause and effect. The results present a story of *how* social capital impacts community well-being. By using both a wide and deep lens in terms of study methodologies, a richness of understanding can be created and more reliable generalizations found.

# CHAPTER 2

## LITERATURE REVIEW

The literature analysis reviews our current understanding of rural community change, community well-being, and the relationship between social capital and rural communities.

### 2.1 Rural Community Change

Rural North America has undergone a major economic and demographic transformation over the past century due to laborsaving technological processes, reductions in transportation costs, and rising household incomes. The results are greater rural economic diversity, selected rural population decline, increased rural-urban interdependence, emergent exurban areas, and amenity-led rural growth (Irwin et al. 2010). Households face a painful readjustment period as many rural communities transition from natural resource-dependent towns to service economies.

Several classification schemes exist that define rural America (Crandall and Weber 2005). The U.S. Census Bureau defines a place with 2,500 people or more and a population density of at least 500 persons per square miles as urban; hence, a place that does not meet one of those characteristics is considered rural. The Office of Management and Budget (OMB) classifies counties as metropolitan (urban) if they contain a city of at least 50,000 people, or are adjacent to a metropolitan county and linked to the metropolitan county through significant commuting flows. All other

counties are considered non-metropolitan (rural). Non-metropolitan counties can be further divided into micropolitan and non-core counties. A micropolitan county is defined as a county where the largest city has between 10,000 and 49,999 people. The largest city in a noncore county has less than 9,999 people.

In the early 20th century, 65% of Americans lived in U.S. Census-defined rural areas and two-thirds of those residents were farmers or engaged in farming and natural resource dependent employment. By the beginning of the 21st century, 20% of Americans lived in rural areas, but only 1/20 was employed in agriculture (Kilkenny and Johnson 2007). Technological advances have allowed much of our production processes to become more efficient, requiring less physical labor. As residents employed in agriculture migrated to urban areas for education, jobs, social life, and cultural amenities, our rural areas have changed significantly. Manufacturing dominated rural employment in the mid to late 20th century, but a large proportion of those jobs have been outsourced to developing countries or eliminated by new technological efficiencies. A service economy has developed, robust in high amenity rural areas and fledgling or non-existent in less desirable locales. Many rural areas close to urban centers have become bedroom communities for urban workers.

Rural America experienced outmigration and population loss throughout the 20th century until the "turnaround migration" phenomenon occurred in the 1970s. During this decade, population gain in non-metropolitan counties exceeded those in metropolitan areas for the first time in at least 150 years (Brown and Swanson 2004; Smith and Krannich 2000). Although the 1980s did not follow this trend of rural

population growth, the non-metropolitan population gained by 2.7 million migrants in the 1990s. Migration to non-metropolitan counties slowed in the 2000s, when those counties gained one million migrants from 2000 to 2010 (Johnson 2012). Diversity has accelerated in rural America, with racial and ethnic minorities accounting for 83% of non-metropolitan population growth between 2000 and 2010.

Rural America is highly diverse in the structure of its economy and its population's demographics. Stauber (2001) describes four types of rural communities: urban periphery, sparsely populated, high amenity, and high poverty. The Carsey Institute (2008) describes three rural Americas: amenity-rich, declining resource-dependent, and chronically poor. These demarcations imply that rural communities should fall within one category or another; yet, some communities exhibit a mix of typologies. For example, some high amenity places may experience high poverty rates.

2.2 Community Well-being

Terms such as well-being, standard of living, quality of life, welfare, happiness, life satisfaction, and others have been used in studies to characterize a good and healthy life or the critical components of one (Kusel 1996). Economic studies often focus on GDP growth, incomes, and poverty levels to ascertain well-being. From rural boomtown studies focused on population change to forest community research concerned with stability, rural community well-being has been measured with a myriad of indicators. Choosing appropriate indicators of well-being for rural

communities is not an exact science. Both socio-demographic measures and subjective self-reporting measures of well-being have significant limitations (Kusel 1996; Sen 1985). In the United States, secondary data collected by the U.S. Census and other government agencies provide a wealth of information on indicators of well-being such as individuals' incomes, education levels, and employment levels. Yet, particular indicators may resonate or be relevant to some communities and not in others. For example, a community with low poverty rates may be beset by high levels of income inequality. Hence, indicators of inequality would be more useful in understanding well-being in that place. Also, high incomes and low unemployment rates, standard indicators of well-being, do not necessarily imply happiness. Community members may view the place they live favorably despite low levels of standard well-being indicators. Subjective measures, alternatively, are suspect because respondents may adjust their perceptions of well-being (or happiness) to the conditions they face, making cross-community analysis difficult.

Recent social assessments of communities have moved away from the concept of well-being and focused on resilience and capacity (Donoghue and Sturtevant 2007). Resilience and capacity acknowledge the active agency of community members, the communities' ability to develop capacity, and the self-reinforcing effect of engaging community resources toward community ends. Magis (2010) defines community resilience as the existence, development, and engagement of community resources by community members to thrive in an environment characterized by change, uncertainty, unpredictability, and surprise. The community development literature defines

community capacity as the community's ability to engage in collective action, and to address a variety of circumstances through the use of various community assets.

Resilience theory reminds us that social and ecological systems organize around continuous change (Janssen et al. 2007). Change is endemic to social and ecological systems, rather than exogenous. The idea of resilience was originally applied to ecosystems, but has found currency among social scientists as well. Ecosystem resilience is the ability to absorb disturbance without inducing "system changes in its structure by changing the variables and processes that control behavior" (Holling and Gunderson 2002, 28). The application of the concept of resilience to social systems is reviewed in Davidson (2010). She remarks, "given that resilience describes the ability of a system to absorb or accommodate disturbances without experiencing changes to the system, one can readily envision conditions in which this might not be the preferred response…" (Davidson 2010, 1145). A change catalyst may reveal a resilient social system, which is able to absorb the opportunity or disturbance without substantial system change. Or, community norms may adapt in response to a given catalyst. Davidson (2010, p. 1137) contends that "a deficit in resilience increases the probability that a given regime will need to *adapt*, or *transform* into a new regime."

Similar to the idea of community capacity, the concept of adaptive capacity can serve as a model to understand the assets and processes that allow communities to deal with change. A community's adaptive capacity is the collective efforts to reduce exposure to, or minimize the impact of, disturbances and take advantage of new

opportunities that may arise. In contrast to the concept of resilience, it does not assume

the primacy of an initial state of the social system. Adaptive capacity works at

multiples scales and time frames; by investigating its underlying components, we may

be able to identify how a community's assets and processes influence its ability to

achieve collective goals.

Donoghue and Sturtevant (2007) present a model of adaptive capacity in which

foundational and mobilizing assets are combined to create community actions and

outcomes, illustrated in Figure 1. The assets are different forms of capital. Physical,

financial, natural, social, human, and political capital comprise the foundational assets,

whereas social, human, and political capital comprise the mobilizing assets. Flora and

Flora (2007) add cultural capital to the mix, which I define as a foundational and

mobilizing asset. Mobilizing assets are the social processes and interaction that can

bring foundational assets into productive use.

Figure 1. Adaptive Capacity
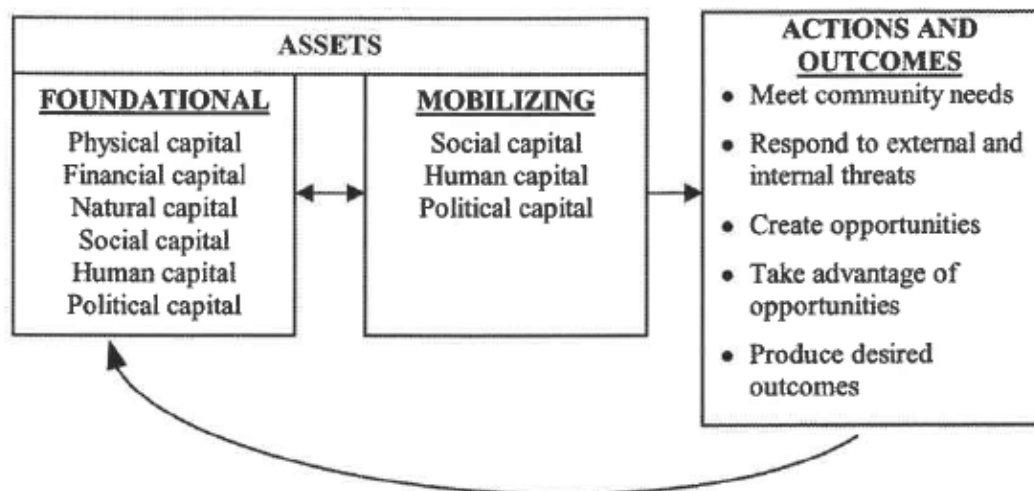
Source: Donoghue and Sturtevant (2007)

The concept of adaptive capacity was developed by earlier studies in sociology and organizational and business management, which revealed it to be a critical component in leadership and organizational success (Engel 2011; Staber and Sydow 2002; Chakravarthy 1982; Parsons 1964). It is employed frequently in the global environmental change literature (Engel 2011). The International Panel on Climate Change summarizes the determinants of adaptive capacity as economic resources, technology, information and skills, infrastructure, and equity (Smit et al. 2001). Communities are limited in their abilities to adapt by their abilities to act collectively (Adger 2003; Pelling and High 2005).

Three large scale social assessments in the PNW used the constructs of capacity and resiliency to assess social and economic conditions for forest communities, particularly as they relate to resource management decisions. The Forest Ecosystem Management Assessment Team, the Sierra Nevada Ecosystem Project (SNEP), and the Interior Columbia Basin Ecosystem Management Project collapse community attributes and dynamics into a single score. Hence, the assessments provide little information about the impact of individual components of each construct (Donoghue and Sturtevant 2007). For example, SNEP researchers found that community capacity (i.e., the ability of a community to adapt to circumstances of all sorts and to meet the needs of its residents) and socioeconomic status are relatively independent, suggesting that they represent different dimensions of well-being that are not strongly related to each other (Doak and Kusel 1996). They divide community

capacity into three areas: physical infrastructure, human capital, and social capital. Yet, because the authors focused on the broader idea of community capacity, the study does not offer a systematic review of the components of social capital that contribute to capacity or relate to socioeconomic status.

Donoghue and Sturtevant (2007) argue that the constructs of capacity and resiliency require further theoretical and methodological advancement. In particular, foundational assets (i.e., resources present in a community) should be distinguished from mobilizing assets (i.e., social processes and interaction that make up collective action). Foundational assets can be measured by profile indicators, whereas mobilizing assets are better understood through process indicators.

2.3 Social Capital and Rural Communities

Social capital theory emphasizes that both individual and group decisions are embedded in a particular social context that includes community traditions, norms (i.e. typical patterns of behavior), and networks (Rainey et al. 2003; Granovetter 1985). While the concept of capital has traditionally been the domain of economics, social capital spans the social sciences. Castle (2002, pg. 332) argues that this concept is truly interdisciplinary and advocates for its use in community studies due to its "attention to the passage of time in understanding rural places at a specific point in time." Typically economic models do not provide for intermediary decisions between firms and individuals at the micro level and the nation-state at the macro level. Other social science disciplines like rural sociology, in contrast, often focus on community-

level analysis with an emphasis on social institutions. The social capital concept

provides a means of bringing communities and other small groups into economic

analysis consistent with social theory (Castle 1998; Kraybill 1998; Oakerson 1998;

Salamon 1998; Summers and Brown 1998).

Trust, reciprocity (i.e. a mutual or cooperative interchange of favors,

privileges), and information exchange are some outcomes from the presence of social

capital. Putnam (1993) argues that repeated interaction facilitates communication and

amplifies information about the trustworthiness and cooperation of others, which

reduces transaction costs associated with economic exchange. When transaction costs

and the costs of gathering and disseminating information are reduced, less risk is

involved and more exchange takes place, thus enlarging the scope of transactions and

interactions. Another contribution of social capital is that it affects the supply of public

goods. The provision of public goods is subject to free riding or shirking if most users

do not participate in joint actions to make the provision of public goods a success.

When social capital is present, externalities are internalized, which has the effect of

eliminating or reducing the free rider problem and the misuse of public goods while at

the same time increasing investments in public goods. The value of social capital rests

upon its ability to contribute to a more efficient "round-about" means of production.

By investing in relationships that reduce transaction costs, we can reduce the friction

in productive activities.

Kraybill and Weber (1995), Castle (1998), Barkley (1998), and Rainey et al.

(2003) stress the importance of social capital in the development of rural places in the

U.S. Social capital can substitute for formal institutions that would otherwise sustain a region and make it prosperous. Kraybill and Weber (1995) and Barkley (1998) use social capital to explain the success of endogenous development strategies in rural places, while Rainey et al. (2003) argue that social capital encourages economies of scale and other efficiencies that make rural places more competitive in a global economy. These studies make sound rhetorical arguments for the importance of social capital in rural America, but lack systematic empirical results to support their ideas. They all advocate for further research on the relationship between social capital and rural economies.

Many economic studies find positive associations between social capital and indicators of well-being. Social capital has been associated with beneficial community outcomes such as reductions in poverty (Crandall and Weber 2004), increased incomes (Durlauf 2002; Rupasingha, Goetz, and Freshwater 2000; Narayan 1997; Knack and Keefer 1996; Putnam 1993), sustainable natural resource management (Pretty and Ward 2001), and prosperity (Isserman, Fesser, and Warren 2009). Table 1 shows how a handful of prominent economic studies have measured the concept and how social capital impacts various indicators of community well-being, the dependent variables in each study. Metrics used to measure social capital vary greatly. Quantitative studies typically measure social capital using an aggregation of survey data. Survey questions pertain to organizational membership, trust in neighbors, time spent volunteering, whether the respondent votes, criminal activity, charitable giving, and interaction with neighbors.

Table 1: The Many Measures of Social Capital and Their Associated Outcomes

| Study Authors and Method | Social Capital (SC) Measure | Positive Association |
|---|---|---|
| Crandall and Weber 2004 Econometric analysis | County level index including (1) Associational Activity (Good SC), (2) Criminal Activity (Bad SC), (3) Charitable Giving, and (4) Voter Participation Rates | Decrease in US tract-level poverty rates |
| Glaeser et al. 2002 Optimal investment model | Organizational membership | Increase in individual education level in the US |
| Isserman, Fesser, and Warren 2009 Correlation | Social capital establishments, Number of adherents to civically engaged religions | US prosperity: low poverty rate, low unemployment rate, low high school dropout rate, and low housing problem rate |
| Knack and Keefer 1996 Econometric analysis | Civic cooperation index, Trust | Real per-capita country income growth |
| Narayan and Pritchett 1999 Econometric analysis | Associational activity including (1) Membership in groups and (2) Characteristics of these groups where trust is used as an instrumental variable to avoid endogeneity | Increased household expenditures in rural Tanzania |
| Rupasingha, Goetz, and Freshwater 2000 Econometric analysis | County level index including (1) Associational Activity (Good SC), (2) Criminal Activity (Bad SC), (3) Charitable Giving, and (4) Voter Participation Rates | GDP growth in US counties |
| Shideler and Kraybill 2009 Computational simulation of investment model | Individual SC: Frequency of conversation with neighbors, participation in organized activities with neighbors, and favors for neighbors Neighborhood SC: Sum of local volunteer establishments that do not primarily serve their own members | Increased education level in Columbus, Ohio, US |

While these economic studies find positive associations between social capital

and indicators of well-being, their unit of analysis is frequently the individual. Social

capital studies that use the community as their unit of analysis appear to find a greater diversity of outcomes from the presence of social capital. Flora and Flora (1993) argue that conceptualizing the community as a system is the key to our ability to analyze it effectively; the system is not simply a sum of its parts. This explanation is similar to the concept of ecological fallacy, in which ecological (or community) correlations are incorrectly assumed to be substitutes for individual correlations (Robinson 1950).

The economic studies also rely on profile indicators of social capital and well-being and ignore process indicators that are commonly assessed in qualitative studies. Parkins and Beckley's (2001) study of a Canadian forest community revealed how quantitative indicators, taken alone, do not fully capture the social dimensions of that place. Similarly, den Otter and Beckley (2002) found that despite relatively poor performance on standard quantitative indicators of well-being, community members' subjective assessments suggested that quality of life was quite high.

The concept of social capital has three distinct epistemological roots (Pelling and High 2005), which account for the diversity of definitions and methodologies employed to understand social capital and its effect on community well-being. Bourdieu (1984) used the concept to explain social stratification, in which it serves as a good consciously maintained by elite groups to enhance their privileged status. In contrast, Coleman (1990), a rational-choice theorist, conceived of social capital as a mostly unintentional outcome of social processes and interaction. He used social capital to explain educational attainment in the USA. Putnam (1993) argued that social capital accrues through history, and its qualities and quantity for any society are

dependent upon the historical development path taken. If social capital is indeed relational and dependent on social context, studies that simply aggregate the number of civic organizations or newspaper readership ignore the situational complexity of social capital.

Endogeneity between social capital and community well-being further complicates the relationship between the two concepts. Does social capital affect community well-being? Or does community well-being impact social capital formation? An argument can be made that both cyclically affect one another. Blank (2005) emphasizes that attributes that affect poverty, an indicator of a lack of community well-being, are endogenous; measuring the impact of change in one attribute independent of others is suspect because of the simultaneous causality between them. She posits, "changes in social norms tend to be interrelated and simultaneous with changes in economic structure or population characteristics" (Blank 2005, pg. 442). Social capital may impact poverty, while poverty may simultaneously impact social capital in a place.

While most econometric studies treat social capital as an independent variable, some studies have explored the determinants of social capital (Charles and Kline 2006; Rupasingha et al. 2006; Glaeser et al. 2002, 2000; Alesina and La Ferrara 2000; Brehm and Rahn 1997). Some empirically tested determinants of social capital include length of residence in a community, ethnic fragmentation, income inequality, and marriage. The impact of poverty on social capital formation has only been tested in case studies, not in any large-scale models. In her case study of two impoverished

London neighborhoods, Cattell (2001) found that social networks enabled access to coping resources; however, not all networks produced the same outcomes. Even if poor people participate in strong social networks, those networks may be less institutionalized and have fewer linkages to those with resources. The types of networks available depend on the social organization to which a person belongs and the forms of poverty a person faces. Investing in social capital likely produces smaller returns for poor and working class people versus the middle class. Willmott (1987) suggested that middle class people generally have wider, looser networks and Pearlin (1985) found they have more resourceful social networks. Working class people have fewer opportunities to broaden theirs (Cattell 2001).

Spatial relationships likely influence the relationship between social capital and well-being in a given community as well. In econometric models, unstable parameters and unreliable significance tests may result if spatial relationships are ignored. Spatial lag models deal with questions of how the interaction between economic agents can lead to emergent collective behavior and aggregate patterns. Regional science and economics both emphasize that location—in terms of natural resources, distances to or from markets, and infrastructure—plays a role in determining the success or failure of an area. Poverty and unemployment, indicators of community distress, for example, are not evenly distributed across the United States. Poverty and unemployment rates are highest in the most remote rural counties and in central cities, and persistent poverty and unemployment are geographically concentrated in isolated rural regions. A geographic region's history and demographic

structure also affect social capital formation. Duncan's (1999) study of rural poverty revealed how a rich and equitable civic culture in Northern New England differed significantly from social norms in the Appalachian coal fields and Mississippi Delta. A history of impoverishment and a lack of decision-making power among the Appalachian and Southern labor force continues to affect development today.

Another spatial issue arises when the aggregation level of geographic data is not the same as the level at which the process under study acts. Hence, if social capital is a neighborhood or town-level process, but is measured at the county level, measurement error associated with the spatial boundaries may occur. The result of this mismatch is spatial dependence in the error terms, which is also known as spatial autocorrelation. While a few econometric models of social capital and indicators of well-being take space (Crandall and Weber 2004) or endogeneity (Narayan and Pritchett 1999) into account, none consider both.

Table 2 presents a handful of rural community social capital studies and their findings. Because social capital is defined inconsistently, it is hard to compare the studies' findings. Yet, it does appear clear that social capital can produce both positive and negative community outcomes. For example, Cleaver (2005) found that social capital in rural Tanzanian communities served to exclude the poor and was a barrier to poverty reduction. Alternatively, Summers (2004) found that social capital improved community well-being in the U.S. Intermountain West.

The diverse findings of the social capital community studies reveal that social capital does not always have a consistent effect on well-being. Further refinement of

the concept may be needed to understand when social capital is likely to produce a

positive or negative effect. Recent social capital studies have differentiated the

concept into bonding, bridging, and linking social capital (Woolcock 2001). Bonding

social capital refers to relations with people of similar backgrounds (e.g. education

levels, ethnicity/race, language, political beliefs, wealth) *within* your community,

while bridging social capital refers to relations with people of different backgrounds

*within* your community.  Linking social capital is the relations with people *outside*

your community who have the power to impact community outcomes. Power

dynamics of social relationships can be better understood by differentiating social

capital into these three types.

Table 2: Rural Community Social Capital Studies

| Study Authors and Method | Social Capital Measure | Association |
|---|---|---|
| Agnitsch, Flora, and Ryan (2006) Regression Analysis using mail survey of heads of households and key informants in rural Iowa communities | Bonding and Bridging Social Capital | Levels of Community Action (+) Bonding and bridging capital are found to be interchangeable; one is not more important than the other. |
| Cleaver (2005) Ethnographic research in rural Tanzanian communities | Social capital: Association and participation at community level | Inclusion of the poor and poverty alleviation (-) |
| Crowe (2006) Regression analysis using structured interviews and surveys with key informants in rural Washington communities | Community Social Infrastructure: existence of active civic organizations, local businesses that support local community projects, community-wide fund-raising capacity, and extra-local linkages | Industrial Recruitment and Self-development (+) |

| Dahal and Adhikari (2008) Ethnography of rural Philippines village | Bonding, bridging, and linking social capital | Effective collective action around community forest management (+) |
|---|---|---|
| Doak and Kusel (1996) Local expert knowledge in Sierra Nevada community workshops | Community Capacity: physical infrastructure, human capital, and social capital | Socioeconomic Status (+-) |
| Flora (1998) Interviews and survey of leaders from a Midwestern town | Social capital: social networks, strong norms, intergenerational continuity of leadership, and trust | Collective action (+-) |
| Sanginga et al. (2010) Focus group discussions and structured interviews with key informants in rural Uganda villages | Bonding social capital | Bonding social capital (+) Bridging social capital (+-) |
| Sharp (1998) Random survey of households from three Midwestern towns | Resident Embeddedness and Organizational and Leadership Infrastructure | Community Mobilization (+) |
| Summers (2004) Key informant interviews with community leaders in the rural West | Social cohesion and civic leadership dimensions | Community well-being (+) |
| Warr (2005) Interviews and participant observation in two impoverished Australian suburbs | Bonding and bridging networks | Accessing valuable forms of social capital (+) Bridging networks were considered more effective. |

Social capital operates on different scales. Relationships between individuals cannot simply be aggregated to the community level, as intra-community norms and networks frequently compete. Bonding and bridging social capital are congruous with Wilkinson's (1991) concepts of social and community fields. The community field is composed of multiple social fields, defined as loosely bounded arenas of interaction in a local population. A social field may be strengthened by bonding social capital, whereas a strong community field requires bridging social capital. Strong bonding

social capital may come at the expense of bridging social capital, as in Sangina et al.'s (2010) study of rural Ugandan villages. The relative importance and interaction effects of bonding, bridging, and linking social capital are only just beginning to be explored. In their study of rural Iowa towns, Agnitsch et al. (2006) found that both bonding and bridging social capital are positively associated with community action and that one is not more important than the other; instead, they represent alternative development strategies. Agnitsch's definition of bridging social capital conflates bridging and linking social capital; hence, it is unclear how important external linkages are compared to ties within a community.

Social capital has been defined and measured in numerous ways by distinct disciplines. Although the specific meaning of the term varies from study to study, social capital has been found to affect community well-being and the ability of a community to adapt in the face of change. Most studies that rely on survey data of individuals find positive effects on well-being, whereas community studies employing ethnography and interview methods find more nuanced effects. Differentiating the term into bonding, bridging, and linking social capital provides clarity to why effects may differ. Alternatively, community well-being may also affect social capital formation in a cyclical fashion; this direction of causation has received less attention from the literature. Furthermore, the unique histories and asset structures that dominate particular geographic regions likely affect the relationship between social capital and community well-being. By combining diverse methods and understanding

a range of social science approaches to study social capital, social capital appears to be

a critical lens to understand community well-being more broadly.

# CHAPTER 3

ECONOMETRIC APPROACH

The aim of this study is to investigate the relationship between social capital and community well-being. I am interested in how social capital impacts well-being, and how well-being impacts social capital formation. Economic studies generally find that social capital positively impacts indicators of well-being, whereas case studies find that social capital positively and negatively impacts well-being. For example, Narayan and Pritchett (1999) found that social capital positively impacts income using survey data, whereas Cleaver (2005) found that it maintains exclusion of the poor by employing ethnographic methods. The impact of well-being on social capital formation has been less studied in the literature. Education level, one indicator of well-being, has been found to positively impact social capital formation (Glaeser et al. 2002; Helliwell and Putnam 1999; Nie et al. 1996). Yet, poverty, one indicator of a *lack* of well-being, has been found to positively impact social capital formation (Bebbington 1999; Briggs 1998).

In this chapter, I use econometric tools to study the relationship between profile indicators of social capital and community well-being. I selected a county-level social capital index (Rupasingha 2008), which is based primarily on organizational membership, as an indicator of social capital. I selected poverty rates as an indicator of a lack of well-being. Ample case studies exist describing the relationship between social capital and poverty; few large-scale quantitative studies exist.

Case studies do not find a consistent relationship between the impact of social capital on poverty rates. For example, one outcome of social capital is knowledge transmission among networks and clubs. If the poor are excluded from groups with greater wealth and resources, the networks they belong to may not relay needed information to take advantage of economic opportunities (Cattell 2001; Collier 1998; Pearlin 1985; Willmott 1987). Hence, higher levels of social capital, as indicated by organizational membership, may do little to decrease poverty rates. Alternatively, trust and reciprocity, common indicators of social capital, are key norms of behavior for a successful rotating savings and loan association, of which the poor may benefit from and gain wealth. Crandall and Weber (2004) find that social capital is a significant factor in decreased poverty rates in U.S. census tracts.

The impact of poverty rates on social capital formation has not been studied in any large scale quantitative studies and case studies reveal conflicting relationships. Higher poverty rates may force community members to spend more time working and less time investing in relationships and network building. Alternatively, the poor may rely on their social networks to make ends meet (Bebbington 1999; Briggs 1998). Assensoh (2002) finds that civic engagement in terms of community meeting attendance is higher in high poverty areas. It is not clear in which direction poverty rates influence social capital formation.

I have two expectations for the modeling results:

(1) A community that invests in social capital, as represented by Rupasingha's (2008) index, experiences greater well-being, as represented by lower poverty rates.

(2) A community with lower well-being, as represented by higher poverty rates, invests in higher levels of social capital, as represented by Rupasingha's (2006) index.

Figure 2 displays the expected relationships between social capital and poverty. My expectations are driven by the ideas that social capital is an asset that people use to increase their material well-being and that poor people actively invest in social capital to meet their needs or take advantage of opportunities. A spatial, simultaneous equation model is used to test the relationships. This is the only study to my knowledge that accounts for both simultaneity and spatial relations in an analysis of social capital and well-being.

Figure 2. Relationship between Social Capital and Poverty
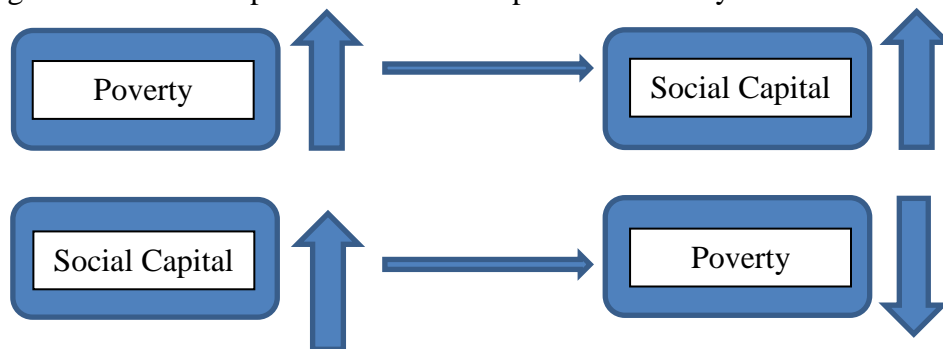
Accounting for simultaneity is warranted because attributes that affect well-being are frequently endogenous. The development of social norms and economic class structure is interrelated and occurs simultaneously (Blank 2005). Ignoring simultaneity in econometric models and applying ordinary least squares results in biased and inconsistent estimates, and leads to incorrect inferences. The only study that accounts for simultaneity in the relationship between social capital and indicators of well-being is Narayan and Pritchett (1999) in their study of how social capital impacts income levels in rural Tanzanian villages. Those researchers used instrumental variables to avoid simultaneity bias. Two-stage least squares is used here to yield unbiased and consistent estimates in the presence of simultaneity.

Spatial relationships must be taken into account to understand the relationship between social capital and well-being. Both social capital formation and poverty rates in a given community may be affected by the level of social capital and poverty, respectively, in neighboring communities. Social capital and poverty are concentrated in particular geographic regions due to an area's unique history and demographic and economic structure. Few studies account for spatial relationships when considering how social capital and well-being are related. One exception is Crandall and Weber (2004), who incorporated spatial errors and a spatially lagged dependent variable in their study of changes in poverty rates. Omitting significant spatial relationships results in unstable parameters and unreliable significance tests. Spatial errors and spatially lagged dependent variables are included in the models estimated here.

3.1 Methods

The relationship between poverty and social capital is modeled as a system of two simultaneous equations. The structural form of the pair of equations is:

$$Pov_i = f_1(SC_i, \boldsymbol{X_i}, \boldsymbol{Y_i})$$

$$SC_i = f_2(Pov_i, \boldsymbol{X_i}, \boldsymbol{Z_i})$$

where the endogenous variables, $Pov_i$ and $SC_i$, are poverty rate and social capital level in county $i$, $\boldsymbol{X_i}$ is the set of exogenous variables that affect both poverty rate and social capital level, and $\boldsymbol{Y_i}$ and $\boldsymbol{Z_i}$ are the sets of exogenous variables specific to each dependent variable. The structural model permits empirical testing of the relative effect of social capital on poverty and vice versa.

*3.1.1 Data*

Counties define community boundaries in my study. Although census places and census county divisions may better represent rural communities (Crandall and Weber 2005), indicators of social capital are not available at that level of aggregation. To avoid further spatial dependence in the error terms, the analysis is restricted to the Western region of the United States excluding Alaska and Hawaii (US Census 2012). Counties are much larger in the western United States and have different social structures because of their unique histories and geographies. The units of analysis are 414 counties from Arizona, California, Colorado, Idaho, Montana, New Mexico, Nevada, Oregon, Utah Washington, and Wyoming. Although I am primarily interested in rural (i.e. non-metropolitan) counties, I include all Western counties because many rural counties lie adjacent to metropolitan counties. Spatial dependence can't be

accounted for if neighboring counties are omitted from analysis. Dummy variables for metropolitan and metropolitan-adjacent counties are included in the models to understand how the degree of rurality impacts poverty and social capital formation.

In my model, poverty is an indicator of a lack of community well-being. I initially considered seven indicators of community well-being, but chose poverty rate based on factor analysis. From the array of indicator variables cited in the community well-being literature, I evaluated only those that could be calculated with county-level US Census data from 2010. They included *poverty*, *mean income*, *income inequality*, *unemployment*, *industry diversity*, *bachelor degree*, and *population decline*. They are defined in Table 3 and their relationship to community well-being is described in Appendix A.

Table 3: Potential Indicators of Community Well-being

| *Community Well-being Indicator Variable* | *Definition* |
|---|---|
| Poverty | Percentage of population at or below the poverty line |
| Mean Income | Mean value of household income |
| Income Inequality | GINI coefficient – Measure of the inequality of the income distribution (Gini 1912) |
| Unemployment | Percentage of the labor force considered unemployed |
| Industry Diversity | Shannon Weaver Index – Diversity index used to measure diversity in categorical data (Shannon 1948) |
| Bachelor Degree | Percentage of population $\geq$ age of 25 with bachelor's degree or higher |
| Population Decline | Percentage decline in population from 2000 to 2010 |

Factor analysis is useful in determining whether an unobserved variable exists that explains the variation in a subset of variables. It reveals whether observed

variables can be explained largely or entirely in terms of a smaller number of variables called factors. I used factor analysis to select one of seven indicators of community well-being, based on which of the indicators had the highest correlation with the principal component factors. Principal components analysis is the specific type of factor analysis used. Factor loadings are the weights and correlations between each variable and the factor. A higher (lower) load indicates a variable is more (less) relevant in defining a factor's dimensionality. A negative value indicates an inverse relationship to the factor.

Results from the principal component analysis are displayed in Table 4. The variables *poverty*, *mean income*, and *bachelor degree* loaded the highest on factor one, while *industry diversity*, *unemployment*, and *population decline* loaded highly on factor two, and *income inequality* loaded highly on the third factor. The presence of three factors indicates that the variables represent three distinct dimensions of community well-being. Factor one explained the greatest amount (33.205%) of the variance in the data compared to the other factors. Since *poverty* had the highest loading on factor 1, I decided to explore the relationship between social capital and poverty.

Table 4. Principal Component Analysis of Community Well-being Variables

| | Initial Eigenvalues | | |
|---|---|---|---|
| *Component* | *Total* | *% of Variance* | *Cumulative %* |
| 1 | 2.324 | 33.205 | 33.205 |
| 2 | 1.567 | 22.38 | 55.585 |
| 3 | 1.263 | 18.043 | 73.627 |

| | | | |
|---:|---:|---:|---:|
| 4 | 0.831 | 11.874 | 85.501 |
| 5 | 0.556 | 7.949 | 93.45 |
| 6 | 0.290 | 4.149 | 97.6 |
| 7 | 0.168 | 2.4 | 100 |

| | Component | | |
|---|---:|---:|---:|
| | 1 | 2 | 3 |
| Poverty | 0.848 | 0.167 | 0.355 |
| Mean Income | -0.842 | 0.378 | 0.06 |
| Income Inequality | 0.186 | 0.502 | 0.758 |
| Unemployment | 0.528 | 0.597 | -0.143 |
| Industry Diversity | -0.014 | 0.649 | -0.493 |
| Bachelor Degree | -0.759 | 0.352 | 0.381 |
| Population Decline | 0.087 | 0.493 | -0.388 |

Poverty is a ubiquitous measure that contributes negatively to well-being

(Charnley et al. 2008; Donoghue and Haynes 2002; Isserman et al. 2009; Overdevest

and Green 1995; Formann 1991; Stedman et al. 2004; Reeder and Brown 2005;

Beckley 2005). People with lower incomes and savings can't purchase as many goods

and services as wealthier people. Thus, being impoverished may result in the inability

to buy needed household items and services such as clothing, nutritious food, or safe

housing. I use the U.S. Census definition of poverty, in which poverty thresholds are

calculated by estimating the costs of a minimum adequate diet for families of different

size and age structures multiplied by three to allow for other necessities. A family is

considered poor if its annual before-tax money income is less than its poverty

threshold. The variable poverty is defined as the percentage of the population at or

below the poverty threshold.

County-level data on poverty rates, as well as the majority of model control variables, were sourced from the American Community Survey for the five year period 2006-2010. Control variables for the poverty equation were drawn from a variety of literature on poverty determinants (Blank 2005; Weber et al. 2005; Crandall and Weber 2004; Duncan 1999). They can be divided into three types: demographic (e.g. race, age structure, rural-urban), economic (e.g. industry structure, unemployment rate, labor force participation rate), and human capital characteristics (e.g. education level). Table 5 displays the poverty control variables, their definition, and data source.

Table 5: Poverty Control Variables

| Poverty Control Variable | Definition | Source |
| --- | --- | --- |
| Metro | Dummy Variable: Metropolitan=1, Non-metropolitan=0 | ERS 2005 |
| Metro Adjacent | Metro-Adjacent=1, Metropolitan or Rural=0 | ERS 2005 |
| NonWhite | % Population that identifies as a race other than white | ACS 2006-2010 |
| Population under 19 | % Population below the age of 19 | ACS 2006-2010 |
| Population over 65 | % Population above the age of 65 | ACS 2006-2010 |
| Married with Children | % Households that are married with children | ACS 2006-2010 |
| Bachelor Degree | % Population $\geq$ 25 years of age with a bachelor's degree | ACS 2006-2010 |
| Unemployed | % Labor force that is unemployed | ACS 2006-2010 |
| Female Labor Force | % Females $\geq$ 16 years of age in the labor force | ACS 2006-2010 |
| Industry Diversity | Shannon Weaver diversity index for industry employment | ACS 2006-2010 |

| FIRE Jobs | % Employed population working in finance, insurance, and real estate industry | ACS 2006-2010 |
| Natural Amenity | Categorical Variable of Natural Amenities: Highest level of natural amenities=7, Lowest level=1 | McGranahan (1999) |

Most model control variables are commonly found throughout the poverty literature; the variables FIRE jobs and natural amenities require some explanation. The variable FIRE jobs refers to the percentage of the employed population working in finance, insurance, and real estate. The industrial employment mix of an area has the ability to affect poverty rates. In their study of regional variations in U.S. poverty rates, Levernier, Partridge, and Rickman (2000) find that above-average employment shares in finance, insurance, and real estate are associated with lower poverty rates. The variable natural amenity refers to the level of natural amenities in a county, such as the number of days with sunshine, miles of coastline, and varied topography. Migration flows are increasingly explained by amenities and quality of life differences across regions (Deller et al. 2001; Irwin et al. 2010). Because amenities are a normal or superior good, I expect that counties with higher levels of natural amenities are associated with lower levels of poverty.

To measure social capital, I used a 2005 data set developed by Rupasingha and Goetz (2008), which includes data for continental US counties. They created a composite index of social capital using principal components analysis. The variables used in the principal components analysis are: total associations (i.e. bowling centers, civic and social associations, physical fitness facilities, public golf courses, religious organizations, sports and recreation clubs, political organizations, professional

organizations, business associations, labor organizations) per 10,000 people, number

of not-for-profit organizations per 10,000 people, census mail response rate for 2000,

and vote cast for president in 2004 divided by total population of age 18 and over in

2004. The first principal component explained about 46% of the variation and is

considered the index of social capital. Total associations and non-profit organizations

represent networks of people in each county, whereas the census response rate and

voting rate represent civic norms.

Other commonly used social capital datasets include questions from the

General Social Survey (GSS) and a collection of state level indicators developed by

Putnam (2000). While the GSS captures more information about norms of behavior

(e.g. questions about trust and reciprocity), the population sample is overwhelmingly

urban so that rural areas are not well represented. Because Putnam's data only assess

state-level variation, it is not useful for a county-level analysis. Kawachi et al. (1997)

found that three indicators of social capital--trust, membership in organizations, and

reciprocity--are strongly correlated with each other. Although the social capital data

set used in this study primarily relies on organizational membership information, it

should capture some of the effects and determinants of trust and reciprocity due to the

strong correlation between them and organizational membership.

The social capital control variables were drawn from Charles and Kline (2006),

Rupasingha et al. (2006), Glaeser et al. (2002), Alesina and Ferrara (2000), Glaeser et

al. (2000), and Brehm and Rahn (1997). They are defined in Table 6.

Table 6: Social Capital Control Variables

| Social Capital Control Variable | Definition | Source |
|---|---|---|
| Metro | Dummy Variable: Metropolitan=1, Non-metropolitan=0 | ERS 2005 |
| Metro Adjacent | Dummy Variable: Metro-Adjacent=1, Metro or Rural=0 | ERS 2005 |
| Nonwhite | % Population that identifies as a race other than white | ACS 2006-2010 |
| Ethnic Heterogeneity | Ethnic Heterogeneity | ACS 2006-2010 |
| Median Age | Median Age | ACS 2006-2010 |
| Median Age Squared | Median Age Squared | ACS 2006-2010 |
| Population over 65 | % Population above the age of 65 | ACS 2006-2010 |
| Married with Children | % Households that are married with children | ACS 2006-2010 |
| Same County | % Population that lived in the same county one year ago | ACS 2006-2010 |
| Bachelor Degree | % Population $\geq 25$ years of age with a bachelor's degree | ACS 2006-2010 |
| Unemployed | % Labor force that is unemployed | ACS 2006-2010 |
| Female Labor Force | % Females $\geq 16$ years of age in the labor force | ACS 2006-2010 |
| Income Inequality | Gini index of income inequality | ACS 2006-2010 |

Descriptive statistics of the poverty and social capital control variables are listed in Table 7.

Table 7. Descriptive Statistics of Control Variables

| Variable | Mean | Std. Deviation |
|---|---|---|
| Poverty | 0.144 | 0.052 |
| Social Capital | -0.021 | 1.696 |
| Metro | 0.307 | 0.462 |
| Metro Adjacent | 0.295 | 0.456 |

| | | |
|---|---|---|
| NonWhite | 0.248 | 0.198 |
| Population under 19 | 0.269 | 0.051 |
| Population over 65 | 0.15 | 0.049 |
| Married with Children | 0.207 | 0.063 |
| Bachelor Degree | 0.227 | 0.097 |
| Unemployed | 0.072 | 0.031 |
| Female Labor Force | 0.619 | 0.078 |
| Industry Diversity | 2.279 | 0.127 |
| FIRE Jobs | 0.047 | 0.021 |
| Natural Amenity | 5.034 | 1.062 |
| Ethnic Heterogeneity | 0.329 | 0.176 |
| Median Age | 39.849 | 6.497 |
| Median Age Squared | 1630.04 | 526.91 |
| Same County | 0.926 | 0.029 |
| Income Inequality | 0.412 | 0.035 |

### 3.1.2 Empirical Model

To model the interdependence between social capital and poverty, I adopted a multi-equation spatial econometric model following Jeanty et al. (2010). Consider the following spatial simultaneous equations system:

$$Pov = \alpha_0 + \alpha_1 SC + \alpha_2 X + \alpha_3 Y + \alpha_4 W(Pov) + u_j$$

$$SC = \beta_0 + \beta_1 Pov + \beta_2 X + \beta_3 Z + \beta_4 W(SC) + u_j$$

$$u_j = \rho_j W u_j + \varepsilon_j \text{ where } j = 1,2$$

where $W$ is a spatial weights matrix, $u_j$ is the disturbance term, $\rho_j$ is the spatial autoregressive parameter, and $\varepsilon_j$ is the error term (i.i.d. innovations). The model incorporates feedback simultaneity, as well as spatial relationships among the dependent variables. To explore the importance of simultaneity and spatial relationships, the model was estimated first using ordinary least squares (OLS) as a

baseline, and then in a stepwise fashion, simultaneity and spatial relations were incorporated.

OLS estimation provides a baseline from which to compare the other models. Neither simultaneity nor spatial relationships are taken into account with OLS. Hence, $\alpha_4 = \beta_4 = 0$ and the error term $u_j$ is assumed to be independently and identically distributed across observations. OLS minimizes the sum of squared residuals, which is the difference between the observed values and the predicted values. The OLS estimator is considered the best linear unbiased estimator (BLUE) only if the independent variables are uncorrelated with the error term:

$$E(X_j u) = 0 \ for \ some \ j = 1, \ldots, k$$

If this is not the case, OLS-estimated coefficients and standard errors may become biased due to endogeneity. Factors like omitted variables, measurement error, and simultaneity lead to endogeneity. If spatial relationships exist among the data, correlated error terms are likely, requiring a different estimator.

In order to test for endogeneity, a Hausman (1978) test was performed, in which the variables social capital and poverty were hypothesized to be endogenous. The test is based on the difference of two estimators, the OLS and 2SLS estimators. Given the choice between a model that assumes all variables are exogenous and another one which treats a subset of variables as endogenous, the tests allows us to reject or fail to reject the hypothesis that both estimators are consistent and at least one is efficient (null hypothesis). The alternative hypothesis is that the OLS model is miss-specified and its estimators are inconsistent.

The Hausman test did not offer strong evidence of endogeneity. A p-value of 0.163 on the Hausman test statistic was found, indicating that we fail to reject the null hypothesis of no endogeneity under common significance levels of 0.05 or even 0.10. In cases of strong endogeneity but weak instruments, the power of the test is relatively low (Chmelarova and Hill 2004). The possibility of a Type II error—accepting the null hypothesis when it is false—is high with the Hausman test. Hence, a simultaneous equation system was estimated for comparison to the OLS estimation even though the test statistic does not strongly indicate the presence of endogeneity.

To deal with simultaneity—the presence of an endogenous explanatory variable—is to use one or more instrument variables (IV) that serve as a proxy for the endogenous variable. The most common IV method is the two stage least squares (2SLS) model in which the endogenous variable is regressed on a set of instruments in a first stage estimation. The predicted values generated with the first stage estimates are then used in a second stage estimation instead of the actual measure.

2SLS is used for single equation estimation while three stage least squares (3SLS) is used for whole system estimation. They both return equivalent results, although 3SLS can be more efficient (i.e. the variance is "more" minimized) than 2SLS if error terms are correlated across equations. Although system methods like 3SLS are asymptotically better, any specification error in the structure of the model will be propagated throughout the system. By running a seemingly unrelated regression and using the Breusch Pagan Lagrange multiplier test, cross-equation correlation was not found to be a concern. The test statistic is:

$$\lambda_{LM} = T \sum_{i=2}^{n} \sum_{j=1}^{i-1} r_{ij}^2$$

where $n$ is the number of cross-sectional units and $r_{ij}^2$ is the $ij$th residual correlation

coefficient. The Breusch and Pagan (1980) test statistic is distributed $\chi^2[d]$, where

$d = N_g(N_g - 1)/2$, under the null hypothesis of cross-sectional independence. The

null hypothesis that the error terms are uncorrelated across equations failed to be

rejected ($\chi^2[1] = 0.578$ and $p = 0.447$). Hence, 2SLS was used to estimate the

simultaneous equation system.

There are two approaches to modeling spatial relationships: spatial lag and

spatial error (autocorrelation in the residuals). The spatial lag model incorporates

spatial dependence by adding a spatially lagged dependent variable on the right-hand

side of the regression equation. It treats spatial correlation as a process or effect of

interest. The values of the dependent variable in one geographic area are directly

influenced by the values of the dependent variable found in neighboring areas. For

example, poverty rates in a county may be influenced by poverty rates in an adjacent

county if there are spillover effects. Physical proximity can facilitate the movement of

poor people and associated characteristics (e.g. higher crime rates, less services,

environmental disamenities) from one community to another nearby. The spatial lag in

the poverty equation is captured by the interaction term $W(Pov)$, whereas the spatial

lag in the social capital equation is captured by the interaction term $W(SC)$. The

endogenous variables are assumed to depend on their own spatial lag. If the influence

of spatially lagged terms is ignored, coefficients are biased and standard errors wrong, since the errors cannot be considered to be independent among contiguous counties.

The spatial error model examines spatial autocorrelation between the residuals of adjacent areas. It treats spatial autocorrelation primarily as a nuisance and implies that it does not reflect some meaningful process. Spatially correlated error terms can result from specification errors, especially if an omitted variable is spatially clustered. Suppose that y is explained entirely by two explanatory variables $x$ and $z$, where $x, z \sim N(0, I_n)$ and are independent:

$$y = x\beta + z\theta$$

If $z$ is not observed, the vector $z\theta$ is nested into the error term $\epsilon$

$$y = x\beta + \epsilon$$

Examples of the latent variable $z$ include culture, neighborhood prestige, distance to markets, and natural resource endowments. We may expect the latent variable $z$ to follow a spatial autoregressive process. Another source of spatially autocorrelated error terms is measurement error associated with the spatial boundaries of the unit of analysis. The aggregation level of the data may not be the same level at which the process under study acts. If we ignore spatial autocorrelation in the residuals, coefficients are unbiased, but standard errors may be underestimated.

A spatial weights matrix defines the pairwise spatial relationship between any two observations. Initially, the spatial models were estimated with a row-standardized, inverse distance matrix of the form:

$$w_{ij} = \frac{1}{d_{ij}^a} \; if \; d_{ij} \leq C$$

$$w_{ij} = 0 \; if \; d_{ij} > C \; or \; i = j$$

where $C$ is a distance cutoff beyond which no spatial relationship is assumed, $d_{ij}$ is the distance between the centroids of counties $i$ and $j$, and $\alpha$ is a dampening coefficient, whose magnitude determines how quickly the spatial relationship between a county and its neighbors declines with distance. Distance-based spatial weights matrix have the added complication of choosing the appropriate values for $C$ and $\alpha$, which is ultimately an empirical question. The spatial models estimated initially did not include a distance cutoff and the dampening coefficient was set equal to one. Hence, the spatial weights matrix was simply:

$$w_{ij} = \frac{1}{d_{ij}}$$

A sensitivity analysis was conducted to explore how different parameter values and types of spatial weights matrices affected model results. Other weight matrices explored include an inverse distance matrix with a cut-off of 100 miles and a queen contiguity matrix.

The spatial diagnostic test Moran's I was computed to test for the presence of spatial dependence among the dependent variables. Table 8 displays the results, which indicate that we can reject the null hypothesis that there is zero spatial autocorrelation present for the variables *poverty* or *social capital* (p=.01). A Moran's I value near +1.0 indicates spatial clustering whereas a value near -1.0 indicates dispersion. The Moran's I value for *poverty* is 0.07 and its value for *social capital* is 0.12 for the

inverse distance matrix. The values are higher for an inverse distance with 100 mile

cut-off and queen contiguity matrices. A queen contiguity matrix is a binary weighting

scheme, in which any county that lies directly to another is given a value of one,

whereas no spatial relationship is assumed between those that do not share a border or

vertex. The Moran's I statistic indicates that counties with higher poverty rates lie

adjacent to other counties with higher poverty rates. Similarly, counties with higher

levels of social capital lie adjacent to other counties with higher levels of social

capital.

Table 8. Moran's I Statistic

| Spatial Weights Matrix | Variable | Moran's I | P-value |
|---|---|---|---|
| Inverse Distance | Poverty | 0.0736 | 0.00 |
| | Social Capital | 0.1226 | 0.00 |
| Inverse Distance with cut-off of 100 miles | Poverty | 0.3539 | 0.00 |
| | Social Capital | 0.4495 | 0.00 |
| Queen Contiguity | Poverty | 0.3755 | 0.00 |
| | Social Capital | 0.4533 | 0.00 |

3.2 Estimation and Results

All estimations were computed using the statistical software program Stata.

Table 9 and 10 show the OLS, 2SLS, and spatial 2SLS estimations. I first estimated

the poverty and social capital models using OLS. The OLS estimation yielded an R-

squared of 0.597 for the poverty model and 0.520 for the social capital model. In the

poverty model, the results suggest that most of the control variables were significant

(p-value=0.05) and of the expected sign, e.g., a higher percentage of nonwhite residents, population under 19, and unemployment were positive and significant. Other variables such as whether the county is metropolitan, the percentage of households that are married with children, and the percentage of females in the labor force were negative and significant in revealing county poverty rates. Metropolitan counties, counties with higher percentages of households married with children, and counties with a higher percentage of females in the labor force had lower poverty rates, holding other variables constant. An unexpected result is that the percentage of individuals with a bachelor's degree or higher was not significant and took an unexpected sign. Education level did not predict poverty rates. Other proxies for education were tested, such as percentage of individuals with an associates degree or higher, or number of years of schooling. These proxies were also insignificant in predicting poverty rates. It may be that counties with more residents with higher education levels also have large numbers of current students, who are below the poverty line if considered independent from their families. Being a metro adjacent county and the degree of industry diversity also were not significant.

*Table 9. Estimation Results for Poverty models*

| Poverty | OLS | | | 2SLS | | | 2SLS w/sp.lagged dep. var. | | | 2SLS w/sp. lagged dep. var. & sp.errors | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Coef. | P-value | R sq | Coef. | P-value | R sq | Coef. | P-Value | R sq | Coef. | P-Value | R sq |
| Social Capital | -0.001 | 0.629 | 0.597 | -0.017 | 0.021 | 0.462 | 0.002 | 0.642 | 0.605 | -0.002 | 0.638 | 0.577 |
| Metro | -0.015 | 0.005 | | -0.032 | 0.001 | | -0.012 | 0.071 | | -0.016 | 0.016 | |
| Metro Adjacent | -0.002 | 0.647 | | -0.014 | 0.053 | | -0.001 | 0.893 | | -0.004 | 0.435 | |
| NonWhite* | 0.070 | 0.000 | | 0.047 | 0.005 | | 0.062 | 0.000 | | 0.067 | 0.000 | |
| Population under 19* | 0.226 | 0.000 | | 0.201 | 0.006 | | 0.212 | 0.001 | | 0.197 | 0.002 | |
| Population over 65 | -0.324 | 0.000 | | -0.164 | 0.125 | | -0.361 | 0.000 | | -0.315 | 0.000 | |
| Married w/Children* | -0.386 | 0.000 | | -0.438 | 0.000 | | -0.336 | 0.000 | | -0.343 | 0.000 | |
| Bachelor Degree | 0.006 | 0.839 | | 0.063 | 0.114 | | -0.007 | 0.804 | | 0.007 | 0.823 | |
| Unemployed* | 0.394 | 0.000 | | 0.303 | 0.001 | | 0.381 | 0.000 | | 0.370 | 0.000 | |
| Female Labor Force* | -0.266 | 0.000 | | -0.189 | 0.001 | | -0.252 | 0.000 | | -0.241 | 0.000 | |
| Industry Diversity | -0.020 | 0.232 | | -0.028 | 0.144 | | -0.019 | 0.245 | | -0.020 | 0.205 | |
| FIRE jobs | -0.226 | 0.047 | | -0.136 | 0.310 | | -0.234 | 0.037 | | -0.217 | 0.051 | |
| Natural Amenity* | -0.011 | 0.000 | | -0.017 | 0.000 | | -0.009 | 0.000 | | -0.009 | 0.000 | |
| Constant | 0.432 | 0.000 | | 0.432 | 0.000 | | 0.277 | 0.000 | | 0.297 | 0.000 | |
| Poverty spatial lag* | | | | | | | 0.972 | 0.001 | | 0.788 | 0.014 | |
| Further spatial auto? | | | | | | | YES | | | | | |

*Significant at p=0.05 across all models

*Table 10. Estimation Results for Social Capital models*

| Social Capital | OLS | | | 2SLS | | | 2SLS w/sp.lagged dep. var. | | |
|---|---|---|---|---|---|---|---|---|---|
| | Coef. | P-value | R sq | Coef. | P-value | R sq | Coef. | P-Value | R-sq |
| Poverty | 2.530 | 0.160 | 0.520 | 9.620 | 0.008 | 0.501 | -2.405 | 0.510 | 0.580 |
| Metro* | -1.013 | 0.000 | | -0.827 | 0.000 | | -0.850 | 0.000 | |
| Metro Adjacent* | -0.785 | 0.000 | | -0.766 | 0.000 | | -0.669 | 0.000 | |
| Ethnic Heterogeneity | -1.881 | 0.000 | | -1.907 | 0.000 | | -0.585 | 0.208 | |
| Median Age | 0.214 | 0.028 | | 0.271 | 0.007 | | 0.099 | 0.298 | |
| Median Age Squared | -0.002 | 0.136 | | -0.002 | 0.060 | | -0.001 | 0.540 | |
| Population over 65** | 5.536 | 0.104 | | 6.626 | 0.054 | | 5.671 | 0.072 | |
| Same county | 2.801 | 0.181 | | 3.479 | 0.100 | | 3.477 | 0.073 | |
| Bachelor Degree* | 3.140 | 0.001 | | 4.424 | 0.000 | | 3.641 | 0.000 | |
| Unemployed | -9.582 | 0.000 | | -12.57 | 0.000 | | -2.493 | 0.409 | |
| Female Labor Force | 4.807 | 0.001 | | 5.891 | 0.000 | | 1.740 | 0.249 | |
| Income Inequality | 1.509 | 0.544 | | -3.622 | 0.284 | | 1.743 | 0.572 | |
| Constant | -11.49 | 0.000 | | -13.30 | 0.000 | | -8.156 | 0.003 | |
| SC spatial lag* | | | | | | | 1.794 | 0.000 | |
| Further spatial auto? | | | | | | | NO | | |

*Significant at p=0.05 across all models

In the social capital model, the results suggest that most of the control variables were significant (p-value=0.05) and of the expected sign. Median age, bachelor degree, and percentage of females in the labor force were positive and significant. Other variables such as whether the county is metropolitan or metropolitan adjacent, ethnic heterogeneity, and the percentage of labor force unemployed were negative and significant in revealing county social capital levels. Social capital levels were found to be higher in rural counties, holding other variables constant. Median age squared, the percentage of the population over 65, the percentage of residents who lived in the same county one year prior, and income inequality were not significant.

As discussed earlier, the OLS results may be biased due to the potential for endogenous regressors and spatially lagged dependent variables, and inefficient in the case of spatially correlated error terms. In order to control for potential bias that is generated by endogenous variables, a 2SLS model was estimated, in which the endogenous poverty and social capital variables were instrumented. Identification of the 2SLS model was satisfied since the number of exogenous variables excluded from each equation is greater than the number of endogenous variables. Excluded exogenous variables in the poverty equation were *nonwhite*, *population under 19*, *industry diversity*, and *FIRE jobs*. Excluded exogenous variables in the social capital equation were *ethnic heterogeneity*, *median age*, *median age squared*, *same county*, and *income inequality*.

In the poverty model estimated by 2SLS, the majority of the control variables did not differ from the OLS results. They generally had the same sign and level of

significance. An interesting result is that metro adjacent counties became significant.

Population over 65 declined slightly in significance and FIRE jobs became

insignificant. All of the control variables had the same sign in the OLS and 2SLS

poverty models. In the social capital model estimated by 2SLS, median age squared,

population over 65, same county, and income inequality all increased in significance.

All of the variables sign in the social capital model were consistent with the OLS

results except for income inequality, which became negative in the 2SLS estimation.

This change in sign indicates that higher levels of income inequality are expected to be

associated with lower levels of social capital, which is consistent with social capital

theory.

Some important changes occurred to the social capital and poverty variables in

the 2SLS estimation. Both variables became significant. An increase in social capital

was associated with lower poverty rates, indicating that social capital is a critical

factor in the reduction of poverty rates. An increase in poverty rates was associated

with higher social capital, indicating that more impoverished counties invest in social

capital. The results confirm the cyclical relationship hypothesized at the beginning of

this chapter.

Next I explored spatial relationships in the 2SLS poverty and social capital

models. The third model estimated was 2SLS, which included spatial lags of the

dependent variables. In both the poverty and social capital models, the variables of

interest, social capital and poverty, were insignificant when the spatially lagged

dependent variables were added. The signs on social capital and poverty flipped as

well. The spatially lagged dependent variables were highly significant and positive in both models. Counties with high levels of social capital (poverty) tended to be surrounded by other counties with high levels of social capital (poverty). Omitted variables such as a spatially lagged dependent variable can bias 2SLS estimates, especially if there are strong spillover effects from neighboring counties for the dependent variables.

The control variables for the 2SLS spatial lag poverty model were similar in sign and significance to the OLS results. The control variables for the 2SLS spatial lag social capital model differed somewhat in sign and significance to the OLS results. Ethnic heterogeneity, median age, unemployed, and female labor force became insignificant in the 2SLS spatial lag social capital model. Population over 65 and same county became slightly more significant. All of the signs stayed the same.

Spatial autocorrelation of the residuals affects the efficiency of coefficient estimates. The Moran's I statistic indicated the presence of spatial autocorrelation in the residuals of the poverty 2SLS spatial lag model. Counties with high poverty levels tended to be surrounded by other counties with high poverty levels. The error process could be driven by omitted variables that are themselves spatially correlated, which cause a declining gradient of spatial dependence over distance. There was no indication of further spatial autocorrelation in the social capital 2SLS spatial lag model.

The last model estimated was a poverty 2SLS with spatially lagged dependent variables, which accounted for spatial autocorrelation in the residuals (i.e. spatial

errors). Again, the variable of interest, social capital, was not significant in the

presence of a spatially lagged dependent variable and a model that accounted for

spatial errors. The control variables in the two spatial 2SLS models were very similar

in sign and significance.

The spatial 2SLS results reported here were computed with an inverse distance

matrix. Spatial 2SLS models were also computed using an inverse distance with a

100-mile cut-off and queen contiguity spatial weights matrix. Spatial model results

were consistent across spatial weights matrices. Consistency across spatial weights

matrices confirms LeSage and Pace (2010), who argue that spatial regression models

are not as sensitive to specifications of the spatial weights structure as prior literature

suggested. Because different spatial weights structures are likely to be highly

correlated, model results are unlikely to reveal significantly different conclusions

about the impact of changes in the explanatory variables on the dependent variable.

3.3 Discussion

The expectations tested about the relationship between social capital and

poverty were not confirmed in the model results. The variables of interest, social

capital and poverty, were not significant across all model types. They were only

significant in the 2SLS estimation. When spatial dimensions were incorporated into

the 2SLS model, they became insignificant. These results underscore the importance

of accounting for simultaneity and spatial dimensions in studies of community well-

being. Because many factors that contribute to well-being are jointly determined with

well-being and indicators of well-being are frequently spatially clustered, this situation is likely to be more common than has been typically recognized in the literature. When simultaneity and space were accounted for in the regression model, no significant relationship between social capital and poverty emerged.

Spatial autocorrelation causes correlation coefficients and coefficients of determination to appear bigger than they really are. Coefficients are biased upwards, and the relationship appears stronger than it would be if spatial autocorrelation was taken into account. Also, standard errors appear smaller than they really are, indicating exaggerated precision. We are more likely to conclude a relationship is statistically significant, when that may not be the case. In the poverty model, the spatially lagged dependent variable was significant, and spatial errors were present. The spatial dimensions of the poverty model reflected a substantive spatial process, as well as nuisance. In the social capital model, the spatially lagged dependent variable was significant, but spatial errors were not present.

Spatial errors in the poverty model are not a result of a substantive spatial interaction process. Instead, spatially correlated errors may be the result of either omitted variables that are themselves spatially correlated or mismeasurement of one or more spatial variables. Mismeasurement can arise if the unit of analysis does not reflect the scale at which the spatial effect is at work. Neighborhoods, for instance, may be more appropriate geographic bounds for understanding how poverty spills over from community to community. Counties may be too large for poverty rates to influence one county to the next.

The indicators used here to measure social capital may be a factor in why the estimations did not indicate strong evidence of a relationship between social capital and poverty. By relying on an easily-obtained dataset on organizational membership, voting rates, and census response rates, other forms of social capital were not explored. Cohen (2001, p. 270) states poor community members are "creating new political and social formations invisible to social scientists looking for social capital in all the old places (national data sets) and in all the traditional forms." Civic organizations in the social capital index used here like public golf courses, professional organizations, and business associations are unlikely to represent or strongly benefit the poor. The results here support Bourdieu's (1984) notion of social capital, in that it does not help the poor increase their material well-being. He contends that it produces social stratification, which could be studied by examining the relationship between social capital and income inequality in a future study.

# CHAPTER 4

## CASE STUDY APPROACH

In this chapter, I use a case study approach to study the relationship between process indicators of social capital and community well-being. I analyzed social capital through the lens of bonding, bridging, and linking social capital. I selected adaptive capacity as an indicator of community well-being, which indicates the ability of a community to take advantage of opportunities and mitigate disturbances.

According to Robert Yin in *Case Study Research*, "a case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident" (Yin 1994, pg. 13). By concentrating on a single phenomenon, individual, community, or institution, the researcher aims to uncover the manifest interaction of significant factors characteristic of this phenomenon, individual, community, or institution. But, in addition, the researcher is able to capture various nuances, patterns, and more latent elements that other research approaches might overlook (Berg 2009).

The phenomenon in this study is the impact of social capital on adaptive capacity, and the case is defined by a community of place. A comparative case study approach is taken; three case communities are described and compared with the intent of answering the research question: How do bonding, bridging, and linking social capital impact adaptive capacity? More specifically,

1. How are bonding, bridging, and linking social capital manifested in three communities?

2. How do the three types of social capital impact a community's response to an economic opportunity or disturbance?

   a. What are the disparate effects of the three types of social capital?

   b. What are the interaction effects of the three types of social capital?

4.1 Methods

   The county-level social capital index used in the econometric analysis revealed no significant relationship between social capital and poverty, an indicator of a lack of community well-being. In this chapter, qualitative data is used to illustrate the nuances of social capital in a particular place. Zussman (2004) argues that qualitative sociology works best when it studies people in places. Barkley (1998) writes that case studies should be used in regional economic studies of rural places since rural communities are too heterogeneous to understand simply through quantitative proxies of qualitative dimensions. Such a study requires multiple levels of analysis, triangulation, and the strategic choice of case. Case studies typically combine data collection methods such as content analysis, interviews, questionnaires, and observations. The evidence may be qualitative, quantitative, or both (Eisenhardt 1989). This study relies primarily on interview data, in conjunction with document analysis and observation.

Some case study researchers use cases to test established theory, while others see case studies as an avenue to generate theory. Eisenhardt (1989) argues that theory building research should begin as close as possible to the ideal of no theory under consideration and no hypotheses to test. Her position is rooted in Glaser and Strauss' (1967) grounded theory approach. They argue that theory should be derived from the data and not from *a priori* assumptions. Yin (1994) disagrees and supports a theory-before-research model. These opposing views represent the divide between inductive and deductive science. I take Yin's (1994) deductive approach and narrowed my research questions before collecting data. However, I view the data collection and analysis as an iterative process and refined my study methods as needed.

*4.1.1 Case Study Selection*

A comparative case study of the impact of social capital on adaptive capacity was undertaken in three rural communities in the state of Washington. I used case studies to explore how Pacific Northwest (PNW) forest communities employ social capital to reduce exposure to or mitigate disturbances and take advantage of new opportunities. I interviewed community leaders knowledgeable about the particular community action or outcome related to each opportunity or disturbance. I take a post-positivist approach, in which those studied are represented as accurately as possible through their own words, actions, and documents (Charmaz 2003).

The case study approach hones in on a specific type of rural community in a particular geographic area, PNW forest communities. Forest communities are defined

as place-based communities adjacent to forestlands. Forest communities in the states

of Oregon and Washington, which comprise the PNW region, are surrounded by a mix

of private and public forestlands. Forests cover more than 30 million of Oregon's 63

million-acre land base, or about 48 percent of the total land area (Oregon Department

of Forestry 2009). The federal government manages about 60 percent of Oregon

forestlands. Forests cover approximately 21 million acres of Washington's 43 million-

acre land base, or about 49% of the total land area (Washington Department of Natural

Resources 2012). The federal government manages about 44 percent of Washington

forestlands. Public forestlands are managed by the USDA Forest Service (USFS),

USDI Bureau of Land Management (BLM), and state agencies.

While indisputably connected economically and culturally to forested

landscapes, forest communities do not necessarily engage in timber extraction nor

could be considered timber-dependent (Sturtevant and Donoghue 2008). Similar to

rural areas across the United States, PNW forest communities are transitioning from a

dependence on natural resource and manufacturing industries towards a more diverse

service economy. Labor saving technologies and international capital markets have led

to the closure of numerous wood products manufacturing facilities, such that the forest

industry no longer dominates the economies of these communities. By the late 1970s,

productivity in the PNW timber industry was much lower than its competitors, Canada

and the southeastern United States (Brunelle 1990; Adams 1986).

The forest industry has further declined in communities surrounded by USFS

lands as timber supply has been curtailed in favor of ecosystem restoration and

conservation. Across the United States, timber harvests from federal lands have declined dramatically since the early 1990s. This decline began in the PNW with injunctions prohibiting logging on USFS and BLM lands within the range of the northern spotted owl (*Strix occidentalis caurina)*, which was listed as threatened under the Endangered Species Act in 1990. The Northwest Forest Plan adopted in 1994 embodies the shift in management focus from intensive timber production to endangered species protection and ecosystem management. It applied to 24 million acres of USFS and BLM lands that lie within the range of the northern spotted owl, essentially all of the federal forested land west of the Cascade range through Washington, Oregon, and northern California.  The Plan aimed to provide "a sustainable level of human use of the forest resource while still meeting the need to maintain and restore the late-successional and old-growth forest ecosystem" (USDI 1994, pp. 26-27).

The Northwest Forest Plan was viewed by many rural communities as a threat to their way of life. The spotted owl controversy was framed as jobs versus the environment (Olympian 1990), obscuring the complex forces that have shaped employment in the timber industry. Kirschner (2010) argues that emotions ran high because the owl was one of the first endangered species to severely limit the extraction of a natural resource in the Western United States, and because logging was such an important part of the historical identities of PNW rural communities.

In the 1980s, the USFS offered an average of 4.5 billion board feet (bbf) of timber for sale annually in the Plan area, and the BLM offered an annual average of

1.1 bbf. During the first 10 years of the Plan, the agencies offered an annual average of 525 million board feet—or 54% of the total volume expected (Charnley et al. 2008). The contribution of federal timber to the total regional supply went from about 25% in 1990 to less than 5% by 2000 (Phillips 2006). From 1990 to 2000, an estimated 5000 timber industry jobs were lost because of cutbacks in federal timber harvesting (Phillips 2006).

Employment declines on USFS lands can also be attributed to global market forces and technological advances in the timber industry. Greater domestic and international competition has led to mechanization, consolidation, and mill closures throughout the United States. From the late 1980s to the late 2000s, harvests in Oregon and Washington declined by 86% on National Forests not affected by the Northwest Forest Plan according to Figure 3 (US Forest Service 2010a). Figure 4 shows that harvests declined by 95% from the late 1980s to the late 2000s on National Forests affected by the Northwest Forest Plan in Oregon and Washington. From 1990 to 2000, about 30,000 primary wood products manufacturing jobs were lost in the Plan area due to harvest changes across all ownerships, industry restructuring, and technological change (Phillips 2006).

Figure 3: Timber Harvest on Oregon and Washington National Forests Not Affected by the Northwest Forest Plan
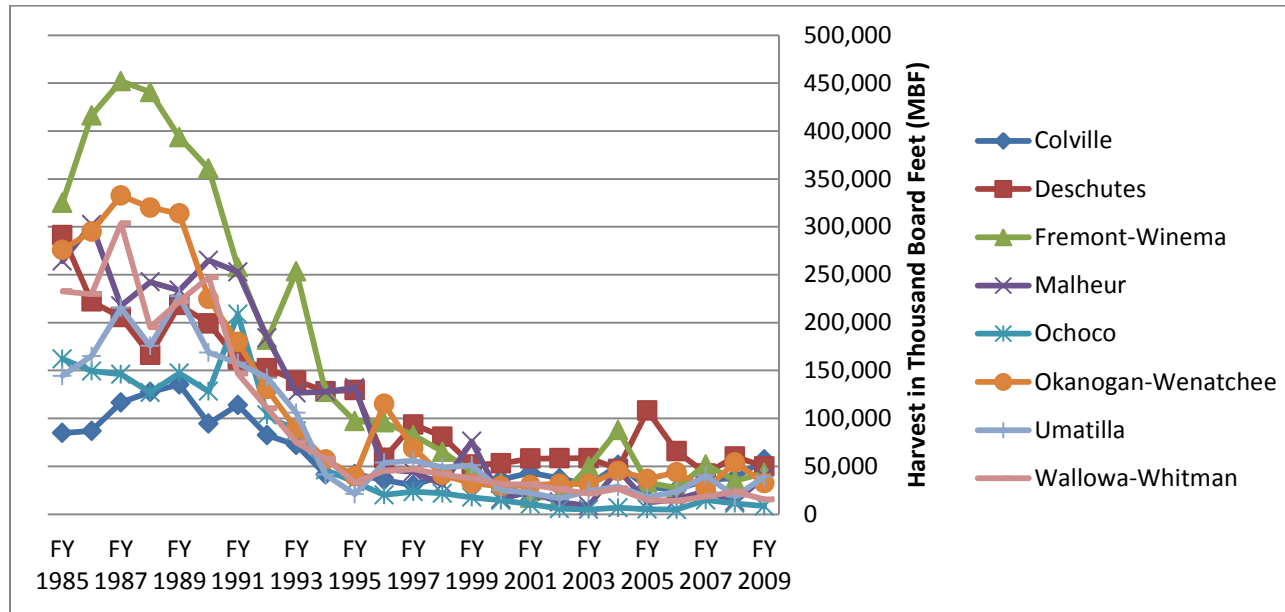


Source: US Forest Service (2010)

Figure 4: Forest Harvest on Oregon and Washington National Forests Affected by the Northwest Forest Plan
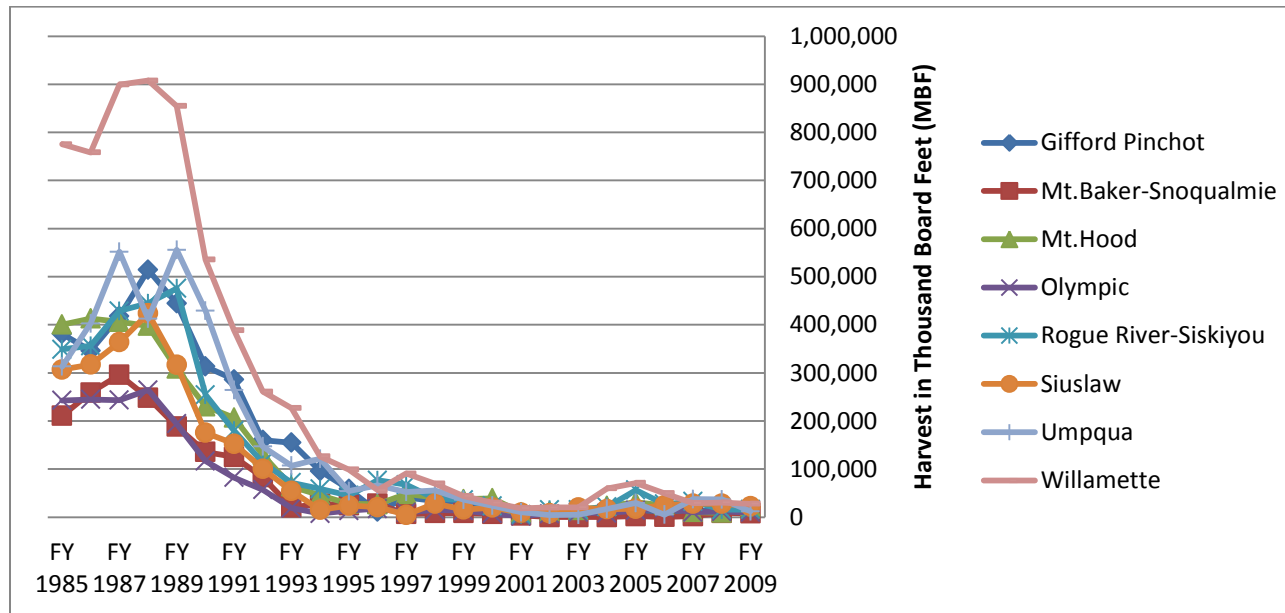


Source: US Forest Service (2010)

A decline in federal timber harvests has not only negatively impacted residents employed in the timber industry, but affected available funds for critical county services in the PNW. Beginning in the early 20th century, the USFS and BLM paid 25 and 50% of their gross timber receipts, respectively, to the counties where the timber was harvested to provide and maintain roads, schools, and other social services. In counties with considerable public lands, these receipts contributed substantially to county budgets. Adjusted for inflation, Oregon county payments declined by 32% on average from the late 1980s to the late 2000s, while Washington county payments declined by 23% (US Forest Service 2011). Counties in Oregon and Washington now must look for other sources of revenue to provide critical social services. While various legislation (e.g. Omnibus Budget Reconciliation Act of 1993, Secure Rural Schools and Community Self-Determination Act of 2000) has somewhat stabilized federal contributions to county budgets, the acts must continually be reauthorized, which creates great uncertainty for rural communities.

I chose each case study community to have a different level of social capital, as measured by Rupasingha and Goetz's (2008) social capital index. The same index was used to measure social capital in the econometric approach, facilitating comparison between quantitative and qualitative indicators of social capital (see Section 3.1.1). The social capital index is available for the years 1990, 1997, and 2005. Only communities in Oregon and Washington within counties that historically received county payments from National Forests were considered as potential cases.

I developed cases in three communities, Liberty[1] (Ferry County), Swift Brook (Stevens County), and Elkton (Jefferson County), all traditionally timber-dependent communities in the state of Washington. Ferry County had the lowest level of social capital for every county in Oregon and Washington for all three years of data. Ferry County was in the bottom 25 percentile for all US counties. Stevens County was in the bottom 25 percentile in 1990, but rose to the mean of the social capital index for 1997 and 2005. Jefferson County was in the upper 25 percentile for all three data years. Liberty and Swift Brook are located near Colville National Forest, in the northeastern part of the state close to the Canadian and Idaho borders, whereas Elkton is located near the Olympic National Forest, on the eastside of the Olympic peninsula. Figure 5 displays a map of the communities.

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[1] Community names were changed to protect confidentiality of community members interviewed.

Figure 5: Map of Case Study Communities in Washington State
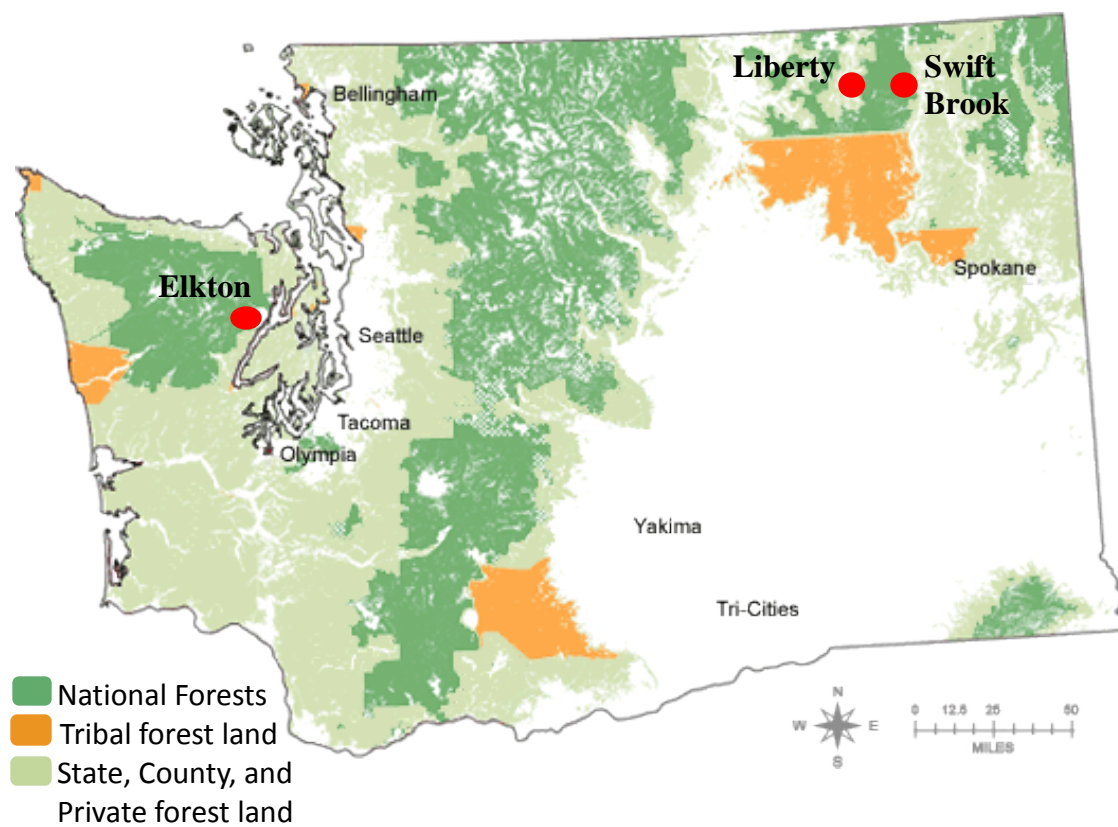


Source: Washington Forest Protection Association (2012)

The communities and their respective counties have unique geographies, histories, and socioeconomic demographics. The case summaries describe these differences and their relationship to social capital formation and adaptive capacity. Table 11 presents some statistics related to county trends, prosperity, economy, use sectors, and federal land prepared by Headwaters Economics in conjunction with the U.S. Bureau of Land Management and U.S. Forest Service. It relies on published statistics from federal data sources, including Bureau of Economic Analysis, Bureau of the Census, U.S. Department of Commerce, Bureau of Labor Statistics, and U.S. Department of Labor.

Table 11: County Trends and Statistics

| | Jefferson County, WA | Ferry County, WA | Stevens County, WA | County Region | U.S. |
|---|---|---|---|---|---|
| **Trends** | | | | | |
| Population % change, 1970-2010 | 181.6% | 105.2% | 149.5% | 155.1% | 51.8% |
| Employment % change, 1970-2010 | 270.7% | 122.9% | 145.6% | 185.0% | 90.4% |
| Personal income % change, 1970-2010 | 482.9% | 205.2% | 296.3% | 355.9% | 164.1% |
| **Prosperity** | | | | | |
| Unemployment rate, 2011 | 9.9% | 14.2% | 12.1% | 11.5% | 8.9% |
| Average earnings per job, 2010 (2011 $s) | $32,200 | $32,973 | $33,740 | $33,006 | $53,347 |
| Per capita income, 2010 (2011 $s) | $44,425 | $27,053 | $28,775 | $34,395 | $41,198 |
| **Economy** | | | | | |
| Non-Labor % of total personal income, 2010 | 58.4% | 57.5% | 52.2% | 55.6% | 35.2% |
| Services % of total private employment, 2010 | *78.1%* | *62.1%* | *75.7%* | *76.0%* | 84.8% |
| Government % of total employment, 2010 | 16.5% | 36.9% | 21.4% | 20.6% | 14.2% |
| **Use Sectors^** | | | | | |
| Timber % of total private employment, 2010 | *6.3%* | *11.4%* | *9.9%* | *8.3%* | 0.7% |
| Mining % of total private employment, 2010 | 0.3% | *17.9%* | *1.6%* | *2.0%* | 0.5% |
|    Fossil fuels (oil, gas, & coal), 2010 | 0.0% | *0.1%* | 0.0% | *0.0%* | 0.4% |
|    Other mining, 2010 | 0.3% | *17.8%* | *1.6%* | *2.0%* | 0.1% |
| Agriculture % total employment, 2010 | 1.8% | 8.0% | 8.0% | 5.3% | 1.5% |
| Travel & Tourism % total private emp., 2010 | *19.3%* | *11.3%* | *15.1%* | *16.8%* | 15.1% |
| **Federal Land*** | | | | | |
| Federal Land % total land ownership | 50.8% | 37.0% | 22.2% | 35.9% | 28.2% |
|    Forest Service % | 8.4% | 33.6% | 14.5% | 18.8% | 8.2% |
|    BLM % | 0.0% | 0.7% | 1.6% | 0.8% | 11.3% |
|    Park Service % | 42.1% | 0.0% | 0.0% | 13.2% | 3.2% |
|    Military % | 0.3% | 0.0% | 0.0% | 0.1% | 1.0% |
|    Other % | 0.0% | 2.7% | 6.1% | 3.1% | 4.5% |

| Federal land % Type A** | 88.9% | 0.0% | 16.7% | 43.0% | 34.9% |
| Federal payments % of gov. revenue, FY07 | 11.0% | 10.9% | 2.9% | 7.4% | na |

Source: Headwaters Economics 2012

From the years 1970 to 2010, Jefferson County experienced significantly more growth in population, employment, and personal income in comparison with the other counties. Ferry County experienced the least growth; population change and employment change were relatively flat. In 2010, per capita income was higher in Jefferson County, whereas average earnings per job were comparable across the counties. In 2010, non-labor income for all three counties was about 20 percent higher than for U.S. non-metropolitan counties and represented a majority of income earned. Non-labor income consists of dividends, interest, and rent (money earned from investments), as well as transfer payments including government social security, disability insurance benefits, medical payments, and unemployment insurance benefits. In 2010, Jefferson County had the lowest percentage of private employment in timber, mining, and agriculture, whereas Ferry County had the highest. Ferry County also had the largest percentage of government employment (36.9%). Jefferson County has the highest percentage of federal land (50.8%) compared to Ferry (37.0%) and Stevens (22.2%).

In a "presearch" phase of community visits and informal interviews with community leaders, I identified several events (i.e. economic opportunities or disturbances) relevant to each community, which are listed in Table 12. My aim was to hear from community members about the changes they deem important in their community, allowing their concerns to drive some of the research design. Although the opportunities and disturbances vary greatly, they all affect the well-being of the community and have the ability to change the current asset structure. These events

provide a lens to understand how social capital impacts adaptive capacity within each case community. Adaptive capacity's latent nature makes it difficult to measure, in that it's difficult to gauge until after its realization or mobilization within a system (Engle 2011). By investigating adaptive capacity in regard to recent events, we can use this knowledge as a proxy for how systems might build and mobilize (or not) their capacity to prepare for and respond to future opportunities and disturbances (Adger et al. 2007; Bussey et al. 2010; Ford et al. 2011; Nielsen and Reenberg 2010).

One event happened to affect two of the communities; I interviewed relevant community leaders from both Liberty and Swift Brook, as well as surrounding community leaders regarding a potential wilderness designation in Colville National Forest. The communities are located in adjacent counties. Hence, the wilderness event reflects regional trends in northeastern Washington regarding social capital and adaptive capacity.

Table 12. Communities and Relevant Opportunities and Disturbances

| Community | Opportunity or Disturbance |
|---|---|
| Elkton | Resort Development |
| Elkton | Washed Out Forest Service Road |
| Liberty | Mining Operations |
| Swift Brook | Poverty Reduction Program |
| Swift Brook & Liberty | Wilderness Designation |

*4.1.2 Interview Methods*

For the interviews, I sampled community leaders using the snowball sampling technique. Snowball sampling is a technique for developing a research sample where

existing subjects recruit future subjects from among their acquaintances. I initially

relied on Washington State University extension personnel, public officials, and

community leaders named in local newspapers to find interviewees. Interviewees

included leaders of public institutions like government agencies and schools, volunteer

organizations and service clubs like the Rotary Club, advocacy organizations like

motorized recreation user groups, and business entities such as the Chamber of

Commerce and large employers. I conducted about 20 interviews in each community,

discontinuing interviews when responses no longer varied and I had conducted

interviews from as many different constituencies as I could identify.

The interview guide was adapted from two sources: (1) the Social Capital

Rapid Assessment Protocol (SCRAP) developed by the USFS and National Oceanic

and Atmospheric Administration (Allen 2010) and (2) the Community Social Capital

Model developed by the University of Minnesota Extension (2009). It is attached in

Appendix B. SCRAP was created to assess and measure community and agency social

capital in forest communities in the United States. It was piloted in seven forest

communities that vary ecologically and demographically across the United States. My

interview guide deviated from SCRAP in that my questions were structured to elicit

information about bonding, bridging, and linking social capital. The University of

Minnesota Community Social Capital Model similarly makes this distinction. I piloted

the interview guide with leaders from two different forest communities. The guide is

semi-structured and was further personalized around the particular disturbance or

opportunity relevant to each community.

A majority of the guide questions focused on bridging and linking social capital to ascertain how intra-group and intergroup relations are facilitated. Bridging social capital represents intra-group relations, while linking social capital emphasizes intergroup relations. Questions pertain to trust, engagement, and connections in bonding, bridging, and linking networks, described in Table 13. An example of a question about trust in bridging networks is: Do people from different groups in the community have a difficult time trusting each other? An example of a question about engagement and connections in linking networks is: Are there any organizations or government agencies outside your community that currently support community interests or groups?

Table 13: Trust, Engagement, and Connections in Bonding, Bridging, and Linking Networks

|  | *Trust* | *Engagement* | *Connections* |
|---|---|---|---|
| *Bonding Networks* | Residents with a common social background trust each other. | Residents with a common social background engage with each other. | Residents have close connections that give a sense of belonging and help them get by. |
| *Bridging Networks* | Residents with different social backgrounds trust each other. | Residents with different social backgrounds engage with each other. | Residents have broad connections that help them expand opportunities. |
| *Linking Networks* | Residents trust leaders of public and private institutions. | Residents engage with leaders of public and private institutions. | Residents have connections to organizations and systems that help them gain resources and bring about change. |

Source: University of Minnesota Extension Community Social Capital Model (2009)

*4.1.3 Analysis of Data*

Data analyzed includes interviews, documents, and observation. Approximately 60 interviews were conducted between June and December 2011. I made three visits to each community, typically spending three to four days at a time in each place. The majority of interviews were audio recorded and transcribed verbatim. One interviewee requested that a recorder not be used for fear of her words being misconstrued, and instead detailed notes were taken. Four other interviews were not recorded as the interview was impromptu and informal, and I did not possess the recorder in hand. I took detailed notes for these interviews as well. During my visits to the communities, I collected newspaper articles, brochures, fact sheets, mail correspondence, and other community documents relevant to the study. I also took notes regarding informal interaction I observed in the communities, as well as physical descriptions of the towns.

Crowley et al. (2002) suggest that the use of qualitative data software makes research more reliable or robust. This depends upon how the software is used, although it could be argued that use of such software makes analysis more visible, thereby enhancing transparency, and so the quality of evidence and argument might be more easily judged. I used the qualitative data software program NVivo for data management, coding, and retrieving text. The document and node are central organizing concepts in NVivo. The document either contains some data in textual form or represents some external data (e.g. a book, video, audio tape or still image). Nodes represent themes and can be linked to relevant passages from the data. Nodes

may also be organized into hierarchical trees. NVivo does not perform any analysis

functions, but instead is used to help organize, classify, and examine complex

relationships in the data gathered.

The data was coded with both analytic and grounded categories. Analytic

categories result from the theoretical constructs and research questions that guide this

study, while grounded categories are data-driven. Codes may be acts, activities,

meanings, perspectives, processes, strategies, participation, relationships, social

structure, or settings (Miles and Huberman 1994). From the initiation of the study, I

was fairly confident about how to identify and categorize different forms of social

capital for coding and analysis purposes. The social capital interview guide clearly

delineates how each question relates to the three types of social capital. However, I

was less sure about the appropriate framing of community outcomes in the case of

each opportunity or disturbance. I very much relied on interviewees' explanations to

guide the coding process. About half of my codes were theory driven, while the rest

arose from the data.

In order to build theory and form hypotheses from the data, constructs were

refined and evidence built which measures the construct in each case (Eisenhardt

1989). Figure 6 is a diagram of how social capital relates to adaptive capacity. A stock

of bonding, bridging, and linking social capital exists and is applied by community

members to deal with a particular opportunity or disturbance. Bonding, bridging, and

linking social capital are enclosed in a triangle in which they interact with one another,

as indicated by the bi-directional arrows. Each have disparate and interaction effects

on the outcome of an opportunity or disturbance. Potential community outcomes include capital maintenance, capital accumulation, and capital depletion. The community outcomes are enclosed in a Venn diagram, as it is possible to observe only one outcome, a mix of two outcomes, or a mix of the three outcomes. An arrow from the community outcomes to the three types of social capital indicates how the stock of social capital available to deal with an opportunity or disturbance may stay the same, increase, or decrease with the advent of each catalyst.

Figure 6. Impact of Social Capital on Adaptive Capacity
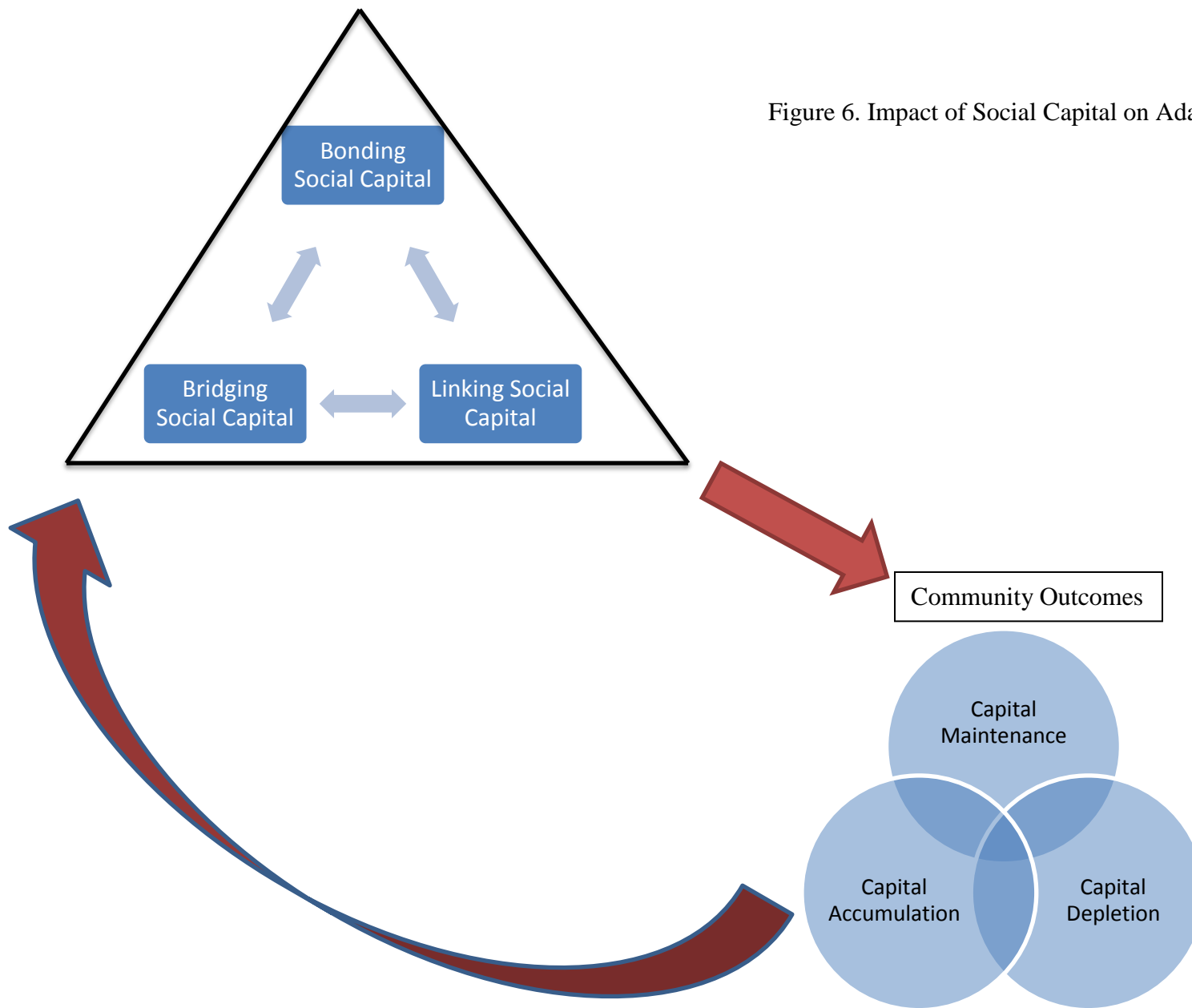
In the case summaries and discussion sections, I displayed the data in matrices to summarize and tabulate the evidence underlying the impressions, tentative themes, concepts, and relationships between social capital and community outcomes (Miles and Huberman 1994). Internal validity is improved through the use of patterning-matching logic, i.e. the exploration of similarities and differences between a study's findings and predicted theory (Trochim 1989). Cases which confirm emergent relationships enhance confidence in the validity of the relationships. Cases which disconfirm the relationships often can provide an opportunity to refine and extend the theory. I explored the patterns and themes that cut across individual case experiences and applied explanation-building techniques, which are relevant to explanatory case studies. This process entails making an initial theoretical statement about the phenomenon of interest, examining the case study evidence, revising theoretical positions, and re-examining the evidence from this new perspective, in an iterative mode (Yin 1994).

Kirk and Miller (1986, p.21) suggest that validity in qualitative research "is ... a question of whether the researcher sees what he or she thinks he or she sees." This study primarily follows the qualitative methodology of Yin (1994) and Eisenhardt (1989) to produce a high quality and rigorous piece of research. Yin (1994) asserts that case study methodology should maximize construct validity, internal validity, external validity, and reliability, as defined in Table 14. Debate on the usefulness of the concepts of validity and reliability in qualitative research is prolific (Welsh 2002; Buroway 1998; Kelle and Laurie 1995). Some researchers suggest that these terms are

inappropriate in qualitative research, preferring to use terms such as "trustworthiness," "rigourness," or "quality" of the data. I believe that qualitative research and data analysis should be carried out in a thorough and transparent manner following Miles and Huberman (1994). While Yin's proscriptive, positive approach may irk grounded theorists, his methods are explored here to ensure consistency within and across cases.

Table 14: Quality Tests for Case Study Methodology

| Quality Tests | Definition | Case Study Tactic |
|---|---|---|
| Construct Validity | Establishing correct operational measures for the concepts being studied | -Use multiple sources of evidence<br>-Establish chain of evidence<br>-Have key informants review draft case study report |
| Internal Validity | Establishing a causal relationship | -Do pattern-matching<br>-Do explanation-building<br>-Do time-series analysis |
| External Validity | Establishing the domain to which a study's findings can be generalized | -Use replication logic in multiple-case studies |
| Reliability | Demonstrating that the operations of a study—such as the data collection procedures can be repeated, with the same results | -Use case study protocol<br>-Develop case study data base |

Source: Yin (1994)

A chain of evidence has been established with the aim that the links are explicit between the questions asked, the data collected, and the conclusions drawn. Construct validity could have been improved in this study through the use of other sources of evidence. By using multiple sources of evidence, converging lines of inquiry may emerge. This process of triangulation increases construct validity since

multiple sources of evidence are likely to provide multiple measures of the same phenomenon. I originally planned to conduct focus groups with a cross-section of community members to elicit their sense of how social capital impacts adaptive capacity for each community. Community leaders' perceptions may differ from those of the average community member. Time constraints and logistical difficulties kept me from pursuing focus group data, as well as concern about inflaming tension in communities dealing with more controversial issues.

The case study findings are most aptly extended to other high-amenity rural communities surrounded by public lands in the United States. Findings from the private resort development and poverty reduction event could apply to a wider variety of communities, as these particular catalysts can be found in rural and urban places far from public land. The communities studied have very small minority populations. Interviewees were not racially diverse and all appeared to be of white European descent apart from one African-American interviewed. Hence, social norms depicted in these case studies may not be reflective of communities with more ethnically heterogeneous populations.

## 4.2 Case Summaries

Each case begins with a background of the geography, history, and socioeconomic demographics for a given community. The communities have recently experienced events (i.e. economic opportunities and disturbances) which highlight community divisions and social interactions. These events are used as a lens to

understand how and why bonding, bridging, and linking social capital manifested in distinct manners in these communities.

*4.2.1 Case Study 1: Elkton*

The 731-person town of Elkton is nestled between Hood Canal and Olympic National Forest (U.S. Census 2010). Elkton lies on the Olympic Peninsula in which the majority of the land base is publicly owned. Jefferson County, where Elkton is located, has the largest share of public lands (federal and state lands comprise 65% of total area) and the smallest share of private lands (18% of total area) on the Peninsula (Headwaters Economics 2012). The Olympic Peninsula is surrounded on three sides by bodies of water: the Pacific Ocean to the west, the Strait of Juan de Fuca to the north, and Hood Canal to the east.

European settlers moved to the area in the late 19th century to establish farms, work in the thriving timber industry, and catch seafood for market (Bailey 1997). Previously, indigenous tribes dominated the landscape; Tribal lands today represent less than one percent of the total area of Jefferson County (Headwaters Economics 2012). However, Tribes retain customary rights to hunting, fishing, and foraging throughout the Peninsula. The 1974 ruling in U.S. v. Washington (the Boldt decision) guaranteed Washington's Indian Tribes 50 percent of the annual salmon catch (*United States v. Washington*), which was eventually extended to shellfish as well.

Natural resource industries no longer comprise the majority of employment in Jefferson County, and instead service industries represented the majority (78%) of

total private employment in 2010 (US Census 2010). Timber employment represented 6.3% of total private employment, whereas travel and tourism employment represented 19.3% of total private employment in 2010. The population of Elkton is aging; the median age was 58.2 years in 2000 and 64.2 in 2010. The population contains a large proportion of retired people, many who made their living in urban areas and receive transfer payments from past employment according to interviewees. Elkton is located within a 1.5 hour drive to the state capital of Olympia and a two hour drive/ferry ride to Seattle, facilitating travel to and from urban centers. Poverty rates in Elkton are high compared to non-metropolitan counties. In Elkton, 23.3% of people were below the poverty line for the years averaged across 2006-2010, whereas 13.8% of people were below the poverty line in non-metropolitan counties for the same time period (ACS 2010). Interviewees explained that people of working age engage in subsistence activities such as hunting, fishing, and farming to supplement their incomes.

Elkton recently experienced two events, a proposed resort development and a washed-out USFS road that reveal how social capital impacts adaptive capacity in the community. In the mid-2000s, a Canadian developer initiated discussion with private landowners in Elkton to buy waterfront property and build a resort. It would include a 1000-unit condominium complex with an adjacent golf course and marina. In 2002, a USFS-maintained motorized access point to the Olympic National Park washed out. It has not been rebuilt.

Interview data regarding Elkton and the two events were coded for statements related to bonding, bridging, and linking social capital, and then further coded for evidence of weak, medium, and strong social capital for each type. Some statements coded pertained specifically to the resort development or the washed-out road, while others pertained to Elkton more generally. If an interviewee made multiple statements related to weak bridging social capital for a particular event or the community at large, they were recorded as one statement. Hence, statements from a particularly passionate or talkative interviewee were not weighed more than a terse interviewee.

A total of 19 people were interviewed regarding Elkton. Appendix C presents a table describing all interviewees in this study. It includes information pertaining to the interviewees' community of residence, occupation, and date and place interviewed. Table 15 displays the number of interviewees that indicated weak, medium, or strong bonding, bridging, and linking social capital in Elkton and for the two events. The total is not the sum of each column; rather, it reflects the absolute number of interviewees that indicated weak, medium, or strong social capital. For example, although strong bonding social capital was noted by five interviewees regarding Elkton, one interviewee regarding the resort development, and six interviewees regarding the washed-out road, the total number of interviewees does not equal 14 (5+3+6). A total of 12 interviewees indicated strong bonding social capital; some interviewees noted it for both events, or for the community and a particular event.

Table 15. Number of Interviewees who Indicated Weak, Medium, or Strong Bonding, Bridging, and Linking Social Capital in Elkton

|  |  | Elkton | Resort Development | Washed-out Road | Total |
|---|---|---|---|---|---|
| Bonding Social Capital | Weak | 0 | 1 | 0 | 1 |
|  | Medium | 0 | 0 | 0 | 0 |
|  | Strong | 5 | 3 | 6 | 12 |
| Bridging Social Capital | Weak | 11 | 11 | 4 | 18 |
|  | Medium | 6 | 3 | 0 | 7 |
|  | Strong | 5 | 3 | 1 | 6 |
| Linking Social Capital | Weak | 10 | 2 | 8 | 15 |
|  | Medium | 3 | 1 | 1 | 3 |
|  | Strong | 3 | 5 | 2 | 8 |

Strong bonding social capital was described by more than one-half of the interviewees. The majority of interviewees made statements indicating weak bridging social capital. Weak linking social capital was described by about half of the interviewees regarding Elkton generally and the washed-out road. About a quarter of the interviewees noted strong linking social capital regarding the resort development.

Next, interviewees' statements regarding bonding, bridging, and linking social capital were explored for salient themes to understand the manifestation of the three types of social capital. A count of cross-cutting themes was taken to discover the most frequently cited explanations for each type of social capital formation. Table 16 ranks the themes in order of the number of interviewees who described a theme.

Table 16. Social Capital Themes in Elkton

| Rank | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| *Strong Bonding Social Capital* | Some community leaders tightly connected due to similar backgrounds (8 interviewees) | Cultural heritage of access and economic relationship to public lands (8 interviewees) | | |
| *Weak Bridging Social Capital* | Prominent community leaders promoted economic development without community buy-in (10 interviewees) | Values and lifestyle differences drove division over resort (9 interviewees) | Lack of leadership and collective vision (8 interviewees) | Ineffective attempts to galvanize community support (6 interviewees) |
| *Weak Linking Social Capital* | Alienation and marginalization from regional and national governmental institutions (11 interviewees) | Residents reported few linkages with extra-local residents who influenced community affairs (10 interviewees) | | |
| *Strong Linking Social Capital* | Local environmental organizations depended on regional connections to accomplish goals (6 interviewees) | | | |

4.2.1.1 Strong Bonding Social Capital

Rank 1: Some of the most prominent leaders in Elkton were tightly connected due to similar education and work backgrounds (8 interviewees).

Most leadership positions in Elkton were held by a few people, retirees from upper management positions in urban areas. When questioning interviewees about leaders in the community, inevitably just a few of the same names came up each time. Several of these new residents worked for the same company prior to retiring in Elkton. They served on the comprehensive planning committee, county economic development council, Chamber of Commerce, watershed council, school board, and have formed numerous organizations to promote Elkton interests. Because Elkton is not incorporated, there is no formal government leadership like a mayor's office or a city planner. One of the informal leaders, Brent[2], described their ranks as generally comprised of "newbies, not the ordinary loggers." They were generally in favor of economic development and attracting new businesses to the community. They are referred to as the pro-development leadership in this study.

Generally, longtime residents of the area were not involved in community affairs because they were more focused on their material needs and "surviving" according to several people interviewed. Bill, an Elkton pro-development leader, described longtime residents as "loggers, ex-loggers, retired loggers, and then you see the giver-uppers, the druggies, and there's quite a bunch of that here." Some interviewees explained that the majority of longtime residents don't have time to be

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[2] Pseudonyms are used to protect the identities of community members interviewed.

active. If those residents were employed, they endured long commutes, limiting time for community involvement.

Rank 2: Elkton residents had a strong cultural heritage of access and an economic relationship to adjacent public lands (8 interviewees).

Elkton served as one of two access points to Olympic National Park on the east side of the Peninsula. The Park is a popular tourist destination for visitors from around the world and is largely surrounded by the Olympic National Forest. Community members viewed the washed-out access road as an essential conduit to a location of cultural significance, providing business opportunities in an otherwise lackluster economy. The road led to a high alpine camping area accessible to people with disabilities and to numerous hiking, backpacking, and horse trails. Before the road washed out, older community members in poor health used the road for outdoor recreation. Charlie, an ex-county commissioner, recounted how Elkton residents viewed the road as an integral part of their history:

> *It's not a county road, but it serves the community. It's been there*
> *forever. It's been there for a long time. The community thinks of it has*
> *a natural part of their heritage…it was access for all kinds of people.*

Without the access road, Elkton was no longer a gateway point to the Park, reducing demand for goods and services like meals, gas, and overnight accommodations.

Elkton residents characterized the road dispute as a taking, albeit the fact that the road is on national forest land and is operated by the USFS. Newcomers adopted or shared the same viewpoint as longtime residents regarding the road. They contended the road should be rebuilt to maintain Elkton's identity and provide economic opportunity.

<u>4.2.1.2. Weak Bridging Social Capital</u>

Rank 1: Prominent community leaders promoted economic development without community buy-in (10 interviewees).

Social life was divided in Elkton as pro-development leaders have alienated some longtime residents and leaders of *Rural Elkton*, an organization opposed to the proposed resort. Elkton had two welcome centers and two community centers, indicating a schism in town life. Bernadette, a leader of *Rural Elkton* and a local business owner, helped to maintain one welcome center, while pro-development leaders maintained another. Similarly, when the pro-development leadership first moved to Elkton, they established their own community center as they felt it was difficult to be effective working alongside longtime community leaders. Doug, a pro-development leader, described himself as a "threat" to longtime interests. He started several new civic organizations in Elkton because "it was impossible to do anything with any of the other groups. We had to start our own group."

Bill, another pro-development leader, critiqued himself and his peers for not working harder to engage diverse community interests:

> *We made a huge error probably seven or eight years ago. We didn't go out to the community, especially in planning the Shrimpfest [new community festival and revenue generator]. We attempted to do that this year and we failed miserably because we did not build that…*

By not involving other community members early on, the pro-development leadership isolated themselves and found it difficult to engage others on new issues.

Members of *Rural Elkton* claimed they were amenable to appropriately-sized development in the area, which could be a potential starting point for discussion with pro-development leadership. Bernadette described how she would design a development, "It should be done incrementally where it's a healthy development. It grows with the area rather than the huge impacts it's going to create." It seemed unlikely that *Rural Elkton* leadership and pro-development leadership would work together on the issue however. Pro-development leaders generally dismissed the views of *Rural Elkton* members, claiming that few people actually belong to the group. Bill, a pro-development leader, considered the group "radical environmentalists," implying that *Rural Elkton's* membership reflected extreme viewpoints. Neither side indicated a plan or desire to work with one another.

Greater disposable income among the pro-development leadership compared to the majority of residents further exacerbated rifts between different sets of community leaders. Pro-development leadership promoted the installation of water and sewer lines over the current use of septic tanks. Residents on fixed incomes were concerned about additional property taxes and did not feel the need for such a change. Doug, a pro-development leader, described division among Elkton residents as "long term versus newer folks who want to move and make the town grow. A lot of these people aren't ready for that." Tracy, a retired homemaker and frequent community volunteer, rationalized the division over the resort as the people who can afford to benefit from it and others who can't: "People that want to play golf – they're going to have the money to do it, and they're the ones real happy about the resort."

Rank 2: Differences in values and lifestyles drove division over the proposed resort development (9 interviewees).

An informal alliance was forged between longtime residents and local environmentalists who actively opposed the resort. Longtime residents typically worked in or retired from natural resource dependent industries such as forestry, farming, and fishing. Conflict over the resort did not reflect common divisions between traditional residents[3] and newcomers. Many environmentalists were themselves newcomers to the area. Their view of rural life coincided with that of longtime residents, who perceived the development as destroying their rural hamlet and being "too big" for Elkton. Furthermore, few Elkton residents worked in natural resource industries; of total private employment in Jefferson County, only 8.4% of residents were employed in agriculture, mining, or timber industries (US Census 2010). When questioned about Elkton leadership and their backgrounds, Brenda, a community center volunteer, replied, "we all moved here." Common divisions between residents in traditional industries and newcomers may have been less noticeable because traditional residents made up a small proportion of the population in Elkton.

The leaders of the effort to halt the development included Bernadette, a business owner who has resided in Elkton since 1980, Sue, a newcomer to the area and government employee retiree, and Rachel, a conservative back-to-the-lander who has lived in the area for several decades. Together, they managed *Rural Elkton,* a 501C3

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[3] Traditional residents are defined in this study as longtime residents who worked in or were sympathetic to natural resource dependent industries such as forestry, farming, ranching, and mining.

organization that lobbied county and state regulatory agencies, maintained extensive

contacts with media outlets, mobilized regional environmental interests, and kept

interested Elkton residents informed about the progression of the resort. Their

arguments against the resort included a need to preserve the unique environment,

maintain solitude, and find more suitable, sustainable economic enterprises for Elkton.

Leaders of *Rural Elkton* described the group as "virtual," in that members rarely met

each other and most communication was conducted through email. Sue, a *Rural*

*Elkton* leader, claimed their membership came from all walks of life and did not

represent any obvious class or political divisions:

> *I think we're all pretty middle class. It's probably about why you*
> *moved here and your values. But it's not political. Libertarian, hated*
> *Obama, tea party advocate, we don't talk politics. It's got nothing to do*
> *with politics. It's got to do with values I guess. Rachel [leader of Rural*
> *Elkton] doesn't believe in global warming but she cares about where*
> *we live, why we moved here, and what we want it to be like. Can you*
> *imagine having 1000 units down there with the noise and the light? It's*
> *why we moved here.*

*Rural Elkton* leadership perceived their group as representing many different kinds of

people.

Rural Elkton leaders led the effort to stop the resort's development, yet many

longtime residents in the area shared their views at public meetings and in interviews.

They raised concerns that the resort would overwhelm the small town and their local

culture and change the rural environment. Because the resort developers were looking

for funding from Chinese investors, the resort could be primarily occupied by people

of Chinese nationality, a fear aired by several interviewed. Although longtime

residents were generally not inclined to get involved in community issues, they did

have strong opinions about the proposed resort. Sherry, a university extension agent who filmed public meetings about the resort said, "they [traditional residents] are usually off doing their own thing. But they came out for the public meetings and they said they didn't want to see the resort development."

Ryan, a business owner, described his reasoning for supporting the resort:

*When I get to the point where I want to retire, I want my children or grandchildren to be able to have living wage jobs here so that I don't have to move out of the area, which I've seen too much in my past. I was involved with the fire department for a few years, I was an EMT, and I went to a lot of calls where we're picking people up that fall down, they don't have anybody, they can't get up by themselves, they don't have anyone to take care of them. Eventually they have to sell the old homestead or the property because their kids all live in Portland or Seattle or whatever. It's sad. I think some people don't look far enough ahead to see themselves in that same situation. We need medical care, pharmacy, a grocery store within a reasonable driving distance, all of that stuff.*

Interviewees from *Rural Elkton* and other long-time residents were less confident about economic benefits accruing to the community. They discussed how the recent economic downturn caused similar resorts to fall into bankruptcy, leaving half-built buildings and empty homes. Lauren, whose family lived in Elkton for many generations stated, "We just don't think it will make a go of it anyway. They have this big resort and a big golf course and all of that and it rains most of the time. I think it's crazy to start it." She noted other resorts in Elkton's history that closed for financial reasons. Bernadette of *Rural Elkton* argued that most of the resort jobs would be held by people who did not live in Elkton. She hired Hispanic workers from outside Elkton for her business because of their work ethic and the dearth of a reliable Elkton labor force:

*They [Spanish-speaking employees] do a great job and they don't*
*complain. They're here at 8 o'clock in the morning and they leave at*
*4:30. It's just a different work ethic. We've only had two kids that were*
*local that really did a good job, two out of 20.*

Because most jobs would initially be in construction and then minimum-wage service

positions, many people interviewed questioned whether Elkton residents would see

much financial benefits. Wes, an ex-logger and construction contractor, had a slightly

more nuanced view of the community's perception of the development and discussed

his plan to make money off the resort and then move once he retired. He suggested

that the older families in Elkton weren't looking forward to the resort as "they really

like their small town." He presented an apathetic viewpoint in that community input

would not affect the outcome of the resort; hence, figuring out how to capitalize on it

economically is all one could do.

Rank 3: Interviewees described a lack of leadership and collective vision (8
interviewees).

Many of those in Elkton leadership positions described the town as polarized

and lacking a cohesive development strategy. In response to how animosity might be

lessoned, Sue of *Rural Elkton* stated, "I think there's potential for change, but

somebody would have to have leadership. There's a leadership vacuum." She

suggested that residents who took on leadership roles were not "in the middle ground"

and needed to focus on a more collective vision for Elkton. Bill, a pro-development

leader, made similar remarks in that all current leaders were too divisive to bring

people together. He suggested that someone from outside the community might be

needed to make progress towards dissolving tension. Local business owners Ryan and

Melissa said community development was hampered by "not having a central goal,

more like out for yourself, your own interests."

Rank 4: Interviewees described ineffective attempts to galvanize community support
(6 interviewees).

Ryan, a business owner, explained how his efforts to create a community

emergency reaction group failed: "We couldn't get any significant cooperation from

any useful group." Another business owner Bernadette lamented how her efforts to

decorate the downtown for the holidays received no support: "Our community effort is

what we [Bernadette's business] do here because we can't get anyone else to join in."

Although the majority of Elkton residents desired the washed-out road to be rebuilt,

they did not engage in a conscientious collective effort towards this goal. Few

residents interviewed could recall of an organized community effort to rebuild the

road. Wes, the contractor who bid to repair the road, perceived community

mobilizations as "complaining at meetings," which achieved no results. Doug, a

community leader and business management retiree, felt the effort was largely up to

him:

> *That was mostly on my shoulders it seemed like. As an effort to support
> the road, we actually got letters of support from all of the Chambers in
> the surrounding counties and all the representatives, their signatures of
> support, supporting the opening of the road itself, and all the county
> commissioners. Getting all these signatures took a lot of work and lots
> of letters, letter writing opinions going into the newspaper.*

Doug described putting pressure on the USFS by contacting all levels of management and engaging in the public process available. According to Chris, the Olympic National Forest public relations officer, only a small, core group of people promoted road repair. He remarked on Elkton community member involvement, "We get emails, phone calls from the same people, three or four contacts." The relative paucity of community involvement on the issue belied the importance of the road as described by interviewees.

It did not appear as though a strong social norm for collective action existed in Elkton. Brent, a pro-development leader, concluded: "In small communities like this, there's usually a dozen or so people that do everything; trying to get others to get engaged or to take major responsibility is really tough." He did concede that residents could come together for an afternoon to accomplish a quick and non-controversial task. For example, when a county agency ceased to offer free senior meals due to budget cutbacks, the community organized to provide meals on a volunteer basis. Lauren, a longtime resident, remarked: "They [county agency] shut down the senior meals, but people themselves have kept it going."

### 4.2.1.3 Weak Linking Social Capital

Rank 1: Elkton residents expressed a sense of alienation and marginalization from regional and national governmental institutions (11 interviewees).

Melissa, a local business owner, summed up her concerns about government: "So many rules and regulations by so many different agencies, it just seems overwhelming sometimes." Residents found it difficult to accomplish community

goals due to roadblocks from county, state, and national government agencies and laws. Apathy persisted among residents who they felt their efforts to engage with governmental actors rarely resulted in beneficial outcomes.

Local government decisions are made at the county level since Elkton is an unincorporated town. Many Elkton residents expressed concern and sometimes outrage that county government did not reflect their interests, and instead represented more populated communities whose residents have different backgrounds and values. Bill, a pro-development leader, explained Elkton's predicament: "These rural counties are run by very left wing, social engineering, democratic wealthy that live in urban areas or in the urban communities in these rural counties. They manipulate the rural communities to control what happens and keep them in poverty."

One of Elkton's community centers was owned by county government and residents criticized the county for mismanagement of the building. It was originally a county-owned motel, which failed to make a profit. During visits to the community, it appeared derelict with out-of-date décor from the 1960s. Large block letters on the building spelled M-O-T-E-L. Brent, a pro-development leader, said, "The county government doesn't know how to run a commercial business; the county pays $40 an hour plus benefits where locally you could pay $20 an hour without benefits." Lauren, a longtime resident, explained, "Whoever was running it [motel] wasn't keeping it up. It needs cleaned and remodeled." Some interviewees feared that county officials intended to sell the building. The community center and senior program that operated

out of the defunct motel would have to find another location if the building was sold,

aggravating community leaders involved in the programs.

Elkton residents perceived county and state regulations regarding Hood Canal

to negatively affect their community. Recently the Washington State Department of

Health closed Elkton's recreational shellfishery due to high marine biotoxin levels

(Jefferson County Public Health 2012). Bryan, a local pastor, described constraints on

commercial and subsistence fishing: "Only 16 hours a year we can fish or shrimp,

which affects our economy. And those decisions are made well away from Elkton."

Elkton residents generally did not trust the USFS to make decisions that

benefit the community. Their decade-long attempts to work with the USFS to replace

the washed-out road were futile. When the access road initially washed out, Elkton

community members did not organize in support of rebuilding the road, as they

assumed it would be done quickly and without contention.  Brent, a pro-development

leader, described how the community's response was delayed:

> *At first, it was not a big deal because it would have easily been*
> *repaired probably right at the time with a couple hundred thousand*
> *dollars or less. The damage has escalated you know and it continues to*
> *escalate. At first it was no big deal. So everyone said, "When is it going*
> *to get repaired?" That got into the situation where the Forest Service*
> *waited too long. They admit that now.*

Many Elkton residents interviewed critiqued the USFS for moving too slow to repair

the road, giving time for regional environmental groups to appeal the decision.

However, they admitted that local USFS employees were not to blame. Instead,

regional or national USFS policies kept the road from being rebuilt and served as an

insurmountable roadblock. Bryan, the church pastor, explained, "They [local Forest

Service Ranger District] had the money, they had the willpower, they had the backing, but once you go above this local level, state or federal government shut 'em down and overruled."

Local capacity and funds to build the road were useless in the face of environmental regulations governing activity on the road. Wes, a construction contractor, related how his design to build the road was left on hold in order to study the environmental impacts of rebuilding the road:

> *I had a design drawn up for 'em and a bidded price. I can rebuild this road right now, move the equipment in today for $330,000. They said they needed to study it first. From what I've heard, they've spent a million studying it. When I finally got ahold of somebody again, they said, well the problem is, we've studied it so long and taken so long so that now the fish are spawning there and we can't put the road back in the way it was.*

USFS regulations prevented speedy repair of the road according to many Elkton residents interviewed.

Restoring access to the Park was the intent of the Forest Service according to the Olympic National Forest environmental impact statements (USDA Forest Service 2010a). Chris, the Olympic National Forest public relations officer, cited complex environmental concerns that stalled road repair. Endangered and threatened species such as steelhead trout (*Oncorhynchus mykiss*), spotted owls (*Strix occidentalis*), and marbled murrelets (*Brachyramphus marmoratus*) depend on the ecosystem surrounding the road and could be adversely affected by road repair. The preferred alternative identified in the final environmental impact statement cost approximately

$4.5 million; Chris was uncertain when sufficient funds would be secured to restore access.

Asked how they might approach a washed-out road in the future, after dealing with the disappointment of the unusable access road, several interviewees suggested that community members should have covertly rebuilt the road as soon as it washed out. The National Environmental Policy Act (NEPA) sets guidelines to evaluate the environmental impacts of a federal agency decision, and is one of the primary tools Elkton residents used to advocate to rebuild the road. Residents submitted comments with their opinions about alternatives being considered by the USFS. Engaging in the NEPA process to get the road rebuilt yielded nothing, so residents believed that they had to rely on rogue activities by community members. Trust eroded between community members and the USFS. Doug, a pro-development leader, suggested it should have been rebuilt "before the environmentalists catch wind and jump up and down, before you have to get an EIS [environmental impact statement] and do this and this and this…"

Apathy and anger were expressed by many Elkton residents regarding the washed-out road as many felt their actions had no impact on USFS decisions. Wes criticized the USFS for being ineffective and inefficient, "I don't have a lot of faith in the system, especially in the Forest Service, in terms of making a decision and getting something done." Many interviewees who had advocated for rebuilding the road sounded defeated as they discussed the situation. Bryan, the church pastor, described how all community energy devoted to rebuilding the road had dried up, "they [Elkton

community members] poured it all out and they're tired of it. It's ridiculous to most people that it [road repair] got stalled." Some Elkton residents asserted that the USFS had lost sight of its mission and no longer took human communities into account when making decisions. Local business owners Ryan and Melissa shared that viewpoint:

> *People, like the Forest Service and DNR [Department of Natural Resources], my understanding is their understanding is to protect the environment for the enjoyment of the citizens. So we should protect the environment, but we should still provide access. By allowing something like that [road in disrepair] to happen, we're preventing access. We're not doing everything we can to allow the maximum number of people to enjoy the resources.*

Elkton residents claimed that the USFS values endangered species like salmon and old growth trees over sustaining their community.

Some Elkton residents were careful to draw a distinction between local USFS employees and federal regulations that govern the agencies' activities. They made it clear that local USFS employees are at the mercy of federal statutes and laws and should not be blamed for management decisions that adversely affect Elkton. Charlie, an ex-county commissioner, claimed that the road would have been repaired if only people in the Elkton area and local USFS personnel were involved in the issue.

Elkton residents in support of the resort development were not as vocal as detractors. Interviewees on both sides of the issue said that regulatory decision makers heard from detractors more frequently. Doug, a pro-development leader, deplored how a vocal minority has the power to stop the resort development:

> *The way our government works, one person can write a letter to stop any kind of development or have 'em run through all the hoops. The developer spent millions, literally millions of dollars mitigating all the concerns that have been brought forward.*

Others interviewed surmised that hundreds of thousands, not millions of dollars, were likely lost by the developer due to the lawsuit. Ryan and Melissa, business owners and local representatives to the resort, stressed that community support was necessary to get the resort built; otherwise, county commissioners would not make the needed approvals in the permit process. Tribal support was important in the development conflict as they have proprietary rights to private land in the area, which is their historic fishing grounds. No interviewees in favor of the resort mentioned having close ties to regional Tribal governments. Melissa said, "Everything we do here is under close scrutiny by the tribes. There's some stuff going on there that makes it challenging." Melissa and Ryan were still waiting on a memorandum of understanding with several Tribes to sanction the resort's activities.

Rank 2: Residents reported few linkages with extra-local residents who influenced community affairs, especially regional environmental interests (10 interviewees).

According to Elkton residents, the interest groups opposed to the repair of the access road did not represent their viewpoints and lived in urban areas far from Elkton. Many residents interviewed expressed disgust at the ability of people from other places to determine whether the access road would be repaired. Wes, a construction contractor, declared his dismay at extra-local meddling:

> *I find it funny that other people in other places dictate what we do on our property, in our area, in our neighborhood. I'm not real thrilled that Port Townsend has a say about what happens down here because they have more votes up there. Those people don't live like us.*

Port Townsend is the county seat and has a population of 10,000, easily overwhelming the small number of votes from Elkton. Interviewees described the town of Port Townsend as more liberal and environmentally oriented than Elkton, full of "hippies," "birkenstocks," and "tree-huggers."

Elkton residents expressed discontent that environmental organizations from other places held undue power over public land management decisions in their community. Kim, a community leader and retiree, highlighted how much disposable income environmental organizations have to keep the road closed, "Environmental groups have spent tens or hundreds of thousands of dollars preventing that [road repair] from moving forward." Lauren, a longtime resident, described her sense of why the road had not been rebuilt:

> *Every time the road gets started, there's a group of environmentalists not from here, maybe some from Port Townsend or Sierra Club, that go to court against them [USFS] or pull out all the pegs where the road was gonna go.*

Residents felt frustrated that environmental groups did not trust their capacity to be good land stewards. Charlie, an ex-county commissioner, expounded on local people's commitment to ecological preservation and sustainability:

> *Those people, they had deep roots. They have great love of that land. They're stewards of the land. They're not rapers of the land. They're not people that are going to come in and mess it up and leave. They live there. They produce their income. Some of them are in forestry. They derive their livelihood, and they derive, to some extent, their very image. That's them. Those are the people that are going to take care of it and give a damn. There's a lot of people from…and I understand their general feelings, but they have an inordinate amount of power because of the incomes and political power where they have a lot of influence. They're from Seattle and Portland, Oregon. They've never even been there. They influence the political process against us.*

Residents interviewed had no relationships with the environmental groups apart from Sue of *Rural Elkton* who was in favor of road closure.

Although residents attempted to form ties with political representatives and regulatory agencies, a broad-based collaboration between Elkton economic interests and environmental groups never materialized. Brent, a pro-development leader, said:

> *That really galls on us…somebody telling us how to live. Look what they've done to the Seattle or Portland area in terms of pollution and unplanned development. We're not dummies over here, that's why we live here – to get away from that, to move into a community that doesn't have the problems that the big cities have.*

A clash in livelihood choices between urban environmentalists and rural people surfaced in numerous interviews. Elkton residents argued that people from urban areas didn't understand the economic reality of living in a rural place and the few assets available apart from natural capital. Brenda, a volunteer at the Elkton community center, characterized the community as relatively poor, "Here, people live off the government, unemployment, and welfare. It's really a community of poverty; you're either impoverished or wealthy, very little middle class." Elkton interviewees generally intimated that eliminating access to a popular tourist attraction could only further harm the paucity of employment opportunities in the area.

Regional environmental groups opposed rebuilding the road. They pressured the Forest Service to consider converting the road into a non-motorized trail and appealed environmental assessments that favored motorized access (Olympic Forest Coalition 2006). Interviews with two regional environmental group leaders illustrated their narrow ecological aims and disregard for rural community economies. The

primary group they represented focused on restoring critical wildlife habitat and decommissioning roads.

Regional environmental leaders Butch and Candace described their land ethos as "inaction is often best." They mentioned that the group they represented was well-connected with state and national environmental organizations that provide funding and support when needed. Butch presented a conflicting narrative regarding collaboration with multiple stakeholders. First, he stated, "Everyone loses. Collaboration is awful.  Wilderness is lost." A few minutes later, he explained, "Sometimes there's no choice, especially when there's only gridlock. You must join the collaboration." He revealed his belief that environmentalists should only engage in collaboration when they have something to gain. If litigation and other means can achieve environmentalists' goals, there is no point to form relationships and negotiate with people of opposing viewpoints. Candace had some empathy for struggling rural communities, but she did not offer viable solutions to meet their challenges. An exchange between her and Butch provides a glimpse of compassion on the part of Candace, but general indifference by Butch.

> *Butch: There's hardly any more old growth.*

> *Candace: It's a challenging and difficult thing. I can understand why logging families are suddenly having trouble making it.*

> *Butch: All of a sudden means 30 years.*

> *Candace: Well the reason we're pushing the Wild Olympic Campaign is because if we don't protect lands now, they'll be lost forever.*

Although Candace was aware of the economic hardship that traditional residents face throughout the Olympic Peninsula, she retained her focus on wilderness protection. If Elkton residents were to form ties with environmental group organizations, it appeared as though they must have something to offer environmentalists in return. As long as environmental appellants could circumvent local community interests, they had little incentive to engage communities like Elkton as they pursued their conservation objectives.

#### 4.2.1.4 Strong Linking Social Capital

Rank 1: *Rural Elkton* depended on regional connections to environmental organizations and government agencies to accomplish goals (6 interviewees).

Sue, a *Rural Elkton* leader, reported having good relationships with several regional environmental groups and relying on them for encouragement and support. One regional environmental group leader in particular, Candace, served as a mentor for Sue and gave her advice on how to get more signatures for petitions and enlist the support of other environmental organizations. Sue credited Candace for giving members of *Rural Elkton* the confidence early on to fight the resort. By organizing early and receiving guidance from other activists, *Rural Elkton* had a jumpstart on the development.

Much of the pro-development leadership claimed that *Rural Elkton* represented very few Elkton residents, and relied mostly on support from outside the community. Melissa, a business owner, stated that *Rural Elkton* was composed of "basically one lady," referring to Sue. Bernadette, a *Rural Elkton* leader, dispelled that view by

saying, "The resort is a 50-50 split in the community, even though the [pro-development leadership] only refer to us as that minority." Ryan, a business owner, claimed that *Rural Elkton's* legal counsel was from Seattle or even another state. Mary, a retiree, said that their funding came from outside the area. Whether or not *Rural Elkton* represented a sizeable proportion of Elkton's population, leaders of the group did appear to have strong regional connections.

Apart from developing relationships with regional environmental organizations, leaders of *Rural Elkton* stayed in touch with numerous governmental agencies, Tribal governments, and media outlets. They kept abreast of important permit dates and made comments or appeal decisions as appropriate. They stood vigil over the regulatory process to ensure all rules were followed. Sue of *Rural Elkton* explained how "they [the County Department of Community Development] have no capacity to have eyes and ears down here." She felt it was necessary for *Rural Elkton* to serve what might otherwise be a governmental role. For example, the county commissioners voted in favor of the resort development, as long as the developers met certain conditions. *Rural Elkton* members monitored whether these conditions were met and communicated with appropriate decision makers when needed. Melissa, an Elkton business owner, recounted how *Rural Elkton* was so plugged in with decision makers: "State legislators were only hearing negative things [about the resort] and thought the community was totally against it."

4.2.1.5 Visual Display of Social Capital

Figure 7 is a visual display of bridging and linking social capital in Elkton. Within the community, the pro-development leadership operated independently of longtime business establishment and civic leaders. Longtime business and community leaders had historic ties with longtime residents. *Rural Elkton* had a medium level of social capital with longtime community leaders and residents. Those relationships had only recently been formed. They shared a common cause around the resort development, but did not necessarily know one another intimately or spend time together otherwise. Of all community leader groups, *Rural Elkton* was the most successful in developing linking social capital with extra-local decision makers and other interest groups.

Figure 7. Visual Display of Social Capital in Elkton

4.2.1.6 Adaptive Capacity

The framework of adaptive capacity is used to understand how capital assets transform into a particular community action or outcome in response to a change event. These changes can be considered an opportunity or a disturbance depending on the nature of the change event and to whom the benefits and costs of the change accrue. To understand the impact of social capital on adaptive capacity, interview data were coded for themes of *capital maintenance*, *capital accumulation*, or *capital depletion*, three possible responses to a change event. These responses are the results of a particular community action or outcome described in the final stage of the adaptive capacity cycle in Donoghue and Sturtevant (2007).

Table 17 details the community's response to each catalyst or change event in Elkton. I thematically coded for indications of maintenance of or adaptation in community capitals (i.e., physical, financial, natural, social, human, political, and cultural capital). I differentiate the concept of adaptation by the manner in which the community changes. For example, if an interviewee noted a decline in social cohesion in response to a given catalyst, I consider this evidence of social capital depletion. Alternatively, if the interviewee cited a new community center, I consider this evidence of physical capital accumulation. A majority of the interviewees cited several outcomes, such as both capital accumulation and depletion. The theme was recorded regardless of the interviewee's personal feelings about the theme. For example, if an interviewee sarcastically mentioned that a slug had been protected, revealing that he

could not care less about the slug, the theme of natural capital accumulation was noted.

Table 17: Elkton's Response to a Catalyst

| Event | Total # Interviews | # Interviews with Capital Maintenance Theme | # Interviews with Capital Accumulation Theme | # Interviews with Capital Depletion Theme | Community Response |
|---|---|---|---|---|---|
| Resort Development | 18 | 4 | 13 | 11 | Capital Accumulation & Depletion |
| Washed-out Road | 17 | 1 | 3 | 13 | Capital Depletion |

Resort Development: Capital Accumulation & Depletion

A mix of capital accumulation and depletion characterized the resort development event. Out of 18 interviewees, 13 referred to capital accumulation, while 11 pointed to capital depletion. Four interviewees spoke of capital maintenance themes.  Interviewees who mentioned capital accumulation saw the resort as offering a mix of new "super green" physical capital in the form of the resort itself and financial capital from new jobs and ancillary businesses. Wes, a construction contractor, bought a new excavator in the hopes of completing the underground utility work for the resort. Many interviewees anticipated additional businesses such as a grocery store, pharmacy, or medical care that would allow them to stay in Elkton throughout their old age. Interviewees concerned about capital depletion referenced natural capital concerns over water quality, pollution, and traffic, and a significant loss of cultural capital if the resort is developed. They countered that building a 1000-unit

condominium resort would result in an unsustainable use of scarce natural resources,

potentially depleting the water table and degrading the sole byway (Highway 101)

through Elkton with increased traffic. Many interviewees worried that the resort would

degrade their town's homey atmosphere and rural lifestyle. They questioned whether

jobs from the resort would go to locals or if the resort would hire people from other

places. Both the nonlocal hires and condominium owners had the potential to alter the

cultural landscape in Elkton. While some interviewees adamantly cited evidence of

solely capital accumulation or solely capital depletion, others described conflicting

feelings about the resort's impact. Wes explained his ambivalence about the resort:

> *A lot of people would like to see a little bit of work around here, some money to help the community. I would too. But then a lot of us see it as the end of our little community, which I can understand that. I'm even kind of on the fence about it. I figure once they put the resort in, I'd probably work there until I didn't want to work anymore or until it was done, and just sell out and leave town, find another small town.*

Although he would take advantage of the employment opportunities that the resort

affords, he planned to move from Elkton once he finished working. The town would

no longer be congruent with his desires for a close-knit, small community.

Some forms of social capital appeared to be static, while other forms were

increasing in the resort development case. The social system of Elkton adapted in that

community members who generally had different social norms and networks

coalesced together to fight for a common cause, the defeat of the resort; yet, their

tenuous relationships may not subsist for long. Lauren, a longtime resident of Elkton

opposed to the resort, made it clear she did not have direct ties with the group

organized against the resort. She said, "There is a group against it [the resort].  It's

nobody I know. I've seen their name a time or two." Hence, even though a diverse

group of people opposed the resort, they did not necessarily know one another. *Rural*

*Elkton*, the group formally opposed to the resort, primarily communicated with its

membership via email. Sue, a leader of the group, explained her lack of familiarity

with group members:

> *Whenever I send something out [via email], some people [Rural Elkton*
> *group members] will just thank me for doing something. It's funny*
> *because I've never met some of these people, I have no clue who they*
> *are…I could see them in the post office and have no clue.*

Although *Rural Elkton's* membership was only loosely connected, group leaders had

formed relationships with extra-local decision makers in their attempt to halt the

resort's development. Hence, linking social capital increased for the group. An aspect

of social capital maintenance was the continued division between pro-development

leaders and residents who resented their dominance in community affairs. Bernadette,

a business owner, explained how these leaders began to divide Elkton over

development issues:

> *You see that huge influx of retirees that came in with a fair amount of*
> *money. They wanted to change this place like you've never seen before*
> *in your whole life. They weren't quite ready for retirement. That's*
> *where you saw this huge group of people, I say huge, there's probably*
> *20-25 people, but in a community like this, that's fairly substantial.*
> *And because they're retired, they have lots of time. Lots of time and lots*
> *of energy and the money. They don't have to work, but the rest of us*
> *have to work.*

While some residents viewed these highly educated retirees as bringing needed skills

and expertise to Elkton, others saw them as a cause for declining unity.

Washed-out Road: Capital Depletion

The washed-out road event was generally characterized by capital depletion. Out of 17 interviewees, 13 mentioned themes of capital depletion, whereas three interviewees described capital accumulation and one interviewee described capital maintenance. Interviewees lamented a loss of natural, cultural, and financial capital. Elkton community members cherished the hiking and camping opportunities provided by the public access road. Elkton no longer attracted the stream of tourists that once frequented the community. One interviewee pointed to unintended consequences for wildlife. Road disrepair caused increased flooding, placing salmon and oyster spawning beds in jeopardy. The road's disrepair did not diminish the community's sense of ownership over the road and the assets for which it provided access. However, it caused community members to question their ability to accomplish shared goals, especially as they relate to public land management. Doug, a pro-development leader, told how the community had learned an important lesson:

> *Hindsight tells us, a lot of us talked about it, when the road washed out,*
> *what we should have done is gotten guys like Wes and others and guys*
> *like myself and taken all our equipment up there and fixed it. We could*
> *have done it in a couple weeks and it would have been done.*

Community members lost faith in the legal channels available for road repair. Only by rogue actions could Elkton reclaim its rightful heritage. Whether Elktonians would act on this lesson learned in the future is questionable. The three interviewees that described capital accumulation included Chris, an Olympic National Forest employee and Butch and Candace, two regional environmental group leaders, no one who lived directly in Elkton. They argued that by not re-building the road, critical habitat for

steelhead, spotted owls, and murrelets could be improved and maintained, leading to

an increase in natural capital.

*4.2.2 Case Study 2: Liberty*

Liberty lies in the northeastern corner of Washington State, to the west of

Colville National Forest and to the east of Okanagon-Wenatchee National Forest.

Ferry County, where Liberty is located, is bordered by Canada to the north. Only 18%

of the land base of Ferry County is privately owned (Schlosser et al. 2006).

Approximately half of the land base is managed by the Colville Indian Reservation

and the other third is managed primarily by the USFS. Liberty is the most remote of

the three case study communities; it takes about 2.5 hours to drive to or from the

nearest metropolitan area of Spokane.

Liberty was primarily settled by gold miners in the late 1800s. Liberty has

experienced many boom and bust mining cycles. The *Spokesman-Review* newspaper

in 1929 explained, "When its mines boomed, [Liberty] boomed; when the mining

interests waned, the town slumped and badly." Employment in mining continues to be

a large contributor to the economy (17.9% of total private employment in Ferry

County is in mining) (US Census 2010). Numerous interviewees emphasized the

importance of gold mining to support Liberty area hotels, restaurants, and retail stores.

The mine company spends $6.8 million annually on local goods and services,

including contractors and utilities (Kinross 2012). Another $1.2 million annually in

property taxes helps to pay for schools, roads, and hospitals.  Mine operations

temporarily ceased in 2005, causing mine workers to leave the area for work, rely on public assistance, or find new forms of employment in Liberty. Mine operations resumed in 2008. The current gold mine was expected to be open through 2017. Although the company was seeking permits for exploration, the future of a viable mining economy was uncertain given environmental regulations and whether gold would be found.

The timber industry was traditionally a mainstay for Ferry County. However, the last remaining lumber mill in Liberty closed in 2003. After the closure was announced, 200 residents rallied to keep the mill open, blaming USFS logging restrictions for the loss of jobs (Craig 2002). Interviewees explained that ancillary businesses lost revenue and many residents in the timber industry moved away to find work or relied upon public assistance to make ends meet. The only remaining wood products manufacturing facilities in the County lie on the Colville Reservation and on the eastern edge of Ferry County, which requires an hour drive over a high mountain pass, considered dangerous by residents in winter months.

Recreation and tourism have increased in Ferry County and comprised 11.3% of total private employment in 2010 (US Census 2010). The surrounding public forestlands offer abundant recreation opportunities for hiking, camping, fishing, hunting, four-wheeling, horseback riding, and other pursuits. Construction had begun on a 40-mile bicycle path, which begins in Liberty and will connect with a Canadian bicycle route. The city government and retail businesses of Liberty agreed to adopt a Western Victorian theme in the 1980s to encourage tourism. Western script on

storefronts, quaint taverns, a compact downtown core, and clean streets contrasted with nearby communities whose residents have not made similar investments.

Liberty has recently experienced two events, resumption of mining operations and a proposed wilderness designation, that reveal how social capital impacts adaptive capacity in the community. Resumption of mining activity after several years of inactivity sparked debate and controversy about the impacts of mining to the environment and economy of Liberty. Some public land interest groups were promoting a new wilderness area on Colville National Forest, potentially changing permitted uses on that section of the Forest.

The interview data were coded for statements related to bonding, bridging, and linking social capital, and then further coded for evidence of weak, medium, and strong social capital for each type. Some statements coded pertained specifically to mining or wilderness, while others pertained to Liberty more generally. A total of 23 people were interviewed regarding Liberty. Table 18 displays the number of interviewees that indicated weak, medium, or strong bonding, bridging, and linking social capital in Liberty and for the two events. Strong bonding social capital was described by about three-quarters of the interviewees. The interview data revealed evidence of weak and strong bridging social capital, particularly for the mining operations event. In that event, about half (13) of the interviewees indicated weak bridging social capital and about half (11) indicated strong bridging social capital. Interview data revealed a mix of weak and strong linking social capital. Although weak linking social capital was indicated by about half (9) of the interviewees for the

wilderness designation event, both weak and strong linking social capital were noted for the mining operations event. The bifurcation of responses for the mining event will be shown to derive from some difference of opinion among community members, as well as a change over time in interviewees' perceptions of bridging and linking social capital for this event.

Table 18. Number of Interviewees Who Indicated Weak, Medium, or Strong Bonding, Bridging, and Linking Social Capital in Liberty

|  |  | Liberty | Mining Operations | Wilderness Designation | Total |
|---|---|---|---|---|---|
| Bonding Social Capital | Weak | 0 | 0 | 0 | 0 |
|  | Medium | 0 | 0 | 0 | 0 |
|  | Strong | 6 | 10 | 8 | 17 |
| Bridging Social Capital | Weak | 7 | 13 | 7 | 15 |
|  | Medium | 5 | 3 | 2 | 7 |
|  | Strong | 4 | 11 | 4 | 14 |
| Linking Social Capital | Weak | 1 | 8 | 9 | 16 |
|  | Medium | 0 | 4 | 3 | 7 |
|  | Strong | 2 | 12 | 4 | 13 |

Next, interviewees' statements regarding bonding, bridging, and linking social capital were explored for salient themes to understand the manifestation of the three types of social capital. A count of cross-cutting themes was taken to discover the most frequently cited explanations for each type of social capital formation. Table 19 ranks the themes in order of the number of interviewees who described a theme.

Table 19. Social Capital Themes in Liberty

| Rank | 1 | 2 | 3 |
|---|---|---|---|
| *Strong Bonding Social Capital* | Traditional residents united by livelihoods dependent on natural resources (15 interviewees) | Residents afraid to go against traditional community norms (5 interviewees) | |
| *Weak Bridging Social Capital* | Lack of trust and understanding between traditional residents and newcomers (10 interviewees) | Diverse backgrounds and values of residents divided community (8 interviewees) | Distinct sets of interests with predetermined desired outcomes (8 interviewees) |
| *Strong Bridging Social Capital* | New communication strategies increased trust and understanding among traditional residents and newcomers (9 interviewees) | Collaboration successful among more centrist individuals and groups (6 interviewees) | |
| *Weak Linking Social Capital* | Lack of trust and understanding between Liberty residents and US Forest Service (9 interviewees) | Gold company initially not responsive to residents' concerns (6 interviewees) | |
| *Strong Linking Social Capital* | Collaboration among diverse stakeholders and persistent activism improved relationships with management of gold company (9 interviewees) | Connections with regional information and support networks helped residents concerned about mining operations achieve their aims (5 interviewees) | Environmentalists found common ground with US Forest Service and timber industry, enabling a productive working relationship (4 interviewees) |

4.2.2.1 Strong Bonding Social Capital

Rank 1: Traditional residents were united by livelihoods based on natural resource use and extraction such as logging, mining, ranching, and farming (15 interviewees).

Traditional residents frequently referred to the importance of their cultural heritage and sustaining farming and forestry jobs to retain young people in the area. Changes in USFS policy that promoted management for ecosystem integrity over harvest and other uses produced consternation among traditional residents. Scott, a county commissioner, discussed why he chose public service:

> *I wanted to make sure that the next generation of folks, the younger crew, wasn't all moving from the area. That we are able to retain some of the good folks and then also that they would have the same freedoms we had.*

These "good folks" likely included foresters, miners, ranchers, and farmers, who ought to have continued access to public lands for economic enterprise.

The Forest Plan Revision is a congressionally mandated action that each national forest is expected to complete every 15 years. The Forest Plan Revision requires a review of areas that meet wilderness criteria and recommendation for wilderness if the criteria are met. Colville National Forest was in the midst of the Forest Plan Revision process. John, a USFS District Ranger in Liberty, explained that "my job is to know what is causing people angst and to address it. With this one, it's the wilderness issue." Wilderness is defined by the Wilderness Act of 1964:

> *A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and community of life are untrammeled by man, where man himself is a visitor who does not remain.*

Numerous distinct community organizations actively opposed wilderness designation and, instead, supported "access" to Colville National Forest[4]. They represented ranchers, motorized vehicle users, backcountry horsemen, mountain bikers, and woodcutters. These groups appeared united in their world view and customs and commonly presented similar arguments. They viewed public lands as a needed resource to support their livelihoods and recreation outlets, whether it be ranching, logging, mining, snowmobiling, or horseback riding. Claire, an aide to the U.S. Congresswoman that represents the region, emphasized the strongly linked identities among access proponents: "Cattlemen are ORV [off-road vehicle users]. Cattlemen have fingers in timber, recreation."

Bonding social capital among traditional residents was strengthened by their shared history of the loss of traditional employment and recreation opportunities. The majority of interviewees expressed concern that lumber mills and manufacturing centers had closed over the years, leading to an increase in unemployment and government transfer payments. The only remaining sizeable private industry in Liberty was gold mining. The railway was removed several years ago and companies were unlikely to relocate there due to its remote location between two steep mountain passes. In 2010, Ferry County had the highest level of poverty for any county in the state (US Census 2010). Aaron, an environmental organizer, explained why traditional residents rejected environmental regulations: "How can you be supportive of something that's going to get rid of jobs?"

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[4] This loose anti-wilderness coalition is referred to as access proponents.

Many traditional residents had families with multigenerational ties to Liberty and saw themselves as critical links to the past, although it was questionable whether they would be instrumental in guiding Liberty's future. Hunter, a third-generation rancher, proudly referred to himself as a "lifer," in that he, as well as his parents and grandparents, had lived in Liberty his entire life. In separate interviews, Adam and Rob, who were concerned about the environmental impacts of mining, described how their efforts were often suppressed by the "good old boys," implying that power rested with longtime residents. Yet, several lifers noted demographic shifts that concerned them. Rose, a cosmetologist and longtime resident, lamented, "We're losing old timers fast." As natural resource dependent jobs decline and industries shift, traditional residents found themselves grappling with an uncertain future. Hunter made it clear that he does not want his children to follow his career path:

> *Ranchers are all going out of business, or they're retiring and the kids aren't taking over. They've [kids] seen the headaches we've gone through to keep the ranch viable. You wouldn't wish that on your kid if they have a chance to work somewhere else.*

Rank 2: Some residents were afraid to go against traditional community norms, preventing open discussion about community issues (5 interviewees)

A citizen action group concerned about the negative impacts of mining operations found it difficult to attract and retain members. Some group members left due to concerns over social and economic isolation. Business owners could not risk alienating their customers by opposing the mine. One couple that helped found the citizen's action group stated that recruiting people to their cause had always been a trying task. Beatrice, a member of that couple and a border patrol employee, depicted

people's reticence, "Some would come for a while and then they'd say, 'Oh golly. I might lose a friend or something.' So they'd back out." A letter sent to haul route residents by the citizen action group did not contain names of any of their members. Jenny, a leader of the group, a postal worker, said, "People are afraid to speak out. People are afraid to be identified as wanting maybe something different than the norm or afraid of being shunned." Putting a neighbor's job at risk was not an outcome some of the group members could stomach, especially as it would likely affect their reputation in Liberty. People that remained committed to raising their concerns over the mine reported losing friendships over the issue.

Some members of the citizen action group later joined a community advisory board (CAB) concerned about the environmental, economic, and social dimensions of mining. Board members included a diverse mix of residents. Strong bonding social capital among traditional residents prevented some CAB members from voicing disagreement with another. Sally, the group's facilitator described the board's social and communication norms:

> *They [CAB members] also have, I would call it a certain amount of social integrity. By that I mean they know each other. Some families have been there for many generations and they expect to be there for many generations more. They run into each other on a daily basis. That really affects the dynamics of communications. I think that was to the benefit of that group. Even though someone might say something to me on the side about what they really think, when they're in the group, they're very respectful of each other and in many ways, they're hesitant to say something because they don't want it to come back later and they want to make sure that they really understand the situation before they speak.*

Hesitancy to air concerns was an obstacle the facilitator tried to overcome by teaching group members how to "voice a disagreement without disagreeing." For example, she

would instruct members to go around in a circle and each make an "I" statement such as "I believe the best outcome would be…" She would then make note of each person's preferred outcome and the group would deliberate about how those preferences could be achieved.

4.2.2.2 Weak Bridging Social Capital

Rank 1: A lack of trust and understanding frequently surfaced between traditional residents and newcomers (10 interviewees)

Adam, a retired businessman, described his initial encounter with a neighbor when he moved to Liberty: "A rancher came over to our property when we were first building and just stared. He wanted to know if we were building a mansion. Since it was a real simple ranch, he was okay with that." Opulent displays of wealth were not common in the struggling community, nor welcome. Interviewees frequently critiqued newcomers for not following common behavioral norms and possessing conflicting values from longtime residents.

A recent dispute between new residents and a neighbor illustrated how a disagreement became a legal matter absent familiar relationships and respectful communication. Newcomers sued a neighbor for excessive noise and light pollution. The gold company had a contract with this neighbor to operate a gravel pit for their operations. These new residents were characterized by several interviewees as relatively isolated from community affairs and at odds with the community. Jenny, a postal worker, said:

*They've [newcomers] had some tough feelings with some old time ranching*

*families up there so I think they tend to stick to themselves. They moved in from the coast like we did. People who move in from the coast are usually…people who live here don't like them. They see them as traitors.*

Several CAB members suggested the newcomers should have addressed the gravel pit owners using the board's newly developed communication tools. Instead, the new residents chose a legal remedy to pursue first.

Rank 2: Perhaps more than newcomer status, residents' diverse backgrounds and conflicting values divided the community (8 interviewees)

Both the mining and wilderness events reflected a lack of social cohesion due to residents' varied pasts and identities. Eddie, a CAB member and environmental engineer for the gold company, described the backgrounds of people in the Liberty area:

*The settlers, the old-timers, the industry resource-based, ranching, logging, mining. From the 1960s on, we ended up with a large population influx of alternate lifestyle people, the California in-plants, hippies, I think you get the picture. There's differing opinions, different points of view, not irreconcilable, but always, maybe just a little bit of tension…there's probably a third faction or entity. That would be newcomers that are retirement, that have come from wealth. A lot of times they're a bigger problem than the hippies because, "I come from Seattle. We had it this way. I want it this way here."*

Apart from traditional residents and newcomers who recently retired, the back-to-the-landers from the 1960s and 1970s were another group with their own vision and values for the community. For employment, they tended to engage in small-scale farming and husbandry, as well as cottage industries like soap making.

Fundamental differences over livelihood choices drove the wedge between citizens concerned about the mine's operations and those that actively promoted the company. Adam, a founder of the original citizen's action group, a retired financial

accountant, likened Liberty to a drowning person that viewed the gold mine as a life raft. Many interviewees credited the gold mine with reviving the economy. A lack of mutual respect often came across when an interviewee discussed someone of an opposing viewpoint. Seth, a local business owner, characterized citizens concerned about mining operations as "whining and crying." He argued that residents opposed to mining had financial support in the form of retirement and investments and disrespected the average Liberty person by opposing the gold company. Rob, a founder of the citizen's action group who later left the area because of disputes with the mine, had similarly disparaging remarks about residents benefitting from the mine. He referred to a neighbor who rented a quarry to the gold company as "just [a] typical Liberty person looking for a handout."

The newly formed CAB initially made little progress without mutual understanding. Tension was rife between board members with opposing viewpoints. Interviewees who participated in the initial formation of the CAB described meetings as unorganized, volatile, and argumentative.  Contention prevented the CAB from accomplishing aims for either side.

Aaron, an environmental organizer, explained how differences in identity could be elevated to leverage power:

> *The politics of division are here. They find these simple little statements that create fear, confusion, and then you rally your troops around it. We need to learn how to live together through these travails in our lives, support each other, help out, not create this bully system and isolation.*

The ability of access proponents and wilderness advocates to find common ground was severely hampered by the lack of trust between access proponents and

environmental groups. Scott, a county commissioner, attributed the area's economic woes to "environmental fanaticism." He characterized a leading local environmental group as "cancerous" and compared environmentalists to a "religious cult" that has "torn apart this community."

The perceived educational backgrounds of access proponents and wilderness advocates differed somewhat, which likely further crippled the groups' ability to accomplish shared goals. A commonly expressed sentiment among traditional residents was that wilderness advocates believed access proponents to be incompetent natural resource managers. Scott characterized wilderness as:

> *only available for people who feel they are intellectually superior to the rest of us [access proponents]. I think some of the folks [previously described as "well-meaning liberal friends"] feel that we don't have the ability or the dignity or intelligence to determine what's best for us.*

Access proponents remarked that the general public unfairly judged them as destroyers of the environment. Snide remarks by newcomers to the area validated the access proponents' fear of being perceived as backwards or inept. Rob, a retired businessman and newcomer to the area, critiqued residents: "They're ignorant, ignorant of big business. Most people in Liberty aren't real bright -- It's a mining community."

Rank 3: Distinct sets of interests with predetermined desired outcomes thwarted attempts at collaboration (8 interviewees)

In both events of resumption of mining operations and the proposed wilderness designation, Liberty residents failed to find common ground when focused on outcomes instead of process. The consensus process used by the CAB eliminated

several of the more passionate members of the original citizen's action group, as they

felt they could not achieve their aims in such a group. Dissatisfied members of the

original citizen's action group ceased attending meetings. Several members continued

to attempt to influence the mine on their own. One couple moved off the haul route

and away from Liberty, as they couldn't imagine the mine alleviating their concerns.

Mike, the leader of the regional environmental group *Clean Water Now,* questioned

why any of the original members continued to be active in a CAB whose mission, in

his view, was to facilitate the rapid permitting of the mine.  He contended that "a well-

facilitated group has a way of progressing an agenda.  That's why we [*Clean Water

Now*] didn't participate."

While consensus was achieved by more moderate CAB members, what might

be considered the more impassioned voices among concerned citizens were silenced.

Their refusal to participate in the CAB kept them from playing a role in forming the

Good Neighbor Agreement (GNA), a consensus document that guides how the mining

company operates with regard to the community. The GNA governs appropriate

operation hours, communication strategies, and the use of back-up alarms and bright

lights. Mike of *Clean Water Now* criticized the permitted types of communication at

the CAB meetings:

> *When someone had concerns that they raised, they were called emotional and
> tabled, and not given the opportunity to express themselves.  But people who
> wanted to praise the company could talk and talk and talk.*

Bridget, a member of the community advisory board, a county economic development director at the time, recalled that a particularly contentious haul route resident necessitated a facilitator.  She described this disgruntled man's attitude:

> *He didn't want the mine period.  He moved to the area and wanted peace and quiet, to listen to the birds.  It would disrupt that.  He wanted to stop the whole thing, but what the group wanted to do overall was to see how they could successfully get the mine to start up and employ people with having as little negative impact to the environment as possible.  That was the goal of the group.*

He stopped attending meetings soon after the facilitator joined the group.

Prior to the formation of a wilderness advocates' collaboration, local environmental groups pursued a relentless, independent agenda according to numerous interviewees. Aaron, an environmental organizer, said their group started filing appeals and litigation against the USFS in 1992: "we started appealing, one after another, we just beat 'em [USFS], again and again and again, never lost a single challenge to a roadless area sale." This history of ceaseless appeals continued to color recent attempts at collaboration between environmentalists and traditional residents.

Local and regional environmental groups reported spending considerable time and resources to collaborate with ranchers, but little headway had been made towards consensus on the wilderness issue. Key leaders from both sides of the issue had eaten meals together and been able to talk civilly. Environmental groups offered to sign a memorandum of understanding with the ranchers, as they had done with the timber industry, offering them staff time to help resolve problems with Colville National Forest, but no one would sign. "When you step out of line, you get shot.  And nobody's going to do it," reported Aaron, the environmental organizer. The

environmental groups tried to ameliorate mountain bikers by developing new trails

outside of the proposed wilderness area. Aaron continued, "We're not about shutting

people out of the woods. We want to provide equal access, but the cowboys, they play

hardball. They think they own the land." Although wilderness advocates made

overtures to the access community, most access proponents were wary of making

concessions.

Several access proponents claimed that environmental organizations pursued

wilderness designation in order to continue receiving money from wealthy donors.

Hunter, a rancher, explained their one-track mentality, "They're gonna try to do what

they can to get it [wilderness] in and that's all there is to it." Although some access

proponents considered compromising with wilderness proponents, the majority of

access leaders interviewed dismissed this strategy. Cliff, an ex-logger, explained the

slippery slope of wilderness designation, "As soon as they get that 5000 [acres] locked

up in wilderness, they're coming after yours." Most access proponents had little

confidence that making a good-faith effort would result in any long-term gains.


4.2.2.3 Strong Bridging Social Capital

Rank 1: New communication strategies increased trust and understanding among
traditional residents and newcomers (9 interviewees).

According to Bridget, a CAB member and county economic development

director at the time, mine management officials decided the group needed to become

more constructive. She recalled:

*Rather than a whole bunch of people getting together complaining, arguing, and fighting, it needed to be something that the gold company could take a look at and say okay, obviously this is an issue that we really need to address.*

The gold mine hired a third-party facilitator, who was considered neutral by all CAB members interviewed. The facilitator used consensus to make decisions; hence, everyone had to agree before an action was taken.

Sally, the CAB facilitator, used a variety of techniques to improve communication and help the board find common ground. Rules were instated such as "everybody can talk, everybody should listen" and group members were requested to discontinue writing heated letters to the editor. According to Sally, "quality of life is a real hot button term because we all want high quality of life.  For someone to say, you're ruining my quality of life…what's quality for one person is different for another." To prevent harsh disagreement about the meaning of quality of life, group members were requested to ask probing questions about a misunderstanding instead of simply assuming another person is wrong. Group members reported being instructed to sit next to people they did not know and to sit closest to those with whom they tended to disagree. Sally reported that it's harder to scream at someone sitting next to you than someone across the room. Closer physical proximity led to calmer demeanors. Rose, a cosmetologist, intimated that group members were initially uncomfortable about the "touchy feelyness" of the meetings. Bridget recounted a conversation she had with the facilitator, "'look, people aren't responding well to this level of facilitation.' She [Sally] did back it off a little bit. Eventually she got a pretty good feel for the community and what works."

When probed about how the CAB had changed over time, all members noted a significant shift towards compromise and consensus. Eddie, a member of the group and an environmental engineer for the mine company, suggested that crafting the GNA improved group relations:

> *Everyone got their piece. Someone who was concerned about the quarry got to put what they want or don't want to happen in the quarry there. Somebody that's worried about traffic on the roads got to put that in somehow. It was a guideline, a framework for the whole organization. We were just a group of people without the GNA.*

Writing the GNA took two years of monthly meetings. Duncan, a CAB member, an accountant, credited forming the GNA for developing relationships among group members who were not in similar peer groups and who had different priorities, "We got to know each other. We're good friends now. We worked our way through our disagreements." The resulting GNA was a genuine compromise between members of the CAB concerned about the mine's adverse effects and its ability to stimulate the local economy according to all board members interviewed.

Relationships with traditional residents improved for members of the citizen's action group that maintained involvement in the CAB. Adam, a self-described cantankerous group member, left the CAB, but his wife Jenny continued to participate, keeping him in the loop of group relations. He recalled a friendly exchange, in which he was innocently teased by a rancher's mother:

> *His mom will kid me every now and then. We're down at Les Schwab [tire store]. She was saying something and I told her, "I have a nail in my tire." And she said, "you haven't pissed anybody off, have you?"*

Scott, a county commissioner, commended the board, "It's a good mechanism for folks that are at polar opposite ends of the political spectrum."

Rank 2: Collaboration was successful among more centrist individuals and groups (6 interviewees).

According to Rose, a CAB member and cosmetologist, "A lot of people left after that [facilitation began]. But it was the contentious ones, the ones who weren't listening." An exchange between a couple reveals the personality traits needed to participate on the CAB:

> Jenny: *The only ones left in CAB are the ones that get along.*
>
> Adam: *Jenny doesn't like to offend anyone.*
>
> Jenny: *Adam recognized that he couldn't be in the CAB group and that he was better off influencing the group with his research through me and another original [citizen action group] member.*
>
> Adam: *I needed someone more diplomatic in my place.*

The couple argued that Jenny's more pleasant demeanor and willingness to compromise allowed her to stay with the CAB. Mike, a regional environmental organizer, who refused to join the board, recognized that some citizen action group members viewed the CAB as a vehicle to get the company to listen to them. The CAB consisted of community members who could understand and appreciate the social, economic, and environmental dimensions of mining operations. A focus on just one dimension precluded involvement with the CAB.

Residents involved with the wilderness advocates' collaboration found middle ground that benefited all participants. Collaborators included local and regional

environmental groups and the timber industry, uncommon bedfellows lauded for their

ability to work together in the region. This collaboration spanned 10 years and many

interviewees cited it as bringing economic stability to the area. Prior to the

collaboration, interviewees claimed that all timber sales were appealed and log supply

from public lands was practically non-existent, damaging the already struggling timber

industry. The collaboration was successful in part because of participants' willingness

to find solutions that benefited a diverse spectrum of interests (Gordon et al. 2012).

The collaboration designed a blueprint for Colville National Forest to make it one-

third active management, one-third restoration of dense stands, and one-third

inventory roadless areas or wilderness. Designating some acreage as wilderness was

one of many goals.

4.2.2.4 Weak Linking Social Capital

Rank 1: A diverse mix of Liberty residents viewed the USFS with mistrust and a lack
of understanding (9 interviewees).

John, a USFS District Ranger, summed up the difficulty of engendering

positive relationships with a diverse public: "As a public agency, we try to

accommodate all users and that's the dilemma." The USFS must treat all publics the

same, whether they live adjacent to a National Forest or live across the country,

whether they prefer economic activity or wildlife restoration on the Forest. Bart, a

USFS employee, reported "We hear from everyone." In both the wilderness and

mining events, diverse groups of stakeholders commented that their efforts were

unlikely to influence the USFS, and they were unsure of how public participation in USFS matters would result in beneficial outcomes for Liberty residents.

Access proponents discussed how the ability to sustain interest in their cause was tempered by their ability to make progress towards their goals. Several leaders of access proponent groups reported growing discontent among their membership, as many of their supporters did not believe their actions made a difference in the wilderness debate. Little optimism was expressed by access proponents when questioned whether the USFS would take their viewpoint into consideration. Hunter, a rancher, said:

> *We give our public input, write letters, meet with state reps, Forest Service, but it doesn't matter who you meet with or the public input you give. They're going to put wilderness in and shove it down your throat. It's all going to take place in D.C. What we say here doesn't amount to a hill of beans.*

Justin, a university extension agent, did not see the local people as having an impact on wilderness designation. Despite resolutions against wilderness by local groups such as the Ferry County Cattlemen's Association and county commissioners, he contended that the Forest Supervisor was in support of wilderness and made it appear as though everyone was satisfied with wilderness designation. Seth, a business owner, said he doesn't get involved with the wilderness issue because:

> *It's useless because they [USFS] got their own plans. They hold meetings only because they have to. It's the law. But they don't mean nothing. In fact it'd be nice if they'd just go away if they're not going to do anything.*

Similarly to the access proponents, wilderness advocates were also uncertain about their ability to influence USFS policy. Although the wilderness advocates' collaboration was broadly acknowledged and welcomed within Colville National

Forest decision-making circles, it had to continually form new relationships with rotating upper management on the Forest to achieve its aims. Janet, a National Environmental Policy Act (NEPA) coordinator for Colville National Forest remarked, "We [USFS] go through a lot of people so we struggle with the trust." In the latest iteration of the Forest Revision plan, new wilderness areas were not included. Claire, the Congresswoman's wilderness staffer, implied that the new Forest Supervisor was not as engaged with the wilderness advocates' collaboration and that she was "lalaland in terms of these issues." Several agency personnel indicated that the collaboration must reach out to other stakeholders to form a broader based coalition if wilderness advocates wanted to see their ideas more fully incorporated into Colville National Forest policy.

The access proponents' concerns over wilderness bled into other aspects of USFS policy, such as road closures and decommissioning, and wildfire management. John, a USFS District Ranger, explained the public's perception: "The public sees government limiting access, but we just don't have the funds to maintain roads. One group wants and another group doesn't want motorized." Rose, a cosmetologist, charged that the USFS did not communicate openly with county officials and the public: "Our county is a coordinating county and the Forest Service isn't coordinating with us on the things that they do. They're closing roads without telling us." A history of large, uncontrollable wildfires further tainted residents' perceptions of USFS management practices. According to John, a university extension agent:

> *People were frustrated with the Forest Service in '88 because there were several major fires – timber was burning up while it wasn't allowed to be*

> *harvested…There are potential ramifications of fire being a low priority*
> *[under wilderness designation]. You let it burn until it threatens private land*
> *and you usually can't stop it.*

Access proponents found further reasoning to oppose wilderness designation from

their past experience with wildfire.

Environmentally-minded individuals and organizations discussed feelings of

frustration in approaching the USFS about mining operations on patented USFS lands.

Adam and Jenny recalled intimidation at a public meeting regarding mining operations

held by the USFS:

> *There was a group that was being hired by the gold company to do*
> *gravel work and road building. They're standing there big and tall.*
> *Nobody's taking our jobs away [gruff voice used to imitate workers]. I*
> *heard one of the truckers say, "You know, we all carry guns."*

The citizen's action group tended to be outnumbered at such public meetings. Rob, a

group member and retired businessman, remarked, "We talked to the Forest Service

and that was a joke. They caved on everything." Mike of *Clean Water Now* felt the

USFS had given the mine company a free pass in only requiring NEPA on ancillary

facilities such as an access road to the mine and water infiltration gallery. NEPA sets

guidelines to evaluate the environmental impacts of a federal agency decision. The

mine originally sat on USFS land. This land was patented via the 1872 Mining Act,

which is a way to acquire land under a mining project. Bart, a USFS employee,

concurred that local groups could have little impact on the patenting process without

Congressional support.

For some residents to develop respectful, working relationships with the USFS,

it appeared as though they must feel that the agency agreed with their management

opinions. Others found some solace from their understanding of federal statutes and laws. Mike of *Clean Water Now* described how he views his interactions with the USFS:

> *Because of the 1872 Mining Law, the Forest Service mission is to encourage mining on public lands – as long as I understand that, I'm not completely frustrated with our relationship. As long as I understand their job is to encourage mining, I don't expect more or less with them.*

Not all interviewees who expressed concern over USFS policy and management made mention of the rules and regulations that govern their activities. Nor did they always differentiate between local USFS managers and federal policy directives.

Rank 2: The gold company was not responsive to residents' concerns initially (6 interviewees).

The gold company was generally unresponsive to their demands according to citizen action group members. Adam, a founding group member and retired financial accountant, criticized the main point of contact at the mine, "He stalled. He never suggested anything. And he's been through this. He knows what backup alarms are out there. He knows all of it." Group members suggested that company officials feigned ignorance of methods to mitigate adverse effects to maintain low operating costs. Frustrated with the lack of action on the mine's part, Rob, a host of the citizen's action group's meetings, asked the primary mine contact to leave one meeting and not return. Rob clarified his perception of the gold company: "[The company] isn't stupid. They go into these communities and hold these meetings just as a feeler to find out how bright they are and what they have to do to beat them. [The company] played a lot of

games with us." This severance of relations with the mine eventually led to the demise

of the original citizen's action group and the formation of the CAB, which was

comprised of a more diverse mix of Liberty area residents.

<u>4.2.2.5 Strong Linking Social Capital</u>

Rank 1: Collaboration among diverse stakeholders and persistent activism improved
relationships with management of gold company (9 interviewees).

      Continued activism by concerned citizens likely improved communication and

relations between members of the original citizen's action group and mine

representatives. Concerned citizens sustained their involvement in multiple venues:

CAB membership, letter writing to mine management officials, political

representatives, and government agencies, and vigilance of mine operations. If a mine

truck drove over the speed limit down the haul route, observant citizens would inform

mine management officials, as well as governmental regulatory agencies and state and

U.S. representatives and senators. Jenny, a founder of the citizen's action group, a

postal worker, compared influencing the mine's operations to the strategy of the

reality television show *Survivor*: outwit, outplay, outlast. Adam, another founder of

the citizen's action group, a retired financial accountant, said:

> *They'll [mine company] just drag this out until hell freezes over. You got to be
> in it for the long haul. If people think they're just going to go in it for a few
> months or a year, forget that. We can be talking a decade here.*

Mine company officials appeared more responsive to complaints when they made

impromptu visits to concerned citizens' homes to listen to noise pollution. Prior to the

formation of the CAB, concerned citizens felt the gold company had little respect for

their views or needs. Jenny described the new two-way communication at CAB

meetings, "You get a seat with the guy [gold company management official]. You get

to ask him questions. Where can you get that otherwise? It's really good verbal

communication." "Being in the loop" was considered an important asset by members

of the citizen's action group. Regulatory officials would keep members appraised of

deadlines for environmental impact statements and the gold company would

informally share confidential information. Concerned citizens' sustained involvement

led them to develop relationships with numerous decision makers.

Jenny explained that mine management rotated frequently and the GNA could

serve as a continued bridge between the mine company and the community, "If a new

guy [mine management official] comes in and you don't have anything written down

and agreed upon, he could run it however he wants to run it." Because it's a living

document, the CAB's evolving composition plays a significant role in whether it

represents the majority of community concerns. Group members that tire of the

monthly CAB meetings will not have a central voice in the evolvement of the GNA.

Furthermore, the GNA is not legally binding. Hence, the mine company could choose

not to honor the GNA. When asked why the company participates in the GNA,

Bridget, a public relations employee for the mine replied, "It's the right thing to do.  If

the community has concerns, chances are they are legitimate concerns." One reason

why the mine may be inclined to respect the GNA is its need for public support for

proposed exploration drilling on public lands. Permits are required by both the Forest

Service and Bureau of Land Management. Hence, the public will have the opportunity

to make comments through the NEPA and State Environmental Policy Act process, a state water law, and following the environmental impact statement. Bart, the mining coordinator for the Okanagan National Forest, who collects public input regarding the gold company's operations, related that public comments influence required mitigation procedures and scientific papers that the USFS reviews in making permit decisions. He also remarked that the USFS keeps abreast of opposition in the form of lawsuits and communicates more frequently with groups that may appeal, "When you're doing an environmental document, you have to consider appellants. To a certain extent we try to work out issues ahead of time."

The site for the current gold mine, located on patented Okanogan National Forest land, took over 20 years to be permitted. Litigation and appeals pursued by the regional environmental group *Clean Water Now* delayed the mine numerous times. The gold company had an incentive to build relationships with and placate potential appellants in order to move forward with its activities. When asked about the pleasant and professional relationship between his environmental organization and the gold company, Mike explained:

> *I think there's a corporate attitude. I mean there's a reason I would say…the settlement agreement. There's a reason we're even at the table…We fought a multinational gold company for a long time and we went to court. Prevailing in court was, is not something that happens all the time either.*

Although the GNA is not a binding agreement like the settlement with *Clean Water Now*, mine representatives emphasized their attention to honor it. Sally, the CAB facilitator, said, "[The company] recognizes the value of having the advisory board. We're on the third vice president and the third or fourth environmental manager.

Management doesn't have a lot of history without this group." Eddie, the

environmental manager for the company, viewed the company's receptiveness to the

board as the right thing to do and integral to the company's brand: "Working with

community groups and engaging in community activities is a new way of doing

business."

Rank 2: Connections with regional information and support networks, as well as
regulatory agencies, helped residents concerned about mining operations achieve their
aims (5 interviewees).

A primary thrust of the original citizens action group was to educate

themselves on gold mining operations and search for alternatives to environmentally

destructive practices. One member in particular, Adam, a retired financial accountant,

spent countless hours researching other mines and communities' responses to them.

He also kept in touch with environmental organizations regionally and nationally, as

well as regulatory agencies and political representatives. Adam explained how he

influenced mine operations one day, "I wrote an extensive letter to the Mine Safety

Association, every Senator, Governor, and highway patrol about a truck that crossed

over a median next to the school. It shut them down for the day – all their truck drivers

had to go to class." The gold company had an incentive to work with Adam and find

solutions to some of his grievances to stave off further business interruptions.

Rank 3: Environmentalists found common ground with US Forest Service, enabling a
productive working relationship (4 interviewees).

Although wilderness advocates may not realize all of their goals for USFS

policy and management, they made significant headway in forming relationships with

USFS personnel that weren't present in years past (Gordon et al. 2012). John, a USFS

District Ranger, said, "Colville is one of the leading forests as far as working with

collaborative groups. The Forest has a very good working relationship with

[wilderness advocates]." Environmentalists found common ground in the form of

forest restoration, which encourages ecologically resilience systems, as well as timber

harvest. The Congresswoman's aide contended that the wilderness advocates'

"collaboration [is] absolutely a model" and has "laid awesome grounds for

wilderness."

4.2.2.6 Visual Display of Social Capital

Figure 8 presents a visual display of bridging and linking social capital in

Liberty. The business establishment, miners, ranchers, motorized recreationists, and

ex-loggers had strong social capital with one another based on their natural-resource

dependent livelihoods and recreational pursuits. Citizens concerned about mining

practices made some in-roads with the business establishment and miners by

committing to long-term collaboration. Environmental groups were less successful in

finding common ground with ranchers over the wilderness issue. Concerned citizens

improved working relationships with the gold company due to collaboration and

continued activism.

Figure 8. Visual Display of Social Capital in Liberty
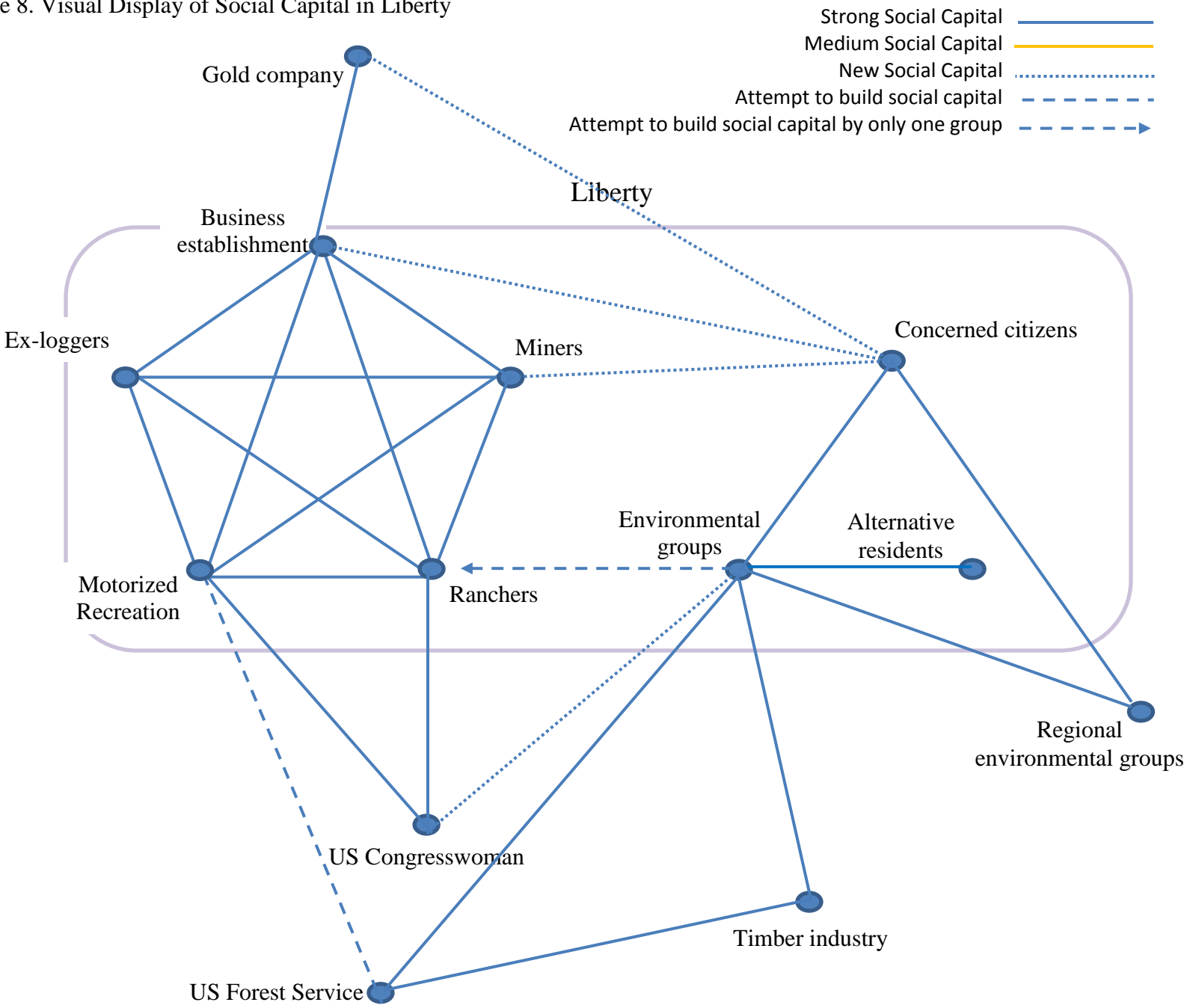
4.2.2.7 Adaptive Capacity

Table 20 displays the community's response to the catalysts or change events.
The interview data were coded for themes of capital maintenance, capital
accumulation, or capital depletion.

Table 20. Liberty's Response to a Catalyst

| Event | Total # Interviews | # Interviews with Capital Maintenance Theme | # Interviews with Capital Accumulation Theme | # Interviews with Capital Depletion Theme | Community's Response |
|---|---|---|---|---|---|
| Mining Operations | 18 | 4 | 16 | 14 | Capital Accumulation & Depletion |
| Wilderness | 14 | 11 | 5 | 8 | Capital Maintenance & Capital Depletion |

Mining Operations: Capital Accumulation & Depletion

A mix of capital accumulation and depletion characterized the mining
operations event. Out of 18 interviewees, 16 related themes of capital accumulation,
14 mentioned themes of capital depletion, and four interviewees discussed capital
maintenance.  Interviewees noted accumulated financial, human, and social capital.
Financial capital included good wage jobs, ancillary businesses, property taxes, and
community donations. Interviewees emphasized Liberty's lackluster economy and the
importance of the mining company jobs to the area. Many working-age people and
their families had to leave Liberty after the last lumber mill closed and they were able

to return to work at the gold mine and mill. The gold company hired the otherwise unemployed truck drivers, loggers, and mechanics, who had little other recourse to earn a living in the area. Social capital increased in that empathy increased between residents initially in favor of and opposed to the mine, as well as between community members and mine company representatives. Entrenched norms and divisions between traditional residents and amenity migrants lessened over time through sustained dialog. Opposing stakeholder groups committed to meet together and listen to one another's point of view with the help of a neutral facilitator. Numerous studies focus on the development of trust in collaborative natural resource management (Bergmann and Bliss 2004; Bryan 2004; Wondolleck and Yaffee 2000). By spending two years together crafting the GNA, animosity decreased among members of the community advisory board. By engaging in shared work, members now have a history of working together and some new collective norms for how to engage with one another. The GNA also acts as a social contract between Liberty and the mine company, ensuring impact mitigation (e.g. restricted hours of operation, sound berm in gravel pit, quieter trucks) throughout the life of the mine.

In terms of capital depletion, interviewees emphasized a loss of natural capital. Haul route residents charged that their quality of life was threatened from the mine's operation due to loud trucks, gravel pit noise and light pollution, added traffic, and air and water pollution. Bart, a USFS employee, raised concern that recreation tourism might suffer because of the mine's activities.

Interviewees who discussed themes of capital maintenance were generally cynical about the CABs success in bridging diverse viewpoints. A "good old boys" mentality was mentioned by several haul residents who felt like their voices didn't matter. Because they were not from the area and did not engage in ranching, logging, or mining work, these newer residents considered themselves marginalized in Liberty. Seth, a long-time resident and Liberty business owner, echoed this view. He emphatically stated, "You shouldn't come in and just change things. If you don't like it, move!" Mike of *Clean Water Now* believed the CAB to be a farce:

> *There was a group called [citizen's action group] that was concerned about trucking, ore trucking issues, noise, local issues. And at some point [the gold company] hired someone from the Economic Development Board to facilitate a Citizen's Advisory Group. Part of their mission was to facilitate the rapid permitting of the mine. So from my point of view, this was not a citizen's advisory group, it was a function of the mining company. In this case, we basically have [the mining company] initiating this citizen's advisory group with the goal of coming up with a Good Neighbor Agreement. It's totally one sided. The citizen's group has no strength. The citizen's group is a function of the mining company, albeit with some concerned citizens. So the good neighbor agreement that they could come up with, from my point of view, is very biased and not a valid thing.*

Because more impassioned voices did not participate in the CAB, only weak social adaptability was observed. Those people who approached the mining issue on their own or within a homogenous organization prevented the social system from further adaptation.


Wilderness Designation: Capital Maintenance & Capital Depletion

The majority of interviewees characterized the wilderness event by capital maintenance and capital depletion, and about one-third cited capital accumulation. Out of 14 interviewees, 11 mentioned themes of capital maintenance, 8 noted themes of capital depletion, and five interviewees referred to capital accumulation. Bridging social capital appeared to have a static quality and was resistance to change in this case. Wilderness advocates and access proponents represent two factions of community members deeply divided over past resource conflicts and livelihood choices. The change event did not lessen tension between the groups, and if anything, exacerbated the conflict. The inability of either side to achieve their aims lessened their confidence in achieving future goals. Feelings of hopelessness pervaded several interviews. There was a sense among access proponents that wilderness designation is part of a long-term management strategy to reduce public access to the forest and increase regulations. Because harvest and recreation opportunities were already limited, additional wilderness acreage would not result in any significant change for Liberty and Swift Brook residents. Some interviewees described how wilderness would continue to degrade forest health, but again emphasized insect outbreaks and forest fire were already common; hence, wilderness would not necessarily ameliorate or worsen forest health. Trust between USFS employees and the surrounding communities continued to be shaky. Aaron, an environmental group leader, claimed that wilderness designation would not prevent access to ranchers or various recreation users nor hurt the economy.

In terms of capital depletion, interviewees emphasized a loss of financial and cultural capital, as well as natural, social, and political capital depletion. Financial capital loss included increased costs for ranchers, trail maintenance, and fire prevention, the inability to utilize wood products or mine, and decreased tourism from motorized vehicle users. Cultural capital was perceived as eroding as local motorized recreationists would be prohibited from wilderness areas and residents with livelihoods dependent on natural resources would need to find other work or move from Liberty to support themselves and their families. Hunter, a third-generation rancher from Liberty, described why the Ferry County Cattlemen's Association opposed wilderness designation:

> *We are 100% against wilderness. We just believe that there's no nothing good about it. It'll affect me, it'll affect a lot of cattlemen here, some more so than others. There might be a cattleman out there who will say, oh it won't affect me that much. But it will affect 'em. It'll affect 'em in the long run. There's no ifs, ands, or buts about it. It would change the way, how we do our maintenance and it would just change the way we run our business. We'd have to go back to the way the 1800s is. The old misery whips. In this day and age, you can't go backwards. You gotta go forward. Time is valuable. Especially a small farm, ranch. You've only got so much time. You gotta put up your own hay. I raise all my own hay. I put 1000, 1200 ton a hay to feed my own cow herd. There's only so much time you can put out there on the Forest. When you have to start putting out there weeks or months taking care of your maintenance, there's no time for anything else.*

Access proponents argued that wilderness designation would prevent a diverse array of groups from recreation opportunities including snowmobilers, drivers of jeeps, 4x4s, single tracks, all-terrain vehicles, woodcutters, mountain bicyclists, disabled and elderly people, hunters, and fishermen. Several interviewees raised concern that

wilderness designation would prohibit effective environmental stewardship and lead to increased insect outbreaks and fire. Because wilderness designation was unlikely to occur in the near future, social capital between environmentalists and the wilderness advocates' collaboration group was eroding. Some environmental groups were still working with the collaboration, while others had left the collaboration and planned to appeal USFS management decisions.

Accumulated capital included natural, cultural, financial, and social capital. Wilderness advocates viewed designation as a safeguard to protect the Colville National Forest from logging or other destructive activities like off road vehicle use. These advocates argued that designation would result in biodiversity protection and ecosystem restoration. The hiker or horse rider would benefit from the solitude and silence of wilderness. The recreation tourism industry would benefit as wilderness designation would attract people from urban areas to spend their money in Liberty. Home values would increase as well if people moved to the area for the wilderness. Finally, bonding social capital increased among motorized recreation users as they have united together to halt designation.

*4.2.3 Case Study 3: Swift Brook*

Swift Brook is located in Stevens County, just east of Ferry County. Stevens County borders Canada and is located in the northeastern part of Washington State. Federal, state, and county agencies manage 33% of the total land area of Stevens

County (Nygaard Promotions 2011). The Spokane Indian Tribe resides in the southern part of the County.

Prior to European settlement, regional Tribes gathered at Swift Brook for spring and summer salmon runs along the Columbia River. Swift Brook was considered the second most important fishing and gathering place on the River (The Ferry County Historical Society 2011). In the early 1800s, French-Canadian fur traders moved to the area. During the 1930s, the U.S. government constructed the Grant Coulee Dam, which ended the salmon runs and forced the town of Swift Brook to move five miles west. The damming of the River created Lake Roosevelt, which Swift Brook residents use for recreational boating, fishing, and other water sports.

Swift Brook's population was 1,642 people in 2010 (US Census 2010). The community is a 1.5 hour drive to Spokane along a low elevation route compared to its mountainous surroundings. The population has aged as new retirees move to the area. The median age in Swift Brook grew from 34.4 to 45.4 years from 2000 to 2010 (US Census 2010). Swift Brook's economy is the most diverse of the three case communities. Several forest products manufacturing facilities are located near Swift Brook, as well as a biomass power plant. Boat and fireplace manufacturers are also large employers.

Swift Brook has recently experienced two events, the introduction of a poverty reduction program called Horizons and a proposed wilderness designation, that reveal how social capital impacts adaptive capacity in the community. Horizons provided leadership training to community members and a grant of $10,000 to be spent on

poverty reduction activities. The proposed wilderness designation is the same event that affected Liberty.

The interview data were coded for statements related to bonding, bridging, and linking social capital, and then further coded for evidence of weak, medium, and strong social capital for each type. Some statements coded pertained specifically to Horizons or wilderness designation, while others pertained to Swift Brook more generally. A total of 21 people were interviewed regarding Swift Brook. Table 21 displays the number of interviewees that indicated weak, medium, or strong bonding, bridging, and linking social capital in Swift Brook and for the two events. Both strong bridging and linking social capital were found for Swift Brook overall and specifically related to the poverty reduction program. In the wilderness designation event, there is a mix of weak and strong bridging and linking social capital.

Table 21. Number of Interviewees Who Indicated Weak, Medium, or Strong Bonding, Bridging, and Linking Social Capital in Swift Brook

| | | Swift Brook | Poverty Reduction Program | Wilderness Designation | Total |
|---|---|---|---|---|---|
| Bonding Social Capital | Weak | 0 | 0 | 0 | 0 |
| | Medium | 0 | 0 | 0 | 0 |
| | Strong | 3 | 2 | 4 | 5 |
| Bridging Social Capital | Weak | 3 | 4 | 8 | 11 |
| | Medium | 2 | 4 | 2 | 6 |
| | Strong | 8 | 7 | 8 | 15 |
| Linking Social Capital | Weak | 1 | 0 | 7 | 8 |
| | Medium | 0 | 1 | 4 | 4 |
| | Strong | 6 | 8 | 7 | 16 |

Next, interviewees' statements regarding bonding, bridging, and linking social capital were explored for salient themes to understand the manifestation of the three types of social capital. A count of cross-cutting themes was taken to discover the most frequently cited explanations for each type of social capital formation. Table 22 ranks the themes in order of the number of interviewees who described a theme.

Table 22. Social Capital Themes in Swift Brook

| Rank | 1 | 2 | 3 |
|---|---|---|---|
| *Weak Bridging Social Capital* | Predetermined desired outcomes prevented collaboration between wilderness advocates and access proponents (8 interviewees) | Some entrenchment of ideas (anti-change attitude) among business establishment (5 interviewees) | Time and financial constraints prevented low income people from participating in Horizons (4 interviewees) |
| *Strong Bridging Social Capital* | Cohesive community with collective vision where most people felt comfortable getting involved (7 interviewees) | Diverse membership and an empowerment ethic allowed Horizons to be effective (6 interviewees) | Relationships between Horizons and other civic organizations helped Horizons build goodwill and achieve long-term goals (5 interviewees) |
| *Weak Linking Social Capital* | Lack of trust between residents and US Forest Service; Sense that local public can't influence decision making (7 interviewees) | | |

| | Horizon's regional focus and strong interpersonal skills allowed it to attract financial and organizational capacity support (7 interviewees) | Wilderness advocates' emphasis on the middle ground allowed it to develop a productive working relationship with USFS (6 interviewees) | City planner skilled at making regional and national connections to benefit Swift Brook (4 interviewees) |
|---|---|---|---|
| *Strong Linking Social Capital* | | | |

4.2.3.1 Weak Bridging Social Capital

Rank 1: Predetermined desired outcomes prevented collaboration between wilderness advocates and access proponents (8 interviewees).

Neither wilderness advocates nor access proponents gave much indication of deviating from entrenched positions, curtailing potential collaboration. Access proponents passionately spoke of the history of USFS lands and the need to honor traditional uses. Mark, a former county commissioner and access proponent, dictated a Teddy Roosevelt quote that the primary purpose of public lands is to make prosperous homes and not reach ecological aims such as wildlife habitat maintenance. Both groups reported little contact and few shared activities with the other side, preventing informal relationships and fostering of mutual respect. Claire, the U.S. Congresswoman's aide, disclosed how access proponents forge their bonds, "they all have snowmobiles, go on big rides, and get in a fervor around the campfire dissing conservationists." Friendly get-togethers among access proponents served to strengthen their own bonds at the expense of finding common ground with wilderness advocates.

Several interviewees described access proponents, particularly motorized recreationists and ranchers, as unbendable in their positions. Bruce, a USFS district ranger, explained how the acronym of a broad-based access group illustrated their non-collaborative demands: "ACTNOW – I hate that word. There's conflict associated with that." Compromise on the part of one motorized recreation group has not caught on with other access proponents. Janet, a NEPA coordinator for USFS, explained, "Three motorized groups are extremely independent, that contradict each other. There are some that are not willing to compromise and others are willing to compromise."

Wilderness advocates similarly showed little sign of retreating from their goal of wilderness designation. T.J., a former USFS employee and access proponent, suggested that meetings with the wilderness advocates did not go well because "there should be give and take on both sides." T.J. did not imagine the wilderness advocates shifting from their desired outcome. He claimed that the wilderness advocates were only willing to let them at the table to appease managers of Colville National Forest, but that access proponents could serve no significant role in deciding policy. While access proponents interviewed felt no ill will towards the timber industry, they viewed industry as beholden to environmental interests' trump card of litigation. The constant threat of litigation gave environmental organizations an unfair advantage in negotiations according to access proponents. "You've got to take away the hammer of litigation if we're going to collaborate with an environmental group," said Janelle, a state forest manager and access proponent.

Some interviewees discussed why collaboration failed and how it could be achieved if both groups could find some common ground. Michaela, a non-profit consultant that specialized in conflict resolution, expressed the need to have a two-sided respectful communication in which both sides might compromise to realize community-wide benefits:

> *I have my own strong points but I also see the cattlemen as valid in their point. They need a piece of how to do that. How can they do that in a way they don't destroy the wilderness and can we preserve the wilderness for the hiker? I'm a big picture person. How can we make it okay for everyone? If we would just have a dialog about it…That is solvable, but it's an example of conflict where we will all lose…We're the American rugged individualists out here, which isn't a bad thing. I've got the cabin in the woods thing. We're all connected and that is lacking here among many, many people, especially low income. When you're low income you want to fight like heck for what little you have.*

Michaela pointed to Western individualism as a cause of the conflict. She suggested that both access proponents and wilderness advocates need to find solutions that benefit everyone instead of outcomes that benefit the few.

Claire, the Congresswoman's aide, explained how a lack of agreement keeps policy from changing, "If various interest groups would align, wilderness could be proposed." As long as access proponents perceived no benefit to wilderness designation, wilderness was unlikely to be proposed. Bridging social capital is unlikely to be found when stakeholders can achieve their aims independently of other community interests. Access proponents perceived no incentive to engage with wilderness advocates. They were playing a zero-sum game, in which they gained if wilderness advocates lost—and vice versa.

Rank 2: Civic leaders noted entrenchment of ideas and an anti-change attitude among some business establishments, which has slowed some community efforts (5 interviewees).

Leslie, a multi-generational resident and well-known community leader, described some tension between people who adhered to "old school" ideas versus "new thought." "Old school" residents didn't want to see the town change. Some business owners opposed town beautification efforts that city government and Horizons promoted. Interviewees explained that new sidewalks, downtown clean-up events, and a new welcome/information center irked some business owners who felt the expense was unnecessary. Nadia, a librarian, commented:

> *The anti-tax, anti-government, conservative Christian stuff accounts for some of the opposition to the sidewalk. People don't like the idea of grants even though the money wasn't coming out of Swift Brook.*

Other interviewees felt the business establishment needed time to adjust to change. Kelly, a public administrator, explained, "The sidewalk issue was pretty hot and heavy for a while. It took a while for the businesses to accept. They came to meetings and I think we answered all of their concerns."

Rank 3: Limited time, financial constraints, and distinct cultural norms prevented low income people from participating in Horizons (4 interviewees).

The aim of Horizons was to reduce the level of poverty and improve poor people's lives in Swift Brook. However, low or no income residents of Swift Brook generally did not take on leadership positions in the organization nor participate frequently in the group's activities. Although the Horizons program aimed to improve

the lives of poor people, forming and sustaining connections between various social classes proved to be challenging.

Swift Brook Horizons made connections to other community groups, but was less successful attracting residents of lesser means, impoverished people for which the Horizons program was intended. The majority of leadership was retired and older, likely middle class based on their professions and appearances. Their ranks included real estate professionals, an accountant, a food bank coordinator, a homemaker, and an upper management business retiree. Several interviewees regretted that people of more diverse economic backgrounds were not better represented in the group. Pete, a Horizons leader, said, "You need something to offer people in poverty before reaching out to them." Horizons members argued that factors such as limited transportation, childcare, and availability, as well as cultural differences made it difficult to engage a broader spectrum of Swift Brook residents. Michaela, a non-profit consultant, reasoned why low income people generally weren't involved in the group, "They're [Horizons] not doing anything to keep it out. It's more you have to make it easy for really low-income people to be involved." Members recalled greater turn-out at initial Horizons meetings when free meals like a spaghetti dinner were offered. Sandy, a Horizons group leader and seasoned community volunteer, noticed that the group's diversity dwindled with the passage of time:

> *It was fascinating when it started because rooms were filled with people interested in the very same thing, trying to help the community and address poverty, and do everything we could do come together as a community. It was people in poverty, people that just wanted to help, people that had money. It was just a great blend of the whole community…From a very large mix of people, it has narrowed down to*

*a small group of very dedicated people, who are committed and willing to go out there and keep doing it.*

Horizons struggled to sustain involvement amongst a large variety of residents.

Some interviewees argued that apathy prevented low or no income people in Swift Brook from participating in Horizons. Shane, a Horizons member, a local artist, felt some people accepted having less than others and did not feel the need to aspire for more:

*Both [my wife] and I developed the idea that the people who want help will show up. The people who want to do something will show up. The other people may be, I don't know if they're happy with it, but they don't want to do anything extra, you know, change anything.*

Sandy, a Horizons group leader, noted low expectations and a feeling of hopelessness which permeated segments of Swift Brook's population and worried that "it can spiral you in the wrong direction because then you don't have that vision for the future."

4.2.3.2 Strong Bridging Social Capital

Rank 1: Overall, Swift Brook was considered a cohesive community with a collective vision where most people feel comfortable getting involved (7 interviewees).

Although Swift Brook is similar demographically to Liberty, it did not appear beset with community conflict based on longtime residents versus newcomers or even divided too strongly based on backgrounds and values. Dorothy, a librarian, described the different types of people in Swift Brook:

*There's a lot of retirees from Seattle – makes a little bit of friction, but not too much. Old hippies – refugees from the '60s who live in funky houses, do their super liberal thing, grow their pot, are well-educated and big library supporters. Old guys in hats, John Deere hats, their jeans and their trucks, sitting in the diner drinking coffee, bitching about the government.*

Interviewees who recently moved to the community did not consider themselves labeled outsiders, as in Elkton and Liberty. Pete, a newcomer retiree and active volunteer, said, "I heard that Swift Brook was a parochial, private community – if you haven't been here for 40 years, you don't quite belong. But, personally, I have never felt that. It's a pretty friendly community." Dorothy clarified that people's appearances frequently belied their backgrounds and values. A family that looked like hippies may actually be social conservative Christians. She mused, "You can never quite pigeon hole people."

Interviewees felt that community members were capable of working together on community issues. Bruce, a USFS district ranger, said "Swift Brook is a pretty cohesive community when it tries to get something done. I don't sense a lot of conflict." Public administrators and civic organizations worked together often to share and leverage resources and build public support to address a particular community need. Matt, a public administrator, explained, "I only put in grants when there is community support. I stay active with Rotary Club, Horizons, and Chamber of Commerce." Community members were able to engage in short- and long-term activities to benefit Swift Brook. Community leaders initiated a Community Revitalization Committee in the mid-2000s to plan and execute small, medium, and large projects. Matt concluded, "We've pretty much done everything on that plan now."

Although some residents may have considered themselves an access proponent or a wilderness advocate, they didn't appear to let those positions affect community

life in Swift Brook. Community leaders seemed highly focused on improving Swift Brook regardless of people's politics. Nadia, a librarian, commented, "The main thing is that everyone has a common goal, a common idea to just make this place better, to get the things done that are very, very difficult, to think outside the box."

Rank 2: A diverse membership and an empowerment ethic allowed Horizons to be effective (6 interviewees).

Horizons members did not necessarily have strong ties with one another before participating in the program. The program's extensive participation requirements gave members ample time to form strong bonds and get to know new people in Swift Brook. The first phase of the Horizons program obliged participants to complete 10-hour study sessions on poverty, which helped community members understand an often hidden problem. As Horizons members discussed their knowledge of poverty in Swift Brook, they learned from one another, solidifying relationships with people they may otherwise not have known. Lilly, a university extension agent, was surprised by participants' enjoyment in this process. She recounted some of the learning that took place:

> *One of the questions is, is there homelessness in our community? One person said, "No, we don't have any homelessness." Another person said, "I know ten kids that are sleeping with their friends because their parents kicked them out." It just looks different.*

After the study circles, participants completed a ten-week leadership training program and then engaged in community visioning.

By requiring a large number of participants for a small town, the program attracted people who had not previously taken on leadership roles in Swift Brook.

Matt, a public administrator, described the benefit of grooming new leaders in the area:

> *They [Horizons program] wanted to empower the communities by finding people that may not be community leaders, but have good ideas, teach them how to be active at meetings, how to do public speaking, how to bring their ideas to the table, and get other people to buy into them.*

By injecting new blood into community projects, Swift Brook suffered less from the STP problem. STP stands for "same ten people," a phrase Ellen, an economic development specialist, used. Communities with small populations have a small number of leaders typically, and those leaders frequently suffered burn-out when their ranks are not replenished. Ellen explained, "Horizons had a wider variety of people involved than just the usual suspects because of the requirement that 20 community members need to participate in the training – all walks of life, all age groups, probably various socioeconomic statuses."

The Swift Brook Horizons group was not beset with conflict between new and longtime residents. Group leaders tended not to come from multi-generational families, but many of them had lived in Swift Brook for several decades. Shane, a Horizons group member and local artist, described the types of people first attracted to Horizons:

> *There are people whose families have been here for generations that attended every meeting. Retired people same thing. People new to the community who wanted to figure out what's what and who's who and wanted to get involved. Pretty much all age groups.*

Apart from material outcomes of Swift Brook Horizons like a community newspaper and computer center, interviewees cited a new attitude towards taking

community-wide collective action as one of the biggest successes. When questioned

about the biggest impact of Horizons, Lilly, a university extension agent, stated:

> *It's the fact that people in their communities feel like they can make a change.*
> *I consistently hear that this program gave them the hope and possibilities to*
> *make a change. They feel empowered.*

Similarly, Shane commented, "I think overall, mostly what I got out of Horizons was

when people come together and they want to do something, they can do it." Horizons

members interviewed noted their increased capacity and leadership skills. They also

expressed gratitude for better information sharing among community members. Sandy,

a Horizons group leader, explained, "Because of Horizons, because people got

together to communicate and throw ideas around and network, all of these things

happened."

Horizons' ability to significantly strengthen Swift Brook's economy is suspect;

yet, newly trained community leaders in coordination with one another have the

potential to create change, albeit on a small scale. The Horizons program could be

considered an experiment in altering community norms. By increasing the cadre of

community leaders and instilling a sense of hope and optimism in them, the Horizons

program could further ignite the town's burgeoning tourism opportunities. Guy, an

economic development specialist, clarified how the Horizons program might improve

economic development in Swift Brook:

> *That Horizons thing was a big deal. I think it's sort of the Margaret Mead*
> *deal. Things happen because somebody does something. One thing at a time.*
> *You don't see anything major out of that, but then you see improvements in the*
> *community. Some beget more frequently.*

Rank 3: Relationships between Horizons and other civic organizations helped Horizons build goodwill and achieve long-term goals (5 interviewees).

Numerous interviewees mentioned the idea of creating economic vitality and lessening poverty in Swift Brook. Hence, the goals of Horizons appeared to be in line with the views of a majority of community leaders. Horizons' grant seed money also helped the group cement relationships with other civic organizations in Swift Brook. For example, the group used some money to buy a refrigerator for the senior center. Ellen, an economic development specialist, explained: "$10,000 was spent locally by Horizons on different projects. It's a building of goodwill."

Participants in Horizons did not limit themselves to only working on projects organized by the group and instead formed connections with other organizations in Swift Brook. Matt, a public administrator, noticed Horizons members getting involved in a number of community activities, "I've seen 'em doing things outside Horizons too. I see them active in the library, in the food bank. I see 'em coming into City Council meetings." Horizons group members had ties with diverse community actors including the school system, museums, grange, and senior citizen center. Pete, a Horizons group leader, emphasized the importance of relationships with other community groups in town:

> It's all connections. That's going to be our primary thrust as far as Horizons is concerned. I'm going to be speaking to a group of seniors in Colville [nearby town]. They called and they're interested. It's just doing the ground work. So much of all this stuff we're doing is just laying the ground work, going to all the different organizations. We've got a Rotary Club here, we've got a Lady Lions, we've got scads of churches. We've got two food banks, Rural Resources [support agency for rural communities]. We're kind of in the process of coalescing all this stuff together.

Horizons group members made it clear they value informing and partnering with other

community organizations.

### 4.2.3.3 Weak Linking Social Capital

Rank 1: Interviewees noted a lack of trust between Swift Brook residents and the
USFS and a sense that the local public had no influence over decision making (7
interviewees).

Interviewees emphasized that their input in the public participation process had

little effect on USFS policy and management decisions. Access proponents mentioned

the difficulty of hitting a moving target in regard to influencing policy. They

considered themselves novices to the process. Janelle, a state forest manager,

commented, "It's tough to hang with them [USFS]. We want the Forest Service to

play by the rules. This meets or doesn't meet wilderness, road closure or not a road

closure, black and white." Some interviewees didn't trust that the USFS would make a

good faith effort to consider their opinions when making decisions. Mark, a former

county commissioner, griped:

> *As soon as we learn what the road designation is or the criteria, the criteria*
> *for the road changes. The entire FS process is very frustrating. They asked us*
> *to identify our priorities, but they lied to us. They made the decision to*
> *decommission the road anyway.*

A sense of hopelessness among access proponents generated apathy, which

prevented folks from participating in the public process with the USFS according to

several interviewees from diverse backgrounds. Kelly, a public administrator,

explained, "Forest Service policy is a state/federal type of organization that is going to

function with or without our participation or say-so." There was a general sense

among residents that working on USFS policy and management decisions wasn't

worth their time. T.J., a retired USFS employee and access proponent, said:

> *I encourage people to go in, to turn out, and the general public felt like the*
> *Forest Service didn't hear a word they said, those that were in opposition to*
> *further development of the wilderness. I've got people that say now I'm not*
> *wasting my time going to meetings.*

Motorized recreation users also described how the public unfairly judged their

activities, worsening their ability to work with USFS personnel. T.J. explained how he

and other motorized users engaged in volunteer work like trail maintenance, erosion

control, and creation of trail paths for disabled access to build goodwill with decision

makers.

USFS personnel acknowledged the public's negative perception of the agency.

They elaborated on some of the challenges of working with diverse publics. Bruce, a

USFS district ranger, explained how the agency attempts to engage multiple publics:

"We tried to balance [wilderness advocates and access proponents] by bringing them

to the table early, but it's difficult. They want to meet separately…The Forest Service

is back to being in the middle of two groups, just two different groups." He referred to

the timber wars era when the agency was pitted between environmentalists and the

timber industry. Management of Colville National Forest continues to be contested,

but with new axes of division. It is questionable whether every management problem

can be resolved to the satisfaction of all stakeholders.

4.2.3.4 Strong Linking Social Capital

Rank 1: Horizon's regional focus and strong interpersonal skills allowed it to attract
financial and organizational capacity support (7 interviewees).

Funding and support organizations outside of Swift Brook were eager to work

with the community because of the cohesive nature of the Horizons group there, as

well as their broader vision to work regionally over a long time period. The Horizons

group was heralded as a success by interviewees, whereas other communities were

noted that did not thrive or do as well with the same infusion of leadership training

and funding. Lilly, a university extension agent, recounted the diverse outcomes of

Horizons groups in the region:

> *In Stevens County we ended up having nine communities, and in Ferry*
> *County, we worked the Liberty program up there. They [Liberty]*
> *struggled more than Swift Brook with the Horizons program. It's a bell*
> *curve. We have some communities that are just rock stars and did great*
> *and Swift Brook is on that end of things. They did a lot of projects.*
> *Liberty just struggled with it. It depends on who gets involved with the*
> *program.*

The county university extension office provided substantial resources and coaching for

Swift Brook Horizons. Michaela, a non-profit consultant with 25 years of experience

in grant and fund development and conflict resolution, accredited her interest in the

Swift Brook Horizons group to their passion, lack of drama, and commitment to

unselfish goals. Out of the ten community Horizons groups she has worked with, she

spent the most time with the Swift Brook group. She found the group unique because

they had several strong leaders, in contrast with other organizations who had a

singular leader that members rallied behind. She commended their talent for working

together and continued:

> *They know how to deal with conflict. They don't have this narrowness.*
> *Individuals are not just thinking about themselves and their own*
> *agenda…They have the bigger picture viewpoint. Plus they all have*
> *very good interpersonal skills.*

Other Horizons groups fell apart when members clashed with one another over objectives and values.

The Horizons program helped university extension personnel familiarize themselves with Swift Brook community leaders they otherwise would not have known. Lilly, a university extension agent, remarked on her new-found ability to provide resources:

> *It's given me this network of people to connect both fiscal resources like grants and opportunities and projects and connecting people together. If I know that two locations are working on the same thing, I can have them work together.*

She suggested that new synergies in the county could propel regional development forward and stem community isolation. Michaela asked Swift Brook's Horizons group to serve as the fiscal agent for a county-wide grant because of their diverse skillset and follow-through. She remarked on why she trusted them:

> *The partnerships and collaboration, they [Swift Brook Horizons] take care of. They don't just take advantage of them. They know how to build relationships. They're laying a very strong foundation for success.*

Sandy, a Horizons group leader, concurred that numerous individuals have maintained involvement in the group's activities, leaving no single individual to carry the workload.

The Swift Brook Horizons group made connections with Horizons groups throughout the county and had plans to expand their activities and services to other rural towns. Several Swift Brook Horizons group members attended a rural development conference which allowed them to network with Horizons groups from other communities, spurring community development activities across the county. Pete

of Horizons, commented on the conference: "It helped us identify areas where we

could be instrumental in working with the community." Horizons members were

involved with regional activities including a volunteer data base, the creation of a

microenterprise development organization, and serving as the fiscal agent for a

county-wide grant. Matt, a public administrator, explained how the Horizons time

exchange program could be applied in other places:

> *Right now they're [Horizons] trying a bartering program. We're just starting it now. We've got maybe half a dozen people signed up. What we want to do is do a pilot here in Swift Brook. If it works, then we can go to those other ten communities, reach out, and get it to expand.*

Rank 2: Wilderness advocates' emphasis on middle ground approaches allowed it to develop a productive working relationship with the USFS (6 interviewees).

Joe, a biomass power plant manager, described public lands management on

the Colville in the 1990s: "You couldn't log any because of enviros previously. There

wasn't collaboration unless a house burnt down." Environmental groups used appeals

and litigation to achieve their end goals until a new collaboration arose between them,

the timber industry, and the USFS. Bruce, a USFS district ranger, described this new

partnership:

> *Those groups found some middle ground and focused on what they agreed upon. They developed relationships and trust among one another. They were working with the Forest Service and things were pretty rosy for a while. We went years without appeals or objection.*

Environmental groups and the timber industry found common ground around thin

diameter harvesting, in order to facilitate ecological restoration and provide wood

supply for industry. The collaboration also agreed to promote wilderness designation

on ecologically pristine areas of the Forest. Instead of "lawyering up" for every USFS

vegetation project, the environmental groups were at the table with agency decision

makers, assisting with planning. Bruce continued on about how the collaboration

partnered with the USFS:

> *The collaboration works with us on our vegetation activities, fuels reduction or timber sales. They give us low, moderate, or high level of support depending on where the project ends up. We have historically received high levels of support, mainly because we're willing to sit down at the table and negotiate over prescriptions and road construction. A high level of support means they won't appeal us and they will come to our aid if we get appealed by another group.*

Claire, the US Congresswoman's aide, said, "Conservationists are much more

respected because of collaboration and compromise. Respect has skyrocketed."

Rank 3: Swift Brook's city planner was known for his skills in making regional and national connections to benefit the community (4 interviewees).

Informal and formal relationships with grant agencies, other city planners, and

regional community leaders allowed the city planner, Matt, to take advantage of

opportunities when they arose. In the past 10 years, he has secured tens of millions of

dollars for a new sewage treatment plant, repaved sidewalks, a skate park, a

welcome/information center, and other smaller projects. Dorothy, an administrator for

Stevens County libraries, explained, "The city planner is good at building support and

making connections and getting groups and agencies like libraries involved in the

planning." Informal relationships allowed Dorothy and Matt to keep each other aware

of grants and resources to hit the ground running when an opportunity presented itself.

Matt accounted his success in obtaining funding for resources from relationships he developed over time. He worked with the USFS and National Park Service to plan, fund, and build the welcome/information center. He explained how this collaboration came about: "A lot of networking. Part of my job…I go to Rotary meetings and to Chamber meetings, and then the experience I brought from me with previous jobs. It's just a lot of networking." Kelly, a public administrator, complimented him, "Matt is our main mover and shaker in looking for grants. Community groups come to him for resources."

4.3.3.5 Visual Display of Social Capital

Figure 9 is a visual display of social capital in Swift Brook. Public administrators, Horizons members, and other civic organization leaders had strong bridging social capital. Access proponents had medium levels of bridging social capital with public administrators and civic organization leaders and did not represent a dividing force in Swift Brook's community affairs. Low income residents and the traditional business establishment did not have strong social capital with other community leaders; instead, they represented isolated interests with few connections to extra-local power brokers.

Figure 9. Visual Display of Social Capital in Swift Brook



Strong Social Capital
Medium Social Capital
New Social Capital
Attempt to build social capital
Attempt to build social capital by only one group

Swift Brook

Civic organizations

Access proponents

Horizons

Low income residents

Anti-change business establishment

Public administrators

US Congresswoman

Wilderness Advocates

US Forest Service

WSU Extension

Other Horizons groups

Regional community development organizations

4.3.3.6 Adaptive capacity

The interview data were explored for themes of capital maintenance, capital accumulation, and capital depletion, three possible responses in the cycle of adaptive capacity. Table 23 reveals how interviewees perceived the effects of a particular catalyst or event.

Table 23. Swift Brook's Response to a Catalyst

| Event | Total # Interviews | # Interviews with Capital Maintenance Theme | # Interviews with Capital Accumulation Theme | # Interviews with Capital Depletion Theme | Community Response |
|---|---|---|---|---|---|
| Poverty Reduction Program | 13 | 5 | 13 | 0 | Capital Accumulation |
| Wilderness | 14 | 8 | 4 | 8 | Capital Maintenance & Capital Depletion |

Poverty Reduction Program: Capital Accumulation

The poverty reduction program Horizons was characterized by capital accumulation. All 13 interviewees noted capital accumulation and five discussed themes of capital maintenance. Capital accumulated included human, social, political, financial, physical capital, natural, and cultural capital.  Program participants improved their leadership and problem-solving skills, as well as their understanding of rural poverty through 18 months of local intensive training and several regional workshops. The Horizons program groomed many new leaders who previously did not

participate in community affairs. Sandy, a homesteader, related how the training had

given her a sense of leadership capacity:

> *That [Horizons] training was absolutely wonderful. I just got it where I*
> *needed it, until I realized, yeah I do have skills. I think people without a*
> *degree kind of think they don't know as much as the next person.*
> *Validation I think is what it is. It doesn't make any difference who you*
> *are or what you are, but what you do. What you get out and do.*

A Swift Brook newspaper was created, increasing information shared among

community members. Swift Brook Horizons members made connections with

Horizons groups from other communities and began regional initiatives such as a

volunteer database and a microenterprise development organization. University

extension personnel actively sought out resources and grant opportunities for Swift

Brook's program participants because of their newly cemented relationships.  The

program infused $10,000 that Swift Brook Horizons members used to buy a new

refrigerator to serve meals to seniors, donate to the youth center, start a potato garden

for the food bank, and open a computer lab with internet access. All of the group's

financial investments had the aim of "paying it forward" and were expected to serve as

assets that would grow over time. Instead of buying food for the food bank, the group

invested in a potato garden that could be replanted year after year. Group members

initiated a time share in which residents trade goods and services such as tax

preparation, tractor work, and tutoring without the use of money. Horizons members

started both a farmer's and art market, allowing residents to sell their produce and

artistic wares in a new venue. Shane, one of the co-founders of the art market,

explained how the Horizons training jumpstarted the idea:

*We started selling art in the park on weekends, Dolores and I. So we thought, let's just have an open air market. We got the idea while we were in Horizons to do it. Because we thought people in the community are trying to create some kind of income on their own without going to get a second job. That's where we got the idea and the marketing ideas and self-promotion came from some of the workshops we went through with Horizons…I never expected to be unemployed for two years. Those things benefited us personally greatly. That was really nice. Like shameless self-promotion was one of the things they talked about. It was fabulous.*

Finally, Horizons members completed town clean-ups, picking up litter and volunteering to paint local business fronts. Part of the impetus for these beautification efforts was to give Swift Brook residents a sense of pride for their community and to attract motorists from the highway that intersects town. Sandy summed up the program's benefits, "It [Horizons] gave us a glimmer of hope."

Capital maintenance was noted by five interviewees regarding the Horizons program. Although Horizons group members and Swift Brook community leaders could easily list off numerous positive outcomes from the program, a few described how people in poverty, those the program was geared towards, did not participate as fully or perhaps benefit as much as they could have. Sandy explained how people in poverty did not participate fully in Horizons:

*One of the things we wanted to do with Horizons was get people who are in the generational poverty who feel that they don't have a voice. They're never going to run for city council. They'll probably never get invited to join the Rotary. But if we can get them in and give them some leadership skills, they could be very beneficial to the community. Which is what we're still after. We feel like we really haven't made as good of inroads as we can [with population in poverty].*

People with lower economic means had limited participation according to interviewees due to restricted transportation options, harried personal lives, and

cultural differences. Showing up at a Tuesday meeting at 7 pm is a difficult

proposition for someone who can't afford the gas money to get to town or doesn't

have alternative childcare options. Several interviewees noted that more people came

to meetings if free food was offered. Because Horizons is a multifaceted organization

without a narrow service mission, it may be that people in poverty did not see a clear

connection for how participating in Horizons might benefit them. Lilly, a university

extension agent, reasoned why some people did not join the poverty reduction

program:

> *The tricky part about Horizons is it's not the kind of concept that*
> *people that receive the benefit get their arms around. For example, if*
> *you go to the food bank, you get food and you know that the food bank*
> *gives you food. If you go the library you get books or access to the*
> *computer and you know what they give. The fact that Horizons is doing*
> *a volunteer database is going to impact people in poverty by the*
> *agencies they serve, but the people in poverty are not going to go, "Oh*
> *[high pitch squeal] I'm so glad Horizons is here doing that work!"*

Another aspect of capital maintenance entailed resistance to change by local business

owners. Some business owners resented town beautification efforts because they did

not want to alter their store front, or at least not be told to do so. Hence, while

Horizons projects were generally well-received by Swift Brook residents, there were

still a few holdouts who preferred less intrusion in their affairs.


Wilderness Designation: Capital Maintenance & Capital Depletion

The wilderness designation event resulted in capital maintenance and capital

depletion. Out of 14 interviewees, 8 noted themes of capital maintenance, 8 noted

themes of capital depletion, and four referred to capital accumulation. A detailed

description of the manifestation of these themes is provided in the case of Liberty. No

significant differences were noted between communities in how interviewees

perceived the outcome of wilderness designation.

4.3 Discussion

Frequently portrayed as homogenous and united, rural community residents

actually have a diversity of aims, values, and backgrounds. The nature of the catalyst

reveals how bridging social capital within one community varies depending on the

particular economic opportunity or disturbance the community faces. Tönnies'

concept of gemeinschaft tends to reflect community social structure in the less

controversial events studied. Gemeinschaft is akin to bonding social capital as it

describes a particular type of groupthink to which community members ascribe. His

depiction of neighborhood gemeinschaft presents a communitarian ideal that has

mixed resonance in this study:

> *Neighborhood describes the general character of living together in the*
> *rural village. The proximity of dwellings, the communal fields, and*
> *even the mere contiguity of holdings necessitate many contacts of*
> *human beings and cause inurement to and intimate knowledge of one*
> *another. They also necessitate co-operation in labor, order, and*
> *management, and lead to common supplication for grace and mercy to*
> *the gods and spirits of land and water who bring blessing or menace*
> *with disaster (Tönnies 1957, 43).*

Residents in each case study community characterized their neighbors as extremely

helpful in times of a non-controversial crisis such as a flood, fire, or illness. Jane, a

retired homemaker in Liberty, recalled the community's response to a house fire,

"people from all places came, all different sides, came and helped out. That's something that's really cool in the community." Similarly, Leah, a non-profit director in Swift Brook, remarked on the town's ability to help someone in need:

> *I think all and all, probably one of the better things about living in a small town, it doesn't matter who a person is or where they fall on the spectrum…there have been a number of times a kid's gotten hurt or someone dies unexpectedly, somebody gets injured unexpectedly, this entire community digs so deep in their pockets for whatever they can do for a fundraiser.*

Yet, first world rural communities are much more heterogeneous than the German hamlets of the late 1800s to which Tönnies refers. A stock of social capital available to capitalize on during a natural disaster is not the same stock in a controversial public land management decision.

At times, different change events for a given community reflected different stocks of social capital. In Swift Brook, social capital used in the wilderness designation event did not overlap neatly with social capital in the poverty reduction program. Yet, in Liberty, similar constellations of social capital among traditional residents arose in the wilderness and mining operations events. Liberty's limited economic opportunities, history of business closures, and larger public land base linked residents' perceptions of wilderness designation and mining operations. Liberty residents frequently equated a loss of economic enterprise with the end of their community. Swift Brook's more diverse economy and larger private landholdings may have allowed community leaders to distance local community issues from regional public land management decisions.

Wilderness advocates and access proponents can be understood as communities of practice or interest that crossed community geographies. Their interests and activities were regional, instead of being tied to a specific community. Wenger (2000) offers a typology for communities of practice based around three elements: engagement (what and how much individuals do together), imagination (the strength of a shared mental image of the bounds and qualities of the network) and alignment (the extent to which individuals act according to the rules of the network). Access proponents engaged with one another frequently, especially in informal encounters. Imagination was strong for access proponents, who relied on a shared history and values to bolster their network. Finally, they were highly aligned in their outlook on public lands management and attitude against compromise with environmentalists.

Table 24 displays how bonding, bridging and linking social capital varied in each community. More interviewees from Elkton and Liberty noted strong bonding social capital compared to Swift Brook residents. Overall, Elkton exhibited weak bridging social capital, whereas Liberty and Swift Brook had a mix of weak and strong bridging social capital. All three communities had a mix of weak and strong linking social capital.

Table 24: Bonding, Bridging and Linking Social Capital in each Community

| Community | Bonding Social Capital | Bridging Social Capital | Linking Social Capital |
|---|---|---|---|
| Elkton | Strong (12 interviewees) | Weak (18 interviewees) | Weak (15 interviewees) Strong (8 interviewees) |
| Liberty | Strong (17 interviewees) | Weak (15 interviewees) Strong (14 interviewees) | Weak (16 interviewees) Strong (13 interviewees) |
| Swift Brook | Strong (5 interviewees) | Weak (11 interviewees) Strong (15 interviewees) | Weak (8 interviewees) Strong (16 interviewees) |

The discussion section is organized in two parts: (1) Interaction Effects of Bonding and Bridging Social Capital and (2) Interaction Effects of Bridging and Linking Social Capital. They review the manifestation of social capital and its interaction effects through a cross-case synthesis.

*4.3.1 Interaction Effect between Bonding and Bridging Social Capital*

An inverse relationship between bonding and bridging social capital was found in Elkton and Liberty. Strong bonding social capital among pro-development leaders did not help them reach consensus with all residents and was a stumbling block in fostering strong bridging social capital. Similar backgrounds united pro-development community leaders in Elkton; however, other civic leaders found their common vision for the community to not reflect the interests of the average resident. Bonding social

capital among traditional residents in Liberty was strengthened by their shared history of a sense of loss of a cherished way of life and served as a barrier to nurturing bridging social capital. Finding common ground with those who opposed or wished to limit traditional employment opportunities was challenging.

4.3.1.1 Weak Bridging Social Capital

Cross-cutting themes that contributed to weak bridging social capital in these cases include value and lifestyle differences, and predetermined desired outcomes by community stakeholder groups. Bridging social capital appeared to be the weakest in cases where traditional residents clashed with a consortium of amenity migrants and local environmentalists. Strong bonding social capital within each group frequently precluded forming trusting relationships with "others." In the events of wilderness designation, mining, and the resort development, residents competed with one another to manage their physical environment, economic opportunities, and community's social composition.

The social divisions of the New West have been chronicled extensively (McCarthy 2002; Powers 1996; Robbins et al. 2009). McGranahan (1999) found that population growth between 1970 and 1996 in non-metropolitan counties was greatest in those ranked high in natural amenities (e.g. good climate, water bodies and coastlines, varied topography). Amenity migrants move to rural areas for environmental amenities like open space and abundant recreation opportunities, whereas traditional residents typically value land for its production possibilities. Smith and Phillips (2001) use the label "remote greentrifiers" to portray new middle class

members of a rural area in England who value the therapeutic nature of socio-spatial isolation. By selectively pursuing healthy rural traditions such as homesteading and rejecting environmentally degrading work like clearcutting and mining, remote greentrifiers in public land communities challenge traditional residents' livelihoods.

Arguments against resort development and mining and for wilderness designation included a need to preserve the unique environment, maintain solitude, and find more suitable, sustainable economic enterprises for the three communities. In the mining operations event, the phrase "quality of life" became a contentious term as newer residents charged that mining activities were destroying their rural peace and quiet. Residents in support of the mine cited the importance of retaining jobs in the area. Seth, a Liberty business owner, argued that citizens opposed to mining operations did not consider the material needs of longtime residents due to their relative prosperity: "Those people that move to the country and want peace and quiet anywhere they go…They've already made their living! They're living on their retirement funds."

A lack of diversity, inclusivity, and strong horizontal linkages characterized these instances of weak bridging social capital, leading to ineffective community networks (Flora 1998). Instead of engaging in collective action for community betterment, community members pursued actions at the expense of their neighbors with alternative backgrounds, livelihoods, and values. A history of vitriol marks many public land management disputes and challenged resource debates in the case study communities. Interviewees employed in natural resource dependent occupations such

as forestry, ranching, and mining ascribed a loss of economic opportunities and social

cohesion to environmentalists and government regulation. These traditional residents

were unlikely to forge relationships with community members who threatened their

livelihood choices.

Traditional residents in the case study communities nostalgically recalled a

past of good, hard work and self-determination. McCarthy (2002) describes how rural

commodity producers in the American West coalesced together to retain access to

public lands, jumpstarting the Wise Use movement in the 1980s. Demographic as well

as technological changes and evolving environmental values all serve to crystallize

resistance to rural restructuring. Traditional residents promoted the use of local

knowledge over environmental science and vilified environmentalists for job loss in

the case study communities.

Demographic and market shifts in the case study communities concerned

longtime residents who perceived an erosion of traditional cultural identity. Access

proponents equated wilderness designation with a loss of livelihood. Hunter, a third-

generation rancher in Liberty, explained why ranchers opposed wilderness:

> *It [wilderness designation] takes everything away from us that we*
> *believe in, that this country was started on…Even if they tell us we can*
> *run cattle on the wilderness, they haven't proved to us that we can in a*
> *manner of making a living. Because it hasn't happened anywhere else.*
> *So what are we giving up? We're giving up our rights to grazing on the*
> *Forest. We give up our rights to graze and we give up our right to make*
> *a living for our families and everything.*

Hunter insisted that wilderness designation would put ranchers out of business

and destroy the American dream, i.e., the ability to provide for your family

through a hard day of work. If wilderness designation attracted new residents to the area, they would be likely to have different backgrounds (e.g. grew up in California) and priorities (e.g. building "McMansions"), further eroding local culture.

Traditional residents were saddened by a loss of "old timers" and their associated lifestyles and values. The case study communities lie in high-amenity counties that have experienced significant population growth due to in-migration. The communities' population compositions have further changed due to a decline in birth rates. Population increased by 15 percent in Jefferson County (Elkton), four percent in Ferry County (Liberty), and nine percent in Stevens County (Swift Brook) from 2000 to 2010 (US Census 2010; US Census 2000). During that decade, nonmetropolitan counties experienced an absolute decline in the population of non-Hispanic white youth. The white youth population declined by 940,000 people or 10% in those counties (Johnson 2012). In the case study communities, traditional residents had few young people to impart their experience and knowledge. In nonmetropolitan counties, the Hispanic youth population increased by 434,000 people or 45.1% from 2000 to 2010. The case study communities had few Hispanic residents, and did not experience growth in this demographic like other rural communities.

Leslie, a Swift Brook business owner, related how environmental regulations over time have compromised residents' ability to make a living and recreate in

traditional ways. She commented, "if you move a rock, you're in trouble." Traditional

residents loathed forming relationships and collaborating with environmentalists with

whom they conflicted in the past. Because successful models of collaboration are still

far and few between and incredibly contextual, it is difficult for traditional residents to

imagine how these relationships might be initiated. In her study of resilience in

environmental governance in central Oregon, Davis (2011, 229) finds that memory

plays a significant role in the outcomes of a collaboration and frequently is seen as

"negative baggage" in public lands disputes in the Western United States.

Evidence from the case study communities challenges the simplistic notion

that new and old residents will inevitably conflict with one another and highlights how

culture and values are multidimensional. For example, the manifestation of social

capital regarding the resort development event in Elkton was driven primarily by value

and lifestyle differences, not newcomer status. These findings echo other research on

the diversity of attitudes among newcomer communities (Walker, Marvin, and

Fortmann 2003), the insignificance of length of residence and attachment to the

natural environment (Brehm, Eisenhauer, and Krannich 2004), and the evolving nature

of community in tourism-oriented areas (Rothman 2000). Robbins et al. (2009, 373)

argue that:

> *Focusing on conflicts between these communities [new and old residents] may deflect attention from deeper trends that pull control of land and resources away from both groups, and which elide other axes of differences…*

Length of residence appeared to have no bearing on community members' opinions

towards the proposed resort development. Newcomers and multigenerational residents

raised concerns that the resort would overwhelm the small town and their local culture and change their rural environment. Sherry, a university extension agent, who filmed public meetings regarding the resort illustrates the diverse types of people opposed to the resort:

> *I was very surprised that so many people turned out [at a public meeting], I was even more surprised that people that I would characterize as traditional loggers were coming across as environmentalists. They were very concerned about additional traffic, change of lifestyle, influx of large numbers of people. It was really astounding to hear their perspective on that and they had really absorbed that they loved the lifestyle they had in Elkton. This is why we moved here, they moved here to have the sounds of nature and so on.*

The resort development event serves as a reminder that public opinion on community development decisions does not necessarily reflect common social divisions.

In the proposed wilderness and resort development events, people of opposing viewpoints did not work with one another and vilified their opponents. In the wilderness event, access proponents and wilderness advocates met with one another at numerous public meetings, but they did not enter prolonged discussion together. In the resort development event, pro-development leaders referred to the group opposed to the resort as inconsequential and representative of few people in the community. Bill, a pro-development leader, claimed, "only six people are part of that group [*Rural Elkton*]" and "it's probably 85% pro and 15% against it." Melissa and Ryan, an Elkton couple that works with the resort development company, questioned whether *Rural Elkton* represented people of Elkton or interests outside of the community. They described the amorphous nature of the group, "It's hard to understand exactly who they are. Very few of those people live in the community. Their legal environmental

counsel is probably from Seattle, if they're even from Washington State." Bridging social capital remained weak in these events of entrenched interests and limited empathy for opposing viewpoints.

4.3.1.2 Strong Bridging Social Capital

Strong bridging social capital was driven by respectful communication, inclusive leadership, and an empowerment ethic. Liberty and Swift Brook residents recounted how community members solidified relationships and created new pathways of opportunity in the resumption of mining operations and initiation of Horizons, respectively. The poverty reduction program Horizons appeared to increase bridging social capital among emerging and previous leaders, possibly due to the nature of Horizons as a non-controversial catalyst and relative social cohesion and prosperity in the community. The Horizons program had no connection to land management, and revealed other forms of social capital available in these timber war-stricken communities.

In comparison with interviewees of Liberty and Elkton, interviewees of Swift Brook generally presented a positive attitude towards the community's future and a lack of social conflict, likely contributing to the success of Horizons. Swift Brook residents were optimistic that the community would capitalize on tourism opportunities in the future. A number of community leaders were intent on building infrastructure to make their town a desirable place to live and visit. Matt, the Swift Brook city planner, was frequently described as a "visionary" and a "mover and

shaker." He had received grants for a new visitor center, a water treatment facility, and sidewalk upgrades. Other government officials such as the mayor and school superintendent were similarly characterized as "community-minded." Newcomers in Swift Brook claimed they felt supported in the community and not ostracized for recent immigration. Finally, several interviewees noted that Horizons group members did not have a singular agenda that excluded new ideas. Their openness to communicate and listen to diverse viewpoints squelched potential conflicts.

Of the more controversial catalysts in the case community, only in the mining operations event did residents of opposing viewpoints choose to engage in sustained dialog to find consensus. Classic tension between amenity migrants and traditional residents was abated through the use of facilitated meetings based on consensus. Time and interest was sustained by all parties interested in the outcome and facilitation resources were available when needed. New communication strategies allowed residents with opposing opinions to find common ground. An emphasis on process instead of outcomes gave people time to get to know one another before initiating debates on the mine's activities.

*4.3.2 Interaction Effect between Bridging and Linking Social Capital*

Bridging and linking social capital intersected to create a variety of outcomes in each case. In terms of affecting change, linking without bridging social capital meant that the change being made benefited one element of the community's population at the expense of another. Bridging without linking was insufficient to

affect change, even when the community was united around a common cause. Furthermore, the presence of linking social capital did not mean political capital was available. Strong relationships with extra-local decision makers did not always result in a desirable community outcome.

Linking social capital is related to the concept of political capital. Flora et al. (2004) define political capital as access to power, organizations, and connections to resources and power brokers. Access and connections can be formed through norms and networks, but they are not equivalent. Flora (2007, pg. 6) elaborates, "political capital is the ability of a group to influence standards, regulations and enforcement of those regulations that determine the distribution of resources and the ways they are used." Hence, sharing norms and networks with extra-local decision makers is not sufficient to influence policy. The wilderness, mining, and poverty reduction events revealed how linking social capital may or may not result in additional political capital.

In the wilderness event, access proponents and wilderness advocates possessed a mix of weak and strong linking social capital with the USFS and their U.S. Congresswoman. Weak bridging social capital between access proponents and wilderness advocates led both sides to be dissatisfied. Extra-local decision makers attempted to strike a delicate balance to moderate between the two opposing sides, which resulted in policy gridlock.

In the mining operations event, relationships between citizens concerned about the mine's impacts and mine officials and other decision makers improved as bridging

social capital improved between concerned citizens and traditional residents. Initially, the citizen action group made little progress in achieving mitigation goals such as restricted hours of operation and reductions in noise and light pollution. Empathy between citizen action group members and traditional residents increased through their joint participation in the community advisory board.  It appears as though bridging social capital increases linking social capital's potency. It should be noted that some members of the citizen action group refused to join the CAB and instead lobbied the mine on their own.  Sustained energy on the part of these independent activists likely also further influenced the mine to make concessions.

In the event of the poverty reduction program, strong linking capital resulted in additional resources and training for Swift Brook Horizons members. Funding and support organizations outside of Swift Brook were eager to work with the community because of the cohesive nature of the Horizons group there, as well as their broader vision to work regionally over a long time period. New relationships between Horizons' members and university extension personnel provided the group with access to grants and training which has empowered the organization to offer new resources and services to the Swift Brook population. The wilderness, mining, and poverty reduction events all indicate that linking social capital's impacts are significantly affected by the presence of bridging social capital.

At the time of writing, it was still unclear whether the proposed resort development would secure the required permits and financing to be built in Elkton. Linking social capital was strong for *Rural Elkton* members opposed to the resort

development; they kept a vigilant watch on the government permit process in the hopes of stalling and halting the project completely. Elkton community members could lobby for or against the development to county commissioners who would make some of the final regulation decisions. Elkton residents who represented the development locally made it clear that political pressure could make or break the resort. Since bridging social capital was weak, it is doubtful whether those in favor or against the resort could effectively mobilize a broad-based coalition.

4.3.2.1 Weak Linking Social Capital

All case study communities exhibited weak linking social capital with the USFS. Interviewees expressed a sense of alienation and marginalization from the public land agency, which contributed to feelings of powerlessness to control community development outcomes. Wilderness advocates expressed frustration as achieving wilderness designation continued to be elusive. They continually formed new relationships with rotating upper management to retain influence. Those who occupied positions of power like the District Ranger and Forest Supervisor moved frequently for career advancement, restricting the wilderness advocates' collaboration's ability to sustain relationships. In her study of resilience in environmental governance, Davis (2011) finds that the loss of a key collaboration leader can deteriorate working relationships considerably, especially if that person's knowledge and skillset is not transferred to her replacement. Wilderness advocates posited that transitions between USFS personnel could be smoother if employees departing would provide more information to incoming employees about past

agreements and decisions made. They also noted a lack of experience in collaboration among some USFS personnel. Wilderness advocates charged that the latest USFS revision plan did not include agreements made between them and the past Forest Supervisor.

A history of expert management culture among USFS also made public engagement tricky. Janet, a NEPA coordinator for USFS, expounded:

*Part of the problem is our internal talk and what gets out to the public. Our focus has been toward silviculture and our agency and our culture, we have always known the most and the best, we tell you what we're going to do , and we do the head bob, and we go do it.*

Janet highlighted a cultural shift that's underway in the agency, but still has not fully taken over. Historically, the agency was known for its uniform administrative culture and reputation of efficiency and effectiveness (Kaufman 1960). The classic USFS district ranger was viewed as an expert, whereas today they are considered an expert, but one who can also learn from citizens (Koontz 2007). The concepts of collaboration and partnership have been increasingly promoted among USFS leadership to write directives, plan timber sales, conduct restoration activities, and improve wildfire preparedness (USDA Forest Service 2011a; USDA Forest Service 2009); however, those ideas are unlikely to be fully subscribed to by the hundreds of thousands of land managers the USFS employs.

The new Forest Supervisor suggested the wilderness advocates need to branch out to other interest groups such as the access proponents to form a broader-based coalition if they want to see their ideas more fully incorporated in Colville National

Forest policy. Bruce, the USFS District Ranger in Swift Brook, described the

progression of conflict and consensus between the USFS and different interest groups:

> *There was a day when the Forest Service found themselves between the*
> *environmental community and the industry, timber industry. There*
> *were two major extremes. Then under the former Forest Supervisor,*
> *and Darryl[timber industry leader], those two groups got together and*
> *tried to focus on some middle ground and they focused on what they all*
> *agreed on. They developed relationships and trust amongst one other.*
> *That group [wilderness advocates' collaboration] was working with*
> *the Forest Service and things were working pretty rosy for a while.*
> *Then the motorized recreation community felt they were losing out.*
> *Now we're back to the Forest Service being in the middle of two*
> *groups. It's just two different groups.*

The wilderness advocates' collaboration semi-institutionalized status within the

Colville National Forest does not imply that their viewpoint will be adopted by every

district ranger or supervisor that passes through the office. In this case, a lack of

bridging social capital between wilderness advocates and access proponents prevented

linking social capital from producing its intended effects.

The concept of collaborative natural resource management (CNRM)

has been promoted extensively; yet, significant hurdles still exist to enable

diverse interests to work together. A defining feature of collaborations is their

ability to bring together all interested parties to make a decision (Cestero 1999;

Tilt 2005; Ansell and Gash 2007). The presence of multiple publics

complicates the practice of devolving power and authority from government

agencies to local people. In five case studies of CNRM, Kellert et al. (2000, p.

713) found that a significant obstacle was the "inability to control and guide

behavior of complex organizations, particularly bureaucratic and local

institutions." Development of a shared imagination and common goal among diverse interest groups is essential to effective collective action.

Although some environmental organizations have embraced collaboration to pursue environmental objectives, other groups are still skeptical of the benefits of collaboration. Discussion panels at the Public Interest Environmental Law Conference, the largest annual gathering of its kind, reveal the spectrum of views toward collaboration among environmental groups. A 2012 workshop entitled "Collaborative Groups: A Step in the Right Direction or Two Steps Back?" made it clear that environmental groups have not fully subscribed to the notion that collaboration produces better outcomes (PIELC 2012 Brochure). Being at the table early on can allow a group to help guide management decisions; yet, it also may preclude them from achieving specific goals their members have articulated.

Mitch Friedman, Executive Director of Conservation Northwest, an environmental group that has worked on the Colville wilderness issue, argued that landscape-scale restoration of our public forestlands is only possible through partnering with timber and community interests (Friedman 2006). He suggested that "boldness" and "courage" were needed for collaboration to succeed. Still, hardline environmental groups remain and fuel antipathy towards collaboration with traditional residents.

While the presence of linking social capital does not necessarily result in desired outcomes, its absence precluded the achievement of community members'

goals in the washed-out road event in Elkton. When the access road initially washed

out, Elkton community members did not organize in support of rebuilding the road, as

they assumed it would be done quickly without contention. Yet, national

environmental policies kept the road from being rebuilt and served as an

insurmountable roadblock. Local capacity and funds to rebuild the road were useless

in the face of environmental regulations governing activity on the road. Trust and

connections did not exist between local community leadership and environmental

appellants who litigated to decommission the road. In this event, strong bridging social

capital did not appear to have much of an impact in the face of prevailing extra-local

interests. A lack of linking social capital to environmental organizations hindered

Elkton community members from achieving action on an issue for which most locals

agree.

4.3.2.2 Strong Linking Social Capital

In all of the communities, local environmentalists relied upon regional support

networks to achieve their aims. They received guidance and funding from

longstanding environmental groups who have dealt with numerous resource conflicts.

These groups' experience benefited residents concerned about resource conservation

and preservation of solitude. In contrast, community leaders in Elkton and Liberty

especially did not rely upon extra-local organizations and felt strongly that whatever

resources their community needed, the community itself would have to provide. They

did not trust resources to be available to them from other places or institutions. Doug,

a retired business man in Elkton, explained: "People in Portland and Seattle will do

anything they can to stop us. But will they do anything to help us when we need it?

No. That's up to us." In contrast, Swift Brook residents were less critical of outside

groups and instead nurtured relationships with government agencies, university

personnel, and non-profit organizations.

**CHAPTER 5**

CONCLUSION

This study sought to explore the relationship between social capital and well-being in the rural West. Mixed methods were employed to understand the concepts from multiple angles, using both profile and process indicators. Results from the econometric approach did not indicate a significant relationship between social capital and poverty across model estimations. Incorporating spatial dimensions (i.e., spatially lagged dependent variables and spatially correlated error terms) into a two-stage least squares model revealed that neither social capital nor poverty were significant factors in prediction of the other. In contrast, the case study approach revealed social capital to be a critical ingredient in a community's ability to take advantage of opportunities and mitigate the impacts of disturbance.

The integration of quantitative and qualitative approaches to research studies remains infrequent, despite the need for it to find answers to complex questions (Bryman 2004). One challenge to integration arises from paradigm conflicts between a positivist/empiricist approach and the constructivist/phenomenological orientation (Tashakkori and Teddlie 2008; Guba and Lincoln 1994). A paradigm is the worldview or belief system that guides a researcher (Kuhn 1962). The positivist paradigm is frequently associated with quantitative methods, while the constructivist paradigm is often associated with qualitative methods. Positivism bases knowledge on observable facts and assumes a single reality, whereas constructivism argues for multiple,

constructed realities in which the knower and the known are inseparable (Lincoln and Guba 1985). Although positivism and constructivism have been construed as paradigmatic extremes, many social scientists advocate for pragmatism in choosing methods (Plano Clark and Creswell 2008). Morgan (2007) views a pragmatic approach as one that melds the strengths of qualitative and quantitative approaches. He presents an organizing framework for understanding what the pragmatic approach can offer social science methodology. It is presented in Table 25.

Table 25. A Pragmatic Alternative to the Key Issues in Social Science Research Methodology

|  | *Qualitative Approach* | *Quantitative Approach* | *Pragmatic Approach* |
|---|---|---|---|
| *Connection to Theory and Data* | Induction | Deduction | Abduction |
| *Relationship to Research Process* | Subjectivity | Objectivity | Intersubjectivity |
| *Inference from Data* | Context | Generality | Transferability |

Source: Morgan (2007)

Instead of emphasizing one paradigm at the expense of another, this study walks a fine line between the two, adopting a pragmatic approach in which method choice is guided by the research question. Instead of only having the option of a hammer from the toolbox, a mix of tools can be applied, providing more robust findings. This study used mixed methods throughout all stages of the research process: problem formation, literature and theory review, methods, and now the combined analysis.

The quantitative and qualitative approaches were parallel or simultaneous studies. The concurrent design employed an approach of complementarity, in which the two approaches work synergistically. Elaboration, enhancement, illustration, and clarification of the results from one method to the results of the other are possible with the generated data (Greene et al. 1989). Classic triangulation is not appropriate as the research questions in the quantitative and qualitative approaches were slightly different, geared toward the analysis of profile and process indicators, respectively. The methods were used to measure overlapping but also different facets of social capital and community well-being.

The econometric results imply that social capital and poverty do not directly affect one another. Some questions these results raise are whether poor people have the same types of networks as the non-poor, and whether poor people are allowed to enter networks of the non-poor. A defining feature of being poor is that one is not a member of—or is even actively excluded from—networks and institutions, ones that could be used to secure good jobs and decent housing (Woolcock 2002; Wilson 1996; Loury 1997). The social capital index used in the econometric analysis relies on organizational membership data for groups to which the poor are unlikely to belong. Professional associations and sports and recreation clubs could benefit the poor if benefits members receive eventually trickle down to the poor. The results found in this study do not give evidence to long-reaching diffusion of economic opportunities from the type of social capital measured here.

Development organizations like the World Bank and United Nations

Educational, Scientific, and Cultural Organization actively promote social capital

investment as a means to eradicate poverty. Although the econometric results did not

indicate that social capital investment is a credible poverty reduction strategy, other

forms of social capital may be employed by the poor that they leverage to get by. The

poor generally have access to bonding social capital, a close-knit and intensive stock

of social capital related to strategies for survival (Øyen 2002; Woolcock 2002). The

poor are likely to have a modest endowment of the more diffuse and extensive

bridging social capital typically deployed by the non-poor to get ahead, and almost no

linking social capital to gain sustained access to formal institutions such as banks,

insurance agencies, and the courts.

The case study findings shed more light on how distinct forms of social capital

impact community well-being through broader development opportunities. Generally,

interviewees stressed the importance of bridging social capital to achieve community-

wide desired outcomes, whereas the presence of bonding and linking social capital

produced variable effects. More social capital did not always result in beneficial

outcomes. Strong bonding social capital was often associated with weak bridging

social capital. A combination of strong bridging and linking social capital appeared to

be key factors in improving adaptive capacity. None of the case study communities

acted within a vacuum. Relationships to extra-local decision makers like political

representatives, government regulators, and regional environmental organizations

significantly impacted community members' ability to reach their goals. The washed-

out road event illustrated how strong bonding and bridging social capital may have no potency if linking social capital with key powerbrokers is absent. Yet, the presence of linking social capital did not guarantee outcomes that benefited the majority of community members. A lack of bridging social capital can lessen the impact of linking social capital, as demonstrated in the wilderness designation case.

The econometric approach did not consider context in how social capital operates, while the case study approach revealed the contextual factors that influence the formation of and impacts of social capital. For example, the manifestation of bridging social capital was partially driven by the catalyst or change event in a given community. Community leaders united together in the face of a non-controversial economic opportunity or disturbance such as the poverty reduction program. Alternatively, they conflicted in the case of wilderness designation with their memories of tense public land management disputes and loss of resource dependent industries. In the analysis of adaptive capacity, the form of adaptation noted by interviewees was directly related to bridging social capital. Capital accumulation for one segment of the community could imply capital depletion for others. For example, if the resort is developed in Elkton, some community members would benefit from new employment opportunities, while others would find their solitude disrupted with increased traffic. Similarly, increased bonding social capital among motorized recreationists and ranchers led to diminished bridging social capital for all interest groups with an opinion on wilderness designation.

The social capital index used in the econometric approach did not appear to resonate with residents' understanding of social capital where they lived. According to the index, Jefferson County (Elkton) was in the upper 25 percentile for social capital in Oregon and Washington, Stevens County (Swift Brook) had an average level of social capital, and Ferry County (Liberty) was in the lower 25 percentile. Yet, residents of Elkton indicated deep schisms in community life and an inability to work together on pressing issues. Residents of Swift Brook and Liberty, in contrast, developed strong bridging social capital through the events of resumed mining operations and the poverty reduction program. However, residents of those same communities continued to feel alienated from one another regarding the proposed wilderness designation. Indicators of social capital that sum up organizational capacity and evidence of civic norms will obscure how social capital operates differently depending on the issue at hand. Because the index is county-wide, it may also not be able to adequately reflect social capital in a given community. Developing indicators with sufficient scale complexity remains a challenge.

Finally, the case study approach revealed how social capital is created and can be built up or depleted. My hope is that the findings are useful for community development practitioners, rural community leaders, and public land managers that interface with rural communities. Despite initially weak bridging social capital in Liberty, the collaboration around mining practices provides an example for how traditional residents and new in-migrants might lessen animosity and find common ground. A continuum existed between a simple narrative of traditional residents versus

newcomers; a mix of cultural, social, and economic factors influence resident

cohesiveness. Socio-institutional dimensions of adaptability or adaptive capacity relate

to the ability of a community to alter its social norms and networks in response to a

change. The mining, resort development, and poverty reduction events depicted some

form of social adaptability. Walker et al. (2002) defines adaptive capacity as "…an

aspect of resilience that reflects learning, flexibility to experiment and adopt novel

solutions, and development of generalized responses to broad classes of challenges."

In these three events, learning took place among people that would have been unlikely

to develop innovative solutions on their own. Following are some suggestions to

nurture bridging social capital based on the case studies:

- Bring diverse viewpoints in early to a collaboration process
- Treat diverse viewpoints with respect and search for points of empathy
- Seek out opportunities for personal dialogue
- Employ a non-divisive facilitator
- Collaboratively develop goals, a decision-making process, and communications sideboards
- Ensure that all participants are equally familiar with environmental regulations and the process of public involvement with government agencies
- Focus on zones of agreement and low-hanging fruit to build trust and relationships among stakeholders
- Spend sufficient time to inform and train new participants about ongoing, long-term collaborations

To extend this research, I would test the econometric models with different

datasets in order to compare results across geographies, scales, and types of social

capital indicators. A sensitivity analysis is needed to test the generalizability of the

findings. Developing and testing social capital indicators with sufficient scale

complexity would indicate how different types of social capital (e.g. bonding,

bridging, and linking) impact poverty levels and how poverty impacts social capital formation. Although many studies have assessed the impact of social capital on indicators of community well-being, none take both spatial dimensions and simultaneity into account. Revisiting past studies and adding these dimensions to their analysis could contribute to a meta-analysis to understand how social capital works across different geographies and scales.

Another extension of this study would be to investigate how marginalized populations of rural communities use social capital and the types of social networks they join. Marginalized community members could include the poor, ethnic and racial minorities, and youth, those people whose social capital may manifest in alternative forms of social capital. Because the case studies relied on interviews with community leaders, the views of community members who are unlikely to have leadership positions were not well represented.

Future studies could investigate how changing demographics shape rural community members' understanding of past land use disputes and engagement in current public land issues. A longitudinal study could research how imagination, i.e. the strength of a shared mental image of the bounds and qualities of the network, is changing among traditional residents as community composition changes. Due to the changing demographics of rural communities, it is especially important to study emerging community leaders. Hispanic/Latino populations are growing in rural America, and their integration into those communities warrants further study.

While this study gives evidence to when collaborative natural resource management may be successful, it also raises the question of if and when collaboration is an effective policy tool for land management agencies. There is a continued need to assess collaboration between land management agencies like the USFS and adjacent communities, to understand how collaboration evolves and its role in management decisions. Potential outcomes of an inclusive planning process include greater buy-in from diverse stakeholders, a lower probability of appeals and litigation, and external resources for project implementation. Yet, because collaboration success is inconsistent, it is imperative that land managers who engage in collaboration continue to learn about the opportunities and challenges it presents. Ongoing studies are needed to elucidate active stakeholder interests and points of consensus among divergent groups. Agency personnel can learn to gauge when collaboration might be used to help inform management decisions, as well as how to facilitate a collaboration-friendly environment.

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*Appendix A: Community Well-being Variables*

<u>Poverty</u>

Poverty is a ubiquitous measure that contributes to well-being (Charnley et al. 2008; Donoghue and Haynes 2002; Isserman et al. 2009; Overdevest and Green 1995; Formann 1991; Stedman et al. 2004; Reeder and Brown 2005; Beckley 2005). People with lower incomes and savings can't purchase as many goods and services as wealthier folks. Thus, being impoverished may result in the inability to buy needed household items and services such as clothing, nutritious food, or safe housing. I use the U.S. Census definition of poverty, in which poverty thresholds are calculated by estimating the costs of a minimum adequate diet for families of different size and age structures multiplied by three to allow for other necessities. A family is considered poor if its annual before-tax money income is less than its poverty threshold. The incidence of poverty is simply the proportion of the population that is poor.

<u>Income Inequality</u>

Duncan (1999) in *Worlds Apart: Why Poverty Persists in Rural America* suggests that the depth and persistence of rural poverty are rooted in a rigid two-class system of haves and have-nots. The "haves" wield their power over jobs and opportunities to maintain their privilege, at the same time subjugating the "have-nots," who are desperately poor and socially isolated. In-migration of wealthy suburbanites searching for recreation and retirement has greatly altered the socioeconomic structure of amenity-rich communities in the west. Timberlands have rapidly changed hands in the last decade with millions of acres of forested land in the hands of real estate

investment companies and timber investment management organizations. Many of these parcels of land have been developed into high-end residential properties, which have attracted wealthy retirees and newcomers to forest communities (Bliss et al. 2008). While the new residents bring skills, experience, and extra-local connections to these communities, they tend to support low-paying menial jobs instead of employment opportunities with large multiplier effects like wood processing. Nelson (1997) and Brown (1995) find socioeconomic differences between long-time (less wealthy) and newer (more wealthy) residents in rural counties in the Pacific Northwest.

Large differences in incomes between the haves and have-nots may result in a loss of social capital if community members from different socioeconomic classes can't work together for the greater good of their community. Wilkinson (1991) found that income inequality is often a source of social tension. I measure income inequality using the GINI index, a standard measure of inequality of income or wealth. It is a measure of the inequality of a distribution, in which a value of 0 expresses total equality and a value of 1 expresses complete inequality.

Unemployment

At an individual level, access to work is a basic economic need and is typically a necessary, though not sufficient, condition for generating a livable income. At a regional level, a high level of unemployment constitutes wasted economic potential, a drain on public resources, and a limitation on public service capacity. The U.S. Census defines civilians as unemployed if they (1) were neither "at work" nor "with a

job but not at work" during the reference week, (2) were looking for work during the

last four weeks, and (3) were available to start a job. Unemployment is a common

metric in calculating socioeconomic well-being (Ashton and Pickens 1995; Charnley

et al. 2008; Isserman et al. 2009; Stedman et al. 2004; Beckley 2005; Feser and

Sweeney 2003).

Economic Diversity

A diverse economy with a great variety of occupations provides community

residents more employment opportunities from which to choose. Otherwise, a

community member with a particular skill may have to leave the community to find

suitable work. Russell and Harris (2001) argue that economic diversity is a critical

component of a rural community's ability to remain autonomous, where community

autonomy refers to the control that a community has over "events and activities that

occur within [its] boundaries" (Poplin 1979, 150). I use the Shannon-Weaver index to

measure diversity of employment by industry following Ashton and Pickens (1995),

Horne and Haynes (1997), and Donoghue et al. (2006). The U.S. Census collects the

employment by industry data. The Shannon Weaver index is calculated as $SW = -\sum_i(p_i \ln p_i)$ where $p_i$ is the percentage of total employment in sector i. A larger

Shannon- Weaver index value indicates higher levels of economic diversity.

Educational Attainment

A common proxy for human capital is education, another variable that

contributes to community well-being and resilience (Donoghue and Haynes 2002;

Stedman 2004; Reeder and Brown 2005). Advanced skills and training are required for

rural community residents to compete in the global marketplace and find a secure livelihood. I calculate educational attainment as the percentage of the population aged 25 and higher with a bachelor's degree or higher.

Unattached Youth

Unattached youth is defined as the number of people ages 16-19 not in school, not in the armed forces, nor employed. This cohort tends to negatively impact community well-being as youth who move away from the school and work trajectory are associated with lower lifetime earnings, increased poverty, homelessness, and criminal activity (Montalvo and O'Hara 2008). This disconnected or idle youth cohort is considered ill-prepared for employment due to a lack of job and/or social skills. Such youth are often found in Black and Hispanic populations, amongst teen mothers, in rural areas, and in the youth criminal justice system (Snyder and McLaughlin 2008).

Population Decline

While population growth is generally thought to improve an economy by increasing the size and diversity of the labor force, i.e. human capital, it has the potential to restructure the social fabric and culture of a community, which may decrease well-being. Ohman (1999) found that Pacific Northwest counties experiencing strong in-migration show the greatest level of income inequality. My hypothesis is that dramatic changes in population demographics decrease the level of social capital in a community and negatively impact well-being, at least in the short term. Measuring population turnover is problematic, though, in that a stable population does not necessarily imply a stable community. In-migration and out-

migration occurring in tandem may result in a stable population, but a very different demographic.

I use population decline as one community well-being indicator variable. While an increase in population potentially has both positive and negative impacts on community well-being, it seems more clear the negative relationship between population decline and community well-being or resilience. Population adjustment in areas of high unemployment or low income could be considered a positive shift in labor resources regionally, but most certainly a negative shift for the community experiencing this loss (Feser and Sweeney 2003). Migration is a highly selective process, with younger, better educated, and higher skilled working moving first in response to economic decline (Bronars and Trejo 1992; Kwok and Leland 1982; Sjaastad 1962).

*Appendix B: Interview Guide*

I. Community (30 min)

1. What is the best thing about your community?

2. Are there different social groups or classes in your community (e.g. loggers, Latinos, newcomers, ranchers, environmentalists)

| Quick Lists! |

3. What are some of the community groups you are involved in?

4. Do you know of any other community groups?

5. Are there any community-wide issues that your community has dealt with in the past 10 years?

II. Bonding Networks (5 min)

1. Do people from common backgrounds tend to trust each other?
   -trust in bonding networks (+)

III. Bridging Networks (1 hour)

1. Do people from different groups in the community have a difficult time trusting each other?
   -trust in bridging networks (-)

2. Do people in your community tend to stick to their own organizations or social groups?
   -engagement in bridging networks (-)

3. Do people feel connected to each other in your community?
   -bridging networks (+)

4. Do people who live here really have a sense of community?
   -bridging networks (+)

5. Does your community have sizeable numbers of newcomers who are still somewhat detached from the community and its activities?
   -engagement in bridging networks (-)

6. Do different types of people work together to address community issues?
   -engagement in bridging networks (+)

7. If so, which groups are able to bring different types of people together to address community issues?

8. Does your community generally rely on a few individuals, groups, or elected officials to get most things done?
   -trust in linking networks (+)

9. Does your community have active groups and organizations, which are ready to pitch in and help solve community problems?
   -engagement in bridging networks (+)

10. Has your community had a difficult time in getting people to volunteer to address
    community problems or issues?
    -engagement in bridging networks (-)

11. When people make commitments to each other while working on community issues, can they be counted on to follow through on those commitments?
    -trust in bridging networks (+)

12. Do people only work together well in your community when there's a major crisis?
    -engagement in bridging networks (+)(-)

13. When external resources (funding, expertise, etc.) are needed to move forward, people in the community know where to find them and are willing to seek them out.
    -connections (+)

14. Does anyone who might be affected or has an interest in a particular community issue have an opportunity to be heard and participate?
    -engagement in bridging networks (+)

15. Does your community have lots of events and activities that encourage different types of people to get involved?
    -engagement in bridging networks (+)

16. Can community members air their differences, raise issues, and discuss alternative solutions without feeling attacked?
    -engagement in bridging networks (+)

17. Do community members treat those with differing viewpoints respectfully while working to solve the problem?
    -engagement in bridging networks (+)

18. Does your community have an up-to-date, written plan that describes who you are and where you are going?
    -engagement in bridging networks and potentially linking networks (+)

IV. Bridging and Linking Networks (20 min)

19. Has your community had past successes in working through difficult issues so that you have a strong foundation for addressing future challenges?
    -connections in bridging networks (+) and potentially linking networks

20. Do people involved in addressing community issues and solving problems end up feeling satisfied with the results?
    -connections in bridging networks (+) and potentially linking networks

21. Is your community known for its ability to get things done?
    -connections in bridging networks (+) and potentially linking networks

22. Are there any organizations or government agencies outside your community that currently support community interests or groups?
    - engagement and connections in linking networks (+)

23. Are there any organizations or government agencies outside your community that currently hurt community interests or groups?
    - engagement and connections in linking networks (-)

24. Are there any organizations or government agencies outside your community that could help community interests or groups?
    - engagement and connections in linking networks (+)(-)

V. Facilitating social capital (15 min)

25. Does the community have adequate meeting space that is conducive to working together on problem solving?

26. Does your community have a downtown area, parks, senior center, youth center, or other features that make it easy for different types of people to get together and interact?

27. Do people who could be affected by an issue have one or more reliable ways of learning about it and what's going on?

28. Do community members have the skills, experience, and resources to successfully deal with community problems?

*Many questions adapted from the Social Capital Rapid Assessment Protocol developed by the National Oceanic and Atmospheric Administration in conjunction with the U.S. Forest Service 2010

Appendix C: Description of Interviewees

| | Pseudonym | *Interviewed Regarding* | *Occupation* | *Community of Residence* | *Date Interviewed* | *Place of Interview* |
|---|---|---|---|---|---|---|
| 1 | Bernadette | Elkton | Business owner | Elkton | August 2011 | Office |
| 2 | Bill | Elkton | Businessman | Elkton | June 2011 | Personal home |
| 3 | Brenda | Elkton | Retiree | Elkton | June 2011 | Office |
| 4 | Brent | Elkton | Retired businessman | Elkton | November 2011 | Community center in Elkton |
| 5 | Bryan | Elkton | Church pastor | Elkton | October 2011 | Café in Elkton |
| 6 | Butch | Elkton | Environmental organizer | Adjacent county to Jefferson | June 2011 | Personal home |
| 7 | Candace | Elkton | Environmental organizer | Adjacent town to Elkton | June 2011 | Personal home |
| 8 | Charlie | Elkton | Ex-county commissioner | Jefferson County | August 2011 | Phone |
| 9 | Chris | Elkton | Public relations office for Olympic National Forest | Olympia | June 2011 | Office |
| 10 | Doug | Elkton | Retired businessman | Elkton | October 2011 | Café in Elkton |
| 11 | Kim | Elkton | Businesswoman | Elkton | June 2011 | Personal home |
| 12 | Lauren | Elkton | Retired homemaker | Elkton | June 2011 | Personal home |
| 13 | Mary | Elkton | Retired homemaker | Elkton | November 2011 | Café |
| 14 | Melissa | Elkton | Marina owner | Elkton | September 2011 | Office |
| 15 | Ryan | Elkton | Marina owner | Elkton | September 2011 | Office |

| 16 | Sherry | Elkton | University extension agent | Jefferson County | August 2011 | Café in Jefferson County |
|---|---|---|---|---|---|---|
| 17 | Sue | Elkton | Retired public administrator | Elkton | August 2011 | Personal Home in Elkton |
| 18 | Tracy | Elkton | Retired homemaker | Elkton | October 2011 | Café in Elkton |
| 19 | Wes | Elkton | Construction worker & campground manager; former logger | Elkton | October 2011 | Café in Elkton |
| 20 | Aaron | Liberty | Environmental organizer | Liberty | September 2011 | Personal home |
| 21 | Adam | Liberty | Retired businessman | Ferry County | September 2011 | Personal home |
| 22 | Bart | Liberty | USFS employee | Okanogan County | September 2011 | Office |
| 23 | Beatrice | Liberty | Border patrol employee | Spokane; previous resident of Ferry County | September 2011 | Personal Home in Spokane |
| 24 | Bridget | Liberty | Gold company public relations official | Liberty | November 2011 | Office |
| 25 | Cliff | Liberty | Former logger | Liberty | November 2011 | Liberty café |
| 26 | Duncan | Liberty | Accountant | Liberty | July 2011 | Office |
| 27 | Eddie | Liberty | Gold company employee & rancher | Liberty | November 2011 | Office |
| 28 | Hunter | Liberty | Rancher | Ferry County | November 2011 | Café in Liberty |
| 29 | Jane | Liberty | Retired homemaker | Ferry County | July 2011 | Café in Liberty |
| 30 | Jason | Liberty | City Councilor | Liberty | September 2011 | Café in Liberty |

| 31 | Jenny | Liberty | Postal worker | Ferry County | September 2011 | Personal home |
|---|---|---|---|---|---|---|
| 32 | John | Liberty | USFS district ranger | Liberty | July 2011 | Ranger District office in Liberty |
| 33 | Justin | Liberty | University extension agent | Liberty | July 2011 & September 2011 | Office & personal home |
| 34 | Meghan | Liberty | Economic development specialist | Liberty | July 2011 | Office |
| 35 | Mike | Liberty | Environmental organizer | Okanogan County | July 2011 | Café in Okanogan County |
| 36 | Rob | Liberty | Retired businessman | Spokane; previous resident of Ferry County | September 2011 | Personal Home in Spokane |
| 37 | Rose | Liberty | Cosmetologist | Liberty | November 2011 | Café in Liberty |
| 38 | Sally | Liberty | Communications Facilitator | Spokane | September 2011 | Coffeeshop in Spokane |
| 39 | Sara | Liberty | City Councilor | Liberty | September 2011 | Café in Liberty |
| 40 | Scott | Liberty | County Commissioner | Liberty | July 2011 | Café in Liberty |
| 41 | Seth | Liberty | Retail business owner | Liberty | September 2011 | Personal business |
| 42 | Claire | Liberty & Swift Brook | Congressional Aide | Stevens County | November 2011 | Office |
| 43 | Bruce | Swift Brook | USFS district ranger | Swift Brook | November 2011 | Office |
| 44 | Dorothy | Swift Brook | Librarian | Stevens County | July 2011 | Café in Swift Brook |
| 45 | Ellen | Swift Brook | Economic development specialist | Stevens County | July 2011 | Office |

| | | | | | | |
|---|---|---|---|---|---|---|
| 46 | Guy | Swift Brook | Economic development specialist | Stevens County | November 2011 | Office |
| 47 | Janelle | Swift Brook | State forest manager | Stevens County | September 2011 | Bar in Stevens County |
| 48 | Janet | Swift Brook | USFS employee | Swift Brook | July 2011 | Office |
| 49 | Joe | Swift Brook | Biomass plant manager | Swift Brook | July 2011 | Office |
| 50 | Kelly | Swift Brook | Public administrator | Swift Brook | September 2011 | Office |
| 51 | Leah | Swift Brook | Non-profit director | Swift Brook | July 2011 | Office |
| 52 | Leslie | Swift Brook | Business owner | Swift Brook | December 2011 | Personal business |
| 53 | Lilly | Swift Brook | University extension agent | Stevens County | July 2011 & November 2011 | Office & personal home |
| 54 | Lindsay | Swift Brook | Community development specialist | Stevens County | November 2011 | Personal home |
| 55 | Mark | Swift Brook & Liberty | Ex-county commissioner | Swift Brook | November 2011 | Café in Swift Brook |
| 56 | Matt | Swift Brook | Public administrator | Swift Brook | July 2011 | Office |
| 57 | Michaela | Swift Brook | Non-profit consultant | Stevens County | September 2011 | Office |
| 58 | Nadia | Swift Brook | Librarian | Swift Brook | September 2011 | Non-profit |
| 59 | Pete | Swift Brook | Retired businessman | Swift Brook | July 2011 | Café in Swift Brook |
| 60 | Sandy | Swift Brook | Homesteader | Swift Brook | November 2011 | Community center in Swift Brook |
| 61 | Shane | Swift Brook | Artist & masseuse; former lumber mill worker | Swift Brook | November 2011 | Café in Swift Brook |

| 62 | T.J. | Swift Brook | Retired USFS employee | Stevens County | November 2011 | Bar in Stevens County |
|----|------|-------------|-----------------------|----------------|---------------|------------------------|