

CHAPTER 2 –SUSTAINABILITY CONTEXT IN FOREST PLAN REVISION

The information contained in this document and the AMS Technical Report will contribute to the management direction needed for the proposed revised Forest Plans. Much of this analysis will be based upon our understanding of multiple use and sustainability. Multiple use is a guiding principle in the Forest Service and is consistent with sustainability. **Sustainability** is defined as satisfying present needs without compromising the ability of future generations to meet their needs and is widely recognized as the overarching objective of land and resource management (USDA 2002a, USDA 1999a). Sustainability is composed of three interdependent elements: ecological, social, and economic. NFS lands are capable of contributing essential elements in managing for all three components of sustainability.

Sustainability is a human value and not a fixed, independent state of ecological, social, and economic affairs. It requires human judgment about the condition or state of a set of tangible items (resources, goods, uses, etc.). Inherent in sustainability is our valuation of items that we wish to see persist in time and space (USDA 2002a).

Relationship of Sustainability to Forest Plan Revision

To evaluate the KIPZ's contribution towards sustainability, assessments of the historic and current ecological and socio-economic conditions at a variety of geographic scales will be gathered and reviewed. For example, current and historic condition of vegetation and disturbance processes will be assessed. Another example would be assessing the current and historic levels for jobs and income as well as the lifestyles, attitudes, and beliefs of the local communities.

Also needed to evaluate the KIPZ's contribution towards sustainability is knowledge of how management activities impact ecological, social and economic conditions. Together, this information will be used to identify a range of desired future conditions for the KIPZ. Management direction would then be developed to achieve the desired future conditions.

The seven revision topics are the areas identified as needing assessment and analysis. An assessment of the historic and current conditions for the revision topics has been provided in Chapter 1 of the AMS Technical Report. From this, a range of desired future conditions and management direction can be identified. Chapters 4 and 5 of this document outline the process in which alternative development and public participation plays a role in further defining these desired future conditions and management direction.

Many of the decisions to be made in the Forest Plans will affect the forests' contribution to sustainability. Desired future conditions, goals, objectives, standards, management area allocation, and monitoring will all have effects to the components of sustainability.

Ecological Component of Sustainability

Over the last half-century, scientists and natural resource managers have learned much about how ecosystems contribute to the fulfillment of human life (Costanza et al. 1997). An ecosystem is an interacting system of living organisms and their environment. Most obviously, ecosystems provide many of the goods that are harvested and traded in the human economy -- food, timber, forage, biomass fuels, and many pharmaceuticals (Daily 1997a). Ecosystems also provide indirect benefits to humans through their impacts on nutrient flux and cycling, mitigation of flood and drought, and maintenance of biodiversity, all of which feedback in important ways on the production of ecosystem goods that humans directly derive from ecosystems (Chapin et al. 1996). Finally, ecosystems also provide less tangible, but equally important, benefits in the form of recreational, spiritual, and intellectual stimulation (Postel and Carpenter 1997). Because of these important and necessary goods and benefits provided to humans, the long-term sustainability of ecosystems is central to natural resource management.

Ecological sustainability is defined as: “The ability to maintain diversity, productivity, resilience to stress, health, and yields of desired values, resource uses, products, or services over time in an ecosystem while maintaining its integrity” (USDA 1995a). **Integrity**, in turn, is defined as: “...the capacity to support and maintain a balanced, integrated, and adaptive biological system having the full range of elements and processes expected in a region’s natural habitat” (Karr 1991). Critical elements of integrity include vegetation measures of structure, composition, and process and they are defined as:

- Structure: the horizontal and vertical physical elements of forests and grasslands and the spatial interrelationships of ecosystems.
- Composition: the component tree, shrub, grass, and forb classes in a stand or community.
- Function: includes energy flows of materials across and within the landscape and how one ecosystem influences another. Function also relates to energy processes such as fire, hydrological processes (including floods), and matter and energy exchange throughout the food chain.

A system subject to external disturbance will retain its integrity if it preserves all its components as well as the functional relationships among the components (De Leo and Levin 1997).

Based on Haynes, et al., a working definition of aquatic sustainability can be described as the inherent capability or existing potential for a watershed system to provide water quality, water bodies (streams, lakes, wetlands, ponds, etc.), riparian environs (wetlands, flood plains, stream banks, lake shores, and other lands including terrestrial lands proximal to water bodies that can directly influence the water), and the biologic organisms that live in or are dependent on the water that are necessary to support the beneficial uses of the water (based on: USDA 1996).

Ecosystem diversity is the variety of ecological structures, communities, and processes across spatial scales such as regions, subregions, landscapes, and localities. Ecosystem diversity arises from variation in abiotic and biotic components and ecological processes over space and time (Huston 1994). History plays a strong role in the ecosystems we see today through the long-term effects of geological and climate change and biological evolution, and the shorter-term effects of weather, disturbance, and succession, and migration of organisms. Ecosystems are open, linked, and adaptive systems. Linkages among ecosystem components can be weak or strong and the system’s responses to change in one component can be spatially and temporally lagged (Wu and Loucks 1997).

Historic Range of Variability (HRV)

The complexity and variability of natural disturbance regimes requires thinking in terms of variability rather than averages (Baker 1994, Samson 1994). Consequently, the concept of "range of variability" or "historic range of variability" (Engstrom et al. 1999) has been used to define disturbance regimes and the consequences of them in terms of landscape structure, developmental stages and hydrological flow regimes. To respond to this, a series of questions must be answered. These questions will be asked and addressed under the revision topics associated with ecological sustainability.

One method for measuring ecological sustainability is to use the historic range of variability (HRV) as a reference condition. HRV is defined as the variation in spatial, structural, compositional, and temporal characteristics of ecosystem elements, as affected by minor climatic fluctuations and disturbances. This range is measured during a reference period prior to intensive resource use and management. For the Planning Analysis Area, this period is considered to be prior to 1880 to approximately 2500 years ago (Chatters and Leavell 1994). The HRV is a baseline for comparison with current conditions to assess the degree of past change (USFS Great Lakes Assessment 1997).

Nature has functional, historical, and evolutionary limits (limits relating to physiological characteristics evolved through time). Species, ecosystem integrity and/or sustainability may be lost if these limits are exceeded. Disturbance is a necessary function of these ecological systems. Not allowing disturbance to occur within ecological systems can have negative results. Disturbance at a higher frequency, or with a

greater severity, can also have negative results leading to reductions in diversity or productivity. Disturbance with the frequency and intensity of a reasonable, manageable historic range of variability can maintain species and habitats.

There is room to produce a sustainable level of commodities from a forested ecological system in the KIPZ while maintaining biological diversity and ecological sustainability. Vegetation evolved and adapted within the shifting landscape influenced by fire and other disturbance events for the past 2500 years on the forests, which animals adapted to and evolved to occupy. The HRV fluctuated, but over the past 2500 years became predictable enough to allow adaptations to occur (Chatters and Leavell 1994). Management informed by an understanding of HRV, will likely reduce ecologic uncertainty and surprise, because ecosystem management goals would be set within the ecological constraints (or limitations) of an area (Leavell 2000).

In addressing the components of ecological sustainability, current conditions for vegetation, soils, wildlife, watersheds, and aquatic species will be compared against historic ranges.

Ecological Context

The following section provides the broad ecological context for resources within the KIPZ. An understanding of this context is important to understand the distinctive ecological attributes of KIPZ when compared to the overall ecoregion. This understanding is needed to develop appropriate management direction for these distinctive ecological attributes.

In order to provide a better understanding of the ecological setting and importance of KIPZ, one must first look at where the KIPZ is in relation to a larger landscape.

The KIPZ is within the Northern Rocky Mountain Forest Steppe – Coniferous Forest – Alpine Meadow Province (Bailey 1994), viewed as M333 in Figure 2-1. This is a 38,000 sq. mile (98,700 km₂) area extending from east of the Cascade Mountains in Washington State to the Continental Divide in Montana, into Canada to the north, and throughout northern Idaho.

- **Climate:** Severe winters are usual, average temperatures can range from below 0 degrees F in the winter to above 100 degrees in the summer. Precipitation averages 20 to 40 inches annually, but can attain over 80 inches within some geographic areas. Most of the region has been glaciated with landforms typical of this process.
- **Vegetation, Geology, and Landform:** Mixed evergreen-deciduous forest predominates with Douglas-fir, larch, and cedar-hemlock as common forest types. Soils are mostly cool, moist Inceptisols with a variety of igneous, sedimentary, and metamorphic rocks forming the mountain masses.
- **Wildlife and Fish:** Large mammals in this province include grizzly and black bear, caribou, deer, moose, elk, mountain goat, mountain lion, and bobcat. Smaller mammals include red squirrel, flying squirrel, marten, fisher, redtailed chipmunk, picas, hoary marmots, and bushytail woodrat. Birds found most often are eagles, hawks, grouse, turkeys, chickadees, nuthatches, thrushes, and bluebirds. Fish include bull trout, landlocked salmon, sturgeon, rainbow trout, brook trout, and cutthroat trout.

This province is further divided into ecological sections. The dominant ecological features of the KIPZ are characterized primarily in three sections located in the Northern Rocky Mountain Steppe province, indicated as M333A, M333B, and M333C (see Figure 2-1). Following is a brief description of the attributes that are distinctive to KIPZ within each of the sections (USDA 1994a):

Section M333A – Okanogan Highlands

- Climate: Maritime-influenced; rain on snow is common.
- Vegetation, Geology, and Landform: Common species include Douglas-fir, grand fir, western hemlock, western red cedar, and subalpine fir. Whitebark pine occurs at high elevations. Geology consists of Precambrian metasedimentary rocks of the Belt Supergroup and Cenozoic granitics. There are numerous glacial lakes, rivers and streams.
- Wildlife and Fish: The abundant water provides for a high population of waterfowl, osprey, and bald eagle. Other threatened, endangered, or rare bird species include harlequin duck and upland sandpiper (in the lowlands). Woodland caribou reach the southern portion of their range within this Section. Other rare mammals in this Section include grizzly bear, gray wolf, lynx, fisher, wolverine, and northern bog lemming.

Section M333B – Flathead Valley

- Climate: Cool temperate with maritime influence; outbreaks of arctic air occur frequently in winter; rain on snow is common.
- Vegetation, Geology, and Landform: Predominantly Douglas-fir lodgepole pine with western larch, ponderosa pine, grand fir, hemlock, and cedar. Whitebark pine occurs at high elevations. Geology is mostly precambrian metasedimentary rocks of the Belt Supergroup. There are glaciated mountains, glacial moraines, large glacial troughs, and glacial and lacustrine basins.
- Wildlife and Fish: The endangered bald eagle is a relatively common breeder in this Section. Other bird species of note are harlequin duck, osprey, boreal owl, and barred owl. The woodland caribou were historically present within this Section but are now absent. Rare mammals include the grizzly bear, gray wolf, lynx, fisher, wolverine, northern bog lemming, and Coeur d’alene salamander.

Section M333D – Bitterroot Mountains

- Climate: Maritime-influenced, cool, moist temperate with relatively mild winters and dry summers.
- Vegetation, Geology, and Landform: Common species include western red cedar, western hemlock, western white pine, Douglas-fir and ponderosa pine. Geology is mostly Precambrian metasedimentary rocks of the Belt Supergroup. There are steep, dissected mountains, some with sharp crests and narrow valleys.
- Wildlife and Fish: Bird species of note include flammulated owl and boreal owl (in the higher elevations). Dabbling ducks, common goldeneye, and harlequin ducks also occur. The woodland caribou historically reached the southern extent of its range within this Section, but is now absent. Rare mammals include the gray wolf, fisher, wolverine, northern bog lemming, and Coeur d’Alene salamander.

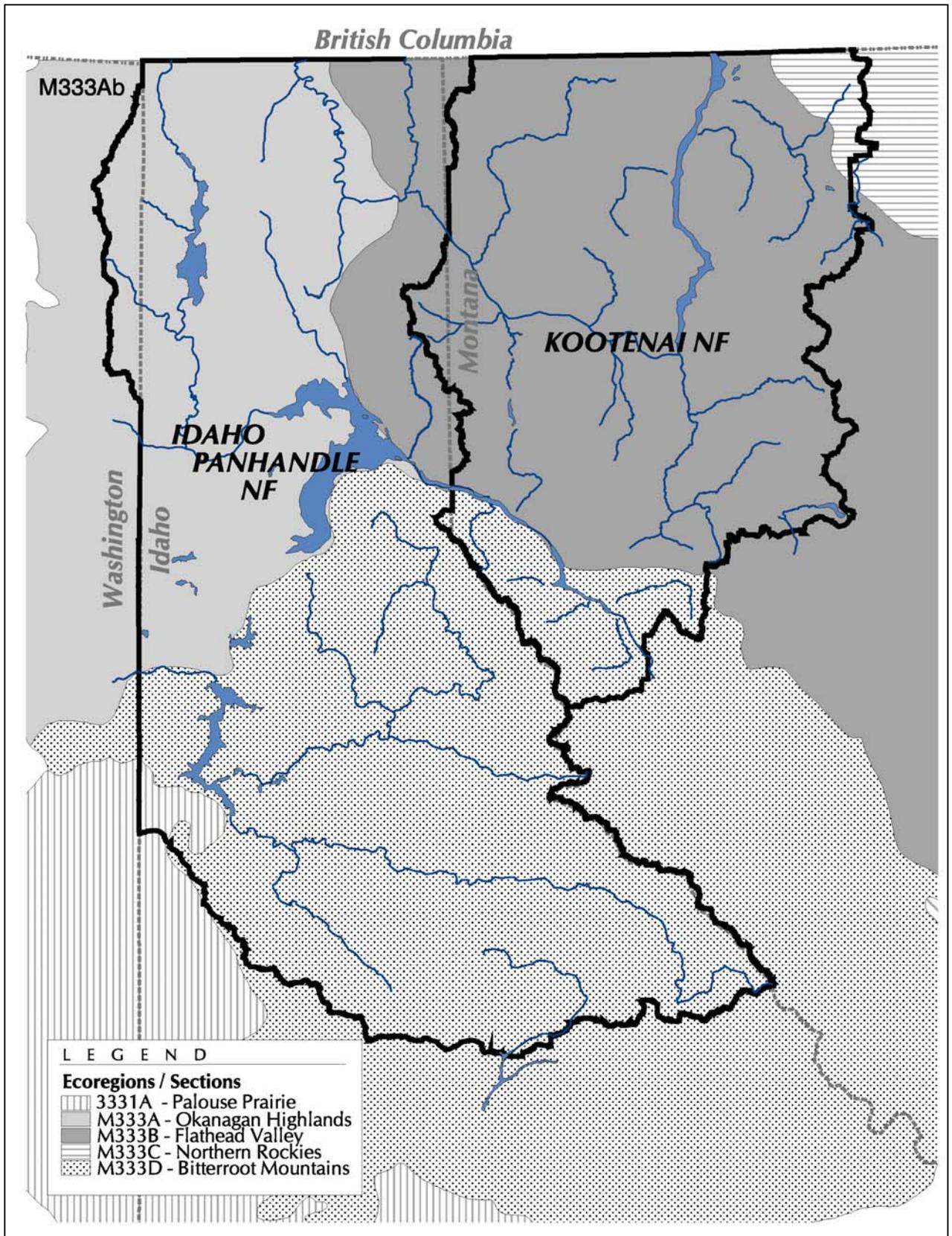


Figure 2-1 Northern Rocky Mountain Steppe province from Bailey's Ecoregions

Social and Economic Components of Sustainability

Management of national forests can contribute towards social and economic components of sustainability by providing for a wide variety of uses, values, products, and services (USDA 1999a). To evaluate the forests' ability to contribute towards the social and economic components of sustainability, an estimation must be made on the quantities of goods and services that will be produced from the KIPZ within a given time period, without impairment of the natural resources that provide or produce this flow of goods and services. State and local economic development agencies have worked with many of the local communities in developing economic development strategy reports. These reports are helpful in identifying the goods, services, and uses the local public would like to see sustained from the national forests in the KIPZ. The reports also describe the vision and future expectations of local communities regarding management of the national forests.

Social and Economic Context

The following section provides the social and economic context for management of the KIPZ. An understanding of this context is important in order to adequately evaluate the effects of management decisions on the social and economic components of sustainability. The social and economic information also provides identification of issues that have developed since the 1987 Forest Plans were written.

Planning Analysis Area - KIPZ

The majority of the KIPZ is located in seven counties: Boundary, Bonner, Kootenai, Benewah, and Shoshone counties in Idaho; and Lincoln and Sanders counties in Montana (see table 2-1 and figure 2-2). These seven counties will be the focus of the social and economic analysis in the Forest Plan Revision and will be referred to as the Planning Analysis Area. The analysis in the 1987 Forest Plans focuses on the same seven counties. These counties were selected as the Planning Analysis Area in order to address the influence or impact of forest management on their social and economic composition.

KIPZ manages land that is also located in the following counties: Latah and Clearwater counties in Idaho; Pend Oreille County in Washington (administered by the IPNFs); and Flathead County in Montana (administered by the KNF). These counties either contain small portions of land administered by the KIPZ and/or are primarily influenced by other economic factors. Counties outside the Planning Analysis Area are not discussed in detail in the social and economic analysis.

County	Total County Acres	Acres Admin. by IPNFs	% Admin. by IPNFs	Acres Admin. by KNF	% Admin. by KNF
Boundary, ID	816,900	478,300	59%	10,600	1%
Bonner, ID	1,227,700	431,100	35%	39,900	3%
Kootenai, ID	842,400	245,800	29%	0	0%
Shoshone, ID	1,682,900	1,149,500	69%	100	<1%
Benewah, ID	502,400	26,100	5%	0	0%
Clearwater, ID *	1,590,800	3,000	<1%	0	0%
Latah, ID *	689,900	12,900	2%	0	0%
Lincoln, MT	2,350,400	21,800	1%	1,691,300	72%
Sanders, MT	1,785,800	6,200	<1%	429,000	24%
Flathead, MT *	3,364,200	0	0%	48,400	1%
Pend Oreille, WA*	911,700	119,900	13%	0	0%

Not included in the Planning Analysis Area. Data Source: GIS coverages from Cartographic Feature Files (1:24,000 scale) for some county and all national forest boundaries; state coverages (1:100,000) for other county lines.

The principle population centers within the Planning Analysis Area are the communities of Bonners Ferry, Priest River, Sandpoint, Coeur d’Alene, Hayden, Post Falls, Kellogg, and St. Maries in Idaho and Eureka, Libby, Troy, and Thompson Falls in Montana.

Just outside the Planning Analysis Area is the large, urban population of Spokane, Washington (population 418,000). This immediately adjacent urban area has a large social and economic influence on the Planning Analysis Area. Much of the recreation that occurs on the KIPZ is from the Spokane area. The influence of this urban area on the KIPZ must be acknowledged and understood when considering management of the resources on the forests.

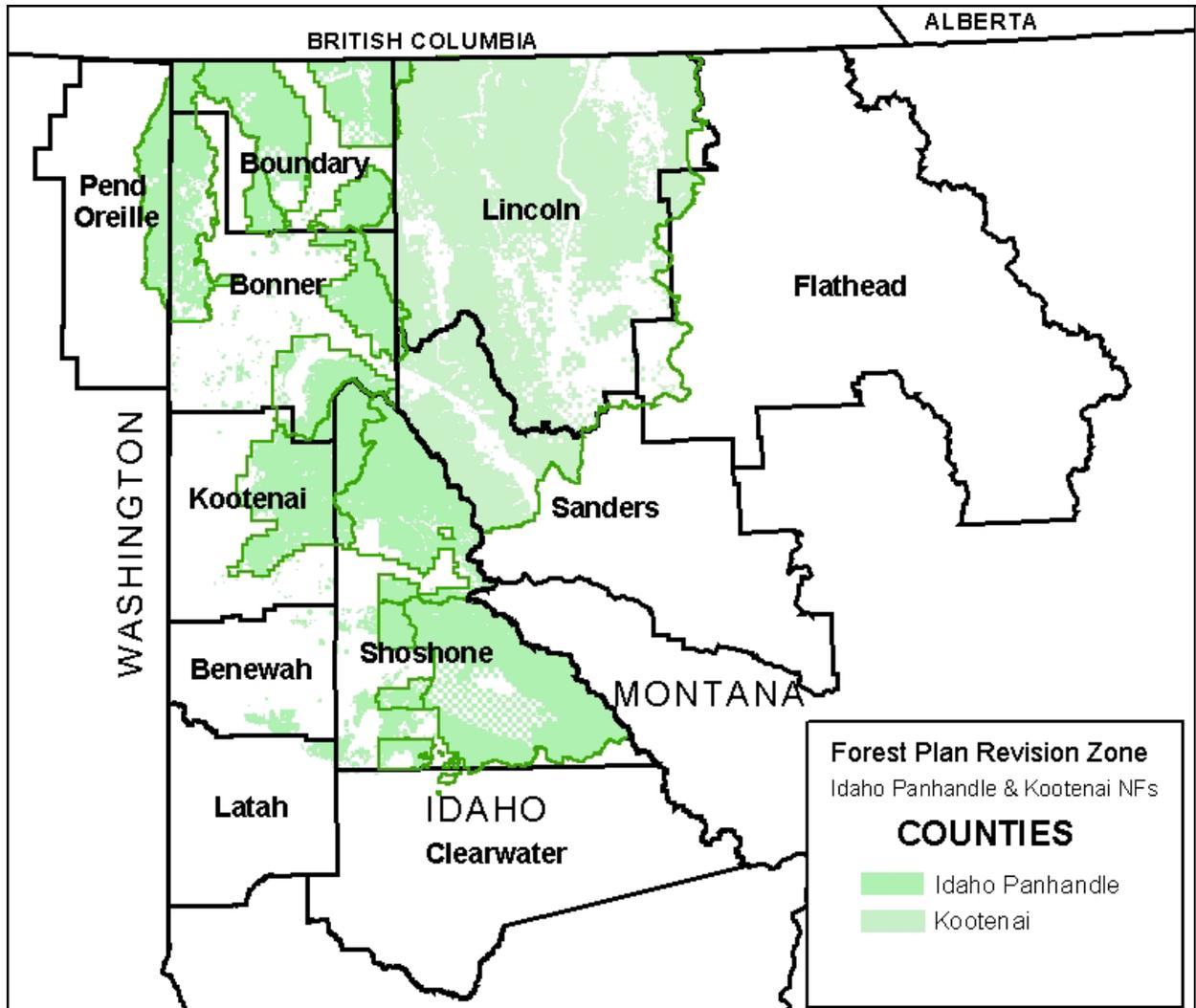


Figure 2-2. Social and Economic Planning Analysis Area

Social Environment

Communities in Transition

Change in social and economic composition is occurring in almost every community within the Planning Analysis Area. Sometimes this change is rapid; other times it can be very gradual (Parker et al 2002, p. 13; Impact Assessment, Inc. 1995, pg. 106).

Historically, timber and mining have dominated the area's economy. With one type of industry dominating local economies, communities often develop identities associated with that work to express "this is who we are" and "this is what we do" (Parker et al 2002, pg. 13). To establish a context for change, it is important to recognize the past identity of logging and mining. With change and transition, things look different today on the KIPZ than when the Forest Plans were first developed in the 1980s.

In some cases, natural resource extraction still dominates the identity and activities of communities. St. Maries, Priest River, Troy, Libby, and Eureka show strong on-going identification with timber harvest. In other cases, amenity-based development now dominates the local economy, including tourism, recreation, and retiree benefits. Coeur d'Alene and Sandpoint are two communities reflecting this type of change. Other communities, such as Bonners Ferry, Priest Lake, those in the Silver Valley, and Thompson Falls are somewhere in the middle, reflecting multiple identities and influences compared to others in the region (Parker et al 2002, pg. 13, Impact Assessment, Inc. 1995, pg. 106).

An increase in recreation and growth from amenity-based development has a mixture of costs and benefits. Some local public expressed the need for a balance between recreational use and conservation in relation to community impacts from an amenity-based economy. In addition, some public have expressed frustration over a perceived change in values of community members. A significant immigration of newcomers to an area, whether seasonal or permanent, may affect local values and understanding for norms and customs (Parker et al 2002, pg. xiii).

The influence and growth of Spokane, Washington is adding to the transition of communities in Idaho, especially Coeur d'Alene, Sandpoint, and Priest Lake. Most residents in the Planning Analysis Area consider where they work, play, and live as rural. They would like to preserve those qualities associated with a rural lifestyle – quiet, safe, friendly, traditional, easy-going, and limited restrictions. Coeur d'Alene could be considered the exception to a rural lifestyle. However, in a relative sense, because Coeur d'Alene's neighbor - Spokane, Washington, just across the border - is significantly larger and considered the regional hub for transportation and business, the Idaho "playground" still maintains somewhat of a small-town atmosphere. Along these lines, a number of those interviewed as part of the IPNFs Social Assessment emphatically described the desire to control residential and commercial growth in the region (Parker et al. 2002, p. xiv).

Population

Population in the Planning Analysis Area has increased more than 42% between 1980 and 2000. All counties experienced an increase in population with the exception of Shoshone, which decreased over the same time period. Table 2-2 displays the population and percent change by decade from 1980 to 2000. A large increase or decrease in population indicates communities and counties that are undergoing change. With change in population, there is change to social and economic components, such as lifestyles, attitudes, values, land use, and employment.

Table 2-2. Change in Population by County and State					
County or State	1980	1990	% Change (1980-90)	2000	% Change (1990-2000)
Idaho	947,983	1,006,749	6.2%	1,293,953	28.5%
Benewah, ID	8,292	7,937	-4.3%	9,171	15.5%
Bonner, ID	24,163	26,622	10.2%	36,835	38.4%
Boundary, ID	7,289	8,332	14.3%	9,871	18.5%
Kootenai, ID	59,770	69,795	16.8%	108,685	55.7%
Shoshone, ID	19,226	13,931	-27.5%	13,771	-1.1%
Montana	786,690	799,065	1.6%	902,195	12.9%
Lincoln, MT	17,752	17,481	-1.5%	18,837	7.8%
Sanders, MT	8,675	8,669	-0.1%	10,227	18.0%
Total Planning Area	145,167	152,767	5.2%	207,397	35.8%

Source: U.S. Bureau of the Census

In Idaho, Bonner and Kootenai counties experienced growth at a greater rate than the State from 1980 to 2000. Boundary County also experienced growth over the same timeframe, but at a rate that was generally lower than the State. Benewah County experienced a slight decline from 1980 to 1990, but grew over the last decade. Shoshone County has decreased in population by more than 28% from 1980 to 2000.

In Montana, Lincoln and Sanders counties experienced slight declines in population from 1980 to 1990 but increased over the last decade. The growth rate in Sanders County for 1990 to 2000 exceeds those of the State, while Lincoln County is growing at a slower rate.

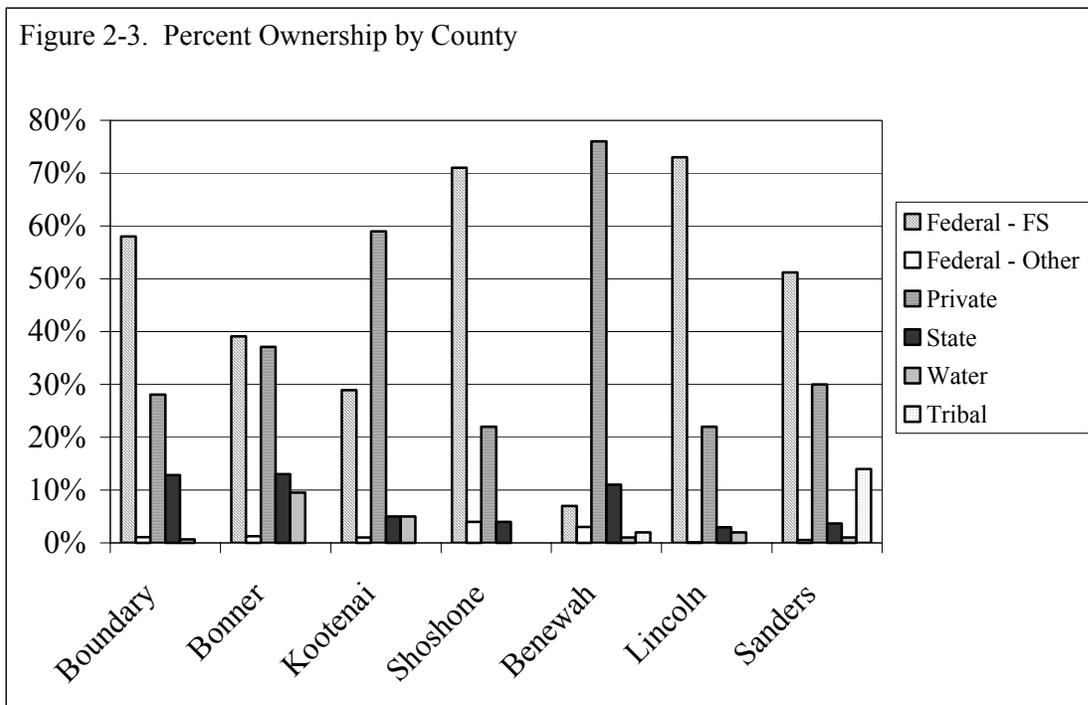
The growth in Bonner and Kootenai counties is reflective of the increasing development and economic diversification in Sandpoint and Coeur d'Alene, Idaho, and their close proximity to the major trade center of Spokane, Washington. Growth in the remaining counties has been much slower, reflective of the dependency of these counties on timber harvest and mining, and the lack of growth in these industries. In Boundary, Benewah, Lincoln, and Sanders counties, more new residents are migrating in, while the adult children of families living in the region are increasingly moving out of the area to find employment (Harp, 1996 and Impact Assessment, Inc., 1995). The decrease in population in Shoshone County is reflective of a sharp decline in metals manufacturing and mining that occurred in the 1980s.

Within the Planning Analysis Area, population composition is changing. More new residents are migrating in, while the adult children of families living in the region are moving out of the area to find employment. This change in population composition has added to the diversity of attitudes, lifestyles, and values of the population within KIPZ. The social assessment for the KNF found there is a concern among some stakeholders that new residents are changing the nature of their communities. The new residents have different values about the use of natural resources in general and the harvesting of timber in particular (Impact Assessment, Inc. 1995, pg. 311). The social assessment for the IPNFs had similar findings, noting an influx of retired and seasonal-home residents. The assessment identified some implications of this in-migration, including: 1) a declining tax base in relation to new residents; 2) increased overall recreational use of resources; 3) shifts in the proportion of multiple uses; and 4) probably related shifts in the expectations about forest management (Parker et al. 2000, pg 29-32).

Along with the change in population comes a shift and increase of people living outside the cities and within or adjacent to the national forests. As a result, new development is occurring in fire-prone areas, creating a "wildland-urban interface" -- an area where structures and other human development meet or intermingle with undeveloped wildland. This relatively new phenomenon means that more communities and structures are at risk to wildfire. (USDA and USDI, 2000b). See the Fire Risk revision topic in Chapter 3 of this document for further discussion on this issue. Increased development in the wildland-urban interface may also lead to increased pressure on other resources, such as wildlife habitat as suitable habitat is reduced.

Land Ownership

Many counties in the western United States contain a large amount of federal land and are influenced by management actions on these public lands. Figure 2-3 displays the percent of land by ownership for each county. Within the Planning Analysis Area, Shoshone and Lincoln counties have the largest percentage of land under federal ownership, at 75% and 73%, respectively. Boundary County has the next largest, at 59%. Sanders County is 51% federally owned with an additional 14% under Tribal ownership. Bonner County has 40% and Kootenai 30% under federal ownership. Benewah has the least amount of federally owned land, at 10%. For all counties, the majority of the federal ownership is National Forest System lands.



Source: Ownership GIS layers from Idaho and Montana states, generated at 1:100,000 scale.

Land and Resource Use

Natural resources in the Planning Analysis Area are utilized in a number of commercial, recreational, and subsistence activities. Most notable commercial uses include timber production, mining, agriculture, and cattle ranching. Recreational use of natural resources include sightseeing, camping, hiking, backpacking, cross-country skiing, snowmobiling, off-road vehicle driving, bird watching, photography, canoeing, and water sports. Hunting, fishing, and berry picking combine elements of recreation with subsistence activities. Firewood collection is more distinctly a subsistence activity.

Lifestyle, Attitude, Values and Beliefs

Several studies have been completed to determine the social composition of the counties within the Planning Analysis Area (Lyle 1990, Harp 1996, Impact Assessment, Inc. 1995, and Parker et al. 2002). Studies included information on lifestyles, values and issues regarding forest management. In comparing the studies, it is apparent there are many similarities across the Planning Analysis Area. In particular, the counties of Boundary, Benewah, Shoshone, Lincoln and Sanders have many similarities, with social and economic bases founded on the production of natural resources. Bonner and Kootenai counties have somewhat different economic and social compositions, and aren't facing the same economic issues as the

other five counties. These two counties are growing at a quicker rate and have a more diverse social and economic base. The increased social and economic diversity allows these counties to more readily adapt to change.

In general, the social studies within the Planning Analysis Area have found that the value of the landscape and its resources is highly important to the residents and constitute a major reason why they live in northern Idaho and northwest Montana. The communities within these counties embrace the following ideals (Impact Assessment, Inc. 1995, pg. 292; Lyle 1990):

- Individuals can pursue self-reliance and independence.
- Neighbors support one another in times of need.
- There is a high degree of personal safety.
- Fear of crime is minimal.
- High moral values exist and support an environment that is good for raising children.
- Government, in general, and government regulation, in particular, should be minimized.

An outdoor lifestyle is a major integrating force because people share sentiments about the value and meaning of outdoor activities for recreation, work or other purposes. Working out-of-doors is preferred and constitutes a reason for residing in the region. In addition, hunting is of major importance as a recreational activity, a social means to reinforce bonds with others, and an expression of the values of the outdoor lifestyle. Hunting is also an important contributor to the food supply of many residents (Impact Assessment, Inc. 1995, pp. 292-293; Harp, pp. 21, 35, 36). To support this outdoor lifestyle, access to the forests is an increasingly significant issue (see the Access and Recreation revision topic).

For Boundary, Benewah, Shoshone, Lincoln and Sanders counties, the residents' historic reliance on logging has produced a social attachment to forestry and various occupations it has created. A number of local residents identified strongly with the timber industry, though many had never worked in timber, wood products, or related sectors. Residents often expressed a sentiment of ownership about natural resources and public lands in general (Impact Assessment, Inc. 1995; Parker et al. 2002, pp. 13-25).

In these five counties, there is increasing concern over the area's dependency on natural resource production. Declining employment in resource harvest and extraction is resulting in concern about the economic future of communities in the region. Diversifying the economic base is necessary for the long-term sustainability of the economy. Local residents want this diversification to be a priority for upcoming development efforts (Northwest RC&D 2002, pp. 113,120,121).

The situation is somewhat different in Bonner and Kootenai counties. These counties also had historically strong ties to the timber and mining industries. However, over the past two or three decades their local economies have shifted away from logging and mining and more towards amenity-based economies of recreation and tourism. These counties are experiencing growth in retirement populations, telecommuting populations, and business location due to quality of life in an area. In most cases, the motivation to relocate is related – directly or indirectly – to aesthetic appeal or accessibility of the surrounding natural resources. Compared to other communities in the Planning Analysis Area, Coeur d'Alene is now considered to have a relatively diverse economy, much of which is natural resource-based (Parker et al. 2002, p. 22)

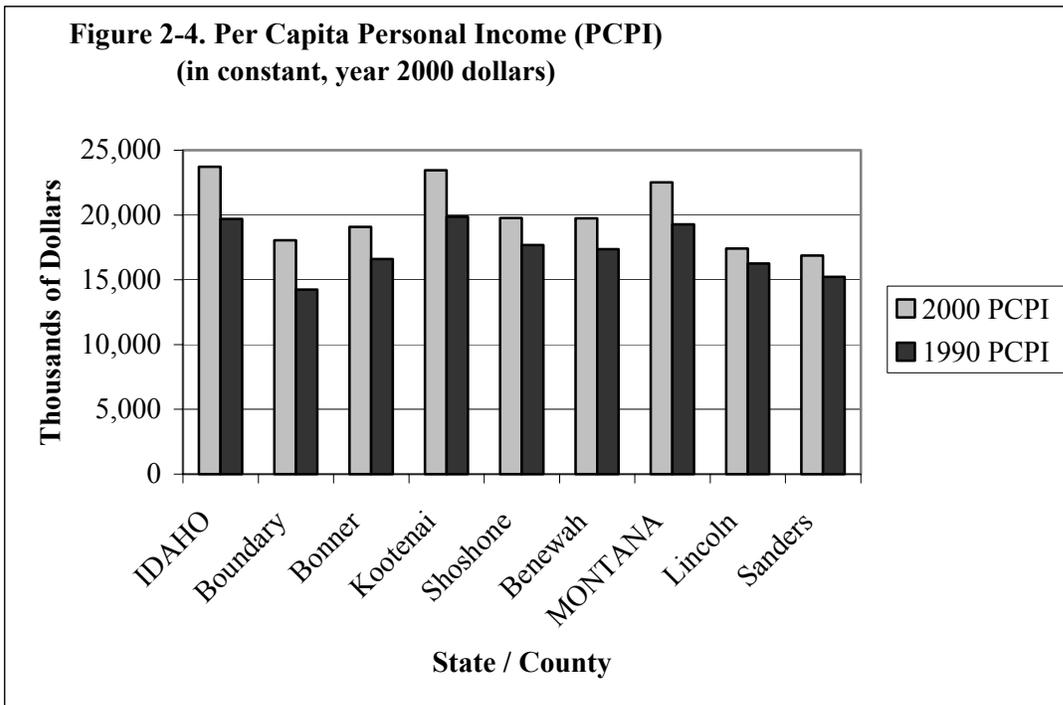
With the shift towards recreation and tourism come some perceived costs (Parker et al. 2002, pp 22-25). Most of the jobs generated by recreation or tourism are service-oriented. These jobs tend to be lower paying and seasonal in nature. Housing for these low-paying jobs can be an issue. Many community members perceive the local economy as unstable and reliant on tourism and seasonal activities. There is also an increase of visitors and an in-migration of newcomers. This influx, whether seasonal or permanent, may affect local values and understanding of norms and customs.

Area Economy

Employment and Income

Figure 2-4 displays the Per Capita Personal Income (PCPI) for the years 1990 (deflated to year 2000 dollars) and 2000. All counties were below state averages for PCPI, with the exception of Kootenai County. The PCPI in Kootenai County was nearly equal to that of the State in 2000 and slightly above the State in 1990.

In 2000, Sanders County had the lowest PCPI, with \$16,868 in 2000. The average annual growth rate, adjusted to constant (year 2000) dollars, was 1.1 percent. Lincoln County had the second lowest PCPI and the lowest average annual growth rate. Its PCPI was \$17,411 in 2000 and \$16,264 (deflated to year 2000 dollars) in 1990, with an average annual growth rate of 0.7 percent.



Source: Bureau of Economic Analysis, Regional Accounts Data, BEARFACTS 1990-2000

Boundary County had the lowest PCPI in 1990, but experienced the highest growth rate. The PCPI in Boundary County in 1990 was \$13,370 (deflated to year 2000 dollars) and grew to \$19,082 in 2000. The average annual growth was 2.7 percent, which was higher than the growth rate for Idaho, at 2.0 percent.

Table 2-3 displays the percentage of income generated by major industries in 1990 and 2000. The industries listed in the table are composed of many sectors. The timber processing sectors are found within the durable goods manufacturing industry. Recreation activities are generally found in the services industry.

County	Industry	1990	2000
Boundary	Services	*	22.3%
	Durable goods manufacturing 1/	25.7%+	20.7%
	State and local government	15.6%	15.7%
	Retail trade	11.6%	*
Bonner	Services	16.9%	20.3%
	Retail trade	13.8%	17.3%
	State and local government	*	14.1%
	Durable goods manufacturing	24.9%	*
Kootenai	Services	22.9%	25.7%
	State and local government	15.4%	15.3%
	Retail trade	14.7%	13.6%
Shoshone	Mining	41.7%	23.8%
	State and local government	16.0%	19.4%
	Retail trade	*	15.3%
	Services	11.8%	*
Benewah	Durable goods manufacturing 1/	35.9%+	25.4%+
	Services	9.2%	17.6%
	State and local government	12.6%	14.4%
Lincoln	Durable goods manufacturing	29.8%	21.5%
	Services	11.2%	18.4%
	Federal civilian government	*	15.3%
	Mining	12.0%	*
Sanders	Services	14.8%	25.5%
	State and local government	15.9%	17.4%
	Durable goods manufacturing 1/	18.7%+	11.5%

* Not present in the top 3 industries for that date.

1/ Plus sign (+) indicates approximation of percentage due to non-disclosure of some industries.

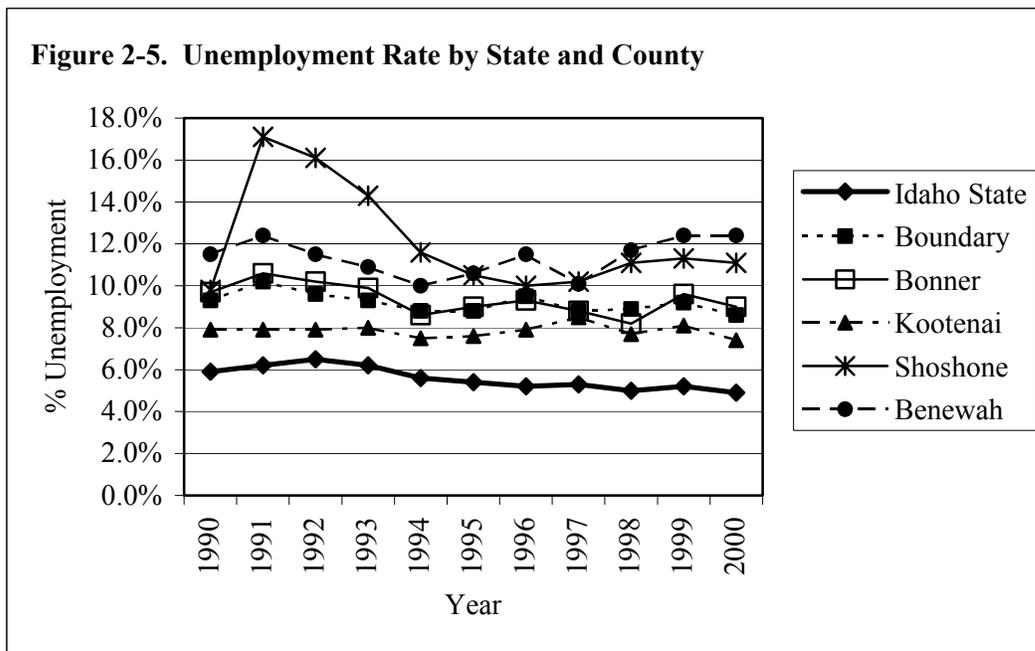
Source: Bureau of Economic Analysis, BEARFACTS and Regional Accounts Data

Major employment and income industries vary by county but there are some similarities. Durable goods manufacturing (primarily the timber industry) has been a major industry in Boundary, Bonner, Benewah, Lincoln, and Sanders counties. This industry generated the largest amount of income in Benewah and Lincoln counties in both 1990 and 2000. Manufacturing also generated the largest amount of income in Boundary, Bonner, and Sanders counties in 1990, but fell in ranking by 2000. For all counties, the percentage of personal income generated by manufacturing has decreased substantially during this time period. This is due to the reduction in timber processing that has occurred from 1990 to 2000.

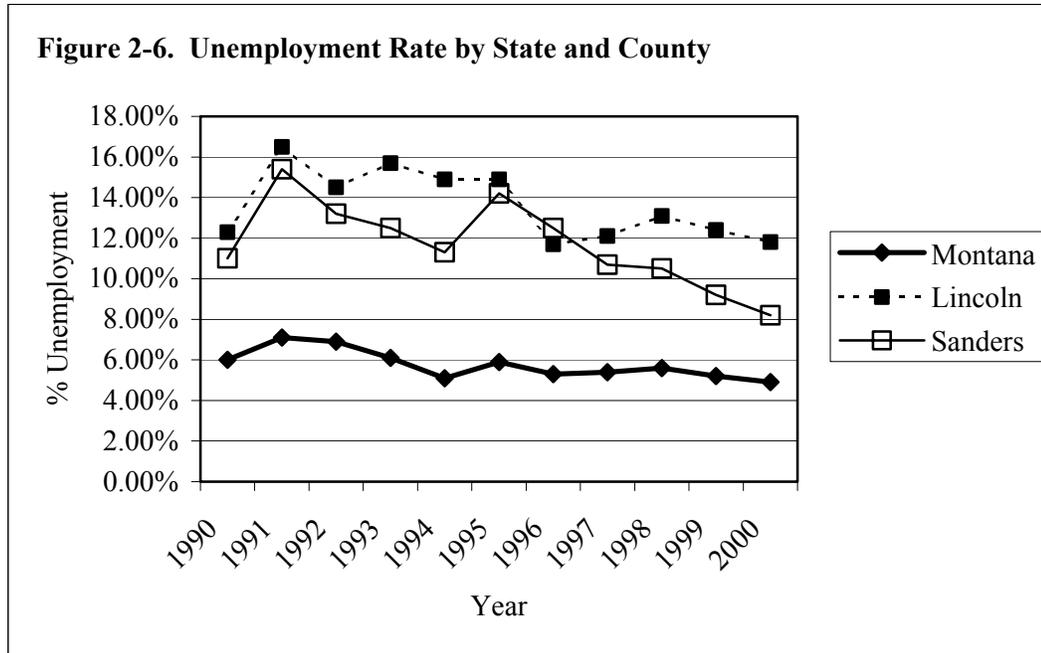
Mining generated the largest income in Shoshone County in both 1990 and 2000. Mining was a major employer in Lincoln County in 1990, but fell out of the ranking of largest industries by 2000. The percentage of personal income generated by mining has decreased substantially during this time period.

With the exception of Shoshone County, the services industry (includes recreation activities) has increased in the percent of income generated from 1990 to 2000 in all counties. The service industry provided the largest amount of income to Bonner, Boundary, Kootenai and Sanders counties in 2000.

Figures 2-5 and 2-6 display the unemployment rate from the years 1990 to 2000 for each county and state. Unemployment rates in all seven counties are substantially higher than their respective state averages. Unemployment rates have been especially high in Shoshone, Benewah, Lincoln, and Sanders counties, peaking in 1991 or 1992. Unemployment rates are decreasing in most of the counties, with the exception of Shoshone and Benewah.



Source: Idaho Department of Labor (<http://www.labor.state.id.us/lmi/lf9000countyrates.htm>)



Source: Montana Department of Labor (<http://rad.dli.state.mt.us/employ/aalf.htm>)

National Forest Contribution to Local Employment and Income

Table 2-4 displays the employment and income from industries associated with natural resource extraction for each of the counties within the KIPZ of influence. This Table shows that timber industries produce the highest level of jobs and income for these industries for all counties except Shoshone. In Shoshone, mineral industries provide the highest level of jobs and income for the wildland related industries.

Table 2-4. Employment and Income for Natural Resource Extraction Sectors

County	Timber Industries		Grazing Industries		Mineral Industries	
	Employ. (Jobs)	Income (MMS)	Employ. (Jobs)	Income (MMS)	Employ. (Jobs)	Income (MMS)
Boundary	753	30.1	5	0.0	2	0.1
Bonner	1,214	53.1	13	0.2	44	2.0
Kootenai	1,599	66.6	9	0.1	365	27.1
Shoshone	126	3.9	3	0.0	686	28.0
Benewah	786	30.4	1	0.0	44	4.4
Lincoln	1,085	32	5	0.1	25	1.6
Sanders	379	8.5	19	0.3	18	0.4

Source: Report from EASY - Based on 1996 IMPLAN Model Year Data.

Recreation and amenity-based resources are also important contributors to local employment and income. Nationally, non-local recreation visitation in non-metropolitan counties generates an estimated 767,000 jobs (Cordell, 1999). As stated in the 2000 RPA, some 39% of these jobs are associated with food and beverage purchases. The remainder is more evenly distributed among accommodations, retail trade, and recreation services. Income and jobs associated with recreation and tourism are relatively more important in many counties of the West. Jobs tend to be seasonal and relatively low paying (USDA 2000c, pg 66). Information on jobs and income from recreation specific to the KIPZ are not currently available. This analysis will be completed and presented in the DEIS.

Economic Diversity

Economic diversity is a measure of how much variety there is in a particular economy. It is believed that diverse economies are more resilient to external impacts than less diverse economies. The Shannon-Weaver entropy function (Shannon and Weaver, 1949) has been used to calculate indices of economic diversity (Attaran, 1986).

The entropy method measures diversity of a region against a uniform distribution of employment. The index ranges between 0 (no diversity) and 1.0 (perfect diversity).

Table 2-5 displays the Shannon-Weaver index for each county and state for several years and the States are listed for comparison. A state economy usually is more economically diverse than any single county. All counties show an increase in economic diversity from 1977 to 1993. The most economically diverse county is Kootenai for all years. The least diverse county in 1977 was Sanders. Shoshone, Benewah, and Lincoln counties were the least diverse in 1985 and 1993.

Region	1977	1985	1993
Idaho	0.58302	0.65692	0.70119
Boundary, ID	0.42191	0.52459	0.59380
Bonner, ID	0.49097	0.54665	0.63652
Kootenai, ID	0.55456	0.60426	0.66255
Shoshone, ID	0.45807	0.44768	0.57753
Benewah, ID	0.45838	0.47820	0.57654
Montana	0.55208	0.63523	0.68074
Sanders, MT	0.41726	0.54098	0.61046
Lincoln, MT	0.43461	0.48085	0.57972

Source: Inventory and Monitoring Institute, Forest Service at http://fsweb.ftcol.wo.fs.fed.us/imi/economic_center/SpatialData3.html

Payments to Counties

Counties containing NFS lands receive payments from the federal government to compensate for critical services they provide to both county residents and visitors to these federal lands. In 1980, Congress enacted, and subsequently amended a law that requires that 25% of the revenues derived from NFS lands be paid to States for use by the counties in which the lands are situated for the benefit of public schools and roads. Receipts from timber sales are the primary source of monies. The percent of forest land area in each county is the basis for the distribution of the 25% funds returned to each county. Since 1908, the affected counties have received these payments. Table 2-6 shows the payments received by each county for the last 11 years.

As Table 2-6 indicates, the payments have fluctuated from year to year. This fluctuation is primarily due to the fluctuation in volume and revenues generated by timber sales.

The Secure Rural Schools and Community Self-Determination Act was enacted in October 2000. The purpose of this act was to stabilize payments to counties. Under this law, for fiscal years 2001 through 2006, counties have the choice of receiving either (#1) the 25-percent payment as under the Act of 1908 or (#2) an amount equal to their proportion of the average of the State’s three highest 25-percent payments from fiscal year 1986 through fiscal year 1999. All the counties in the study area have chosen

the stabilized payment (#2 above) available through the Secure Rural School and Community Self-Determination Act.

County	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Boundary	923	1,363	926	1,041	1,088	979	550	846	831	962	1,285
Bonner	931	1,352	969	1,064	1068	971	566	844	787	911	1,251
Kootenai	645	906	690	826	619	801	492	696	363	360	981
Shoshone ^{1/}	2,844	3,478	3,231	3,313	2,819	3,026	2,188	2,210	960	1,220	4,080
Benewah	89	97	106	84	83	77	62	42	13	31	107
Lincoln ^{2/}	4,518	5,413	6,721	6,128	4,521	4,010	3,388	3,651	2,319	2,856	5,659
Sanders ^{3/}	1,054	1,594	1,452	1,868	1,290	1,175	946	1,251	960	1,06	1,628

Source: P.L. 106-393, Secure Rural Schools and Community Self-Determination Act for 1991-1999 and the “Payments to States from National Forest Receipts” report for 2000 and 2001.

^{1/} Includes payments from the Clearwater National Forest, which is outside KIPZ

^{2/} Includes payments from the Flathead National Forest, which is outside KIPZ

^{3/} Includes payments from the Lolo National Forest, which is outside KIPZ

Counties also receive Payments in Lieu of Taxes (PILT). Under the PILT Act of 1976, Congress provided payments to local units of government, typically counties, containing federally owned lands. These payments are designed to supplement other federal land receipt sharing payments local governments may be receiving.

The Act authorizes payments under one of two alternatives, with formulas that take into account such factors as other forms of revenue sharing, acreage, and population. These payments are made directly to counties and may be used for any purpose. PILT payments can be and recently have been limited by Congress through the appropriations process. Congress has not appropriated sufficient funds to fully pay counties since 1994, with the payments in 2000 being 42% of the formula-determined payment.

Table 2-7 displays the PILT paid to each county for the last 11 years.

County	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Boundary	47	47	47	47	44	52	46	50	188	119	187
Bonner	45	45	45	45	42	50	44	65	168	124	208
Kootenai	179	179	179	178	171	189	173	185	166	188	270
Shoshone	122	123	123	121	114	134	117	126	118	129	272
Benewah	5	5	5	5	12	5	9	16	18	26	47
Lincoln	178	178	178	178	165	195	171	179	175	184	267
Sanders	91	91	91	91	84	99	87	91	91	96	140

To assess the impact of the payments to counties, the total county budget for those counties within the Planning Analysis Area were compared to the total payments to counties (25% Payments and PILT). Table 2-8 shows the county budget and the percentage that is contributed by the payments to counties for 1996-97. Shoshone and Lincoln counties are most affected by the payments to counties, with payments comprising more than 30% of their budget in 1996-97. Kootenai and Benewah counties are least affected, with less than 5% of their budget coming from the payments.

Table 2-8. County Payments as a Percent of County Budget for 1996-97 (in Thousands of Dollars)

County	25% Payments in 1996	PILT in 1996	Total 1996 Payments	1996-97 County Budget	Payments % of Budget
Boundary	979	52	1,031	11,107	9%
Bonner	971	50	1,021	(NA)	(NA)
Kootenai	801	189	990	39,472	3%
Shoshone	3,026	134	3,160	10,036	31%
Benewah	77	5	82	10,765	1%
Lincoln	4,010	165	4,175	12,255	34%
Sanders	1,175	84	1,259	7,341	17%

Source: US Census Bureau, Census of the Government 1997.