

EXECUTIVE SUMMARY

The purpose of this assessment is to profile the social and economic environment encompassing the PNF. This assessment describes the relationship between public lands and the surrounding communities and the contribution of the PNF to social and economic sustainability. It also documents baseline social and economic conditions and trends and their impact on the PNF to determine whether the Forest can or cannot influence or support those trends. Specifically, this report discusses the historical context, demographic conditions, uses of the PNF, community engagement, and economic conditions and trends. The quantitative and qualitative socioeconomic data in this report will help PNF determine needs for change and will assist the PNF and citizens to assess management alternatives developed through the process of forest plan revision.

The PNF is largely within Yavapai County; only 3% is within Coconino County. Therefore, the social assessment is limited to Yavapai County (see introduction for more detail). The economic assessment is also limited to Yavapai County with the exception of Payment in Lieu of Taxes information which affects both counties.

Social Conditions and Trends

Demographic Conditions and Trends

Total Population

Population growth in Yavapai County far exceeded the rate of increase in overall state population from 1980 to 2000 (146% versus 89% respectively). Since the last Forest Plan was written most growth has occurred in cities such as Prescott, Prescott Valley, Chino Valley, and Cottonwood-Verde Village between 1980 and 2000, based on the decadal US Census (U.S. Census 2005). Projections indicate that Yavapai County population will increase to 278,000 by 2030 with the rate of increase slowing to approximately 20% per decade in 2000 (Table 1, p. 16).

Age Distribution

The median age for Yavapai County is 45, significantly higher than the state's median age of 34 years and up from 42 in 1990. Although the county's 65 and older population declined from 24% to 22% between 1990 and 2000, the 22% level is substantially higher than the state of Arizona at 13% (Table 2, p. 18).

Racial / Ethnic Distribution

Yavapai County reported an increase in the number of individuals of multiple race and Hispanic origin between 1990 and 2000 from 4% of the population to 9%, showing nearly the same relative increase at the state level over the same period (20% to 24%). Despite substantial increases in individuals of multiple-race and Hispanic ethnicity, whites remain the predominant racial group in the County (Tables 3 and 4, p. 21).

Migration and Movement Trends

Of the increase of 167,517 residents in Yavapai County between 1990 and 2000, 32% moved into Yavapai County from another place. Of those who moved to Yavapai County, 20% moved from a different state and 12% were from the same state but different county (University of Arizona

2005). The pace of population growth may be outpacing the ability of communities to integrate new residents into existing lifestyles and value systems (Adams-Russell Consulting 2006).

Visitors to the PNF

The most recent data available indicates the PNF received approximately 772,000 visits during Fiscal Year 2002 (Kocis et al 2003). A majority of visitors to PNF are male (67%), predominately white (95%), and an estimated 25% of them are between the ages of 50 to 70. Primary activities on the Forest include hiking/walking, overall relaxation, non-motorized activities, fishing and wildlife viewing. According to National Visitor Use Monitoring Results (NVUM) gathered in 2002 and published in 2003, the largest percentage of respondents who provided zip code information was from Yavapai County, accounting for 19% of the survey respondents. Eleven percent of the visitors were from Maricopa County and only 1% of the visitors were from the Flagstaff area³ (Kocis et al. 2003). All of the other visitors were from throughout the nation.

While new National Visitor Use Monitoring data was collected in 2007, the report is not yet available to determine visitor use trends. Arizona Office of Tourism (AZOT) provides tourism information for the state. The Central Territory of Arizona, an area approximately bounded by Maricopa County on the south, Highway 260 on the East, Highway 93 on the west, and Coconino County to the North, showed a 41% increase in domestic overnight leisure visitors from 1993 to 2003 (AZOT 2004). Further, AZOT data show that the Central Territory is a predominantly outdoor-based activity destination with 52% of visitors participating in nature activities such as camping, eco-travel, and visiting national and state parks.

Housing

Housing units increased from 54,805 to 81,730 units in Yavapai County (49% increase) between 1990 and 2000 mirroring the overall population increase. Median home values increased from \$85,300 in 1990 to \$138,000 in 2000 (University of Arizona 2005).

How do trends in Demographic Conditions affect the sustainability of the PNF contribution to the Social condition?

- Yavapai County population growth exceeded growth for the State of Arizona (Table 1, p. 16). This trend is likely to continue but the rate will decline somewhat. Demand for more facilities, such as those related to a variety of trail uses, is expected to increase.
- There has been a small increase in total ethnicity in Yavapai County. The Hispanic population has increased from 6% to 10% of the total population from 1990 to 2000 (Table 4, p. 21). This trend is likely to continue. With increases in ethnic diversity of the population there may be increasing demands for new or different recreation experiences (Chavez 1993).
- With continued migration of retirees to Yavapai County, it is likely that the median age of 45 will remain higher than state's median age of 34 or increase slightly. The general aging of the population in Yavapai County (Headwaters Economics 2007, Yavapai County 2005) may place new demands on the PNF, since recreational uses and interest may shift. Cordell et al (2002) found that those over 65 were more likely to engage in activities such as walking or hunting compared to other age groups.

³ With NVUM data, there is a margin of error for respondents that did not provide zip code information.

- New residents may also have different expectations about uses of the PNF, such as a desire for aesthetics and recreation but little connection to ranching or logging. (McCool and Kruger 2003).
- In addition to an increase in population in the analysis area, visitors to the PNF are also increasing, potentially changing the recreational experience by increasing crowding at popular sites and trails on the PNF. Due to resource limitations, the PNF may not be able to meet all recreation demands.
- Housing units have increased and approval and construction of additional subdivisions within the County will continue this trend in the future (University of Arizona 2005, Yavapai County 2008). With the increase in housing it is likely that more homes will be located in the Wildland Urban Interface. Concerns about maintaining access to PNF lands, protecting structures from fire, and carrying out fuel management activities in that area will increase.

National Forest Land Use and Users Conditions and Trends

Land Use and Land Ownership

As a whole, land ownership within the area of assessment (Table 5, p. 25) closely resembles overall ownership percentages for the state of Arizona. Yavapai County includes 38% Forest Service administered lands, 25% private land, and the balance is either publicly-owned or tribal lands. A higher than average rate of population growth combined with limited lands for development is a characteristic of this social environment that sensitizes residents to land development, land exchange, and land use issues (Adams-Russell Consulting 2006). Land uses range from traditional uses, such as ranching in rural areas, to concentrations of residential and commercial uses near urban centers.

Transportation, Forest Access, and Utility Corridors

With a 100% increase in Vehicle Miles Traveled (Total number of vehicle miles traveled within a specific geographic area over a period of time) in Yavapai County between 1990 and 2000 (ADOT 2000), County and State transportation plans emphasize the need for improved planning through regional approaches linking transportation and desired land use. Some proposed transportation route alternatives pass through PNF (CYMPO 2008). If selected, they could impact open space values or fragment habitat for hunted species.

Utility corridors are also increasing in number to meet the demand of increasing population. Recent utility routes that cross PNF are the Transwestern Pipeline and the 69 KV Copper Canyon powerline.

Access to the PNF raises concerns. Individual property owners sometimes gain access to National Forest Land directly from their homes located on or near the Forest boundary. Damage can occur as motorized or non-motorized traffic creates a “social” trail (i.e., a pathway that is not part of the National Forest trail or road system). A second situation in some locations is roads on State Trust lands are used or informal permission is granted by private land owners to employees to gain access to the PNF for management. As lands become developed or change ownership, the PNF may lose access and formal easements may need to be acquired.

The PNF is preparing a Motorized Vehicle Use Map to ensure compliance with the 2005 Travel Management Rule. Non-essential travel-ways identified in a previous resource access/travel management assessment are being obliterated as funding is available.

Open Space

Preservation of open space is a particularly important land use issue given both the public's desire to maintain the "rural character" of county lands (Appendix A) and the need to accommodate rapidly growing populations and municipalities. Policies aimed at preserving open space have been mentioned in the Yavapai County General Plan and the Verde Valley Regional Land Use Plan (Yavapai County 2003 and 2006). The PNF faces challenges in managing land parcels that are not contiguous with the majority of the PNF. Illegal uses such as unauthorized OHV use and trash dumping make meeting responsibilities for managing such parcels for "Wildland" character difficult and expensive.

Land exchanges or acquisitions may be used as a tool to by the PNF to retain or increase land in "open" condition, however, management concerns would need to be addressed. Demand is also likely to increase for potential land exchanges for development or for associated utilities and access.

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Commodity/Consumptive Uses

Commodity uses historically played a major role in public land management and continue to play a role on the PNF. Recent trends on PNF show grazing permits remaining relatively stable. In 1986, the PNF issued 57 grazing permits; in 2008 54 permittees were issued a total of 60 permits (Forest Service 2008b). Trend for grazing permits is likely to remain stable.

From 1986 to 2002 timber sale contracts issued ranged from zero to two per year totaling 11 contracts. In 2002 pallet mills began operations in Phoenix and Ash Fork. These mills provide a market for forest products produced as a by-product of fuel reduction projects (including salvage of beetle-killed pine), and thinning of Ponderosa Pine stands for habitat and ecosystem restoration. During the period from 2003 through March of 2008, 22 timber sale contracts for 39,021 hundred cubic feet (ccf) were sold. Expectations are that current levels will stabilize at about 3,600 ccf per year.

Current mining activities on the PNF include flagstone, recreational placer mining (mining of gold from alluvial deposits such as panning), **permitted placer and lode claim mining**, and one permitted limestone operation.

Recreation Use

Visitor numbers at PNF developed recreation sites have remained stable or increased slightly over time. Between 2002 and 2007, information on numbers of users paying fees at developed sites ranged from 204,900 (2005) to 219,300 (2004) (Taken from information on fees paid).

In the Prescott Basin, an area that surrounds the city of Prescott, the PNF requires that camping outside of developed campgrounds only take place in designated sites. While recent NVUM data are not yet available, signs of increased use include visual observations that indicate increased use. In addition most, if not all designated dispersed sites are full each weekend in the summer, indicating that demand may be nearing capacity, at least seasonally.

The PNF mix of climate zones allows for year-round recreation leading to a high amount of trail-based recreation. The majority of visitors to the PNF use forest trails; there is high demand for desired experiences on a finite resource. According to Arizona State Parks (2003), nearly 1.2 million OHV Recreation Days occurred in Yavapai County in 2003 and 65% those days were from other Arizona residents traveling to Yavapai County. While recent NVUM data is not yet available, OHV use is increasing, given that OHV recreational use state-wide increased by approximately 350% between 1998 and 2003 (Arizona State Parks 2003).

The PNF includes eight Wilderness areas comprising 116,000 acres. The largest age group visiting these areas was in the 51 to 60 year group and comprised about 25% of use (Kocis et al 2003). Granite Mountain receives the highest visitation, likely due to the close proximity and easy access from Prescott. Use is expected to remain stable or slowly increase.

How do trends in Land Use and Users affect the sustainability of the PNF contribution to the Social condition?

- o National Forest lands account for 38% of land in Yavapai County. With other agencies and tribal ownership providing about 37% ownership, private lands make up only 25% of the County. A high rate of population growth combined with limited lands for development is a noteworthy characteristic of this social environment that also sensitizes residents to land development, land exchange, and land use issues (Adams-Russell Consulting 2006).
- o Additional utility corridors have been implemented (e.g., Transwestern pipeline) and are being proposed (electric services to Yeager Estates and Sycamore Ranch). Increasing numbers of utility and transportation corridors could increase habitat fragmentation for game species like pronghorn and could affect viewsheds.
- o Access to the PNF may be directly affected by increases in population and development. Residents who live near the Forest boundary may create social trails and unintentionally create resource damage. In addition, access for Forest management may be affected as lands change hands and informal agreements to use roads that cross land under non-Forest Service land ownership may require obtaining easements.
- o The PNF, local governments and individuals have interest in retaining lands as open space in areas surrounding communities, especially in the Verde Valley. Land exchanges can be viewed either as a tool to enhance open space retention, or as a means of releasing public land for development and community growth.
- o Timber harvest is carried out primarily to achieve fuel reduction near the wildland-urban interface, to improve habitats, or to restore ecosystems. The need for fuels reduction will continue as beetle-killed pines increase the potential for catastrophic wildfires and the number of people living in the WUI increases. In addition, as concerns about smoke management persist, the PNF may need to address fuel build-up using mechanical means in addition to prescribed fire.
- o Due to population growth in the assessment area there is potential for higher demand for PNF resources, especially those related to recreation. Over the last two decades motorized recreation vehicles have become popular; consequently their uses on the PNF have increased. If not properly managed, overcrowding and resource damage could occur in many areas. Increases in retirement age citizens and seasonal visitors may, in turn, increase demand for age specific recreation opportunities such as desire for walking trails near population centers or providing an increased number of designated dispersed camping areas. (Cordell et al. 2002).

Community Engagement with the PNF

The PNF has a history of building relationships with those who live in and near the Forest. The PNF consults with tribal groups on projects to accommodate special tribal needs. It maintains partnerships with Local, State, and Federal agencies to achieve shared goals. It also has accomplished projects through cooperation with interest groups such as those related to recreation (trails and campground host), trash removal, fire prevention and education, and heritage resource management (site steward program).

Use of volunteers is increasing; total volunteer hours worked increased by 6% from Fiscal Year 2006 to 2007 (Forest Service 2006g and 2007c). With the increase in population and the number of retirees in the local population, there may be people who would like to be involved in Forest Service management, but have not signed up as volunteers.

The Prescott Area Wildland Urban Interface Commission (PAWUIC) cooperates with the PNF, local fire departments, other agencies, and homeowner's associations to raise awareness of risks of living in the WUI and to facilitate fuel reduction activities. Currently, controlled burns are the most cost-effective and ecologically compatible method of decreasing fuels and thus decreasing wildfire risk. With housing increases, many structures lie within the WUI. New residents often find smoke and the risk of escaped fire problematic. With its emphasis on working with homeowners associations, PAWUIC continues to make people aware of risks. However, issues related to smoke management and prescribed burning will persist.

Changing population demographics increase the need to provide information and opportunities to help new residents and visitors understand the PNF and its associated resources. Providing effective communication whether face to face, signs, or publications will continue to be a challenge.

How do the trends in Community Engagement affect the sustainability of the PNF contribution to the Social condition?

- o The PNF recognizes the importance and value of Tribal relationships. As the state's population grows, so will issues of importance to area Tribes. For example, access to important areas is being impacted and may need to be addressed. There will be a corresponding increase in the need for communication and cooperation between the PNF and Tribes.
- o Communities within and surrounding the PNF will continue to interact with and influence management of the PNF. This relationship may intensify as the population grows and more demands are placed on the PNF's resources. Issues related to smoke management and prescribed burning will persist.
- o Although the PNF will continue to provide the resource base for activities and uses, the agency's ability to meet needs of users is limited. Numbers of volunteers are increasing and the PNF's capacity to coordinate volunteer programs may be exceeded. The PNF could enhance its process of working with partners and volunteers to increase its capacity to provide some services.
- o Changing population demographics increase the need to develop improved relationships between the PNF and communities in order to provide information and opportunities for newcomer and visitor understanding of national forests and their resources.

Economic Conditions and Trends

Employment

Economic growth was significant between 1990 and 2000 (Figure 7, p. 42). The sector⁴ showing the greatest rate of growth was wholesale trade, which increased by 127%, followed by the agricultural services, forestry, and fishing sector (92%); construction (88%); finance, insurance, and real estate (81%); and services (80%). The mining sector was the only one to experience a decline in the state, however within Yavapai County, employment in the mining sector increased by 7% (University of Arizona 2005). The sector providing the largest portion of employment was services, followed by retail trade, and government (Figure 6, p. 42). Services and retail trade contain the industries most likely to be impacted by recreation activities on the PNF. The sectors for manufacturing and agricultural services, forestry, fishing and other represented 6% and 1% of total employment respectively and contain the industries most likely impacted by timber and grazing programs. Mining represented 2% of total employment and is the sector most likely impacted by minerals related activities on the Forest (University of Arizona 2005). Yavapai County also reported rates of unemployment that were lower than the state average (University of Arizona 2005). While logging, mining, and livestock grazing were once a mainstay of the local economies, tourism and service-related employment now play a dominant role.

Income

As of 2000, Yavapai County maintained levels of per capita and median family income that were lower than average for Arizona. Yavapai County reported the strongest gains in median family income, of counties in Arizona, between 1990 and 2000 (Figure 11, p. 47) and also saw substantial declines in individual and family poverty that were greater than reductions in poverty at the state level over the same period (Figure 10, p. 46). Yavapai County reported an especially strong increase in tourism employment between 1990 and 2000 (University of Arizona 2005). Retirees obtain much of their income from non-labor sources. The influx of non-labor income into Yavapai County's economy could affect the demand for various services (medical, legal, food industry, landscapers), as well as recreational uses of the PNF. Retirees, who take up residence in the wildland-urban interface, may have concerns regarding management of prescribed burning, related smoke dispersion, and wildfire protection by the PNF.

Payments to States

Yavapai and Coconino Counties receive payments to replace tax revenue from lands that are in the public domain (Table 8, p. 49). From 2002 through 2005, Coconino County received approximately \$60,000 annually and Yavapai County received approximately \$1,200,000 annually from revenues generated on PNF administered lands.

Prescott National Forest Economic Contributions

PNF Contribution to Employment and Labor Income by Industry: Of those economic contributions coming exclusively from the PNF, natural resource related industries constitute a significant portion of the analysis area economy providing approximately 7% of labor and 8% employment (Figures 12 and 13, p. 51). In total, the management activities of the PNF during

⁴ Sector: A distinct subset of a market, society, industry, or economy, whose components share similar characteristics. All corporate and noncorporate private entities organized for profit and certain other entities that are treated as businesses in the national income and product accounts (NIPAs) (U.S. Department of Commerce, Bureau of Economic Analysis). See Appendix B for additional information regarding sectors.

2005 stimulated approximately 2% of jobs and 1% of labor income within the analysis area (Table 14, p. 57). However, some industry sectors appear to have a much higher degree of dependence on the PNF's contributions. The local industries most dependent on the management activities and uses of the PNF are agriculture; mining; arts, entertainment, and recreation; government; and accommodations and food services. Of the total PNF economic contribution to the economy (2% of jobs, 1% of labor income), a 13% contribution to jobs and 10% to labor income is in the agriculture sector (Table 14, p. 57). These contributions would be most closely connected to activities associated with the timber management and grazing program areas. A PNF contribution of 3% to jobs and 4% to labor income is in the arts, entertainment, and recreation industry; 3% of jobs and labor income takes place in the accommodation and food services industries (Table 14, p. 57). Economic contributions to these industries are most closely associated with recreation and fishing, wildlife viewing, and hunting.

*PNF Contribution to Employment and Labor Income by Resource Program*⁵: Approximately 89% of the labor income and 86% of jobs stimulated by activities associated with the PNF represents new money introduced into the economy (Tables 10 and 11, pp. 53 and 54). The operations expenditures by the PNF (salaries, and other operating expenditures) provide the greatest overall stimulus to the local economy by the PNF. The PNF program area that contributed the greatest amount of economic stimulus is recreation, including and/or combined with those activities associated with hunting, fishing, and wildlife viewing. While not all activities in the wildlife program relate to recreation, the wildlife and recreation program areas represent approximately 28% of the PNF's total contribution to labor income and 36% of the employment stimulated. The next largest contributing program area is minerals which stimulates approximately 14% of the PNF's contribution to labor income and 12% of jobs. (Tables 10 and 11, pp. 53 and 54).

Sustainability of the Forest's Contributions to Economic Conditions and Trends

- o Increasing levels of tourism-related visitors will continue to stimulate employment in service industry positions. Service-related industries now employ the most people in the area, followed by retail trade, and government (Figure 6, p. 42). It should be noted that service industries include high-paying (e.g., medical, legal, real estate), as well as lower-paying (e.g., food industry servers, landscapers) employment. These categories of service workers cover a range of income. Services and retail trade contain the industries most likely to be impacted by recreation activities on the PNF.
- o The PNF provides open space and recreational opportunities which are attractive to retirees. Aging populations present new challenges and opportunities for employment and government services, as those retiring from the workforce expect to receive services funded by revenues from a workforce that is shrinking as a percent of the total population (Wan He et al. 2005). In order to provide the desired level of recreation services, such as more trails or better signs, this group may be willing to contribute their time to achieving that goal. This increasingly urbanized, older population will likely stimulate increased employment for skilled and construction related labor.
- o The influx of non-labor income into Yavapai County's economy could affect the demand for various services, amenities, and uses of the PNF. Retirees, who take up residence in the Wildland Urban Interface, will place increasing demands on the PNF such as the need to

⁵ Resource programs are categories of management activities on the PNF. They include recreation, wildlife and fish, grazing, timber, minerals.

increase awareness of the risks of wildfire, the effectiveness of fuel reduction treatments, and the realities of smoke management.

- o In total, the management activities of the PNF during 2005 stimulated approximately 2% of jobs and 1% of labor income within the analysis area. The local industries most dependent on management activities and uses of the PNF are agriculture; mining; arts, entertainment, and recreation; government; and accommodations and food services. Of the total PNF contribution to jobs and income, the PNF represented 13% of jobs and 10% of labor income in the agriculture sector (Table 14, p. 57).
- o The PNF program area that contributed the greatest amount of economic stimulus is recreation, including those activities associated with hunting, fishing and wildlife viewing. While not all activities in the wildlife program relate to recreation, the wildlife and recreation program areas represent approximately 28% of the PNF's total contribution to labor income and 36% of the employment stimulated. The next largest contributing program area is minerals which stimulates approximately 14% of the PNF's contribution to labor income and 12% of jobs (Table 11, p. 54).