6. Forest Users and Uses

The purpose of this section is to describe various past and current uses of the Tonto National Forest (TNF) as well as the multiple groups that engage in these uses. This includes use for both extractive and non-extractive purposes as well as special uses and user groups. The following subsections include historical context and user groups, extractive users and uses, and non-extractive users and uses (including recreation; recreation planning; special users and uses, such as Native Americans, wildlife, wilderness; and illegal uses).

A review of available data on users and uses within the Tonto NF is consistent with larger surveys of trends at the regional and national levels. These trends show a marked decline in extractive uses of national forests concurrent with an increase in recreational use, particularly in visitors to wilderness areas and users of off-highway vehicles (OHVs). These and other socioeconomic factors discussed in this section present significant challenges for multiple-use management of the TNF.

6.1 Historical context and user groups

Federal agencies often struggle to balance the needs and wishes of different users on public lands. Not long after the establishment of the first national forest reserves in 1891, Congress passed the Organic Act to help direct the management of those forests. The forest reserves, later to become the national forests, were to be used in a way that protected or improved the forest itself (including protection from fire), secured waterflows for use in other areas, and provided a reliable supply of timber. Public lands deemed to be more valuable for mineral extraction or agricultural uses were not to be included in the national forests, and individuals were allowed free use for certain extractive purposes. Essentially, all types of use were permitted provided that the use was not destructive to the forest. At the time, this was considered to include grazing, recreation, the construction of homes and resorts, and use for rights-of-way. The essential aim of the policy was to use the forests wisely to support local, regional, and national development and growth (USFS 1993).

A practical doctrine of managing for multiple uses eventually developed out of the conflict and cooperation among competing users and user groups. This doctrine was formally expressed in the 1960 Multiple-Use Sustained-Yield Act (USFS 1993). Managers were directed to give equal consideration to all resource users, and national forest lands were to be used in the ways that best met the needs of the American people. They were specifically not to be managed with the singular goal of maximizing output or economic profit (Fedkiw 1998). Similarly, the National Forest Management Act of 1976, "reinforces the mission laid out in other governing statues—that the agency will both provide goods and services, such as timber and recreation, and protect forest resources, such as clean air and water, aesthetics, and fish and wildlife habitat" (GAO 1999a). However, multiple-use laws generally provide little or no guidance as to how forests should balance conflicting or competing uses (GAO 1999a).

Fedkiw (1998) describes managing for multiple uses as, "the fitting of multiple uses into ecosystems according to their capability to support the uses compatibly with existing uses... in ways that would sustain the uses, outputs, services, and benefits, and forest resources and ecosystems for future generations." From this perspective, forest users and uses are seen as the primary drivers of management. These ideas will be crucial in this section, which aims to describe how the TNF is used, who uses it, and how trends in forest users and uses compare to historical and national trends.

Uses and users of the national forests can be defined roughly as being either extractive or non-extractive. Extractive uses include livestock ranching, timber cutting, and mining. While not strictly extractive, the use of public lands for infrastructure (such as power lines and communication sites) is also included in this group. Recreation is the most common non-extractive use although the national forests are also

commonly used for research and tribal activities. Hunting, fishing, and gathering, though arguably extractive, are included here because they are considered in recreation data. Notably, forest use can also be legal or illegal.

6.2 Extractive users and uses

Nationally, livestock grazing, timber cutting, and mining are the most common extractive uses on national forest land. Although extractive uses have historically played a major role in public-lands management, most recent evidence seems to suggest that they are being slowly succeeded in policy and management by non-extractive uses (Davis 2001). Also, environmental citizen groups and recreation users are increasingly challenging extractive uses.

In fiscal year 2002, 7,750 operators were permitted to graze livestock on a total of about 95 million acres of available FS-administered land (Vincent 2004). [1] As Davis (2001) notes, the number of permits issued for livestock grazing on public lands has decreased slightly over recent years. In 2000, the TNF issued eighty-seven grazing permits. This number was unchanged from 1990 (Alford, pers. comm.).

The Forest Service sells timber for a variety of reasons, most commonly to support local mills and communities that were, in some cases, built around a specific forest's timber supply and to modify forest structure or composition to meet a variety of management goals (Gorte 2004). Timber sales on national forest land have been steadily decreasing since the late 1980s, when total production reached 11 billion board feet annually (GAO 1999b). In contrast, just over 2 billion board feet were harvested during fiscal year 2004 at a total value of approximately $218 million; an additional $3.17 million in special forest products, including Christmas trees, fuel wood, mushrooms and berries, and the like, were harvested that year (USFS 2005g). In 1997, the FS timber sales program reported a loss of $88.6 million (GAO 2001a).

Timber cutting in the TNF includes sawtimber, pulpwood, and fuelwood. In 2000, the last year for which data are currently available, the forest issued permits for 539 cords of commercial fuelwood, an increase of over 100% from 1990. Permits for sawtimber (2,421 mbf in 2000) and pulpwood (709 mbf in 2000) have decreased substantially since 1990. Timber data provided by the TNF also includes the gathering of fuelwood for non-commercial purposes. In 2000 the forest issued permits for 3,489 cords of gathered fuelwood. Permits for more than 10,000 cords were issued in 1990 (Alford, pers. comm.).

Mining in the national forests is directed by the General Mining Law of 1872, which allows individuals and corporations free access to prospecting on FS lands. Upon discovery of a mineral resource, an individual or corporation can, in turn, patent it to claim full title to the deposit. Small fees are generally required to stake, maintain, and patent a claim (Humphries and Vincent 2004). Nationally, mineral and energy production, from gravel to gold to carbon dioxide, totaled about $2 billion in fiscal year 2003 (USFS 2005i).[2] In 2002, Region 3 issued $557,042 in sale permits and $1,773,756 in free use permits for mineral extraction (Jevons, pers. comm.). Also in 2002, the TNF issued ninety-one sale and ten free use permits, valued at more than $1.5 million. The most common materials permitted were sand and gravel, fill, and landscape rock. The number of mining permits issued decreased between 1990 and 2002 (Alford, pers. comm.).

Forests also commonly allow communities and other entities to use public lands for infrastructure, including power lines, rights of way, telecommunications, and the like.

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[1] Data given are the most recent available.
[2] Data given are the most recent available.

6.3 Non-extractive users and uses

Non-extractive users, particularly recreation users, play a major role in forest use and planning. The national forests are mandated to provide outdoor recreation opportunities in natural settings, to maintain and enhance open spaces and public accessibility, and to maintain and enhance "cultural, wilderness, visual, and natural resource values" through a variety of management tasks and activities (FSH 2302). However, unmanaged recreation has also been identified by the FS as one of four "key threats" to the nation's forests and grasslands. As participation in outdoor recreation increases, the FS predicts that recreation pressure on undeveloped areas in most of the Southwest and Rockies regions will be heavy. Much of this pressure can be traced back to population trends throughout the West. The use of OHVs (discussed below) is seen as a major component of unmanaged use (USFS 2005j).

Recreation use has increased steadily throughout the history of the national forests. Over the past few decades, the growth in recreation has been truly extraordinary. Participation in camping has increased from about 13 million people in 1960 to 19 million people in 1965 to almost 58 million people in 1994-95 (Cordell et al. 2004). The 2004 Roper Report estimated that nine in ten Americans had participated in some sort of outdoor recreation during the previous twelve months (RoperASW 2004). However, the same report showed a decline in recreation participation beginning in 2001. It attributes this trend in part to travel concerns following September 11, 2001 but also to the expansion of indoor recreation opportunities through Internet and television (RoperASW 2004). Cordell and others (2004) also note slight decreases in several categories of outdoor recreation following September 11. Nationally, there were 209 million national forest visits in 2001. The forests of the Southwest (Region 3) received 19.5 million visits[3] (USFS 2001e).

Arizona in particular (but also the West and the nation in general) has experienced significant demographic changes in recent years, and these demographic trends have likewise influenced recreation trends. In Arizona, where more than 42% of the land base is managed by federal agencies for public use, the population has increased about tenfold since 1940, to more than 5 million people in 2000; the state had the second largest growth rate in the nation in the 1990s (Arizona State Parks 2003). Perhaps even more importantly, the proportion of Arizonans living in urban areas has increased dramatically, so that more than 88% of Arizona residents lived in urban settings by the year 2000 (Arizona State Parks 2003). In phone surveys conducted by the Arizona state parks in 1994 and 1998, nearly 50% of Arizonans said that they had visited an Arizona national forest within the previous twelve months (Arizona State Parks 2003). Access to public lands is considered a major contributor to quality of life by many Arizonans, and many parks and forests are experiencing very high recreational use, even while urban expansion is decreasing the amount of available open space. As a result, this trend of increasing pressure on recreational resources can be expected to continue well into the future.

According to National Visitor Use Monitoring (NVUM) data, the nearly 3 million acres of the Tonto forest received approximately 5.7 million visits during fiscal year 2002. The majority of visitors to TNF are male (74.7%) and are predominately white (92.5%). Spanish, Hispanic, or Latino visitors make up approximately 6.1% of total visits. Most visitors, an estimated 63.8%, are between the ages of 31 and 60. 1% of the visitors interviewed in NVUM surveys were from a foreign country. The most frequently reported zip codes were from the Flagstaff area (Kocis et al. 2003b).

The Recreation Opportunity Spectrum (ROS) system provides a framework for understanding recreation users, their needs and wishes, and the abilities of forests to accommodate these (USFS 1982). As understood through an ROS lens, a recreation opportunity consists of three elements: the activities, the setting, and the experience. All land and water resources are classified in one of six categories, based on physical, social and managerial criteria (Table 29).

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[3] However, for the latter figure there is a 41.2% margin of error at the 80% confidence level.

Table 29. Description of ROS Classifications

Category	Description
Primitive	Setting is unmodified and remote and of a fairly large size. Users are generally isolated from one another, and typical activities include hiking and walking, viewing scenery, horseback riding, tent camping, and hunting.
Semi-Primitive Non-Motorized	The environment is predominately natural and of moderate to large size. Users' opportunities to experience solitude are less than in primitive areas, but user density remains low. Motorized activities are not permitted.
Semi-Primitive Motorized	Setting is similar to semi-primitive non-motorized, but off-road motor vehicles are permitted.
Roaded Natural	Setting is predominately natural but with a moderate level of human impact. There is a probability of contact with other users. Roads are present, and there may be substantial motorized use, including automobiles, buses, trams, and boats.
Rural	Setting is substantially modified. Facilities and management practices allow multiple uses and a large number of users and may be designed to facilitate specific activities. There is convenient access, and user density is moderate to high.
Urban	Levels of modification and user convenience are high and characteristic of urbanized areas. Opportunities to interact with other individuals and groups are emphasized.

Source: USFS 1982

Another important element of recreational setting is scenic integrity, or the visual quality of the landscape. The Scenery Management System guides forests in planning management activities that harmonize with existing natural landscapes (USFS 2001e).

The activities that recreation users prefer can also provide a guide for land management planning. The National Survey on Recreation and the Environment (NSRE), which tracks national outdoor recreation trends, lists the ten most popular recreation activities, summarized in Table 30 below for 2000-2001 (Cordell et al. 2004):

Table 30. Ten Most Popular Recreation Activities, NSRE 2000-2001

Activity	Percent of Population Participating
1. Walking for pleasure	83.0%
2. Family gatherings	73.5%
3. Visiting nature centers	57.1%
4. Picnicking	54.5%
5. Sightseeing	51.8%
6. Attending outdoor sports events	49.9%
7. Viewing historic sites	46.2%
8. Viewing/photographing wildlife	44.7%
9. Swimming (lakes, streams)	41.8%
10. Swimming (outdoor pools)	41.0%

Source: Cordell et. al. 2004

As Table 30 illustrates, walking is currently the most popular outdoor activity. 83% of the adult population participates annually. Of the nearly 177 million people estimated to have walked outdoors for pleasure within the last year, an estimated 71 million did so in the form of a day hike or a visit to a wilderness or primitive area (Cordell et al. 2004). The most popular activities, such as picnicking, sightseeing, and swimming, tend to be available in a variety of settings and readily accessible to families and groups. Less popular activities, such as specialized hunting, rock climbing, and sailing, tend to require specialized equipment, specific skills and knowledge, and greater physical stamina (Cordell et al. 2004). Even activities that are only moderately popular, such as mountain biking, driving off-road, canoeing, or sledding, attract many millions of users annually (45.6 million, 37.2 million, 20.7 million, and 31.2 million respectively). The three least popular activities, snowshoeing, orienteering, and migratory bird hunting, claim a combined total of approximately 13.1 million participants annually (Cordell et al. 2004). NSRE data for several general kinds of outdoor activities are summarized in Table 31 below:

Table 31. Participation in General Outdoor Activities, NSRE 2000-2001

Activity	Percent of Population Participating
Viewing/learning/gathering activities[4]	88.4%
Developed site activities	94.9%
Trail activities	40.4%
Swimming/surfing/beach activities	62.8%
Motorized activities	62.0%
Hunting and fishing	38.1%
Snow activities	19.3%
Risk activities	35.2%
Other non-motorized activities	22.8%

Source: Cordell et. al. 2004

[4] Viewing/learning/gathering activities are defined as, "visits to… recreation sites, wildland, or open space sites… to watch study, identify, photograph, sample, observe, and learn about natural or cultural history, or to gather natural products" (121).

The TNF includes fifty-nine campgrounds, twenty-six picnic sites, eighteen boating sites, ten fishing sites, three organization camps, eight commercial public service sites, and six interpretive sites. Four lakes, two reservoirs, the Salt and Verde Rivers, and numerous trout streams provide ample opportunities for water recreation. Fifty-two trailheads and 900 miles of trails are available for hiking, horseback riding, mountain biking, and/or OHV use. Recreational shooting, rockhounding, and mineral prospecting are also allowed in many areas of the forest.

The five most popular activities for visitors were viewing natural features (61.6% participation), viewing wildlife (53.7%), general relaxation (53%), hiking/walking (41.3%), and driving for pleasure on roads (38.3%). Using off-highway vehicles (OHV), camping in both primitive and developed sites, visiting historic and prehistoric sites, picnicking, and hunting and fishing were also very popular (Kocis et al. 2003b).

6.4 Special users and uses

A number of special user groups merit attention in Arizona's national forests. They are unique in that they do not fit into the profile of the majority of users described above. Some user groups need special accommodation, and this accommodation can at times become politically charged.

Tribes

Federally recognized American Indian tribes occupy about 53.5 million acres (7%) of land in the western states. These tribes are legally considered to be sovereign nations, so that the relationship between the FS and tribes is a government-to-government one (Toupal 2003). Tribes that enter into contracts with the federal government do so just as state governments or sovereign nations do (NFF and USFS 2005). However, the federal government also holds a special responsibility to consult with tribes over management issues that may affect them. This process is governed by a variety of federal regulations and policies, including the Forest Service Handbook (FSH 1509.13), the National Environmental Policy Act, the National Indian Forest Resources Management Act, the Tribal Forest Protection Act, and the Archeological Resources Protection Act, and several presidential executive orders.

Tribes' use of FS land includes free activities such as gathering boughs and basket materials for which permits are unnecessary as well as the use of products such as sawtimber, for which fees are charged (Jevons, pers. comm.). In 2003, the National Tribal Relations Task Force recommended a legislative proposal that would authorize the USFS to allow federally recognized tribes to use forest products for traditional cultural purposes free of charge. In addition, many national forests contain traditional cultural places whose locations are known only to the tribes. Because the tribes cannot divulge the locations, they cannot apply for permits (Jevons, pers. comm.).

OHV Users

On public lands throughout the country, the use of OHVs has increased in popularity and is now a major concern to many forest managers. Between 1982 and 2000, OHV users increased more than 109% nationally (Cordell et al. 2004). In 1995, a GAO study found OHV use on federal lands to be generally undermanaged. The FS devoted limited funding and staffing to managing OHV use, and forests relied heavily on state funding (GAO 1995). According to surveys conducted by the Arizona State Parks, most Arizonans consider the provision of OHV recreation opportunities to be a lower priority than other services, such as the preservation of cultural resources and natural areas. More Arizonans, however,

considered management for OHVs to be important in a 1998 survey than in an earlier survey (Arizona State Parks 2003).

In 2004, the FS proposed a new rule to help manage OHV recreation in the national forests. Under the proposed rule, forests would establish a system of roads, trails, and areas designated for motor vehicle use and would prohibit the motor vehicle use that is off the designated system or inconsistent with the designations. This system would replace the previous assumption that all areas are open to OHV use unless specifically posted otherwise (USFS 2004j). In its 1985 forest plan, the Tonto, noting an ongoing increase in OHV use, recognized it as a threat to some resources and a potential source of user conflict. At that time, about 900,000 acres of the forest was open (primarily in piñon-juniper and ponderosa pine ecosystems) and nearly 2,000,000 acres closed to OHV use (USFS 1985).

Wildlife Users

The National Survey of Hunting, Fishing, and Wildlife-Associated Recreation collects longitudinal data on anglers, hunters, and wildlife watchers in the United States (USFWS 2001). The 2001 survey found that 82 million U.S. residents 16-years and older participated in some wildlife-associated recreation during that year: 34.1 million fished, 13.0 million hunted, and 66.1 million engaged in some sort of wildlife-watching activity (including photographing, observing, or feeding fish and other wildlife).[5] Their spending totaled an estimated $108 billion, or 1.1% of the U.S. GDP. That year's 38.7 million hunters and anglers accounted for approximately $70 billion of that amount (USFWS 2001). Generally, the rate of growth in fishing participation has been greater than U.S. population growth since the survey began in 1955 whereas the growth in hunting participation has failed to keep up with population growth during that time. There has also been an overall decrease in wildlife-watching activities since 1980 (USFWS 2001). However, birding (viewing or photographing birds) has been the fastest growing recreational activity since the early 1980s, adding more than 50 million participants and growing 231% in just under twenty years (Cordell et al. 2004).

In the TNF, wildlife viewing is a more common activity than either fishing or hunting. NVUM data from fiscal year 2002 show that 53.7% of the visitors interviewed participated in some sort of wildlife viewing activity; however, only 4.8% described it as their primary activity.[6] Approximately 11.2% of interviewed visitors fished and about 11.4% hunted (with most of these describing it as their primary activity). 3.8% used a developed fishing site or dock (Kocis et al. 2003b).

Wilderness users

With the Wilderness Act of 1964, Congress laid the foundation for a National Wilderness Preservation System comprised of federal lands, "where the earth and its community of life are untrammeled by man, where man himself is a visitor and does not remain" (16 USC 1131 et seq.). Wilderness areas are designated by Congress and are generally protected from commercial enterprises, road construction, mechanical vehicles, and structural development. The Forest Service Handbook directs managers to minimize the impact of human use while protecting the wilderness character and public values of wilderness land (FSH 2320.2).

As a result of these management requirements, wilderness areas are open to some uses (e.g., primitive camping, backpacking, horseback riding, hunting, and fishing) and closed to others (many extractive uses, bicycling, and OHVs), making the decision to designate a roadless area as wilderness a potentially controversial one. However, many forest users value the solitude and isolation, closeness to nature, and self-reliance experienced in wilderness areas. Activities available in wilderness or primitive areas attract

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[5] Notably, however, an estimated 17% of Coconino visitors are under the age of 16.

[6] The NVUM definition of wildlife viewing appears to be somewhat broader that that used by the national survey discussed above.

millions of visitors nationally. For example, an estimated 34.1 million Americans participated in primitive camping in 2000-2001 while participation in backpacking and mountain climbing drew an estimated 22.8 million and 12.9 million visitors respectively (Cordell et al. 2004).

The TNF includes eight designated wilderness areas and 170,000 acres of inventoried roadless areas (USFS 2001c). Users of designated wilderness areas fit a profile similar to other forest users. They are predominantly male (72.1%), white (97.0%), and generally travel from the Flagstaff area. NVUM data suggest that roughly 110,000 wilderness visits were made during fiscal year 2002 (Kocis et al. 2003b).

Special use permits

While research is rarely considered by the public to be a major use of federal lands, the Tonto forest, like most forests, issues special use permits for research purposes.

6.5 Key issues for forest planning and management

Extractive and non-extractive uses of national forests are often seen as competing with one another, and balancing the uses of different groups can be challenging. Livestock grazing is no exception. Overgrazing, especially on arid lands, can seriously damage ecosystems. Soil erosion, watershed destruction, and the loss of native plants are commonly cited as potential impacts. In the late 1980s, the most recent reports issued by the USDA and Department of Interior on the condition of grazing allotments showed that more than half of the public rangelands were in either poor or fair condition, and a GAO survey of range managers' professional opinions showed that the BLM and the USFS authorized grazing levels higher than the land could support on 19% of allotments (GAO 1988). Disagreements among citizen groups over the appropriate fee system for public-lands grazing, the refusal of some operators to pay grazing fees, the retirement of allotments, and calls for government buy-outs of permits are all key issues for both ranchers and other user groups (Vincent 2004).

Timber harvesting in the national forests has declined since the late 1980s (GAO 1999b). Meanwhile, a new emphasis is being placed on the utilization of small-diameter fuels, which are increasingly being removed from western forests to manage fire frequency and behavior. As public concern over wildland fire grows, the FS and other federal agencies have emphasized the development of a market for these fuels to help mitigate the costs of removal. For example, the 2004 Healthy Forests Restoration Act provides direct subsidies for the development of industries that use previously unmarketable biomass from mechanical thinning projects (16 USC 6531).

The policies that govern mineral extraction in the national forests have also come under increasing scrutiny over the past two decades. Public concern over the Mining Law of 1872, under which about 3.2 million acres of public land had been sold by the late 1980s, was sparked in 1986 when the federal government, under the law's patent provision, sold 17,000 acres for $42,500 to patent holders who then almost immediately resold the land to oil companies for $37 million (GAO 1989). A GAO report called for substantial changes to the law. Many of these controversial aspects of mining law remain unchanged today, and calls for reform continue (Humphries and Vincent 2004).

As the western United States becomes increasingly urbanized, national forests are experiencing increasing demand for recreational uses and, in many cases, decreasing support and demand for extractive uses. While these trends generally have not caused a clear rise in environmental or pro-conservation politics and policies, the forces of supply and demand are changing the face of the national forests (Davis 2001). The following figure, provided by the USDA Forest Service to the General Accounting Office, clearly illustrates these changes (GAO 1999a).
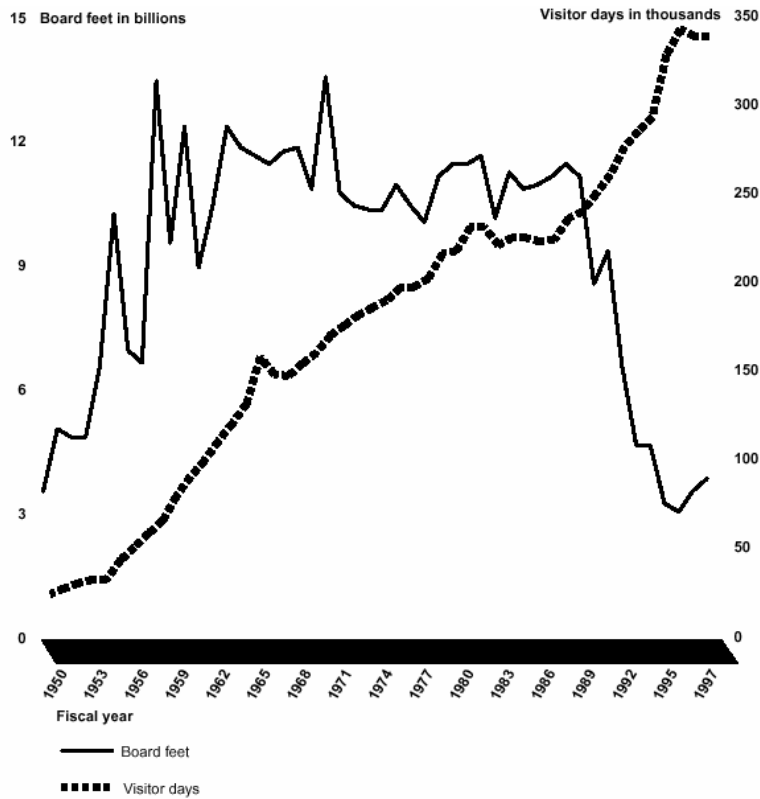
Source: General Accounting Office (GAO) 1999a

Figure 19. Visitor Recreation Days as Compared to Timber Extraction, 1950-1997

As the West becomes increasingly urbanized, managing recreation and its conflicts with other uses will doubtless be a priority for forest managers and planners.

Several important management issues have arisen from demographic and use changes. As discussed above, recreation users represent a wide variety of uses, and their management priorities also differ significantly and sometimes come into conflict. NRSE surveys identify trends in the characteristics of outdoor recreation trips, wildlife as a component of recreation trips, service and accessibility issues for persons with disabilities, and user attitudes and opinions concerning site attributes, funding, and management policy. These data show that, nationally, large proportions of recreation users visit both more developed areas, such as developed campgrounds and restaurants, and less developed areas, such as primitive camping areas, trails away from roads, and wilderness areas. At the same time, significant proportions of users prioritize such potentially contradictory values as accessibility and wilderness preservation or service provision and low use fees (Cordell, Teasley, and Super 1997). Striking an acceptable balance among these values will continue to be a major challenge for forest managers.

Under conditions of increasing recreation demand, simply maintaining services and facilities has become a challenge for many forests. Between 1989 and 1991, the GAO issued several reports on the condition of the FS's recreational sites and areas and found that funding levels were hundreds of millions short of what would be needed to complete backlogged maintenance and reconstruction for trails, developed recreation sites, and wilderness areas. Funding shortages and a lack of consistent, uniform monitoring data were sited as the primary roadblocks to recreation management (GAO 1991). However, the practice of increasing recreation fees to fill funding gaps has been contentious. In 1996, Congress authorized a recreation fee demonstration program, allowing land management agencies to test new or increased fees

to help address unmet needs for visitor services, repairs and maintenance, and resource management. Evaluations of fee demo programs have cited concerns about equity, administration, interagency coordination, and the use of fee monies but concluded that increasing fees have not negatively impacted overall visitor numbers (GAO 1998, GAO 2001b). Conversely, the fees charged for recreational special use permits, especially for large-scale commercial operations such as ski lodges, resorts, and marinas, have been criticized for remaining well below fair market value (GAO 1996). For additional discussion regarding fees, see section 9.1.

Changes over time in forest uses and user groups can and should help guide forest managers in land use planning. The need to balance the priorities and values of a wide variety of extractive and non-extractive users aptly demonstrates both the challenges and the benefits of multiple use doctrine.

7. Designated Areas and Special Places

This section describes those places in and around the Tonto National Forest (TNF) which have been designated for public uses such as camping and picnicking, biking, hiking, OHV use, rock climbing, fishing, scenic drives and vistas, and so forth or recognized as important to the public as so-called undesignated special places. An attempt has been made in this section to identify all designated areas and special places on the TNF. However, the nature of these resources makes this task difficult. As will be discussed in later subsections, some of these areas are held in secrecy by the parties who regard them as special (indeed that is why they are "special") and, thus, there is reluctance by these people to disclose these places and their locations.

A review of available information on designated areas and special places suggests that the TNF contains considerable recreational, interpretive, and cultural resources. Forest GIS Staff provided specific names and locations of over 400 designated areas within the TNF, including boating areas, dispersed sites, campgrounds, picnic areas, information sites and wilderness areas. Although not explicitly identified in this assessment, Forest Planners and Heritage Staff continue to work closely with tribal representatives in identifying and planning for the protection of the many "special places" known to exist throughout the TNF.

7.1 Historical context and methods of designation

Although the concept of special places has existed in social science literature for decades, the idea of incorporating it into forest management plans is relatively new. Traditionally, forest professionals focused on science-based management policies rather than on the subjective, difficult-to-quantify issues of public values (McCool 2001, Mitchell et al. 1993).

Special places can be described as spaces that have been given meaning by the humans who have experienced them in a way that inspired an emotional response (Cheng, Kruger, and Daniels 2003). Although often unrecognized in any official way, special places are significant to visitors of our national forests; however, the FS also recognizes special areas for their "unique or special characteristics" (USFS 2005c) and for the contributions the areas make to our public lands. These areas are noted for generally agreed-upon attributes such as scenic qualities, habitat significance, and other virtues and are delineated on FS maps. But, as will be shown, the distinction between those designated areas and special places—the subject of this section—involves more than semantics and, thus, is worthy of discussion.

The key difference between the two terms is that *areas* are considered special for their own attributes whereas the value of *places* derives from the people who experience them. A pristine riparian area, for example, is not necessarily a special place until a person or group forms an emotional attachment to it. More detailed explanations emphasize place as the intersection and integration of "ecological, economic, and spiritual values" (Williams and Patterson 1996) or of "biophysical attributes and processes; social and behavioral processes; and social and cultural meanings" (Cheng, Kruger, and Daniels 2003). All of these definitions make clear that special places are complex, subjective, and often exceedingly difficult to define in a concise manner.

By way of identifying undesignated special places, the forest archeologist, landscape architect, and recreation officer were given the opportunity to name and describe, to the best of their ability, the key special places in the forest. Also, they were asked to identify the key user publics and, finally, to specify the main management issues associated with these special places. Native American tribes are a particularly important constituency in the designation and protection of special places. The involvement of area tribes with the TNF is discussed in greater detail in the following section, Community Relationships.

7.2 Designated areas

Table 32 provides information on the designated areas within the Coconino National Forest.

Table 32. Designated Areas on the Tonto National Forest

Designated Area Type	Name	District
Boating	Bartlett Lake Marina	Cave Creek
Boating	Jojoba	Cave Creek
Boating	Ocotillo	Cave Creek
Boating	Yellow Cliffs	Cave Creek
Boating	Canyon Lake Marina	Mesa
Boating	Foxtail RAP	Mesa
Boating	Pobrecito	Mesa
Boating	Phon D Sutton RAP	Mesa
Boating	Goldfield RAP	Mesa
Boating	Water Users RAP	Mesa
Boating	Saguaro del Norte	Mesa
Boating	Saguaro Lake Marina	Mesa
Boating	Palo Verde	Mesa
Boating	Laguna	Mesa
Boating	Apache Lake Marina	Tonto Basin
Boating	Burnt Corral	Tonto Basin
Boating	Cholla	Tonto Basin
Boating	Grapevine	Tonto Basin
Boating	Indian Point	Tonto Basin
Boating	Roosevelt Lake Marina	Tonto Basin
Boating	Schoolhouse	Tonto Basin
Boating	Windy Hill	Tonto Basin
Boating	SR 288 Bridge RAP	Tonto Basin
Cave	Barberpole	Payson
Cave	Diamond	Payson
Cave	Ebony	Payson
Cave	Salamander Pit	Payson
Cave	Scout	Payson
Cave	Strawbones	Payson
Cave	Whispering Pines	Payson
Cave	Woman	Payson
Cave	Pishiboro	Pleasant Valley
Cave	Redman	Pleasant Valley
Dispersed Site	Rio Verde Airstrip	Cave Creek
Dispersed Site	Devil's Hole	Cave Creek
Dispersed Site	Shooting pit off FDR 24	Cave Creek
Dispersed Site	Dispersed sites near Seven Springs off FDR 24	Cave Creek
Dispersed Site	Tangle Creek FDR 269	Cave Creek
Dispersed Site	Houston Creek FDR 16	Cave Creek
Dispersed Site	Red Creek FDR 18	Cave Creek
Dispersed Site	Bloody Basin Road (FDR 269)	Cave Creek
Dispersed Site	Table Mesa Road at the cabin	Cave Creek

Table 32 (cont.). Designated Areas on the Tonto National Forest

Designated Area Type	Name	District
Dispersed Site	Shooting pit off Bartlett Lake Road	Cave Creek
Dispersed Site	East side of Bartlett Lake	Cave Creek
Dispersed Site	Riverside River Rock Area	Cave Creek
Dispersed Site	Verde River Access FDR 3257	Cave Creek
Dispersed Site	Verde River Access FDR 161	Cave Creek
Dispersed Site	Willow Springs Wash	Cave Creek
Dispersed Site	Hidden Cove	Cave Creek
Dispersed Site	East of Horseshoe Dam Vista	Cave Creek
Dispersed Site	FR 479 corridor	Cave Creek
Dispersed Site	Riverside (south of campground)	Cave Creek
Dispersed Site	Childs river access	Cave Creek
Dispersed Site	Gleason Flats	Globe
Dispersed Site	FDR 303	Globe
Dispersed Site	Mercuria	Mesa
Dispersed Site	Romo Ranch/Lower Sycamore Creek	Mesa
Dispersed Site	Sugarloaf Mountain/Lower Sycamore Creek	Mesa
Dispersed Site	Mesquite Wash	Mesa
Dispersed Site	Picadilla	Mesa
Dispersed Site	Brushy Basin	Mesa
Dispersed Site	Busnell Tanks	Mesa
Dispersed Site	Mt Ord	Mesa
Dispersed Site	Alder Creek	Mesa
Dispersed Site	East Sycamore Creek	Mesa
Dispersed Site	West Sycamore Creek	Mesa
Dispersed Site	National Mine	Mesa
Dispersed Site	Whitlow Dam/Millsite Canyon	Mesa
Dispersed Site	Hewitt Canyon	Mesa
Dispersed Site	Queen Valley	Mesa
Dispersed Site	The Rolls	Mesa
Dispersed Site	Saguaro Lake shoreline coves	Mesa
Dispersed Site	Canyon Lake shoreline coves	Mesa
Dispersed Site	Mesquite Flats	Mesa
Dispersed Site	Coronado Mesa	Mesa
Dispersed Site	Usery Mountain west	Mesa
Dispersed Site	Bulldog Canyon	Mesa
Dispersed Site	Stewart Mountain	Mesa
Dispersed Site	Lower Salt River/Stewart Mountain Dam to Water Users	Mesa
Dispersed Site	Lower Salt River/Water Users to Phon D Sutton	Mesa
Dispersed Site	Lower Salt River/Phon D Sutton to Granite Reef	Mesa
Dispersed Site	A&A Pit/Cottonwood Spring	Mesa
Dispersed Site	Government Well/Sycamore Spring	Mesa
Dispersed Site	Cottonwood Camp	Mesa
Dispersed Site	Cane Spring	Mesa
Dispersed Site	Mine Mountain Road	Mesa
Dispersed Site	Mud Spring	Mesa
Dispersed Site	Amethyst Mine	Mesa
Dispersed Site	Alder Creek	Mesa
Dispersed Site	Brown's Cave	Mesa

Table 32 (cont.). Designated Areas on the Tonto National Forest

Designated Area Type	Name	District
Dispersed Site	Adams Camp	Mesa
Dispersed Site	First Water North	Mesa
Dispersed Site	Superstition Mountain Face	Mesa
Dispersed Site	Hieroglyphic Canyon	Mesa
Dispersed Site	Fremount Saddle	Mesa
Dispersed Site	Zonderland/Land of Nod	Mesa
Dispersed Site	Weaver's Needle	Mesa
Dispersed Site	Boulder Basin	Mesa
Dispersed Site	Bluff Springs	Mesa
Dispersed Site	Charlebois Springs	Mesa
Dispersed Site	Boulder/Second Water Junction	Mesa
Dispersed Site	Hackberry Springs	Mesa
Dispersed Site	Reed's Water	Mesa
Dispersed Site	Fish Creek Canyon	Mesa
Dispersed Site	IV Ranch	Mesa
Dispersed Site	Reavis Canyon	Mesa
Dispersed Site	Reavis Ranch	Mesa
Dispersed Site	Mound Mountain/Circle Stone	Mesa
Dispersed Site	Angle Basin	Mesa
Dispersed Site	Rogers Spring	Mesa
Dispersed Site	Mt. Peeley	Mesa
Dispersed Site	McFarland	Mesa
Dispersed Site	Potato Patch	Mesa
Dispersed Site	Sharp Creek	Payson
Dispersed Site	Tonto Creek	Payson
Dispersed Site	Zane Grey	Payson
Dispersed Site	Preached Canyon	Payson
Dispersed Site	Control Road	Payson
Dispersed Site	Verde Glen	Payson
Dispersed Site	Webber	Payson
Dispersed Site	Cracker jack	Payson
Dispersed Site	Sycamore	Payson
Dispersed Site	Gisela	Payson
Dispersed Site	Sawmill Flat	Pleasant Valley
Dispersed Site	Rose Creek	Pleasant Valley
Dispersed Site	Workman Creek	Pleasant Valley
Dispersed Site	Honey Creek	Pleasant Valley
Dispersed Site	Parker	Pleasant Valley
Dispersed Site	FDR 203	Pleasant Valley
Dispersed Site	Bearhead	Pleasant Valley
Dispersed Site	Squaw Mesa	Pleasant Valley
Dispersed Site	Walnut	Pleasant Valley
Dispersed Site	Haigler Creek	Pleasant Valley
Dispersed Site	Bottle Springs	Pleasant Valley
Dispersed Site	Red Lake	Pleasant Valley
Dispersed Site	Naegelin Canyon	Pleasant Valley
Dispersed Site	Colcord	Pleasant Valley
Dispersed Site	Ramer	Pleasant Valley

Table 32 (cont.). Designated Areas on the Tonto National Forest

Designated Area Type	Name	District
Dispersed Site	Valentine Canyon	Pleasant Valley
Dispersed Site	Lower Canyon Creek	Pleasant Valley
Dispersed Site	TR 119 at FR 83 Junction	Tonto Basin
Dispersed Site	Coon Creek	Tonto Basin
Dispersed Site	Cherry Creek	Tonto Basin
Dispersed Site	Mt. Ord	Tonto Basin
Dispersed Site	Upper Deer Creek (top of FR 201)	Tonto Basin
Dispersed Site	Bumblebee Wash	Tonto Basin
Dispersed Site	2 Mile site (at the cattle guard)	Tonto Basin
Dispersed Site	School House Wash	Tonto Basin
Dispersed Site	Cottonwoods on Salt River off FDR 333/333A	Tonto Basin
Dispersed Site	Brown's Saddle	Tonto Basin
Dispersed Site	Lone Pine Saddle	Tonto Basin
Family Campground	Box Bar	Cave Creek
Family Campground	Needle Rock	Cave Creek
Family Campground	Riverside	Cave Creek
Family Campground	Horseshoe	Cave Creek
Family Campground	Mesquite	Cave Creek
Family Campground	SB Cove	Cave Creek
Family Campground	Bartlett Flat	Cave Creek
Family Campground	CCC	Cave Creek
Family Campground	Seven Springs	Cave Creek
Family Campground	Oak Flat	Globe
Family Campground	Jones Water	Globe
Family Campground	Pioneer Pass	Globe
Family Campground	Upper/Lower Pinal	Globe
Family Campground	Sulfide del Rey	Globe
Family Campground	Bagley Flat	Mesa
Family Campground	The Point	Mesa
Family Campground	Laguna Beach-Canyon Lake Marina	Mesa
Family Campground	Tortilla	Mesa
Family Campground	Christopher Creek	Payson
Family Campground	Houston Mesa	Payson
Family Campground	Ponderosa	Payson
Family Campground	Upper Tonto Creek	Payson
Family Campground	Sharp Creek	Payson
Family Campground	Airplane Flat	Pleasant Valley
Family Campground	Alderwood	Pleasant Valley
Family Campground	Upper Canyon Creek	Pleasant Valley
Family Campground	Colcord Ridge	Pleasant Valley
Family Campground	Haigler Canyon	Pleasant Valley
Family Campground	Rose Creek	Pleasant Valley
Family Campground	Valentine Ridge	Pleasant Valley
Family Campground	Falls	Pleasant Valley
Family Campground	Cascade	Pleasant Valley
Family Campground	Creekside	Pleasant Valley
Family Campground	Bachelor Cove	Tonto Basin
Family Campground	Bermuda Flat Campground	Tonto Basin

Table 32 (cont.). Designated Areas on the Tonto National Forest

Designated Area Type	Name	District
Family Campground	Burnt Corral	Tonto Basin
Family Campground	Cholla	Tonto Basin
Family Campground	Cholla Bay	Tonto Basin
Family Campground	Indian Point	Tonto Basin
Family Campground	Orange Peel	Tonto Basin
Family Campground	Schoolhouse	Tonto Basin
Family Campground	Windy Hill	Tonto Basin
Family Campground	Lakeview Trailer Park	Tonto Basin
Family Campground	Mills Cove	Tonto Basin
Family Campground	Windy Flat	Tonto Basin
Family Campground	Grapevine Bay	Tonto Basin
Family Campground	Schoolhouse Point	Tonto Basin
Family Campground	Three-Mile	Tonto Basin
Family Campground	Upper Burnt Corral	Tonto Basin
Family Campground	Lower Burnt Corral	Tonto Basin
Family Campground	Davis Wash	Tonto Basin
Family Campground	Crabtree Wash	Tonto Basin
Family Campground	Apache Lake Boat Access	Tonto Basin
Family Picnic	South Cove	Cave Creek
Family Picnic	Rattlesnake	Cave Creek
Family Picnic	Kellner	Globe
Family Picnic	Icehouse	Globe
Family Picnic	Capitan Pass	Globe
Family Picnic	Grantie Reef	Mesa
Family Picnic	Coon Bluff	Mesa
Family Picnic	Blue Point	Mesa
Family Picnic	Peeble Beach	Mesa
Family Picnic	Sheep Crossing	Mesa
Family Picnic	Saguaro del Norte	Mesa
Family Picnic	Butcher Jones	Mesa
Family Picnic	Acacia	Mesa
Family Picnic	Boulder	Mesa
Family Picnic	Phon D Sutton	Mesa
Family Picnic	Christopher Creek	Payson
Family Picnic	East Verde Crossing	Payson
Family Picnic	Flowing Springs	Payson
Family Picnic	Horton Creek	Payson
Family Picnic	Shoofly	Payson
Family Picnic	Burnt Corral	Tonto Basin
Family Picnic	Vineyard Canyon	Tonto Basin
Family Picnic	Cottonwood Cove	Tonto Basin
Fishing Site	Fisherman Point	Cave Creek
Fishing Site	Rattlesnake	Cave Creek
Fishing Site	Peregrine Point	Mesa
Fishing Site	Boulder	Mesa
Fishing Site	Diversion Dam North	Tonto Basin
Fishing Site	Diversion Dam South	Tonto Basin
Experimental Forest	Sierra Ancha Experimental Forest	Pleasant Valley

Table 32 (cont.). Designated Areas on the Tonto National Forest

Designated Area Type	Name	District
Group Campground	Ashdale	Cave Creek
Group Campground	Cave Creek	Cave Creek
Group Campground	Horseshoe Dam	Cave Creek
Group Campground	Rattlesnake	Cave Creek
Group Campground	Timber Camp	Globe
Group Campground	Warnica Springs	Globe
Group Campground	Christopher Creek	Payson
Group Campground	Houston Mesa	Payson
Group Campground	Sharp Creek	Payson
Group Campground	Reynolds Creek	Pleasant Valley
Group Campground	Grapevine	Tonto Basin
Group Campground	Frazier	Tonto Basin
Group Picnic	Forbis	Mesa
Horse Camp	Houston Mesa	Payson
Horse Camp	Frazier	Tonto Basin
Hotel/Lodge/Resort Private	Saguaro Lake Guest Ranch	Mesa
Hotel/Lodge/Resort Private	Tortilla Flat	Mesa
Hotel/Lodge/Resort Private	Apache Lake Resort	Tonto Basin
Information Site	Cave Creek Ranger District Office	Cave Creek
Information Site	Bartlett Lake Aid Station	Cave Creek
Information Site	Globe Ranger District Office	Globe
Information Site	Mesa Ranger District Office	Mesa
Information Site	Saguaro Lake Aid Station	Mesa
Information Site	Canyon Lake Aid Station	Mesa
Information Site	Payson Ranger District Office	Payson
Information Site	Pleasant Valley Ranger District Office	Pleasant Valley
Information Site	Canyon Creek Fish Hatchery	Pleasant Valley
Information Site	Apache Lake Aid Station	Tonto Basin
Information Site	Roosevelt Lake Aid Station	Tonto Basin
Information Site	Tonto Basin Ranger District Office	Tonto Basin
Information Site	Mazatzal Rest Area (State Routes 87 and 188)	Tonto Basin
Information Site	Tonto National Forest Supervisors Office	Supervisors Office
Interpretive Site	Sears-Kay	Cave Creek
Interpretive Site	Sycamore Creek Outdoor Education Center	Mesa
Interpretive Site	Shoofly	Payson
Interpretive Site	Sierra Anch Experimental Station	Pleasant Valley
Interpretive Site	Blevins Cemetery	Tonto Basin
Interpretive Site	Roosevelt Lake Visitors Center	Tonto Basin
Interpretive Site	Roosevelt Dam Cemetery	Tonto Basin
Interpretive Site	Theodore Roosevelt Dam Overlook	Tonto Basin
Municipal	Carefree	Cave Creek
Municipal	Scottsdale	Cave Creek
Municipal	Globe	Globe
Municipal	Miami/Claypool	Globe
Municipal	Superior	Globe
Municipal	Payson	Payson
Municipal	Pine	Payson
Municipal	Strawberry	Payson

Table 32 (cont.). Designated Areas on the Tonto National Forest

Designated Area Type	Name	District
Municipal	Young	Pleasant Valley
Municipal	Roosevelt	Tonto Basin
Municipal	Tonto Basin	Tonto Basin
National Monument	Tonto National Monument	Tonto Basin
National Recreation Trail	Highline Trail	Payson
Observation Site	Bartlett Lake Vista	Cave Creek
Observation Site	Needle Vista	Mesa
Observation Site	Canyon Lake Vista	Mesa
Observation Site	Fish Creek Vista	Mesa
Observation Site	Pleasant Valley Vista	Pleasant Valley
Observation Site	Apache Lake Vista	Tonto Basin
Observation Site	Inspiration Point	Tonto Basin
Observation Site	Roosevelt Dam Overlook	Tonto Basin
Organization Site	Dons Camp	Mesa
Organization Site	Arizona Cactus-Pine Girl Scout Camp	Payson
Organization Site	Grand Canyon Council Boy Scout Camp	Payson
Potential Wild/Scenic Rivers	Upper Verde	Cave Creek
Potential Wild/Scenic Rivers	Arnett/Telegraph	Globe
Potential Wild/Scenic Rivers	Pinto Creek	Globe/Tonto Basin
Potential Wild/Scenic Rivers	Upper Salt River	Globe/Tonto Basin
Potential Wild/Scenic Rivers	Lower Salt River	Mesa
Potential Wild/Scenic Rivers	Fossil Creek	Payson
Potential Wild/Scenic Rivers	East Verde River	Payson
Potential Wild/Scenic Rivers	Tonto Creek (upper segment)	Payson
Potential Wild/Scenic Rivers	Canyon Creek	Pleasant Valley
Potential Wild/Scenic Rivers	Cherry Creek	Pleasant Valley
Potential Wild/Scenic Rivers	Spring Creek	Pleasant Valley
Potential Wild/Scenic Rivers	Workman Creek	Pleasant Valley
Potential Wild/Scenic Rivers	Parker Creek	Pleasant Valley/Tonto Basin
Potential Wild/Scenic Rivers	Salome Creek	Pleasant Valley/Tonto Basin
Potential Wild/Scenic Rivers	Tonto Creek (lower segment)	Tonto Basin
Recreation Concession Site	Laguna Beach-Canyon Lake Marina	Mesa
Recreation Concession Site	Salt River Recreation Tube Rental and Shuttle Bus Service	Mesa
Recreation Concession Site	Christopher Creek	Payson
Recreation Concession Site	Houston Mesa	Payson
Recreation Concession Site	Ponderosa	Payson
Recreation Concession Site	Upper Tonto Creek	Payson
Recreation Concession Site	Sharp Creek	Payson
Recreation Residence	Lower Camp Creek	Cave Creek
Recreation Residence	Upper Camp Creek	Cave Creek
Recreation Residence	Pinal	Globe
Recreation Residence	Crabtree Wash	Tonto Basin
Research Natural Area	Bush Highway Research Natural Area	Mesa
Research Natural Area	Haufer Research Natural Area	Tonto Basin
Research Natural Area	Buckhorn Mountain Research Natural Area	Tonto Basin
Scenic/Sightseeing Route	Apache Trail National Scenic Byway	Mesa/Tonto Basin
Scenic/Sightseeing Route	From the Desert to the Tall Pines National Scenic Byway	Tonto Basin/Pleasant Valley
Sheep Driveway	Heber-Reno Sheep Driveway	Mesa/Tonto Basin/Pleasant Valley

Table 32 (cont.). Designated Areas on the Tonto National Forest

Designated Area Type	Name	District
State Park	Tonto Natural Bridge State Park	Payson
Swimming (Lake)	Rattlesnake	Cave Creek
Swimming (Lake)	Butcher Jones	Mesa
Swimming (Lake)	Acacia	Mesa
Trailhead	Cave Creek	Cave Creek
Trailhead	Cottonwood (Spur Cross)	Cave Creek
Trailhead	Bronco	Cave Creek
Trailhead	Miles	Globe
Trailhead	Picketpost	Globe
Trailhead	First Water	Mesa
Trailhead	Peralta	Mesa
Trailhead	Ballentine	Mesa
Trailhead	Cline	Mesa
Trailhead	Mormon Grove	Mesa
Trailhead	Peeley	Mesa
Trailhead	Woodbury	Mesa
Trailhead	Roger's Trough	Mesa
Trailhead	Reavis	Mesa
Trailhead	Cottonwood Camp	Mesa
Trailhead	Tortilla	Mesa
Trailhead	Crosscut	Mesa
Trailhead	Broadway	Mesa
Trailhead	Boulder	Mesa
Trailhead	Mud Springs	Mesa
Trailhead	City Creek	Payson
Trailhead	Fossil Springs	Payson
Trailhead	Geronimo	Payson
Trailhead	Hatchery	Payson
Trailhead	Pine	Payson
Trailhead	See Canyon	Payson
Trailhead	Two-Sixty	Payson
Trailhead	Doll Baby	Payson
Trailhead	Irving	Payson
Trailhead	Strawberry	Payson
Trailhead	Red Rock	Payson
Trailhead	Washington Park	Payson
Trailhead	Houston Mesa	Payson
Trailhead	Parker Creek	Pleasant Valley
Trailhead	McFadden Peak	Pleasant Valley
Trailhead	Reynolds	Pleasant Valley
Trailhead	Circle Ranch	Pleasant Valley
Trailhead	Barnhardt	Tonto Basin
Trailhead	Bull Canyon	Tonto Basin
Trailhead	Deer Creek	Tonto Basin
Trailhead	Frazier	Tonto Basin
Trailhead	Lone Pine	Tonto Basin
Trailhead	Roosevelt Cemetery	Tonto Basin
Trailhead	Tule	Tonto Basin

Table 32 (cont.). Designated Areas on the Tonto National Forest

Designated Area Type	Name	District
Trailhead	Upper Horrell	Tonto Basin
Wild Burro Territory	Saguaro Lake Wild Burro Territory	Mesa
Wild and Scenic River	Verde River	Cave Creek
Wilderness	Pine Mountain (portion shared with Prescott NF)	Cave Creek
Wilderness	Cedar Bench (portion shared with Prescott NF)	Cave Creek
Wilderness	Mazatzal	Cave Creek/Mesa/Payson
Wilderness	Superstition	Mesa/Globe/Tonto Basin
Wilderness	Four Peaks	Mesa/Tonto Basin
Wilderness	Hellsgate	Payson/Pleasant Valley
Wilderness	Salome	Pleasant Valley
Wilderness	Sierra Ancha	Pleasant Valley
Wildlife Management Area	Roosevelt Lake Wildlife Area	Tonto Basin
Wildlife Management Area	Three Bar Wildlife Area	Tonto Basin
Wilderness Study Area	Lime Creek (03020)	Cave Creek
Wilderness Study Area	Mazatzal Wilderness Contiguous (03016)	Cave Creek/Payson
Wilderness Study Area	Arnold Mesa (03092)	Cave Creek
Wilderness Study Area	Pine Mountain Wilderness Contiguous (03017)	Cave Creek
Wilderness Study Area	Picacho (03030)	Globe
Wilderness Study Area	Boulder (03024)	Mesa
Wilderness Study Area	Goldfield (03026)	Mesa
Wilderness Study Area	Black Cross (03027)	Mesa
Wilderness Study Area	Horse Mesa (03028)	Mesa
Wilderness Study Area	Hellsgate Contiguous (03021)	Payson
Wilderness Study Area	Salome Contiguous (03022)	Pleasant Valley
Wilderness Study Area	Cherry Creek (03023)	Pleasant Valley
Wilderness Study Area	Sierra Ancha Wilderness Contiguous (03019)	Pleasant Valley/Tonto Basin
Wildlife Viewing Site	Goose Point	Tonto Basin

Source: Tonto National Forest GIS Coordinator
         GIS and INFRA Databases

7.3 Special places

The following information was supplied by the Tonto National Forest's Archeologist, J. Scott Wood. The Tonto National Forest was once home to some ancestors of the O'odham (Pima) Tribes, primarily the Salt River Pima-Maricopa Indian Community and the Gila River Indian Community, and some ancestors of today's Hopi and Zuni Tribes. More recently it was home to the Tonto, Cibecue, and San Carlos Apache and the Southeastern Yavapai (Tonto Apache Tribe, White Mountain Apache Tribe, San Carlos Apache Tribe, Yavapai-Apache Nation, Yavapai-Prescott Tribe, and Fort McDowell Yavapai Nation).

To the Hopi, Zuni, and O'odham, all archaeological sites on the TNF are considered "special places," especially those that contain the buried remains of their ancestors. Their concerns about these places center on leaving them undisturbed. When that is not feasible, they are concerned about the handling of human remains under the Native American Graves Protection and Repatriation Act (NAGPRA). Currently, based on a detailed study of cultural affiliations on the forest, done several years ago, all prehistoric human remains recovered from the Tonto NF are repatriated for reburial on their respective reservations. Apache human remains, following the direction of the Apache Tribes, are reburied by the forest at their discretion. Given that the subject has yet to be formally discussed, the Forest Service currently has no agreement in place with the Yavapai. In addition to the ancestral connections between

modern tribes and the prehistoric occupants of the forest, the Hopi maintain an active shrine on the forest that they built in the 1990s.

The association between tribes and the TNF is more intimate with the Apache and Yavapai, especially the Apache. The entire eastern boundary of the Forest is with the White Mountain and San Carlos Reservations and the Tonto Apache Reservation is entirely enclosed by the forest. The Fort McDowell Yavapai Nation and the SRPMIC also abut the forest. Having lived on the forest in many areas both prior to and after the creation of the forest—frequently within living memory and often during the lives of many elders now residing on the reservations—Apache knowledge of the Tonto landscape is quite precise. The forest is currently working with these tribes to identify specific "special places," but a number are already known as a result of a long history of research and consultations by the forest. Most of these areas are places where specific plant food and fiber resources were and often still are gathered (e.g. acorns, agave, beargrass, medicinal plants, etc.). Most areas are not described in terms that lend themselves to drawing distinct boundaries on maps, but the forest is currently working with the tribal representatives to better define the geographic extent of these areas in ways that can interface better with management planning.

Other Apache "special places" are more cultural/historical or religious in nature: clan origin areas (six to ten of these are known to the forest with some degree of precision with more to come), dance grounds and other ceremonial sites, and places where the *ga'an* spiritual figures originate and where they have appeared on special occasions. Former residential sites may also fall into this category. But, except for a few important camps associated with milestone events in Apache history (e.g., specific battles with the U.S. Army, the last camp occupied just prior to confinement on the reservations, etc.), these are not accorded any particular significance. Obviously, the tribes want to preserve these "special places" in perpetuity if at all possible. Native American representatives also wish to preserve the multitude of Apache and Yavapai place names that blanket the forest though there does not seem to be any current initiative to have the forest adopt many of them.

Tribes also are concerned that information regarding the nature and location of their sites be highly restricted with access to specific information confined to the Forest Heritage Staff exclusively. As a result, no specific location information is provided. Aside from the standard issues regarding the destruction of ancestral sites and the disturbance of human remains, either by projects or by vandals, the most critical management issues regarding these "special places" today have to do primarily with vegetation management. The tribes are concerned that prescribed fire and other fuels reduction treatments avoid changing the species compositions in the area by fostering the growth and reproduction of favored species. Along with this, there are issues involving tribal access and use of these resources. The Tonto NF is in the process of resolving these issues by expanding efforts to identify such "special places," institutionalizing tribal relationships and access requirements through the use of Memoranda of Agreement, and refining the planning process for large-scale vegetation treatment projects to accommodate tribal concerns wherever feasible.

7.4 Scenery management

The USFS has long explored the issue of scenery management on the national forests, and several publications have been written which can serve as guides to the forest manager for management of scenic resources. Some of the more important publications are available on-line at http://www.esf.edu/es/via/. Two of these publications which might be particularly useful are *Our National Landscape: A Conference on Applied Techniques for Analysis and Management of Visual Resources* (Elsner and Smardon 1979) and *Landscape aesthetics: A handbook for scenery management* (USFS 1995). The latter deals with the character and nature of landscapes, the integrity of natural scenes, the means to obtain information from constituent publics regarding scenic preferences, the determination of landscape visibility, and the application of the Scenery Management System. The appendices contain information about the history of

the scenery management issue in the USFS. The scenery management issue, according to this handbook, arose during the 1960s as a result of public concern over the visibility of forest management activities, particularly timber cutting. This handbook provides a guide to practical methods for minimizing the impact of those activities on the user public, principally recreationists. The Forest Service also provides guidance to the national forests regarding landscape management in the Forest Service Manual, Chapter 2380—"Landscape management."

7.5 Key issues for forest planning and management

Special places exist because humans form emotional attachments to them based on sensory connections. Sometimes people are aware of this experience and the feelings they develop, but often, this is an unconscious process. The ability and opportunity to form these connections fulfills people's needs to feel a part of something greater than themselves, which is "an essential aspect of human existence" (Brandenburg and Carroll 1995). Researchers advise that the recognition of unique and special places is of growing importance because people, in today's age of cultural homogenization, seek unique and special qualities in their public lands (Williams and Stewart 1998). This, in turn, places higher demands on public lands, particularly in a rapidly growing state like Arizona.

With the complexities of special places in mind, researchers like Williams and Stewart (1998) caution that it is unwise to reduce special places to "single attributes" as they are clearly a collection of values, contexts, and experiences. Consequently, it is not always possible to identify special places as discrete points on a map. The challenge of mapping special places is thus ideally accomplished in cooperation with the individuals that value the place, marking the general boundaries of the area (rather than a point) on the map (Richard and Burns 1998). Using a Geographic Information System (GIS) as a tool to combine the special place maps of different groups or individuals can be very helpful to forest planners seeking to identify overlapping areas that might indicate future sources of conflict (Brandenburg, Carroll, and Blatner 1995). Disputes can arise over the diverse place definitions people give the same physical space, and, given the subjective emotional nature of special places, these disagreements can be quite contentious. Forest professionals are advised that "various sentiments—whether local or non-local in origin, new or long established—are all legitimate, real, and strongly felt" (Williams and Stewart 1998).

Given that these places require sensory experiences, distant landmarks and conditions can affect one's experience of a particular special place and thus are a part of the place even if only to that person. Thus, management of forests for the traditional extractive resources and motorized vehicle use of some may have an impact on forest places that are considered special to others. These potential effects can generate conflict; therefore, a better awareness of the significance of special places can potentially enhance forest planning and management.

Researchers have recognized that the relationships people form with special places often cut across traditional categories of liberal/conservative, extractive/environmentalist, urban/rural, and so on (Brandenburg and Carroll 1995). Wondolleck and Yaffee (2000) advise that "places can be powerful symbols that encourage people…to interact with [others] that historically have been viewed as outside their geographic, interest-based, or perceptual boundaries." As a result, it can be difficult to pin down special places in public town-hall meetings—people who strongly identify with a particular lifestyle group are often reluctant to speak out in a way not supported by that group and yet may feel strongly about a very personal place relationship. Therefore, it becomes important to consider a combination of styles of data collection in order to represent all of these interests. Some findings have suggested that the traditional public meeting may serve to exclude some interested groups or individuals and to encourage a 'majority (or loudest) rules' mentality (Brandenburg and Carroll 1995; Brandenburg, Carroll, and Blatner 1995). The potential loss of social capital within the community when voicing a dissenting opinion in a public meeting may outweigh one's strong special place connection: "an individual may not share his or

her emotive personal values regarding the place in a public or group setting because of the pressures of the primary social groups' common values" (Brandenburg and Carroll 1995). Thus, a mixture of town-hall meetings, surveys, and open-ended individual interviews and conversations may provide a clearer and more balanced picture of special places in the forest (Brandenburg and Carroll 1995; Brandenburg, Carroll, and Blatner 1995).

Cheng, Kruger, and Daniels (2003) emphasize the importance of understanding human-place relationships in planning for, anticipating, and mitigating potential conflicts in multiple-use public land (e.g. forests). These researchers propose that "a key goal of place-based inquiry is to foster more equitable, democratic participation in natural resource politics by including a broader range of voices and values centering around places rather than policy positions." Another study suggested that attention to stakeholders' place-value concerns could help planners avoid "continued acrimonious debate" (Brandenburg, Carroll, and Blatner 1995).

Often, decision makers lack the tools and training necessary to achieve a deeper understanding of social issues (McCool 2003). Nonetheless, studies have shown that by becoming more aware of community values, the FS shows good will toward the public and is better equipped to make management decisions that consider all of the potentially affected people (Mitchell et al. 1993, Richard and Burns 1998). In a recent social assessment prepared for two Idaho forests, researchers noted that "[s]entiments about attachment to place…result in a configuration of social life, individual life, and geographic space that is likely to influence how forest management issues will be evaluated [by the public]" (Adams-Russell 2004). Thus, it benefits the forest managers to know the local communities and consider their individual interests during planning. Increased and continued interactions between forest managers and the visitor public are interpreted as a sign of respect for local knowledge and culture (Mitchell et al. 1993, Williams and Stewart 1998).

Unfortunately, it is not safe to assume that visitors to public lands will recognize and share the values for that landscape that are in its best interest (McCool 2003). By encouraging special place relationships, the Forest Service stands to gain caring partners in the stewardship of forest resources. This occurs because, when people develop a bond with a location, they become emotionally invested in the continued health and balance of the ecosystem (Mitchell et al. 1993, Wondolleck and Yaffee 2000).

Arizona is one of the fastest growing states in the country, and like many states in the Interior West, the majority of its population is concentrated in a few urban areas. The FS should expect significant impacts on public lands near or adjacent to urban areas in Arizona. These stresses may come from increased day use, conflicts over traditional versus new uses, the desire of developers to build directly to the forest's edge, and more.

8. Community Relationships

The purpose of this chapter is to describe the relationship between the Tonto National Forest (TNF) and its neighboring communities. Knowledge of local communities is of interest to the TNF due to the importance of the reciprocal relationship that exists between the forest and these communities. Also, there are legal authorities that require, in some instances, interaction with external communities. The subsections of this chapter are as follows: historical context and methods of designation, community profiles and involvement with natural resources, communities of interest and forest partnerships, historically underserved communities and environmental justice, community-forest interaction, and key issues for forest planning and management.

Information gathered on the nature of the relationships between the TNF and surrounding communities reveals a complex network of interests involved in a variety of issues that affect forest management and planning. In addition to wider public concern for issues such as water provision, wildlife protection, and fire prevention, a growing number of local government organizations and special advocacy groups are seeking to participate directly with the TNF in the formation of policy. Although a comprehensive analysis of the social network surrounding the forest is beyond the scope of this assessment, this section provides insight into the roles and purposes of key stakeholders and establishes a framework for the development of a comprehensive community-relations strategy.

8.1 Historical context and methods of designation

The concept of community relations in a culturally diverse society is about working together as one, both respecting and valuing individual differences (McMillan 1999). It encourages a greater degree of acceptance and respect for, as well as communication between, people of different ethnic, national, religious, cultural, and linguistic backgrounds. Furthermore, it promotes notions of inclusiveness, cohesion, and commitment to the way we shape our future. Above all, a good community relations system ensures that people from all backgrounds have full access to programs and services offered by government service providers, recognizing and overcoming barriers faced by some groups to enjoy full participation in the social, cultural, and economic life of the community.

The act of understanding and maintaining good community relationships is one of the most central responsibilities of the National Forest System. Nonetheless, the importance placed on documenting and enhancing community relationships as part of the overall process of forest planning must be regarded as a relatively recent development. At the time of the creation of the national forest system through the Forest Reserve Act of 1891 and the Transfer Act of 1905, the principal community of concern to the agency was limited, consisting for the most part of a select group of forestry professionals, scientific and professional societies, special interests, and politicians. As such, the forest "community" of the late 19th and early 20th century was considerably less complex than the collection of interested stakeholders today.

However, following World War II, the general public began to show a greater interest in the activities of the national forests. By the late 1960s, with the advent of modern environmental concern, the forest community had expanded to include an extremely broad spectrum of the general public. Statutes such as the National Environmental Policy Act of 1969, the National Forest Management Act of 1976, and more recently, laws such as the Native American Sacred Lands Act of 2002, have officially recognized the array of publics and mandated that the USFS actively involve them in management decisions. In addition to these and other statutes, there are other written authorities that require and provide direction for external contacts. These include 36 CFR 219.9 (Public participation, collaboration, and notification), the Forest Service Manual chapters 1500 (External relations) and 1600 (Information services), and the Forest Service Handbook chapters 1509 and 1609. Effective public involvement requires knowledge; thus, the purpose of this section is to assist in improving that knowledge base.

In this report, the term and concept "communities" received a broad interpretation and, hence, designation. In one sense, "communities" refers to the towns and cities located in the counties surrounding the TNF. In a broader sense, however, "communities" refers also to tribes, governments, the media, educational entities, partners, and special advocacy groups. Both of these types of "communities" are examined in this section.

8.2 Community profiles and involvement with natural resources

This section presents links to community profiles of the towns and cities which are found in the counties surrounding the TNF. It also provides information on local news sources as a gauge of community involvement with natural resources, including Arizona's national forests. Weblinks to community profiles for each of the counties and selected municipalities within the area of assessment are listed below in Table 33. These profiles generally contain the following information for each community: historical information, geographic/location information, population data, labor force data, weather data, community facilities (e.g., schools, airports), industrial properties, utilities, tax rates, and tourism information. They were developed by the Arizona Department of Commerce which also provides data for many other communities than those listed in Table 33. Table 34 categorizes national forest acreage in Arizona according to current congressional districts.

Table 33. Weblinks to Community Profiles for Counties and Municipalities in the Area of Assessment

Gila County	**http://www.azcommerce.com/doclib/COMMUNE/Gila%20County.pdf**
Payson	http://www.azcommerce.com/doclib/commune/payson.pdf
Globe	http://www.azcommerce.com/doclib/COMMUNE/globe-miami.pdf
San Carlos	http://www.commerce.state.az.us/pdf/commasst/comm/sncarlos.pdf
Miami	http://www.azcommerce.com/doclib/COMMUNE/globe-miami.pdf
Maricopa County	**http://www.azcommerce.com/doclib/COMMUNE/Maricopa%20County.pdf**
Phoenix	http://www.azcommerce.com/doclib/commune/phoenix.pdf
Mesa	http://www.azcommerce.com/doclib/commune/mesa.pdf
Glendale	http://www.azcommerce.com/doclib/commune/glendale.pdf
Scottsdale	http://www.azcommerce.com/doclib/COMMUNE/scottsdale.pdf
Chandler	http://www.azcommerce.com/doclib/commune/chandler.pdf
Tempe	http://www.azcommerce.com/doclib/commune/tempe.pdf
Pinal County	**http://www.azcommerce.com/doclib/COMMUNE/Pinal%20County.pdf**
Apache Junction	http://www.azcommerce.com/doclib/COMMUNE/apache%20junction.pdf
Casa Grande	http://www.azcommerce.com/doclib/COMMUNE/casa%20grande.pdf
Florence	http://www.azcommerce.com/doclib/commune/florence.pdf
Eloy	http://www.azcommerce.com/doclib/commune/eloy.pdf
Coolidge	http://www.azcommerce.com/doclib/COMMUNE/coolidge.pdf
Queen Creek	http://www.azcommerce.com/doclib/COMMUNE/queen%20creek.pdf
Yavapai County	**http://www.azcommerce.com/doclib/COMMUNE/Yavapai%20County.pdf**
Prescott	http://www.azcommerce.com/doclib/commune/prescott.pdf
Prescott Valley	http://www.azcommerce.com/doclib/COMMUNE/prescott%20valley.pdf
Cottonwood - Verde Village	http://www.azcommerce.com/doclib/COMMUNE/verde%20village.pdf
Sedona	http://www.azcommerce.com/doclib/COMMUNE/sedona-oak%20creek%20canyon.pdf
Camp Verde	http://www.azcommerce.com/doclib/COMMUNE/camp%20verde.pdf
Cottonwood	http://www.azcommerce.com/doclib/COMMUNE/cottonwood.pdf
Chino Valley	http://www.azcommerce.com/doclib/COMMUNE/chino%20valley.pdf

Source: Arizona Department of Commerce

Table 34. Acreage of Arizona National Forests in Federal Congressional Districts

Congressional District	County	National Forest	Total Forest Service Acres
2nd			
	Pima	Coronado NF	42,961
	Santa Cruz	Coronado NF	418,879
			461,840
3rd			
	Coconino	Coconino NF	848,725
		Kaibab NF	1,528,594
		Prescott NF	43,695
	Mohave	Kaibab NF	5,487
	Yavapai	Coconino NF	431,119
		Kaibab NF	25,119
	Yavapai	Prescott NF	1,195,551
		Tonto NF	317,051
			4,395,341
5th			
	Cochise	Coronado NF	489,396
	Graham	Coronado NF	396,174
	Pima	Coronado NF	346,910
			1,232,480
6th			
	Apache	Apache NF	447,223
		Sitgreaves NF	45,591
	Coconino	Coconino NF	569,772
		Sitgreaves NF	285,693
	Gila	Coconino NF	6,063
		Tonto NF	1,698,631
	Greenlee	Apache NF	751,151
	Maricopa	Tonto NF	657,695
	Navajo	Sitgreaves NF	488,158
	Pinal	Coronado NF	23,331
		Tonto NF	199,558
			5,172,866
		State Total	**11,262,527**

Source: USFS Lands and Realty Management
http://www.fs.fed.us/land/staff/lar/LAR04/table6.htm

The communities surrounding the TNF have a history of involvement with the national forests and with natural resource issues in general. Southern Arizona, like the rest of the state, has long been dependent upon natural resources for commodity production, tourism, and aesthetic enjoyment. As a result, the public has frequently expressed intense interest in the use and management of these resources.

The best and most generally available record of community involvement and interest in the TNF and in natural resources is to be found in the state's newspapers. Journalists publish hundreds of articles each year dealing with almost every aspect of community involvement surrounding natural resources and the forest. Links to Arizona's major newspapers can be found at http://www.50states.com/news/arizona.htm.

A search of natural resource keywords was conducted for six state newspapers: *The Arizona Daily Star* (Tucson), *The Arizona Daily Sun* (Flagstaff), *The Arizona Republic* (Phoenix), *The High Country Sentinel* (Heber-Overgaard), *The Prescott Valley Tribune* (Prescott), and *The Grand Canyon News* (Williams). These newspapers were chosen because they represent the principal newspapers for cities located near each of the six national forests. In addition to the names of the six forests, the keyword search included terms such as "forest," "conservation," "wildlife," and "endangered" species. The results of this keyword search are presented in Table 35. *The Arizona Republic* (Phoenix) is the newspaper most proximate to the Tonto NF and thus will be of greatest interest to this assessment. However, the other five newspaper searches are also presented because journalism today has broad statewide and even national coverage which might reveal stories related to the TNF in many of the state's newspapers.

The keyword search (Table 35) indicated that the six newspapers have collectively published more than 100,000 articles potentially related to natural resources since 1999. This would indicate a tremendous public interest and opportunity for involvement with the state's natural resources. Also, the data indicate that the TNF's nearest paper, *The Arizona Republic* is one of Arizona's most important in terms of natural resource news coverage. Furthermore, the search indicated that the TNF itself was the subject of 372 news articles during the period examined (approximately 1999-2005 although the exact period varied by newspaper).

Table 35. Natural Resources-related Keyword Search of Six Arizona Newspapers

City:	Flagstaff Arizona Daily Sun	Phoenix Arizona Republic	Williams Grand Canyon News	Heber-Overgaard High Country Sentinel	Prescott Prescott Valley Tribune	Tucson Arizona Daily Star	Total	Percent of
Newspaper:								Total
Nearest National Forest:	Coconino	Tonto	Kaibab	Apache-Sitgreaves	Prescott	Coronado	Articles	Total
Issues Searched:	1999-April 2005	1999-April 2005	2000-April 2005	2000-April 2005	2003-April 2005	1999-April 2005	Found	Articles Found
Key Word Searched:								
Forest	8,066	319	732	399	367	3,414	13,297	13.2%
Natural Resources	690	79	29	23	16	688	1,525	1.5%
Conservation	732	133	109	7	62	732	1,775	1.8%
Water	0	1,382	741	244	728	10,960	14,055	14.0%
Lake	7,313	788	294	294	178	2,708	11,575	11.5%
River	5,033	625	370	131	279	n/a	6,438	6.4%
Stream	1,602	169	24	36	67	n/a	1,898	1.9%
Recreation	3,224	2,334	483	314	211	1,969	8,535	8.5%
Fish	4,708	5,028	131	248	285	2,646	13,046	13.0%
Native fish	98	2	15	15	3	135	268	0.3%
Sportfish	22	0	0	0	2	1	25	0.0%
Fishing	480	502	55	434	147	1,035	2,653	2.6%
Forest Fire	247	15	28	3	16	2,491	2,800	2.8%
Mining	165	282	25	9	43	1,504	2,028	2.0%
Endangered species	544	18	23	2	14	638	1,239	1.2%
Wildlife	2,747	167	185	135	120	2,824	6,178	6.1%
Native Wildlife	22	4	5	0	0	24	55	0.1%
Bird Watching	17	26	1	30	1	153	228	0.2%
Hunting	3,231	514	56	253	63	1,114	5,231	5.2%
Range	0	1,194	56	67	146	1,062	2,525	2.5%
Grazing	865	41	40	11	19	402	1,378	1.4%
The National Forests:								
Coconino National Forest	1,046	15	15	3	0	22	1,101	1.1%
Coronado National Forest	120	9	2	20	0	755	906	0.9%
Apache-Sitgreaves Nat. For.	109	12	2	87	0	68	278	0.3%
Kaibab National Forest	441	16	245	0	0	20	722	0.7%
Tonto National Forest	**135**	37	**3**	**14**	**7**	**176**	**372**	0.4%
Prescott National Forest	141	11	7	73	78	27	337	0.3%
Total articles found	41,798	13,722	3,676	2,852	2,852	35,568	100,468	100.0%

Past issues of *The Arizona Republic* were also examined to determine the types of natural resource topics that were of interest to the public in the region surrounding the TNF. Selected topics and their dates of publication in *The Arizona Republic* are provided in Table 36 below:

Table 36. Selected Key Public Issues for the Coconino National Forest

Topic	Date
1. Fire north of Cave Creek is 80% contained	July 2005
2. A large wild cat has forced temporary closure on TNF	February 2005
3. Officials stop campfires on TNF	June 2005
4. Law-enforcement officials douse annual Christmas tree disposal fires	January 2004
5. Fees on Tonto makes for unhappy campers	February 2004
6. Gila County investigators discover marijuana plantation in the Tonto NF	October 2003

Source: The Arizona Republic newspaper

8.3 Communities of interest and forest partnerships

The TNF has many communities of interest: that is, entities that share an interest along with the Forest Service in the management of the forest. For the purpose of this assessment, a distinction should be made between communities of interest and forest partners. Communities of interest may include residents of physical communities or members of an interest group, agency, or private organization that are influenced by, and in turn, stand to influence forest planning and management. Consideration of their stake in forest management is important, but not specifically directed through formal partnership agreements. Following, in Table 37, is a listing of some of those communities of interest. These are grouped according to government agencies, special advocacy groups, educational, business, and media organizations. Specific contact information and the names of principal individuals are available from the TNF. Some especially noteworthy communities of interest to the TNF are the Native American tribes. The tribal contact list for the TNF is found in Table 38. There are thirteen tribes for which the TNF has consultation responsibilities.

Table 37. Communities of Interest for the Tonto National Forest

Governmental	Special Advocacy Groups	
ADOT Natural Resources	American Motorcyclist Assoc.	Roadrunner 4-Wheel Drive Club
Apache County Dev.& Comm. Svs	American Rivers	Rocky Mountain Elk Foundation
AZ Assoc. of Counties	Arizona Great Outdoors	Rod and Gun Club
AZ Dept. of Agriculture	Arizona OHV Association	Scottsdale Sea & Ski Club
AZ Dept. of Commerce	Arizona Rivers Coalition	Sierra Club SW Office
AZ Dept. of Environ Quality	Arizona Sprint Car Association	Sonoran Bioregional Diversity Project
AZ Dept. of Mines & Mineral Res.	Arizona Wilderness Coalition	Southwest Forest Alliance
AZ Game & Fish Dept.	Arizonans for Wildlife Conservation	The Nature Conservancy
AZ State Land Dept	ASA4WDC Conservation	The Wildlife Soc., AZ Chapter
AZ State Parks	Audubon Society-Tucson	Tonto Hills Community Assoc.
Bureau of Indian Affairs	AZ Archaeology Society	Tonto NRCD
Bureau of Land Management	AZ Cattle Grower's Association	Tonto Weed Management Board
Bureau of Reclamation	AZ Desert Bighorn Sheep Society	Trout Unlimited
City of Globe	AZ Wildlife Federation	United Four Wheel Drive Association
City of Mesa	Bat Conservation	Western States Public Lands Coalition
City of Payson	Camp Creek Association	Western Utilities Group
City of Scottsdale	Cave Creek Saddle Club	
Fort Apache Indian Agency	Center for Biological Diversity	
Gila Co. Board of Supervisors	Central Arizona Paddlers Club	
Gila Co. Dev. Office	Desert Awareness Committee	
Gila County Cooperative Extension	Desert Botanical Garden	
Glendale Chamber of Commerce	Desert Tortoise Council	
Maricopa Co. Bd. of Supervisor	Foothills Community Foundation	
National Park Service	Forest Conservation Council	
Pinal Co. Bd. of Supervisors	Forest Guardians	
Salt River Project	Friends of Arizona Rivers	
San Carlos Apache Tribe	Friends of Pinto Creek	
Scottsdale Dept. of Planning & Econ. Dev.	Grand Canyon Wildland Council	
Tonto Apache Tribe	Greater AZ Bicycle Assoc.	
Town of Carefree	Intl. Assoc. F&W Agencies	
Town of Cave Creek	Maricopa Audubon Society	
Town of Fountain Hills	Old Pueblo Bass Anglers, Inc.	
U.S. Fish & Wildlife Service	P.V. Trail Riders	
USDA NRCS	Phoenix Earth First	
White Mountain Apache Tribe	Pleasant Valley Comm. Council	
Yavapai County Board of Supervisors	Prescott NF Friends	
Yavapai-Prescott Tribe	Rio Verde Foothills Alliance	

Table 37 (cont.). Communities of Interest for the Tonto National Forest

Business	Educational
Arizona Bound Jeep Tours	ASU Center for Environmental Studies
ASARCO, Inc.	ASU Dept. of Zoology
Bar Eleven Land & Cattle Co.	ASU Plant Biology
Bar X Ranch Conservatory, Inc.	Isabelle Hunter Memorial Library
Black Brush Ltd. Partnership	Reevis Mt. School
Cave Creek/Carefree Chamber of Commerce	U of A Cooperative Extension
Cline Equity Trust	University of Arizona
Connolly Bro. Construction, Inc	
Cooper's Hay Hook Ranch	**Media**
Diamond A Ranch Corporation	Arizona Hunter and Angler
Dorothy Cline Wells Trust	Scottsdale Progress
Earnhardt Ranches, LLC	Tribune Newspapers
Equipment Maintenance Service	
Fenn Land & Cattle Co., LLC	
Greenvalley Ranch	
Griffin Cattle Ranch	
Johnson Farms Ltd. Part.	
Johnson Ranch Partnership	
Kampgrounds of America	
Kelly Clark Automotive	
Layton Family Trust	
Mad as Hell Ranch, Inc.	
Magma Copper Company	
Martin Ranch, Inc.	
Page Cattle Co.	
Payson Chamber of Commerce	
Phelps Dodge Miami, Inc	
Rambo Realty & Investment	
Roosevelt Marina, LLC	
Round Valley Ranch	
Saguaro Lake Associates	
Scottsdale Chamber of Commerce	
SEC, Inc.	
Spectrum Astro	
Stone Container Corp.	
W.J. Cattle Co.	
Withycombe Family, LLC	

Source: E. Alford, Group Leader for Biological Resources and Planning, Tonto National Forest

Table 38. Tribal Consultation Responsibilities for the Tonto National Forest

Arizona Indian Tribe
Ak-Chin Indian Community
Ft. McDowell Mohave-Apache Indian Comm.
Gila River Indian Community
Hopi Tribe
Salt River Pima-Maricopa Indian Community
San Carlos Apache Tribe
Tohono o'Odham Nation
Tonto Apache Tribe
White Mountain Apache Tribe
Yavapai-Apache Nation
Yavapai-Prescott Indian Tribe
Pueblo of Zuni

Source: D. Firecloud, Regional Tribal Program Manager, Southwestern Region, USDA Forest Service

National Forest Partnerships

Although the USFS claims responsibility for approximately 193 million acres of forests and grasslands throughout the United States, it acknowledges that effective management and protection of the vast resources within forest boundaries would be virtually impossible without the effective involvement of individuals and organizations from neighboring communities. Given the agency's constraints on personnel, funding, and other resources, as well as the direct links between forest management and community well being, the FS places a high priority on the development of partnerships. In addition to the obvious financial benefits that accrue from partnerships, the agency views them as part of its continuing cultural shift from "lone rangers" and "rugged individualists" to facilitators and conveners. As such, partnerships have become a central strategy for strengthening relationships between the Forest Service and surrounding communities (USFS 2005c).

In an effort to promote partnerships and guide individual forest managers through the process of establishing and maintaining cooperative relationships with surrounding communities, the USFS has recently updated its Partnership Guide. Intended as a reference tool for employees and partners of the FS, the guide offers insight into the structure and management of non-profit organizations, issues surrounding forest cooperation with volunteers, and use of grants and other agreements as well as information on the common challenges and ethical issues involved in sustaining effective partnerships. The guide also includes an array of resources and tools based on previous partnership efforts of the Forest Service (NFF and USFS 2005).

Like other forests throughout the country and the region, the TNF is involved in multiple partnerships that contribute to forest health and fire management, the construction of community infrastructure, economic involvement with natural resources, and, most recently, issues surrounding the U.S.-Mexico border region. Previous planning processes such as the National Forest Management Act (NFMA) have attempted to implement policies aimed at enhancing participation of a growing number of interested stakeholders in forest planning and management.

Meanwhile, the Southwest Region (Region 3) of the FS has also outlined several priorities which directly affect the development of partnerships. They include the restoration of ecological functionality to forests and rangelands, the protection of communities adjacent to national forests, and the contribution to the economic vitality of communities. In addition to these priorities, the Southwestern Region of the FS has established five objectives regarding the formation and maintenance of partnerships. They are to continue

to increase the visibility and understanding of successful partnerships and collaboration, encourage and promote cultural change that supports and expands partnerships and collaboration, develop and maintain an accessible and user-friendly partnership process, identify the opportunities and needs for forest and regional coordination, and educate and train for a common understanding of partnerships.

Although the term "partnership" may be defined differently by individual stakeholders with distinct agendas, the FS has identified nine broad categories of forest partnerships. They are volunteers, cost-share contributions, donations and gifts, memoranda of understanding, cooperating associations, grants, "payments to states," stewardship contracting, and interagency collaboration.

Obviously, the number and quality of forest partnerships varies over time according to the level of interaction between individual forests and their communities. The Southwest Region, however, has established a list of partner organizations according to the nature of their involvement. This list, obtained from the regional partnership website, is included as Table 39 below. Additional information on partnerships in the Southwest Region is available at http://www.fs.fed.us/r3/partnerships/. Officials at the Tonto NF reported that the forest has not had a partnership coordinator or an official grants and agreements specialist in recent years; hence, their partnership list is currently not up to date.

Table 39. United States Forest Service, Southwest Region Partner

Conservation Organizations	
Ducks Unlimited	http://www.ducks.org/
Environmental Systems Research Institute (ESRI)	http://www.conservationgis.org/
Federation of Flyfishers	http://www.fedflyfishers.org/
Mule Deer Foundation	http://www.muledeer.org/
National Wild Turkey Federation (NWTF)	http://www.nwtf.org/
Quail Unlimited	http://www.qu.org/
Rocky Mountain Elk Foundation	http://www.rmef.org/
Trout Unlimited	http://www.tu.org
Wildlife Management Institute	http://www.wildlifemanagementinstitute.org/
Arizona Conservation Partners	
Arizona Department of Game and Fish	http://www.gf.state.az.us/
Arizona Wildlife Foundation	http://www.azwildlife.org/
Sonoran Institute	http://www.sonoran.org/
New Mexico Conservation Partners	
New Mexico Department of Game and Fish	Http://www.wildlife.state.nm.us/
New Mexico Wildlife Federation	Http://leopold.nmsu.edu/nmwf/
Audubon Society – New Mexico State Office	Http://www.audubon.org/chapter/nm/nm/rdac/index.html
New Mexico Museum of Natural History	Http://museums.state.nm.us/nmmnh/nmmnh.html

Table 39 (cont). United States Forest Service, Southwest Region Partners

Youth Conservations Organizations	
AmeriCorps – New Mexico	http://www.nationalservice.gov/state_profiles/overview.asp?ID=38
National Association of Conservation and Service Corps	http://www.nascc.org/
Student Conservation Association	http://www.thesca.org/
Rocky Mountain Youth Corps	http://youthcorps.org/
National Ecosystem Health Organizations	
National Arbor Day Foundation	http://www.arborday.org/
Arizona Ecosystem Health Organizations	
The Nature Conservancy – Arizona	http://www.nature.org/wherework/northamerica/states/arizona/
Sky Island Alliance	http://www.skyislandalliance.org/
Grand Canyon Trust	http://www.grandcanyontrust.org/
Greater Flagstaff Forest Partnership	http://www.gffp.org/
Northern Arizona University	http://www.for.nau.edu/cms/
New Mexico Ecosystem Health Organizations	
New Mexico Forestry Division	http://www.emnrd.state.nm.us/forestry/index.cfm
New Mexico Highlands University	http://www.nmhu.edu/forestry/
The Nature Conservancy – New Mexico	http://www.nature.org/wherework/northamerica/states/newmexico/
National Interpretive Recreation	
Public Lands Information Center	http://www.publiclands.org/home.php?SID=
Association of Partners for Public Lands	http://www.appl.org/
Tread Lightly	http://www.treadlightly.org/
National Outdoor Leadership School	http://www.nols.edu/
Leave No Trace	http://www.lnt.org/
Arizona Interpretive Recreation	
Arizona Trail Association	http://www.aztrail.org/
Arizona State Association of 4-Wheel Drive Clubs	http://asa4wdc.org/
New Mexico Interpretive Recreation	
New Mexico Environmental Education Association	http://www.eeanm.org/
Back Country Horsemen – New Mexico	http://www.bchnm.org/
New Mexico Council of Guides and Outfitters	http://nmoutfitters.org/
New Mexico Volunteers for the Outdoors	http://www.nmvfo.org/
Arizona Environmental Organizations	
Sierra Club – Arizona Chapter	http://www.sierraclub.org/az/
New Mexico Environmental Organizations	
New Mexico Wilderness Alliance	http://www.nmwild.org/
Sierra Club – New Mexico Chapter	http://www.sierraclub.org/nm/

Source: USDA Forest Service, Southwest Region – Partnerships
http://www.fs.fed.us/r3/partnerships/

8.4 Historically underserved communities and environmental justice

This section deals with special communities located near the TNF which may have been historically underserved in terms of public services received and their participation in business. This information will be of particular interest to TNF managers as they consider ways to improve delivery of services to minority groups which may have been underserved in the past.

Arizona's rapid population growth has affected the availability of affordable housing and fundamental social services, segregated social groups, created urban sprawl, stressed the state's infrastructure, and caused financial burdens and conflicts for local and state governments (Arizona Town Hall 1999). These factors can have an especially negative influence on Arizona's ethnic and racial minorities and their employment opportunities.

Data on individual racial and ethnic groups as a percentage of total county population were presented in Chapter 2 of this report (Table 7). Individuals of Hispanic origin represent the largest minority group, ranging from 9% in Yavapai County to 29% in Pinal County as of 2000. Note that individuals claiming Hispanic heritage may also claim identification with other ethnic and racial groups and be counted in those categories as well. Gila and Pinal Counties also report a significant percentage of Native American residents (12% and 7% respectively). Maricopa County reported the highest percentage of African American residents at 3.7% of the total county population in 2000.

The Census Bureau has estimated that, by 2025, Whites will comprise 57.5% of Arizona's population. The number of people of Hispanic origin is expected to increase from its 1995 level of 20.6% of the population to 32.2% in 2025. The African American population is projected to grow by 65.7% and the Native American population by 34.9% (U.S. Census Bureau 2005, Partnership for Community Development 2000). Thus, in the future, the national forests must prepare to serve even larger minority populations than at present.

Possible assistance in the formation of minority- and woman-owned businesses is another issue for the TNF to consider. Table 40 presents data on minority- and woman-owned businesses for surrounding Arizona counties. As the data indicate, minorities currently own a smaller number of businesses than the size of their populations might suggest.

Table 40. Minority- and Women-owned Businesses by County, 2002

County	All Businesses	Total Minorities	African American	Native American	Asian or Pacific Islander	Hispanic or Latino Origin	Women
Maricopa	411,961	39,867	4,958	3,683	9,699	26,578	106,313
Gila	6,645	1,183	-	224	-	822	2,506
Pinal	12,625	2,094	-	337	-	1,553	3,562
Yavapai	31,255	2,030	-	218	-	1,579	8,439

* 2002 Survey of Business Owners (including minority- and women-owned business) U.S., states, counties, places and metro areas projected early 2006
Sources: Arizona Dept. of Commerce, 2002
http://www.azcommerce.com/pdf/smallbus/Number%20of%20Businesses%20in%20Arizona%20050602%20FINAL.pdf

Finally, the long term goals of the USFS have led to the development of specific outreach activities designed to enhance the participation of underserved populations in forest planning and management. They include the provision that each FS unit will perform the following tasks (USFS 2000b):

Ecosystem Health

- plan for underserved communities and develop an outreach analysis

- ensure the representation of underserved communities in team membership, participation, and implementation of decisions

- develop a nationally coordinated effort to establish dialogue with underserved communities about FS programs and land management

- expand financial and technical support for underserved communities' participation in land management activities

Multiple Benefits to People

- develop relationships by establishing a FS presence within networks of urban and rural community-based organizations that represent underserved people and conduct community assessments with underserved populations by working closely with existing leadership and resources

- partner with a broad range of non-governmental organizations to increase benefits and other FS resources to underserved communities to help them organize and develop national and localized programs of work which reflect their priorities

- collaborate with underserved populations to create customized delivery systems

Scientific and Technical Assistance

- conduct a research and development review with the direct involvement of underserved people to identify their concerns

- share and conduct collaborative social science research through a Federal Center of Excellence to share information across organizations, foster effective use of federal research resources, and include the needs of underserved communities in setting social science research priorities

- improve access to and distribution of information, including research findings and technical assistance, through partnerships with existing public and private networks involving cities and counties (such as the Joint Center for Sustainable Communities), federal agencies (such as the Sustainable Development Network), culturally sensitive employees (such as employee resource groups), and professional marketing specialists with expertise that benefits underserved communities

Effective Public Service

- develop training programs that strengthen the capabilities of employees and partners to engage underserved communities

- increase scholarship, education, and work experience opportunities to train employees and partners in how to engage underserved groups

- implement grants and training agreements for employees along with representatives of underserved communities

In addition to these general guidelines, the FS currently interacts with its neighboring communities in the following ways:

Rural Community Assistance

The FS implements the national initiative on rural development in coordination with the USDA Rural Business and Cooperative Development Service and State rural development councils. The goal is to strengthen rural communities by helping them diversify and expand their economies through the wise use of natural resources. Through economic action programs, the FS provides technical and financial assistance to more than 850 rural communities that are adversely affected by changes in availability of natural resources or in natural resource policy.

Urban and Community Forestry

The FS provides technical and financial assistance to more than 7,740 cities and communities in all States, the District of Columbia, and Puerto Rico for the purpose of building local capacity to manage their natural resources.

Human Resource Programs

Human Resource Programs provide job opportunities, training, and education for the unemployed, underemployed, elderly, young, and others with special needs, simultaneously benefiting high-priority conservation work. These programs are a major part of the FS work force.

Southwestern Strategy

In November of 1997, the Secretaries of Agriculture and the Interior issued a directive to their agency leaderships to develop a collaborative approach to resolving quality of life, natural resource, and cultural resource issues in Arizona and New Mexico. The result was the Southwest Strategy, which addresses community development and natural resources conservation and management within the jurisdictions of the involved federal agencies.

Environmental justice is the fair treatment and involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including racial, ethnic, or socioeconomic groups, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, or tribal programs and policies. Inequities can result from a number of factors, including distribution of wealth, housing and real estate practices, and land use planning that may place African Americans, Latinos, and Native Americans at greater health and environmental risk than the rest of society (Bullard 1993).

The White House, with Executive Order 12898, elevated environmental justice issues to the federal agency policy agenda. EO 12898 instructs each federal agency to identify and address "disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations" (Clinton 1994).

The USDA's goals in implementing EO 12898 are as follows (from USDA 1997):

- To incorporate environmental justice considerations into the USDA's programs and activities and to address environmental justice across mission areas;

- To identify, prevent, and/or mitigate disproportionately high or adverse human health and environmental effects of USDA programs and activities on minority and low-income populations;

- To provide the opportunity for minority and low-income populations to participate in planning, analysis, and decision making that affect their health or environment, including the identification of program needs and designs;

- To review and revise programs in order to ensure incorporation and full consideration of the effects that agency decisions have on minority and low-income populations;

- To develop criteria consistent with the USDA's environmental justice implementation strategy which determine whether the agency's programs and activities have, or will have, a disproportionately adverse effect on the health or the environment of minority or low-income populations;

- To collect and analyze data to determine whether agency programs and activities have disproportionately adverse human health or environmental effects;

- To collect, maintain, and analyze information on the consumption patterns of populations that principally rely on fishing, hunting, or trapping for subsistence;

- To develop, as part of ensuring the integration of the USDA's environmental justice strategy, outreach activities that include underserved populations in rural and urban America, including women, minorities, persons with disabilities, and low-income people, as well as tribal governments, in natural resource management activities;

Native Americans pose a special environmental justice case since few reservations possess environmental regulations or waste management infrastructures equivalent to those of the state and federal governments. In the past, these areas have been targeted for landfills and incinerators. However, these ecological inequities have met with an increasingly resistant environmental justice movement.

8.5 Community-forest interaction

As the national forests and other federal agencies focus on stakeholder and community-based management, the social linkages, or social networks, formed by different groups and individuals are becoming increasingly important. Social networks provide a framework for balancing needs and priorities in the forest, and they often provide a cadre of willing and eager participants in the forest planning process. Nonetheless, they can also represent a significant challenge to managers trying to accommodate conflicting multiple uses.

The Forest Service has identified three processes resulting from greater agency attention to the social value of forests, the need for greater public involvement, and the ecosystem approach to management. Frentz and others (1999) describe them as follows:

- An increasing demand by the general public, interest groups, and local communities to become more involved in resource management planning and decision-making;

- An awareness that stewardship of natural resource systems by knowledgeable and committed community members is more effective than top down governmental mandates and regulatory procedures; and

- Growing support for an ecosystem management approach that is community based and incorporates both ecosystem and community sustainability into an overarching theory of holistic ecosystem health.

As awareness and commitment to these processes grow, so does the need for forest managers and planners to understand the social linkages within and surrounding the national forests. The FS emphasizes these ideas in many of its policies and publications. For example, it lists among its guiding principles,

- Striving to meet the needs of our customers in fair, friendly, and open ways;

- Forming partnerships to achieve shared goals; and
- Promoting grassroots participation in our decisions and activities. (USFS 2005n)

Recent changes to the NFMA planning process similarly underscore the role of social linkages in forest management, stating, "Public participation and collaboration needs to be welcomed and encouraged as a part of planning. To the extent possible, Responsible Officials need to work collaboratively with the public to help balance conflicting needs, to evaluate management under the plans, and to consider the need to adjust plans" (USFS 2005o). A careful examination of existing and potential social networks can help guide these planning processes.

A social network analysis visualizes social relationships as a set of "nodes" (individual actors within the network) and "ties" (the relationships between the actors) (Hanneman 1999). Formal network analyses generally diagram social networks of interest and often attempt to quantify the personal relationships involved. Computer software is available to conduct formal network analyses by calculating aggregate measures of centrality, density, or inclusiveness and aiding in the visualization of social networks (Garson 2005). A variety of methods exist for graphically displaying these networks (Brandes et al. 1999).

In addition to displaying and/or quantifying the relationships among individuals, sociologists and other social scientists often use social network theory to study relationships among organizations (Stevenson and Greenberg 2000). The distinguishing feature of social network analysis is that it focuses on the relationships among individuals or organizations instead of analyzing individual behaviors, attitudes, or beliefs. The social interactions are seen as a structure that can be analyzed, and formal network analysis aims to describe social networks as compactly and systematically as possible (Galaskiewicz and Wasserman 1994, Hanneman 1999).

While social network analysis offers a significant alternative to analyzing individuals and organizations as if they were isolated from one another, it also contains some problematic simplifications. First, in viewing social networks as analyzable structures, this method inevitably treats networks as static and overlooks the dynamic nature of interpersonal and inter-organizational relationships (Sztompka 1993). It is assumed that the position of the actor in the network is static (Stevenson and Greenberg 2000); however, most managers that work with the public would agree that the relations among network members are not only changeable but are, in many cases, in almost constant flux.

In addition, the focus on quantitative features of social linkages overlooks a wide variety of important qualitative factors, including the kinds of ties involved and the power relationships among the actors (Bodemann 1988). For example, the ties in a social network can represent relationships as different as kinship, patronage, reciprocity, avoidance, or assistance (Breiger 1988). Managers attempting to explain community relationships through social network analysis would no doubt consider ties between network members involved in cooperative management and those between opponents in litigation to be very different; however, in the mere visual representation of a network it would be difficult, if not impossible, to represent this difference.

Finally, network analysis often assumes that social networks operate as constraints on action (or, at the very least, as constraints on peripheral actors) and fail to recognize the agency of individuals acting within the network (Stevenson and Greenberg 2000). This is not a necessary function of network analysis, but this common assumption can easily hamper attempts at cooperative management.

As such, a reliance on formal network analysis for understanding stakeholder linkages can be somewhat misleading. Unfortunately, the graphic representations and statistical conclusions of social networks offered by formal network analyses often convey an impression of objectivity and inclusiveness. It is important to note that research on networks has thus far generally failed to draw reliable conclusions on the actions of individuals based on the characteristics of their networks (Stevenson and Greenberg 2000). In line with many social researchers, this assessment suggests that the qualities of relationships and

strategies used by actors should be of more concern than a visual or mathematical representation of networks.

In place of a formal network analysis, which is both time consuming and based in an incomplete conception of social interactions, we offer a view of the TNF's social linkages that communicates the importance of relationships and the uncertain, active, and dynamic nature of the actors.

Provan and Milward (2001) outline three broad groups of "network constituents," or stakeholders: principals, agents, and clients. Principals are individuals or groups which "monitor and fund the network and its activities." Agents "work in the network both as administrators and service-level professionals," and clients "actually receive the services provided by the network." However, as Provan and Milward also note, actors can and often do fulfill multiple roles, acting, for example, as a client at one geographical or political level and as an administrator at a different level. Figure 20 illustrates the interactions of these groups in the context of natural resource management. Different stakeholders interact with one another and with the resources being managed.

According to this view, a national forest is managed not simply by a USDA chain of command, but by a network that includes a wide variety of stakeholders. The resource itself forms the "center" of the network, and these stakeholders both affect the management of the resource and are in turn affected by its management direction. In a very real sense, non-USDA actors such as county officials, the U.S. Border Patrol, and even media and citizen groups participate in forest management. Figure 21 provides examples of principals, agents, and clients involved in the management of TNF (see Table 37 for a more complete list).

While this network is by no means exhaustive, Figure 21 shows how different actors interact in the social network involved in managing the Tonto. However, this typology is neither unambiguous nor static. For example, forest-level administrators can function as principals, agents, or clients depending on the situation and geographic scale. They monitor and administrate the network, but they also receive services provided by other stakeholders, such as recreation users and those with special permits. Local residents are generally seen as clients of the forest, but some residents also actively participate in network monitoring to ensure that they receive the services they expect. Environmental groups, while perhaps most often seen as clients, can also play an important role in monitoring management and even directly helping to manage the forests. While none of these designations is set in stone, this framework provides a unique perspective on the linkages among and the roles of different stakeholders (or network members) in managing the forest.

The framework and diagrams presented here are intended to facilitate a discussion of social networks and the roles of stakeholders that effectively describes the actors and relationships in the Tonto social network. Future research might address the different needs, priorities, skills, and challenges of different kinds of stakeholders. For example, how does policy or practice differentiate among principles, agents, and clients? Does the Forest Service's vision of visitors and users (i.e., clients) as customers in any way influence the latter's ability to participate in forest planning processes? What management practices help Forest Service personnel treat different kinds of stakeholders in a fair and equitable manner? Finally, how can managers and planners use existing networks to bring maximum benefit to the forest itself?
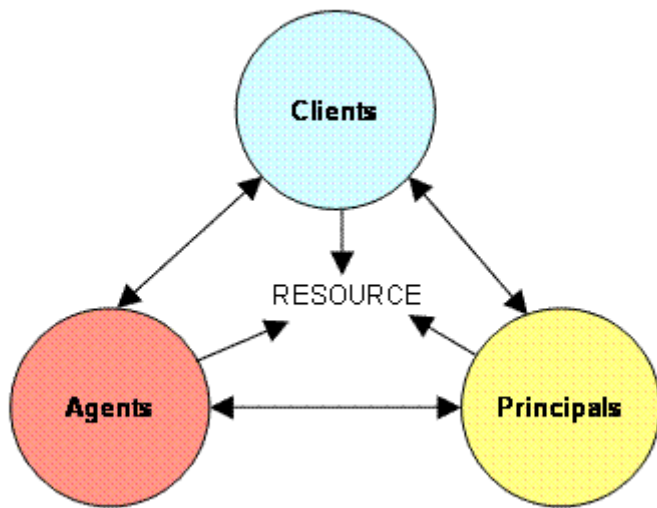
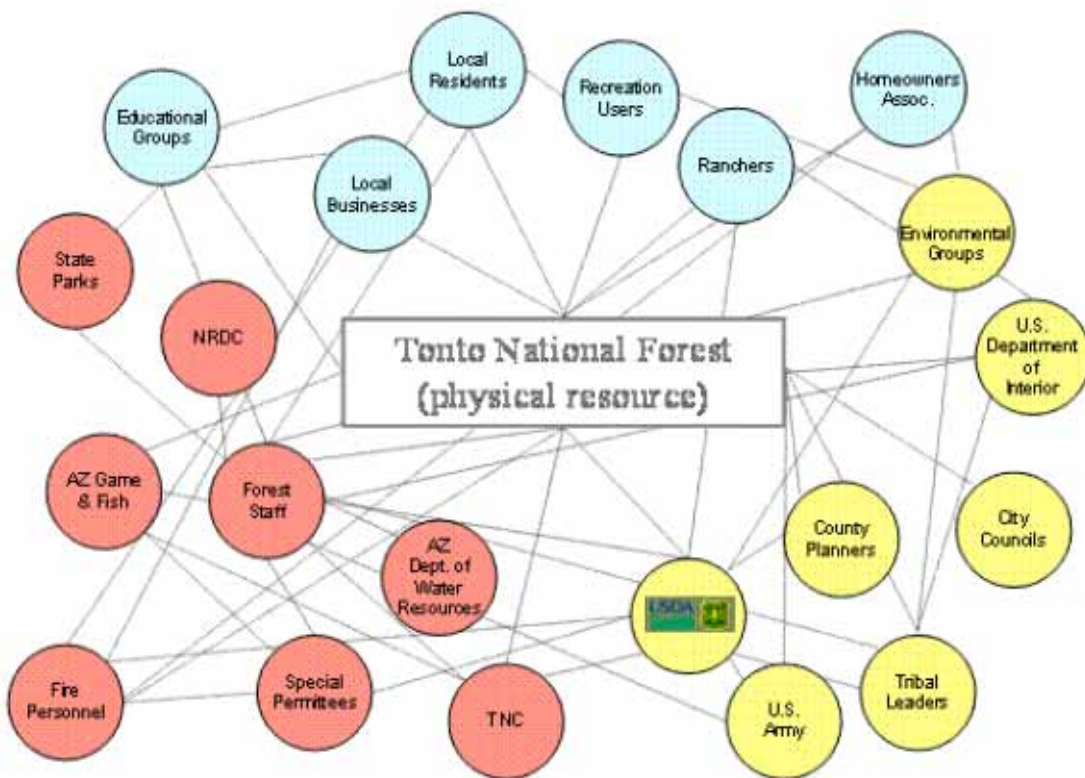**Figure 21. Social Networks in Natural Resource Management**

Figure 21. Partial Social Network for the Tonto National Forest

8.6 Key issues for forest planning and management

Arizona communities are experiencing rapid economic and demographic transformation, resulting in considerable changes in racial and economic diversity, multiculturalism, and social values. These trends have been well documented in other parts of this assessment through analysis of both quantitative and qualitative data which point to the challenges the national forests face as they try to accommodate diversity while delivering forest-based goods and services to the public.

Such an identification and analysis of social and economic trends, however, does not provide sufficient information on community stability, satisfaction, or capacity needed to fully analyze interactions between individual communities and national forests. Therefore, increasing attention has been paid to assessing community interaction with natural resource managers. Methods such as social impact assessments and community surveys have gained prominence as communities evolve from rural to urban patterns of development while striving to incorporate more diverse interests in participatory decision making. An added benefit of these community-based approaches is that they can provide opportunities for community members to verify, comment on, and learn from collected secondary economic and social data. Perhaps most importantly, previous studies have shown that participants in these types of social assessments are better able to identify common concerns and links to structural conditions in a manner that contributes to resource and community development planning (Kruger 1996, USFS 2003f).

Although the size and organization of communities have traditionally been considered important influences in the fields of natural resource and forest management, there remains a lack of appreciation for the various roles and modes of interaction between communities and resource managers. The failure to recognize these different roles and purposes contributes to increasingly polarized debates over the appropriateness of forest management practices. A case in point is the common conflict between communities clinging to historic dependence on commodity use and those expanding communities seeking to capitalize on natural amenities to support retirement and recreation-based activity. Such disputes often make management objectives for stewardship and sustainability difficult, if not impossible, to achieve. Alternatively, a better understanding of the nature of relationships between forests and neighboring communities can provide important insight into divergent and sometimes competing interests and concerns. Ultimately, this process could provide for an enhanced analysis of forest management alternatives and their potential affect on communities (USFS 2003f).

The task of planning for multiple resource use is further complicated by the number and nature of interest groups and stakeholders that interact with the forest in a given community. In fact, as a Forest Service Technical Report asserts, "There are as many potential measures of organization and interaction in social communities as there are ecological interactions in biophysical systems" (USFS 2003f). Evidence of the dynamic nature of relationships between the TNF and various groups, individuals, and organizations is found in ongoing debates over the preservation of open space, the administration of recreation and grazing fees, and the protection of water resources and wildlife.

Despite a growing consensus as to the importance of analyzing community relationships for forest planning and management, there remain relatively few applicable guidelines for developing an effective community-forest relations strategy. Whereas the Forest Service Manual and the Forest Service Handbook provide some guidance for the conduct of external relations, there is an opportunity for a more comprehensive plan to guide the management of local community relations. A good starting point for the development of such a plan is offered by research conducted by the Queensland Government in Australia on strengthening relationships between communities and government agencies (McMillan 1999).

The study focuses on five principal recommendations for enhancing the effectiveness and sustainability of community relations that may also prove useful to Arizona's national forests. They include 1) development of a concept and definition of community relations relevant to the national forest, 2) development of an understanding of the possible benefits of a positive community relations program, 3)

development of a common agency image of what a positive community relations program might resemble, 4) development of some essential principles of an effective community relations program, and 5) development of a list of potential community relations questions and issues to be dealt with by the community relations plan (McMillan 1999).

Although identification of the essential principles in an effective community relations program will require community input and therefore vary in individual cases, the Queensland study offers the following examples:

- *Leadership*—improvements in community relations require leadership at the forest level.
- *Local Ownership*—community relations strategies work best when they are owned and designed by the local community, the groups in that community, and the institutions that serve that community.
- *Administrative Support*—community relationships need to be supported by appropriate forest administrators.
- *Planning*—in seeking to ensure positive conditions for community relations, planning is the key.
- *Positive Framework*—community relationships seek to provide a positive framework and infrastructure for dealing with community-related problems.
- *Integration*—community relationships work better when they are integrated into existing forest processes and procedures rather than regarded as add-ons that can be addressed outside the framework of those processes and procedures.
- *Holistic Approach*—effective community relations strategies frequently need to be multi-pronged and very frequently require the collaboration of a number of organizations, groups, and agencies in order to work effectively.
- *Informed Decision Making*—information from the community is vital in informing community relations, as is information from other sources (including research literature) from other organizations who have tried community relations projects, and from people with knowledge and expertise in the field.
- *Inclusion of Diversity*—community relations values and respects diversity and works to include all cultural and linguistic backgrounds into the social, cultural, and economic life of the community as well as into the decision-making mechanisms of the community.
- *Ongoing Effort*—recognize that improved community relations is an on-going effort and requires a long-term commitment by the agency. (McMillan 1999)

Finally, a list of issues and potential questions for inclusion in a comprehensive community-forest relationships plan should address the following:

- *Access to services*—how will the forest improve its delivery of goods and services and what will those goods and services be?
- *Employment opportunities*—does the forest have a role in providing improved employment opportunities for the community?
- *Information*—how might the forest improve its flow of information to the community?
- *Racial sensitivity*—how might the forest be more sensitive in accommodating the needs of different racial and ethic groups who use the forest?

- *Youth*—is there a special role for the forest in helping the community's youth?
- *Media*—how might the forest develop a positive working relationship with the community's media services?
- *Change*—finally, how will the forest cope with the future in terms of changes in the community and in the delivery of forest-based goods and services to that community? (McMillan 1999)

Although these lists represent a fraction of the elements that may be addressed in any single plan for community-forest relations, they reflect the diversity and urgency of the issues the Tonto National Forest faces as it takes positive steps to respond to a rapidly-changing demographic, political, and physical environment.