Forest Plan
Monitoring and Evaluation Report

Tonto National Forest

Fiscal Year 2009

United States Department of Agriculture
Forest Service

Southwestern Region

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Contents

Introduction

Rising from the Sonoran Desert to the pine covered slopes of the Mogollon Rim, the Tonto National Forest (Tonto NF) covers nearly three million acres and is the fifth largest national forest in the nation. The Forest spans a range of ecosystems from the legendary Sonoran Desert with its unique flora and fauna, through a variety of chaparral, up to the mixed conifer forest of the Rim country, all connected by a series of breathtaking drives. The Forest's lush desert landscape is dotted with reservoirs and streams, which support warm water fisheries and a full range of water-based recreation activities. Prehistoric and historic cultural resources are located throughout the Forest, serving as valuable reminders of the past.

The Forest lies at the edge of Phoenix, the fifth largest city in the United States, and hosts over six million visitors a year. With its easy access for intensive day-use activities, as well as rugged backcountry areas that provide many opportunities for challenge and solitude, the Forest offers a wide variety of recreational opportunities.

The Tonto NF is comprised of six ranger districts: Cave Creek, Globe, Mesa, Payson, Pleasant Valley, and Tonto Basin (Figure 1).

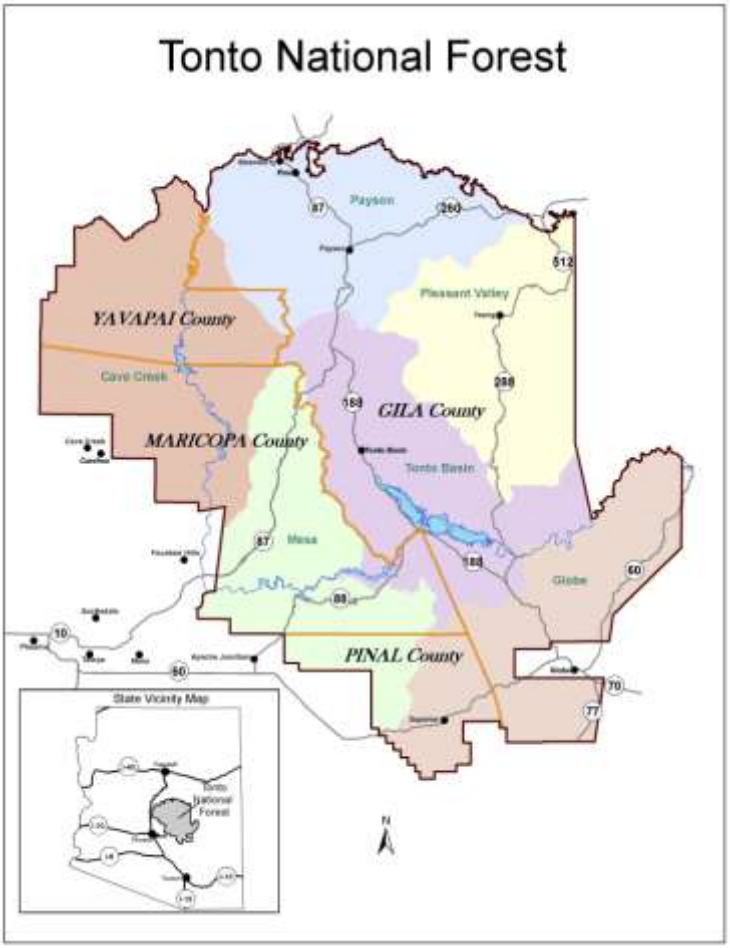


Figure 1. Tonto National Forest

The Cave Creek Ranger District encompasses 570,000 acres, transitioning from arid Sonoran Desert in the southern portion, through chaparral vegetation, to ponderosa pine in the northern portion. Because of its proximity to the Phoenix metropolitan area, it is one of the most heavily-used districts on the forest. The district is bounded by the large metropolitan urban interface to the south and southwest, the Aqua Fria National Monument to the west, other National Forest System lands to the north. The eastern boundary with Mesa District runs through the Mazatzal Wilderness.

Globe Ranger District surrounds the towns of Globe, Claypool, Miami, and Superior. It is within a 30-minute drive of the Phoenix metropolitan area. The close proximity to local populations makes adjacent Forest lands easy to access and use for a variety of recreational activities.

The Mesa Ranger District is characterized by its vast desert landscape surrounding Saguaro and Canyon lakes, the Lower Salt River, and the Superstition and Four Peaks Wilderness areas. Also included is over 250,000 acres of undeveloped lands used by a variety of Forest visitors for dispersed recreation.

The close proximity of the Payson Ranger District to the local populations makes it easy to access and use for a variety of recreational activities including hunting, camping, hiking, and motorized vehicle use. Due to the dispersed nature of the private property in-holdings there is little to no "remote" country outside of designated wilderness on the district.

Pleasant Valley Ranger District encompasses the unincorporated town of Young, population 500 to 800, and the smaller communities of Colcord Estates and Ponderosa Springs. All three communities have year around populations, but also have many second vacation homes. The Canyon Creek area where there are developed campgrounds and easy access to SR 260 has the highest concentration of elk within the district.

The Tonto Basin Ranger District encompasses approximately 530,000 acres of desert, semi-desert grassland, and chaparral types of vegetation, as well as a few scattered areas of ponderosa pine. Roosevelt Lake (the largest lake within Arizona) and Apache Lake lie within this district.

The Tonto NF is an important part of Arizona's natural heritage. The land, forests, lakes, streams, fish, and wildlife provide us with places to recreate, sustain us with food, and fuel the engines of our economic activities. Managed for today's needs without compromising the needs of future generations, the Tonto NF provides for a full spectrum of uses. When a forest is managed properly, it can provide diversified value with a variety of habitats for wildlife, numerous recreational opportunities, scenic landscapes, jobs which help support a rural lifestyle, clean air, stable soil, high quality water, wood products which we need every day, and healthy forests for the future.

Our commitment to the land and people that use it, has prompted a management style that contributes to ecological, social, and economic sustainability. Work toward achieving the desired future condition of the Forests is guided by our Land and Resource Management Plan (Forest Plan), which was adopted in 1985. The Forest Plan represents one integrated plan which guides all resource management activities on the forest.

Two Forest Plan amendments were adopted in fiscal year 2009 (FY09). See Appendix A for a current list of all amendments to the Plan. In January, the designation of energy corridors in 11 western states was entered as the 26th amendment and in July, the Forest Plan was amended to change plan language to make Camp Creek Recreation Residence consistent with plan direction for riparian condition, percent ground cover, and roads location. Until the Forest Plan goes through a revision process, amendments will continue to be used to keep the existing document current. An electronic version of the present Forest Plan and its amendments are available at http://www.fs.fed.us/r3/tonto/projects.

Accomplishments made in achieving Forest Plan goals and objectives are contained in report. Forest Plan monitoring is an ongoing process that assesses the response of the Forest environment to management activities undertaken to move the Forest from an existing condition to an expected future condition as described in the Forest Plan. By evaluating the results of the monitoring plan, the Forest is able to better identify future research needs and to shift monitoring activities to more effectively measure overall Forest health.

Cultural Resources

The Forest regularly surveys for potential cultural resources prior to on-the-ground land management activities such as road construction, campground development, and vegetative treatments. Pre-project monitoring of implemented projects where sites are present consisted of ensuring that sites were properly identified and marked for avoidance, checking the sites, and removing identification boundary markers once the project was completed. It is not uncommon that sites are visited more than once during the life of a project to ensure that they are protected. Where site density is high, projects are reviewed to ensure cultural resource sites are not disturbed. The Tonto NF conducted inspections at various levels on in-service and out-service projects.

The Tonto NF manages 34 properties that include 100 individual sites or structures listed as National Register Properties. Since a number of these sites are actively being used, many are visited throughout the year by heritage resource management personnel. Those National Register properties that are not used on a daily basis are visited less regularly. These less-visited sites are customarily checked by Forest personnel as the opportunity arises. Listed National Register Properties remain in fairly stable condition with no major impacts having altered their historic integrity. There were three heritage resource projects completed in FY09.

Fish and Wildlife

Habitat conditions for game and non-game wildlife species, fish, and rare plants are managed to maintain populations across the Forest. Special emphasis is provided in the management, protection, and recovery of federally-listed threatened and endangered species (T&E).

The Forest's status report of 28 Management Indicator Species (MIS) indicate that population trends of 25 species are stable and three are in decline. The Forests coordinate with the AZ Game & Fish Department, which monitors game species population and trends. Several of these are also MIS species, including elk and turkey. These populations statewide continue to increase. In FY09, 7,000 acres of habitat were restored or improved, with partners contributing 1,387 of those acres.

The TNF plays host to 12 threatened, endangered, and/or sensitive species. Threatened and endangered species are species officially designated by the US Fish and Wildlife Service, because the viability or continuation of the species' population is at risk. Protection and enhancement of these listed species and their habitat is required under the Endangered Species Act. Habitat quality or quantity is often a major reason for a species' decline. It is incumbent on the Forest to ensure management actions on the forest do not contribute further to a listed species' decline. It is also the Forest's responsibility to implement recovery actions identified in Recovery Plans within the Forest's jurisdictional responsibilities. Sensitive species are those species whose populations are of some concern because of overall declines or risks from land management activities on the Forest. These species are designated by the Regional Forester and require that management activities do not contribute to declines in the species that might affect population viability. During FY09, 42 biological assessment and evaluations were prepared. The current Southwest Region Sensitive Species list was approved in 2007.

The Forest has approximately 500 miles of fishable stream and 2,700 acres of lake habitat. There are about 40 species of fish on the Forests, of which 20 are considered game species. There are seven threatened and endangered fish species on the Forest, including desert pupfish, Colorado pikeminnow, razorback sucker, and Gila topminnow. There are an additional two sensitive fish species. In FY09, 26 miles of stream habitat were restored or enhanced and 200 acres of lake habitat were restored or enhanced, with partners contributing 100 of those acres.

Monitoring of reintroduced fish populations in 2008 continued. All reintroduced populations were persisting and reproducing. Chiricahua leopard frog egg mass stocking also occurred on the Payson District.

Insect & Disease

The annual insect and disease aerial detection surveys, made by the Forest Health Protection staff, located in the Rocky Mountain Research Station office in Flagstaff, AZ, showed that mortality caused by the current pine bark beetle outbreak has declined. New mortality decreased to 14 acres in 2009, compared with 130 acres in 2008. Douglas-fir tussock moth was not detected the past two years even though 1,537 acres were detected in 2007.

Noxious Weeds

The Tonto's invasive plant management program is composed of three basic parts: education, prevention, and control.

Seven presentations about invasive plants were given in FY09 to: the Payson Horseman's Association, Flowing Springs Community, Payson Town Council (video available on the Town of Payson's website), a seminar at Star Valley's Plant Fair Nursery, High Country Garden Club, Lions Club in Phoenix. The Forest set up an educational booth at the Gila County Fair in Globe and at the Lower Salt River Cleanup. An article was also published in the *Payson RoundUp* to help educate readers about invasive plants. The Invasive Plant portion of the Tonto's public website was improved, so that there are easily accessible photos and information about each of the 64 species on the Tonto's weed list.

The Tonto National Forest supplement FSM 2081.2 was also finalized in FY09. This document establishes a seed-testing policy that will prevent weeds not on the Arizona state list from being included in seed mixes planted on the Forest by any entity.

We surveyed for invasive plants along the existing alignment and new alignments for a five-mile section of State Route 260, and a four-mile section of State Route 87 north of Payson, for upcoming construction projects. We also worked with the Arizona Department of Transportation (ADOT) and their invasive plant subcontractor to train them to recognize the weeds in these areas and to help them write their Noxious Species Control Plan.

The Forest controlled weeds on 422 acres in FY09 (Table 1). Use of control tools is currently limited to manual, use of livestock on some allotments, and use of herbicides in areas covered by categorical exclusion and along highways.

Table 1. Weeds Treated in FY09

Treatment Type	**Acres Treated**
Fire	13
Manual	211
Pesticide	104
Biocontrol/Livestock	91
Mechanical (mowing)	3
Total Acres	*422*

Infestations of 16 weed species were controlled by using Forest staff, volunteers, and other groups or organizations (Table 2).

Table 2. Personnel Used in FY09

Personnel Type	**Acres Treated**
Outdoorvolunteer.org (a volunteer opportunity website)	3
Scouts & individual volunteers, including a group of Ritz-Carlton employees, eagle scouts & an ASU student on spring break	21
Youth Conservation Corps crew	27
Fire crews	21
ADOT contractors	79
ASU professors & students	1
Grazing permittees	91
Dept of Corrections crew	8
Tonto personnel	165
Total Acres	*422*

A weed new to the Forest, musk thistle, was discovered on the Payson Ranger District. Employees on the Payson District participated in rapid response by manually eliminating all plants within a nine-acre area, and helping to contact the local fire control district who alerted adjacent homeowners about this new weed. District fire crews assisted homeowners with removal of musk thistle on their land adjacent to the National Forest.

We continued to develop a relationship with the Town of Star Valley, mentoring them in their initial yellow starthistle control program. We also continued work with the WAKEUP! Group in north Phoenix/Cave Creek/Carefree/Scottsdale, applying for two grants in FY09.

Range

As one of many multiple uses, the Forest administered over two million National Forest System acres in 95 active livestock grazing allotments in 2009. In FY09 an estimated 2,183,058 acres of rangeland were evaluated and administered to standard across the Forest. All range allotments with Threatened and/or Endangered species were monitored for compliance with *Endangered Species Act Section 7* consultation agreements and were found to be in compliance.

Livestock grazing is monitored through inspections to determine short-term needs for adjustment in stocking numbers and through use of data collected for analysis of grazing projects as required by NEPA. Short-term adjustments in stocking levels are based on forage plant vigor and production and livestock water availability.

Rangeland conditions are difficult to measure directly on an annual basis because of climatic conditions that can affect herbaceous growth, litter production, and species diversity. Therefore, indicators of changes in condition, such as type and quantity of plant species present, are used to compare plot data from the Forest's ecological inventory and current rangeland health field inspection information with Terrestrial Ecosystem Survey information to estimate site potential and changes in plant and soil condition. This combination of management tools has generally resulted in favorable condition assessments, with possible exceptions near watering locations where livestock, wildlife, and recreational activity typically concentrate. Administrative actions are taken, where needed, to ensure that rangeland conditions in not in a declining trend.

Livestock numbers increased slightly with authorized use stocking level of 6,640 head of livestock, which is less than a one-percent increase over 2008. In response to the ongoing drought, however, authorized numbers for 2009 were still well below permitted numbers, with the entire Forest stocked at about 29% of permitted cattle numbers. Range vegetation was improved on approximately 85,132 acres of land through the implementation of improved allotment management plans, and several thinning and prescribed burning projects that resulted in improved vegetative conditions.

Inspections were done on all authorized pastures. Inspections were completed by District personnel, Arizona Cattle Growers' contractor, Drs. Sprinkle and Crew, and permittees. Results of inspections and other Forest projects are listed in Table 3.

Table 3. Range Monitoring

Improved Range Vegetation	85,132 acres
Grazing Allotment Administration to Standard	2,183,058 acres
Authorized Livestock Numbers	6,640 head
NEPA Documents for Grazing Decisions	1

Recreation

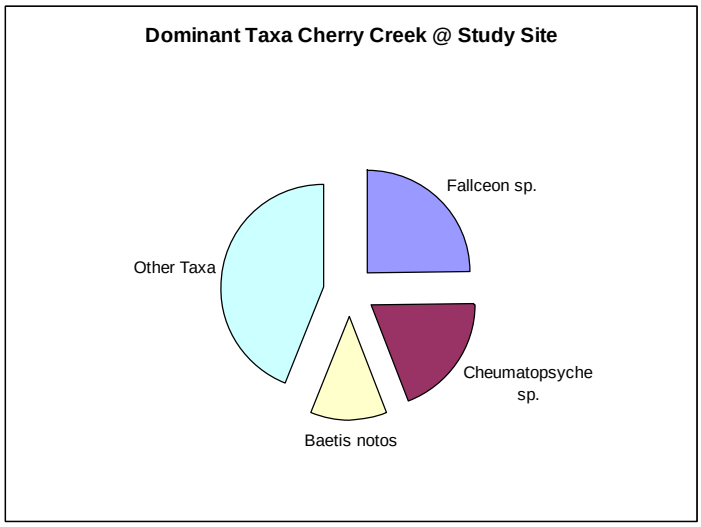
The Tonto National Forest offers a variety of recreation opportunities. In the Cave Creek Ranger District, water based recreation occurs on two lakes (Bartlett and Horseshoe) and along the Verde Wild and Scenic River. Hunting, hiking, equestrian use, developed and dispersed camping and off-highway vehicle (OHV) use are enjoyed throughout the district. Globe Ranger District is also used for a variety of recreational activities including hunting, camping, hiking, and motorized vehicle use. Hunting, camping, target shooting, hiking, OHV use, and driving for pleasure are the most popular activities in over 250,000 acres of undeveloped lands used by a variety of Forest visitors for dispersed recreation in the Mesa Ranger District. The Great Western Trail, a collection of back-country roads, also runs through the district. The close proximity of the Payson Ranger District to the local populations makes Forest lands easy to access and use for a variety of recreational activities including hunting, camping, hiking, and motorized vehicle use. Due to the dispersed nature of the private property in holdings there is little to no "remote" country outside of designated wilderness on the District. Recreation in the Pleasant Valley Ranger District is concentrated in the Canyon Creek area, where there are developed campgrounds and easy access to SR 260. This location has the highest concentration of elk within the district, whichcontributes to the abundance of hunters and dispersed camping. Dispersed camping is available on most of the district where the terrain allows, but is mostly concentrated on the Mogollon Rim or just below in the Naegelin Canyon area. In the Tonto Basin Ranger District, boating, hunting, developed and dispersed camping, hiking, OHV use, and hunting are the most popular activities at Roosevelt Lake (the largest lake within Arizona) and Apache Lake. One place that receives steady use by visiting recreationists as well as local residents is the Roosevelt Estates/Resort area at the south end of Roosevelt Lake.

Riparian Condition

The Forest Plan is clear in its intent regarding the importance and management for riparian areas, including maintaining and improving wildlife and/or aquatic species habitat and enhancing riparian ecosystems by improved management.

Benthic organism sampling was conducted at five sites by Tonto NF staff in FY09. Water at all five sites, Cherry Creek at study site, Cave Creek below Ashdale and three sites on the Verde River (below Sheep Bridge, below Childs, and at Boxbar) rated as attaining water quality conditions. A narrative report of the benthic macroinvertebrate communities was prepared by Michael D. Bilger, EconAnalysts, Inc. and is reproduced below.

Cherry Creek at Study Site
Sample Date: 28 May 2009
Elevation: 2613 ft.
ADEQ Warm Water IBI Score: 71.49
Assessment Based on IBI Score: Attaining



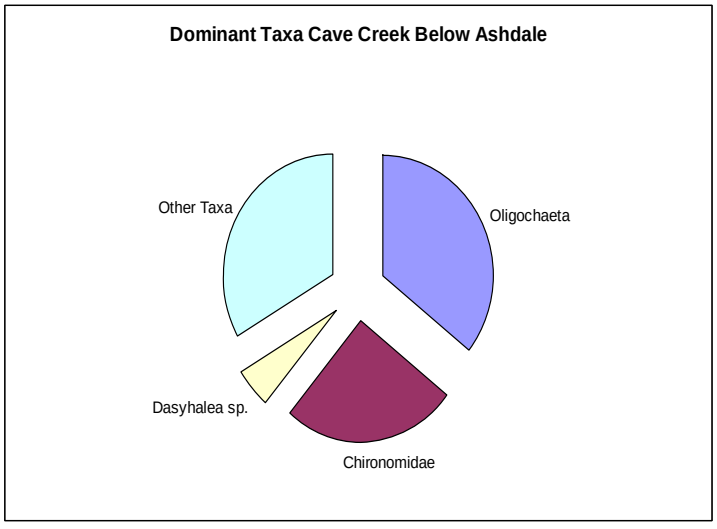
The most dominant taxon from this site was the baetid mayfly *Fallceon* sp. (24.9%). This mayfly is common and wide ranging in distribution throughout the U.S. and considered somewhat sensitive to pollution by some investigators (Baumgardner and Bowles 2005; Mohihara and McCafferty 1979). Animals belonging to this genus seem to prefer silt and sandy bottom substrates (Guenther and McCafferty 2008).

The second most dominant taxon was the net-spinning caddisfly *Cheumatopsyche* sp. (19.3%). These animals construct a silk net to collect and filter fine organic materials and are often found in large numbers below sources of organic pollutants (Wiggins 1996).

The third most dominant taxon was the baetid mayfly *Baetis notos* (11.6%). This species appears to be restricted to areas west of the continental divide (Kondratieff 2000). Regardless, it is difficult to identify and is often confused with other *Baetis* species in benthic samples. Their pollution tolerance is considered similar to that of *B. tricaudatus*, which is a score of six on the Hilsenhoff Biotic Index scale.

The ADEQ IBI score for this site was classified as "Attaining" (ADEQ 2006). This site revealed good species and EPT richness values and a community composition of 91 percent EPT. No single taxon made up greater than 30 percent of the total individuals collected. This site appears to represent the lack of any significant pollution impact. The site photographs and recorded observations showed no visible evidence of disturbance.

Cave Creek Below Ashdale
Sample Date: 21 May 2009
Elevation: 3268 ft.
ADEQ Warm Water IBI Score: 51.44
Assessment Based on IBI Score: Attaining



The most dominant taxon from this site was animals belonging to Class Oligochaeta, the aquatic earthworms (35.6%). These animals are mostly

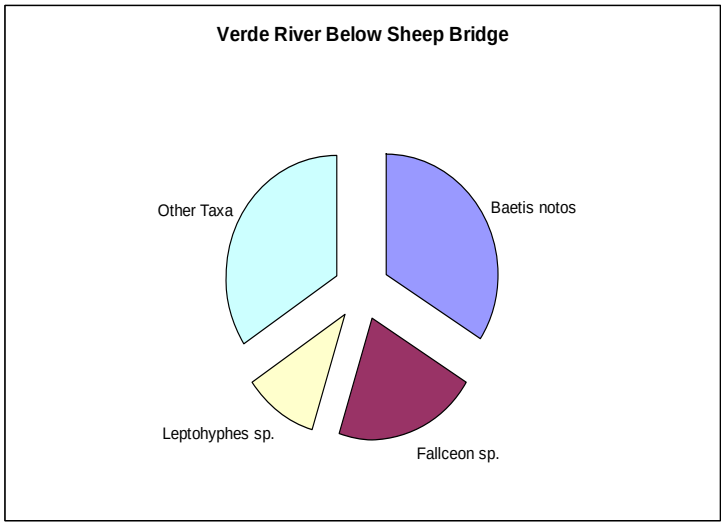
collector-gatherers in functional feeding strategy, are wide spread in distribution, and are also among the most organic pollution tolerant taxa found in freshwater lotic systems having pollution tolerance values of eight to ten on the Hilsenhoff Biotic Index scale.

The second most dominant taxon was the family of non-biting midges, the Chironomidae (25.5%). Members of this group are found in nearly all freshwater habitats, occupy numerous niches, and represent every functional feeding group. Although chironomids are generally considered indicators of poor water quality, many members of this family are quite intolerant to impacts from sedimentation, warm temperatures, pollution, and other anthropogenic sources. It is possible that their abundance is combined among multiple species with varying pollution tolerances, and thus not necessarily directly indicative of the presence of stressor(s).

The third most dominant taxon from this site was the biting midge genus *Dasyhelea* sp. (5.2%) belonging to the insect Order Diptera, family Ceratopogonidae. The immature stages of these animals are found in a variety of habitats, both aquatic and semi-aquatic, ranging from moist leaf mold to fresh and salt water. The aquatic species are found in mud or sand in lake, pond, or stream margins (Brigham *et al.* 1982). Many species of adults of the family are blood suckers and a nuisance to humans and other warm blooded animals.

The ADEQ IBI score for this site was classified as just barely "Attaining" (ADEQ 2006). This site was dominated by the oligochaetes and midges (60%) and exhibited only moderate richness measures for species and EPT. Both values for the Hilsenhoff Biotic Index (fairly poor) and the percent tolerant taxa was representative of some existing pollution impact. Site photographs and recorded observations showed no visible evidence of disturbance.

Verde River Below Sheep Bridge
Sample Date: 13 May 2009
Elevation: 2065 ft.
ADEQ Warm Water IBI Score: 67.67
Assessment Based on IBI Score: Attaining



The most dominant taxon was the baetid mayfly *Baetis notos* (33.8%). This species appears to be restricted to areas west of the continental divide (Kondratieff 2000). Regardless, it is difficult to identify and is often confused with other *Baetis* species in benthic samples. Their pollution tolerance is considered similar to that of *B. tricaudatus* which is a score of six on the Hilsenhoff Biotic Index scale.

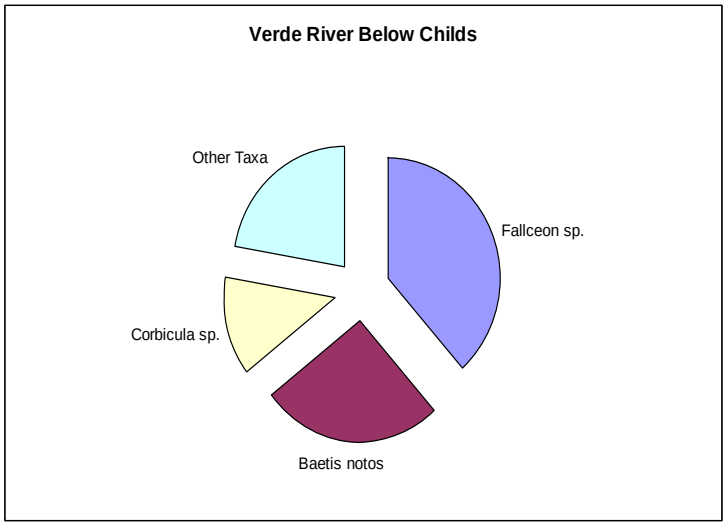
The second most dominant taxon from this site was the baetid mayfly *Fallceon* sp. (20.8%). This mayfly is common and wide ranging in distribution throughout the U.S. and considered somewhat sensitive to pollution by some investigators (Baumgardner and Bowles 2005;

Mohihara and Mccafferty 1979). Animals belonging to this genus seem to prefer silt and sandy bottom substrates (Guenther and McCafferty 2008).

The third most dominant taxon was the mayfly *Leptohyphes* sp. (10.9%). Members of this genus included in the family Leptohyphidae have a poorly understood life history; however, they are thought to be collector-gatherers feeding on decomposing fine particulate organic materials (Brigham *et al* 1982).

The ADEQ IBI score for this site was classified as "Attaining" (ADEQ 2006). This site exhibited high species and EPT richness values as well as community composition metric scores such as percent Ephemeroptera (86%) and percent EPT (91%). The Hilsenhoff Biotic Index score was also very good. It appears the benthic community at this site is not impacted by any significant pollution sources. Site photographs and recorded observations showed no visible evidence of disturbance.

Verde River Below Childs
Sample Date: 15 May 2009
Elevation: 2849 ft.
ADEQ Warm Water IBI Score: 61.81
Assessment Based on IBI Score: Attaining



The most dominant taxon from this site was the baetid mayfly *Fallceon* sp. (38.4%). This mayfly is common and wide ranging in distribution throughout the U.S. and considered somewhat sensitive to pollution by some investigators (Baumgardner and Bowles 2005; Mohihara and McCafferty 1979). Animals belonging to this genus seem to prefer silt and sandy bottom substrates (Guenther and McCafferty 2008).

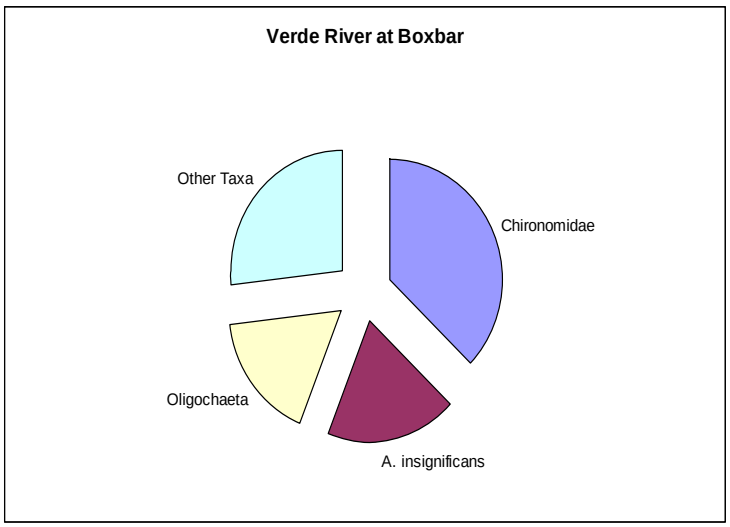
The second most dominant taxon was the baetid mayfly *Baetis notos* (26.1%). This species appears to be restricted to areas west of the continental divide (Kondratieff 2000). Regardless, it is difficult to identify and is often confused with other *Baetis* species in benthic samples. Their pollution tolerance is considered similar to that of *B. tricaudatus* which is a score of six on the Hilsenhoff Biotic Index scale.

The third most dominant taxon was the non-native invasive bivalve *Corbicula* sp. (13.3%). The Asian clam is considered to be pollution tolerant (Florida Caribbean Science Center and USGS).

The ADEQ IBI score for this site was classified as "Attaining" (ADEQ 2006). This site exhibited species richness and EPT values considered moderate with high percent Ephemeroptera (77%) and percent EPT (79%) values. The Hilsenhoff Biotic Index score was very good; however, two genera made up over 60% of the community, indicating lower diversity at this site. Site

photographs and recorded observations showed some visible evidence of disturbance in that there appeared to be increased turbidity.

Verde River at Boxbar
Sample Date: 21 May 2009
Elevation: 1500 ft.
ADEQ Warm Water IBI Score: 44.08
Assessment Based on IBI Score: Inconclusive



The most dominant taxon was the family of non-biting midges, the Chironomidae (37.2%). Members of this group are found in nearly all freshwater habitats, occupy numerous niches, and represent every functional feeding group. Although chironomids are generally considered indicators of poor water quality, many members of this family are quite intolerant to impacts from sedimentation, warm temperatures, pollution, and other anthropogenic sources. It is possible that their abundance is combined among multiple species with varying pollution tolerances, and thus not necessarily directly indicative of the presence of stressor(s).

The second most dominant taxon was the baetid mayfly *Acentrella insignificans* ((18.6%). This species is considered to occur commonly in western North America (Harper and Harper 1997; Guenther and McCafferty 2008). The genus is considered to be moderately intolerant to organic pollutants.

The third most dominant taxon from this site was animals belonging to Class Oligochaeta, the aquatic earthworms (17.2%). These animals are mostly collector-gatherers in functional feeding strategy and are wide spread in distribution and also among the most organic pollution tolerant taxa found in freshwater lotic systems with pollution tolerance values of eight to ten on the Hilsenhoff scale.

The ADEQ IBI score for this site was classified as “Inconclusive” (ADEQ 2006). This site exhibited low species and EPT richness scores and low community composition percentages for Ephemeroptera and EPT. The Hilsenhoff score was considered fair. The percentage of midges and aquatic earthworms seems to indicate some form of organic impact at the site in spite of the occurrence of the baetid mayfly. Site photographs and recorded observations showed no visible evidence of disturbance.

As part of project level analysis in 2009, 46 stream reaches were assessed for condition and function. Generally, riparian area management has improved, and there is an increased awareness of riparian area management needs.

Riparian area photo-point program remains the primary effectiveness monitoring occurring on the Forest. There were 47 new photo-point sites established and 132 permanent photo points re-photographed in 2009.

Timber & Other Forest Products

A total of almost 5,750 CCF (hundred cubic feet) of merchantable tree products were removed from the Forest in FY 2009 with a total value of $36,000, if this material was all converted in cords it would amount to approximately 7,278 cords. This is an increase of over 3,800 CCF (almost 300%) from FY08. Fuelwood demand and sales from over-the-counter personal use permits has exceeded past years due to worsening economic conditions and increased availability of fuelwood from fuels projects. In addition to 1,080 fuelwood permits for a fee, 297 free use permits were issued for an estimated 1,000 cords of free fuelwood. This is 19% more permits than issued in 2008.

Three hundred thirty-six (336) permits for Christmas trees were issued statewide from the Payson and Pleasant Valley Ranger Districts in 2009, nine more than in 2008.

Transportation Management

The TNF currently provides about 450 miles of roads designed for passenger vehicles and over 3,200 miles designed for high clearance vehicles. In FY09, maintenance work occurred on 800 miles (approximately 470 miles of high clearance system roads and 330 miles of passenger car system roads). In addition, about nine miles of passenger car system roads were improved around Payson, Arizona and north of Fountain Hills on the Cave Creek District. Annual road maintenance needs are met by using Forest Service staff, county maintenance staff, and numerous local contractors. Local contractors complete road maintenance tasks and supply structures, such as cattle guards, gates, and culverts. The Forest was able to accomplish road maintenance work that provides for user safety and enjoyment and protects natural resources. Some examples of projects were:

- Improvement of Forest Road (FR) 20 (Needle Rock Road) via minor road realignment, the addition of asphalt surfacing, and provision of minor structures to prevent erosion at drainage crossings. The road serves a popular recreation site and the project was accomplished through a partnership with Maricopa County.

- Improvement of FR 406 (Canyon River Ranch Road) via minor road realignment, the addition of asphalt surfacing, and provision of structures and materials to prevent erosion at drainage crossings.
- Heavy maintenance, including the addition of aggregate surfacing material, on FR 33 and FR 200, two heavily used roads on the Pleasant Valley District. The project enhanced user safety and reduced future maintenance needs by improving stormwater runoff, reducing muddy/slippery conditions, and decreasing the likelihood of severe rutting.

The Forest also continued its efforts to comply with the Travel Management Rule in FY09. Ongoing efforts for travel management planning included completing a draft proposed action, gathering specific road and motorized trail data, and compiling information for an environmental analysis. Public open houses were held throughout the Forest in October and November of FY10 to gain further public input on the proposed action.

Visual Quality

Monitoring for visibility in Class 1 areas is ongoing. The Forest monitors visibility through the Interagency Monitoring of Protected Environments (IMPROVE) network using monitors located in or adjacent to forest lands. The IMPROVE network is operated by University of California at Davis Crocker Nuclear Laboratory. The monitors detect aerosol particles in the air, which scatter light and cause a "hazy" effect in the air.

Goals for regional visibility are to meet or exceed baseline conditions by 2054. Monitoring continues to show that aerosol particles in the Sierra Ancha Wilderness and the Superstition Wilderness are decreasing and therefore, visibility is improving.

Watersheds

Watershed condition assessment has been conducted on a project area basis. Assessments have focused on specific elements of watershed condition such as soil quality, stream channel stability, upland vegetative conditions, and riparian condition.

Watershed condition includes factors such as vegetative cover, soil condition, stream channel condition, water quality, aquatic biota, riparian condition, watershed disturbances, etc. TNF is currently conducting a Terrestrial Ecosystem Survey (TES) of the Forest. The TES crew inventoried

approximately 204,000 acres in FY09. Information provided in this survey will be valuable for assessing watershed condition. This survey is expected to be completed in about four years.

The Forest Service is also developing a national protocol for assessing watershed condition known as the Watershed Program Assessment Rating Tool (PART) that is expected to be issued in FY10. This tool may also assist with the watershed condition assessment process and may be a required element of watershed condition assessment that is reported to the Office of Management and Budget.

Stream channel condition and soil quality data are collected on a project level basis. Macro invertebrate data is collected as part of the Forest Plan monitoring requirements. The Forest is also currently conducting an inventory of the Forest's developed water sources. The project level data is collected primarily for input to *National Environmental Policy Act* (NEPA) documents prepared for various project level activities (primarily grazing and wildland-urban interface projects) and to comply with the monitoring requirements include in these documents. The water resource inventory is being conducted to prepare for a general water rights adjudication.

Approximately 23 miles of riparian stream course monitoring was conducted in 2009. Stream channel and riparian conditions were analyzed using the Tonto Stream Assessment method (Mason and Grove, 1999) and proper function condition assessment. Of all the stream channel assessments conducted since the forest plan was issued in 1985, 18 percent are in stable condition, 50 percent are impaired, and 32 percent are unstable.

Wilderness & Wild and Scenic Rivers

In FY09 wilderness areas on the TNF were monitored and the trails were maintained to standard. As the population in Maricopa and adjacent counties increase, the number of visits to the TNF wilderness areas is expected to increase. Impacts to natural resources within wilderness are documented and monitored.

The Tonto NF works cooperatively with the Coconino and Prescott National Forests to protect and enhance the specific outstandingly remarkable values within the designated Wild and Scenic segments of the Verde River and to protect its free-flowing condition and water quality. In FY09, 18 patrol trips (a total of 83 days of river patrol) were made on the Verde River with volunteers and other recreation managers to pick up trash, monitor and clean campsites, repair fences, remove hazards, treat invasive weeds, etc. (Table 4). Additional projects on the river in FY09 included inventorying and mapping the location of Salt Cedar from Childs to the lake, painting the Wilderness gauging station below the East Verde River, participating in the Swift Water Rescue class, monitoring the Canoe Challenge, and helping Arizona Geological Survey (AGS) map the river rock layers along the river corridor.

Table 4. FY09 Verde River Activities

Patrol Trips	18	
River Patrol Days	83	
Hours Worked	USFS - 2100 Law Enforcement – 386 AGS – 284 AGFD – 160 C-REC – 720 Volunteers – 552 ***Total – 4,184 hours***	
Hours Worked (logistics for volunteers)	400	
River Contacts	447	
Fire Rings Destroyed	54	
Trash Collected	33 bags 31 tires 3 pallets 1 fire pan 2 chairs *Total - 975 LBS*	Gauge Metal 4 iron 3 cable *Total – 1,200 LBS*
	Grand Total -2,175 LBS	

References Cited

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Appendix A: Amendments to the Forest Plan

The *National Forest Management Act of 1976* requires that Forest Land and Resource Management Plans be revised after 15 years. The Tonto National Forest Plan was approved by the Regional Forester in October 1985. Since its approval, the Plan has been amended 27 times as follows:

Amendment 1: August 1988: Allows State of Arizona to install and operate transceiver on Hutton Peak.

Amendment 2: August 1988: Corrects test reference to Table 3 & 4 and provides capacity for jeep tours.

Amendment 3: August 1988: Expands Forest-wide prescriptions, Standards and Guidelines (S&G's), in accordance with the court settlement of litigation – Save the Jemez/State of New Mexico vs. Forest Service.

Amendment 4: August 1988: Corrects text reference to Table 3 & 4 and allows commercial rafting on Tonto Creek from Gisela to 76 Ranch (July 1- November 30) and 76 Ranch to Gun Creek (yearlong).

Amendment 5: August 1988: Moves construction of Haigler Creek Campground from 2nd period to 1st period.

Amendment 6: August 1988: Allows rafting on sections of the Verde River.

Amendment 7: May 1990: References Wilderness Opportunity Spectrum and Wilderness Management Plans.

Amendment 8: October 1990: Allows tour boat operations on Saguaro and Canyon lakes.

Amendment 9: November 1990: Increases river rafting allocations on the Upper Salt River.

Amendment 10: April 1991: Adds reforestation acres for rehabilitation of the Dude Fire.

Amendment 11: April 1991: Designates Crouch Mesa as an administrative electronic site and allows installation and operation of solar-powered microwave repeater.

Amendment 12: April 1991: Designates New River Mesa as an administrative electronic site and allows installation and operation of solar-powered microwave repeater.

Amendment 13: August 1991: Amends outfitter/guide allocations in Management Area (MA) 1E, including increases in rafting allocations on the lower Verde River below Horseshoe and Bartlett Reservoirs.

Amendment 14: August 1991: Amends outfitter-guide allocations in MA 3F.

Amendment 15: January 1992: Classifies recreation residences at Diamond Point, Ellison Creek, Thompson Draw, and Washington Park as base for exchange.

Amendment 16: July 1992: Modifies the number of commercial outfitter-guide permits available in MA 2A, 3B, 3C, 3D, 6B, 6D, and 61 (Superstition and Four Peaks Wildernesses).

Amendment 17: February 1993: Modifies the number of commercial outfitter-guide permits available in MA 5A, 5C, and 6H (Sierra Ancha and Salome Wildernesses).

Amendment 18: June 1993: Modifies the number of commercial outfitter-guide permits available in MA 1B, 1C, 1D, 3A, 4B (west ½ Mazatal Wilderness) and 4C and 5B (Hellsgate Wilderness).

Amendment 19: March 1994: Changes designation of Buckhorn Mountain and Haufer Wash Research National Areas from proposed to existing.

Amendment 20: May 1995: Modifies outfitter-guide permit allocations for MA 1F, 2D, 2F, 3F, 4D, 4F, 5D, 5E, 5G, 6C, and 6F, and minor housekeeping correction for recreation and residence areas located in 1F, 2D, 4D, and 6F.

Amendment 21: May 1995: Adds Standards and Guidelines pertaining to cave resource management and housekeeping consolidation of S&G's pertaining to cultural resources.

Amendment 22: June 1995: Adds Standards and Guidelines pertaining to management of Mexican spotted owl, goshawk, and old-growth habitats.

Amendment 23: June 1997: Allows installation and operation of a microwave repeater on Pinto Mesa for the telephone system serving the Rockhouse Community.

Amendment 24: June 2004: Incorporates the Verde Wild and Scenic River *Comprehensive River Management Plan* into the Forest Plan.

Amendment 25: April 2007: Updates present fire management language to be in compliance with the 2001 *National Fire Plan* and 2005 Wildland Fire implementing procedures, which allows the use of wildland fire as a management tool.

Amendment 26: January 2009: Designation of Energy Corridors in 11 Western States.

Amendment 27: July 2009: Amends plan language to make Camp Creek Recreation Residence consistent with plan direction for riparian condition, percent ground cover, and roads location.