The Upper Verde River:

A Wild and Scenic River Study

Prepared by Cacia McClain as a Senior Project
In conjunction with the Arizona Wilderness Coalition
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Upper Verde River Wild and Scenic River Proposal
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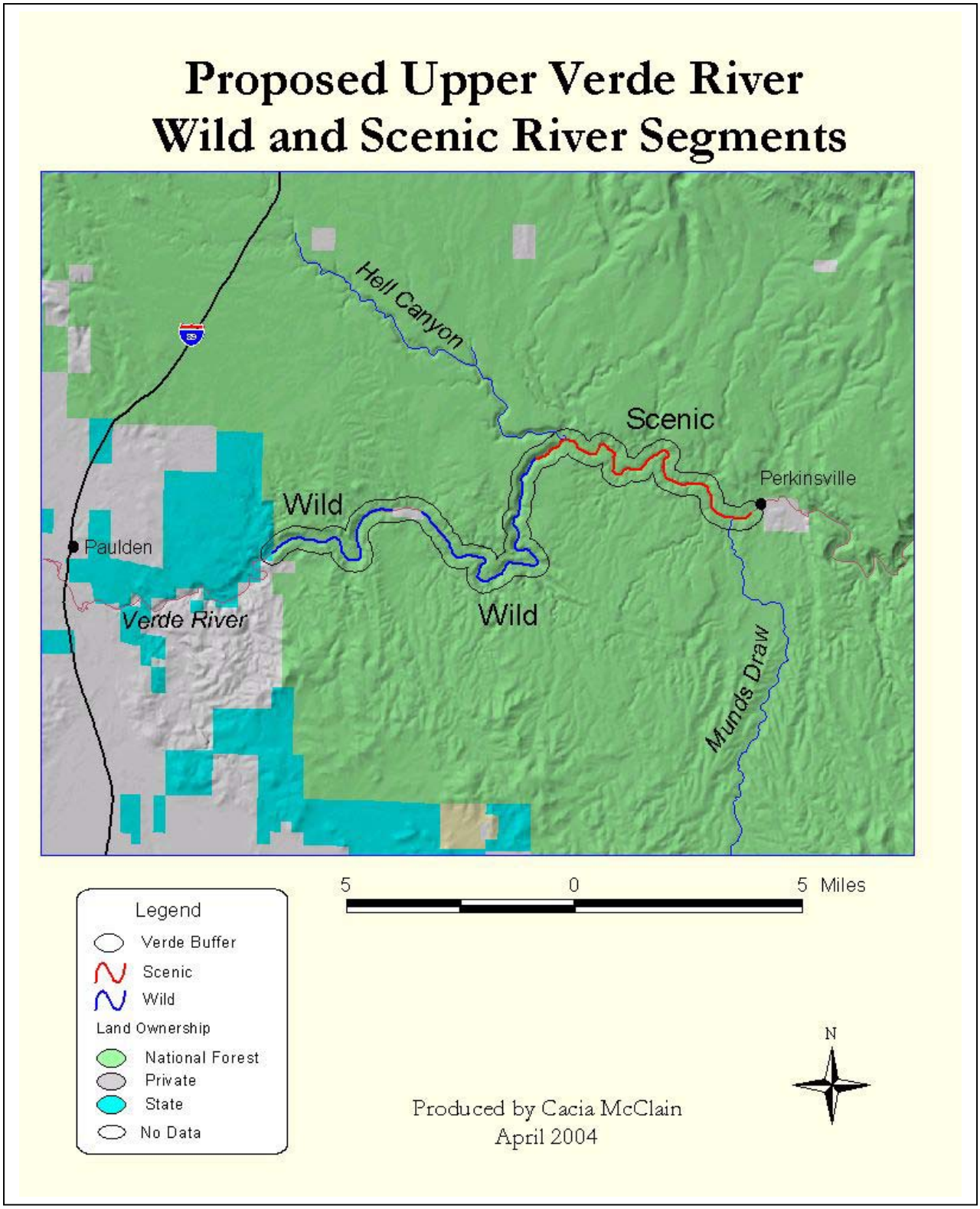
Overview Map



Glossary

Wild river areas -- Those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shoreline essentially primitive and waters unpolluted. These represent vestiges of primitive America.

Scenic river areas -- Those rivers or sections or rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.

Recreational river areas -- Those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past (U.S. Congress 1968).

Eligibility --Qualification of a river for inclusion in the national system through determination that it is free-flowing and with its adjacent land area possesses at least one outstandingly remarkable value (NPS and USFS 1982).

Classification -- The process of determining which of the classes outlined in section 2(b) of the Act (wild, scenic, or recreational) best fit the river or its various segments (NPS and USFS 1982).

Suitability – suitability includes the determination of whether eligible rivers are appropriate for designation based upon the environmental and economic consequences of designation and the manageability of the designated river (USFS, NPS & BLM 1996).

Summary

This study report evaluates the eligibility, classification, and suitability for the upper Verde River to be designated as part of the National Wild and Scenic Rivers System (NWSRS). The determinations are based on evaluations of the natural and cultural resource values of the area. Through this study 18.5 miles of the 19-mile study river have been found eligible for inclusion into the NWSRS. The criteria used determine this inclusion were the existing free-flowing character of the river and the presence of outstanding remarkable river-related values. These values that are found within the study area are: ecology, wildlife, fish, cultural, historical, and scenic. The Wild and Scenic Rivers Act provides a classification system for eligible river segments based on the degree of human development on the river and adjacent shorelines. The three possible classifications are wild, scenic, or recreational. This study determined that the nineteen-mile perennial length of the upper Verde River would best be protected by being divided into three segments. The upper segment from the Prescott National Forest Boundary to the western edge of the Verde Ranch property should be designated **Wild**. The middle segment, from the eastern boundary of the Verde Ranch to about 2 miles upstream of Bear Siding where the 500 kv power line crosses the river canyon, should be designated **Wild**. The third segment, from the 500kv power line to the Perkinsville Bridge is proposed as a **Scenic** river area. The upper Verde's suitability for inclusion in the NWSRS was determined based on the Utah state office of the Bureau of Land Management "Wild and Scenic Rivers Direction for Identification, Evaluation, and Management Manual".

Note about GIS data:

The CD included with this proposal contains GIS shapefiles for all photopoints and proposed river segments. The CD also includes all the digital photos. The photo points in the appendices are hot linked to the photos taken at these locations. For this option to work, the photos must have a file path of c:\GIS\upperverde\photos.

I. Introduction and Background

A. The National Wild and Scenic Rivers Act

The Wild and Scenic Rivers Act (WSRA), (Public Law 90-54289 as amended; 16 U.S.C. 1271-1287) was enacted by Congress in October 1968 to provide federal protection for selected outstanding free-flowing rivers. Congress recognized the need to preserve natural conditions along some of the nation's remaining unimpounded rivers because of the dramatic degradation and modification caused by dams, diversions, and over-development of many rivers and segments of rivers. The purpose of the WSRA of 1968 is stated in section 1(b):

> It is herby declared to be the policy of the United States that certain selected rivers of the Nation which, with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values, shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations. The Congress declares that the established national policy of dam and other construction at appropriate sections of the rivers of the United States needs to be complemented by a policy that would preserve other selected rivers or sections thereof in their free-flowing condition to protect the water quality of such rivers and to fulfill other vital national conservation purposes.

As of 2003, 11,304 miles of river have been designated in the National Wild and Scenic River System (NPS 2004). One river in Arizona has been included, a 40-mile segment of the Verde. Under Section 7(a), the WSRA provides legislative protection for designated free flowing rivers from any "dam, water conduit, reservoir, powerhouse, transmission line, or other project works under the Federal Power Act (41 Stat. 1063), as amended (16 U.S.C. 791a et seq.)". Furthermore, under the same section, the Forest Service cannot recommend any water resources project that would adversely affect the values for which the Wild and Scenic River (WSR) was established. There are also unyielding restrictions against any development of lands within the quarter mile adjacent to each stream bank that might compromise or detract from existing outstandingly remarkable values (P.L. 90-542 Section 7(a)). This protection may also be provided to rivers that have received legislative authorization from Congress for *study* as potentially eligible for the NWSRS. Temporary

protection for study lasts a maximum of three years after Congress has received the final study report from an agency (P.L. 90-542 Section 7(b)).

Rivers can be added to the NWSRS only through an Act of Congress. It is this act of Congress that makes the WSRA so strong. Once Congress has designated a river wild, scenic, or recreational, the managing agency must manage for the protection of the outstandingly remarkable value for which the river was designated (P.L. 90-542 Section 10 (a). A WSR study is conducted by the federal agency (within the Department of Agriculture [USDA] or Department of the Interior [USDI]) responsible for management. The study report is reviewed and commented on by other state and federal agencies, conservation organizations, and the public. If the river is found to be eligible and suitable for designation, a final report is then sent to the President who recommends specific action to Congress.

Another approach for designating a WSR is addressed in section 2(a)(ii) of the WSRA. A given state may designate a river wild, scenic, or recreational through legislation and administer the river as a component of the state's preservation system. A Governor has the ability to then request that the Secretary of the Interior add the river to the National System. The National Park Service evaluates the river, and if criteria for federal inclusion have been met, the Secretary of the Interior has the authority to designate the river on the condition that the state assumes funding and management responsibilities. In this case, Congress is not involved, but the resource values of the river are still protected from degradation (P.L. 90-542 Section 2 (a) (ii)).

B. The Purpose of a Citizen's Proposal for a Wild and Scenic River Study of the Upper Verde River

The purpose of a WSR study for the upper Verde River is to determine if the stream is eligible for inclusion in the national system based on criteria of the Act and United States Department of Agriculture and the United States Department of the Interior Interagency Guidelines. Any group or individual may submit a WSR study report, which is sometimes called a citizen's proposal. This WSR citizen proposal, *Upper Verde River Wild and Scenic River Proposal,* presents information that has not before been considered and augments the earlier federal agency WSR study report; it also provides information to the public, federal and state

agencies, conservation organizations, Congress, and the President to support the upper Verde River's inclusion into the NWSRS.

The importance of citizen action cannot be emphasized enough! Citizens have the power to comment on federal agency proposals in most cases and also have the opportunity to volunteer their efforts toward protecting the places they value, such as the upper Verde River. There are endless opportunities for citizens to create partnerships with the local government agencies to help enforce agency guidelines, clean up local areas of interest, and help with data collection, such as recreational impacts or species accounts. Not only does a citizen's proposal of this kind act as a cooperative effort between local land/river users, federal agencies, and private land owners, but it also voices concern and care for out public lands. This proposal is meant to be clear, concise, and thorough, allowing the common person-with no exceptional knowledge of policy or the designation process-to understand and influence the fate of their public lands.

C. The Study Report

In Section 4(a) of the WSRA, the affected land management agency is required to create a report that includes:

> …maps and illustrations, shall show among other things the area included within the report; the characteristics which do or do not make the area a worthy addition to the system; the current status of land ownership and use in the area; the reasonably foreseeable potential uses of the land and water which would be enhanced, foreclosed or curtailed if the area were included in the national wild and scenic rivers system.

The study process and report includes three sections: *eligibility*, *classification* and *suitability*. Specific requirements must be met for a river to qualify as a WSR through section 2(b) of the WSRA. Primarily, the river or river segment must meet eligibility criteria. The eligibility report describes the area's natural and cultural resource values through descriptions, maps, and photos of the river area. It must be free-flowing, and the river corridor and related adjacent land area must possess one or more "outstanding remarkable values" (P.L. 90-54289 Section 16). From this paragraph on, the phrase "Outstanding Remarkable Values" in this proposal will be capitalized to emphasize the importance of these values; however, in

the WSRA these words are not capitalized. Potential Outstanding Remarkable Values include: geology, ecology, fish, wildlife, historic, cultural, scenic, recreation or other similar values that are deemed regionally or nationally significant. Interagency guidelines clarify that "other similar values", i.e. Native American use or educational importance, can justify eligibility. Outstanding Remarkable Values must be directly river related and their significance is evaluated nationally and within the context of a regional physiographic province and of the nation. Because neither the Act nor Interagency Guidelines provide specific criteria to evaluate the remarkable values, determination is based on regional agency standards, and educated judgment of the WSR study team. Basis for judgment must be documented in the study report.

Section 2(b) of the Act requires that eligible river segments be classified as *Wild*, *Scenic* or *Recreational*. The classification criteria depend on the level of shoreline development and access to the river corridor. Government agencies use these classifications to guide their management plans and decisions with regard to development and use along certain segments of the river.

The suitability study addresses whether WSR designation is in the public's interest, and if designation is the most appropriate conservation measure for the river. Factors involved in the consideration include politics, management, land ownership, costs, conflicting water projects, and other development proposals. Strong public support is needed from landowners along the river corridor, local communities, conservation organizations, and state and federal agencies. Management must also be directed toward protecting the free-flowing conditions and Outstanding Remarkable Values of the river. Prior to suitability determination it is necessary to have convincing evidence that the relevant land regulations are aimed at conservation. WSR designation would add legislation and management requirements that would support existing management practices (Dupperrault 2003).

D. Methods and Study Process

Methods and criteria from the Wild and Scenic River Review in the State of Utah primarily because it is the most in-depth description of the process, the WSRA of 1968, and USDI /USDA Interagency WSR Guidelines were used to determine eligibility for the upper Verde River to be classified under the WRSA of 1968.Through inventory, research, and communication with the USFS, Cacia McClain was able to complete this proposal for the Arizona Wilderness Coalition. The Outstanding Remarkable Values have been identified based on the regional values within the Central Arizona Highlands and on the significant resource values recognized nationally.

II. Description of the Study Area

A. Regional Setting

The upper Verde River is one of the last perennial rivers in Arizona. The Verde River drainage basin is 14,000km² and the study section contains 5,568 km² or 40 percent of this area. The study section is 18.7 miles long, reaching from the Prescott National Forest boundary west of the old Morgan Ranch property at UTM coordinates 372688E, 3860203N to the Perkinsville Bridge that crosses the Verde River at UTM coordinates 390243E 3862098N. The Verde River watershed is bordered on the west by the Big Chino Fault and Chino Valley, to the east by the Coconino National Forest, to the north by the Mogollon Rim and the Kaibab National Forest, and to the south by the town of Jerome. The Sycamore Canyon Wilderness lies just northeast of the southern end of the river segment (see Figure 1) and the Woodchute Wilderness lies south of the river. The river segment is located entirely in Yavapai County and is east of the town of Paulden.

Figure 1. View to north from study area, Sycamore Canyon Wilderness.

(Direction N, photo P1010094)

The only private land on this stretch of the river is the Verde Ranch, an 83-acre ranch that the Prescott National Forest and The Nature Conservancy are working collaboratively with the landowners to acquire (Carrie Christman, USFS, personal communication 2004). The river flows for about ½ mile through this land at mile 4.7.

The river segment flows southeast through a diverse canyon that is characterized in places by majestic vertical sandstone, limestone or volcanic walls up to about 200 feet high, forming a narrow, deep river channel. In other places the river has gently sloping walls and wide riverbanks that form a meandering, more shallow river channel. The diverse geology of the study segment allows the river user to have many perspectives within the river ecosystem; one feels minute and uninfluential when hiking through the narrow canyon walls and more like an elemental part of the river when hiking through the wider sections.

Numerous archaeological sites and cliff dwellings have been recorded and mapped along the upper Verde River. Many of the sites are located on ridges above the river placed defensively and safely with a view of the entire Verde Valley; see photo 017_16. The prehistoric sites along the canyon rim and the floodplain of the Verde suggest the river corridor was used for trade, travel, and agriculture for thousands of years. The prehistoric cultures documented have been the Pueblo I to Pueblo IV people, Prescott Culture and the Sinagua people (Lopez and Springer, no date; Rice and LeBlanc 2001). Miners traveled through the river in the early 19th Century and were looking for gold and copper (Sheridan 1998) they left behind tailings, old mine shafts, and ruins like the one in Figure 6.

Because the Verde River is one of the last perennial rivers in the desert Southwest it represents critical habitat for many riparian-obligate species of fish, mammals, and birds such as the spikedace (*Meda fulgida*), Bald eagle (*Haliaeetus leucocephalus*), Yuma clapper rail (*Rallus longirostris yumaensis*), and southwestern willow flycatcher (*Empidonax traillii extimus*) (USDA 2003d). The riparian vegetation is dominated by cottonwood (*Populus spp.*), willow (*Baccharis spp.*), (*Salix sp.*), (*Chilopsis sp.*), Ash (*Fraxinus sp.*), cattails (*Typha spp.*), reeds, and sedges. The habitat is somewhat affected by invasive vegetation, such as Tamarisk, as well as over thirty introduced non-native fish species (see Table 2), but has maintained its natural character well despite these disturbances.

Today, the river is used widely for recreation. Local visitors enjoy hiking along the river, swimming in it, and fishing and camping along its banks. The legal Forest Service routes that access the river are also important recreational routes for Off Road Vehicles (ORVs) to recreate in the area.

B. Access

State Route 89 is the main road that runs north-south perpendicular to the Verde Canyon. County Roads 71, 70 and 137 in Chino Valley all turn east off of State Route 89 into the Prescott National Forest and lead to various Forest Service Routes that can be confusing to follow and sometimes are not well-marked. The upper section of the study area can be accessed from Forest Service Route (FR) 638 with a high clearance vehicle, which can be accessed by either County Road 137 (now marked Verde Ranch Road) north of the study area or County Road 70 (also called Perkinsville Road) south of the study area by a high clearance, 4-wheel drive vehicle. The Perkinsville Bridge is an access point to the river from the downstream end of the study area and does not require high clearance or 4-wheel drive. County Road 70 leads to FR 9112J, FR 164, and FR 9110R, which all lead to the river corridor and require a high clearance, sometimes four-wheel drive vehicle. County Road 71 leads to a few access points from the north of the river. FR 492A, FR 9115W, and FR 182 (which turns into FR 9711K and then into FR 9010) all turn south off of County Road 71 and access the river corridor.

C. Climate

The upper Verde River climate is affected by the regional topography of the Mogollon Rim to the north-northeast and the Black Hills to the southwest. Moisture-laden air rises and cools when it meets these features and creates precipitation. The precipitation in the entire Verde Valley ranges from 12 to 17 inches per year and occurs mostly in the form of rain. Runoff is highest during March and April because of snowmelt from the Colorado Plateau (Owen-Joyce and Bell 1983). The summer season typically has the highest precipitation when monsoon rains occur and cause flash flooding. Temperatures range from 102º F in the summer to 2º F in the coldest winter months, according to the Childs, Arizona weather records.

D. Geology/ Hydrology/ Geomorphology

The Verde River flows through the Central Mountain Highlands of Arizona, which are characterized by high mountain ranges and alluvial basins. The Central Mountains are mostly made up of granitic rocks with relatively young basalt and lava flows on the surface. The geology of the Central Mountain region is distinguished by a Transition Zone between the Colorado Plateau and the Basin and Range (Pearthree 1996) (Figure 2). This geographic province is nationally unique. The Transition Zone between the Mogollon Rim and the Basin and Range topography is about fifty miles wide and runs southeast. Faulting and erosion that have occurred since the Tertiary period are what separated this area from the Colorado Plateau. Headwater erosion from tributaries of significant rivers in the areas, such as the Gila and Salt, has carved out deep canyons, valleys, and steep mountains. The three greatest valleys in this Transition Zone are the Chino, Verde, and Tonto (Wilson 1962). The Verde Valley we know of today is defined by the Verde River. Sedimentary layers found in the bottom of the Grand Canyon are similar to those found on the surface throughout the Verde Valley and the Mogollon Rim country below the Colorado Plateau (Arizona Wilderness Coalition 2004). The Verde River developed into its current form about 2 to 2.5 million years ago.

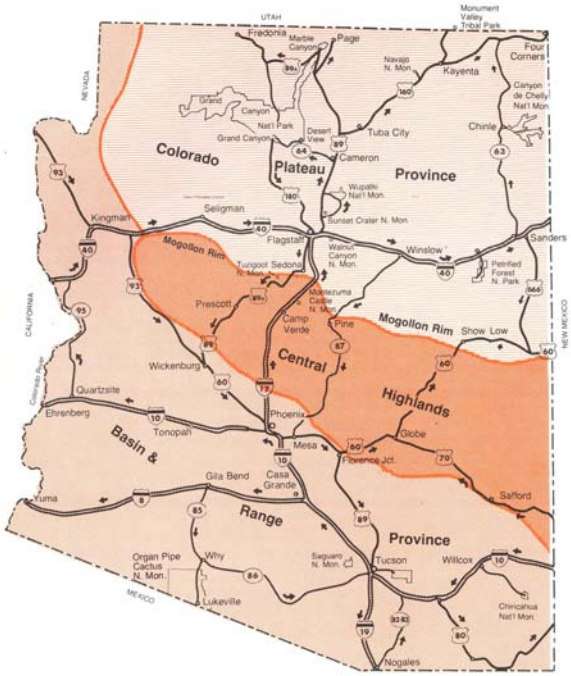


Figure 2. Physiography of Arizona. (Chronic 1983)

In the upper Verde watershed the basement rocks are mostly Paleozoic limestone. Limestone and sandstone layers and granitic basement rocks are exposed in the walls or floodplains of the Verde River canyon and can be easily identified (see photos 010_9; P1010188; P1010089). The Big Chino Fault lies 26 miles northwest of Paulden, just north of the study area. This fault is a central component in the formation of the Verde River canyon and is composed of late Cenozoic sedimentary and volcanic deposits (Wirt and Hjalmarson 2000). Because of possible regional uplift during the late Miocene (5-10 million years ago)

downcutting by the Verde River has occurred. This downcutting was slowed about 8 to 2 million years ago because of volcanic activity and faulting when the Verde Valley was naturally dammed with sediments. The downcutting began again about 2.5 million years ago when the natural basaltic dam was broken. This long-term downcutting has formed terrace deposits that can be mapped historically. The terraces are thin layers that have been deposited on carved out rock types of the region that could also have formed during periods when the river eroded laterally and created a broader floodplain composed of alluvial deposits of fine sands and coarse gravel bars (Pearthree 1996). The study area is distinguished by Martin limestone, usually layered on top of the Tapeats sandstone. In places where the river has eroded these two layers, the granitic basement rock, the layer beneath the Tapeats sandstone, can be seen. (Photos P1010089; P1010187; P2190094).

The Verde River flows year-round and is supplied by groundwater discharge, ephemeral tributaries, and perennial tributaries. The regional aquifers that feed the river are the Big and Little Chino Aquifers, both of which are in danger of being pumped by the surrounding cities for human water consumption. Currently, the base flow of the Verde is fairly steady annually but changes seasonally, with a maximum flow in January and February and a minimum flow in July and August. It is important to note that changes in the base flow of the Verde may represent changes in the Big and Little Chino Aquifers (Lopez and Springer, no date)

The base flow of the upper Verde River has shown increasing flow trends over the past thirty years. Neary and Rinne (2001) found that the mean daily minimum flow of the upper Verde River at the Paulden gage increased over the three decades prior to 1997. Mean daily minimums ranged from 15 to 25 ft^3/sec at the Paulden gage and from 60 to 82 ft^3/sec at the Clarkdale gaging station. The USGS water flow gage 9503700 near Paulden showed that between 1964 and 1994 the maximum monthly discharge was 1,440 ft^3/second in February and the minimum monthly discharge was 27 ft^3/second in June. The mean annual discharge for the twenty-year span was 46 ft^3/second (USGS 2004).

Although the base flow has increased over this short period of time, it is not yet protected from diversion of consumptive extraction. Threats to the base flow are apparent with the

recent proposal by the City of Prescott to pump up to 17 million m^3 (45 billion gallons) of groundwater from the Big Chino Basin could adversely affect the base flow of the upper Verde (Neary and Rinne 2001). From April 1, 1964 through July 15, 1964 groundwater pumping from the Big Chino Basin of 6,500 gallons per minute decreased the flow at the Paulden gage by 25 percent (Neary and Rinne 2001). The amount pumped in 1964 is only two-thirds of the proposed amount today. Base flow is obviously important for the existence of endangered riparian habitat and the wildlife that depend upon this habitat.

E. Ecology and Vegetative Characteristics

The upper Verde River provides a diverse vegetative ecosystem that is supported by a significant perennial base flow. Riparian areas in Arizona represent some of the most significant habitat in the Southwest. Arizona and New Mexico's landscapes are composed of less than 2% of riparian ecosystems, but are the most biodiverse areas in the Southwest and 90% of these have been degraded from grazing, logging, mining and impacts from urban development (USFWS 1995). Riparian areas provide the harsh desert climate and arid environment with water, cover, shade, and travel corridors for hundreds of species.

The upper Verde's surface water has enabled an ecologically important corridor to exist. This corridor is currently functioning in relatively pristine, intact conditions. These waters create an oasis in the arid lands of central Arizona and support a high percentage of species richness and biodiversity. In 1991 and 1992 the Verde River was listed as the thirteenth most threatened river in the U.S. and in 1987 it was the fifth most endangered river in the U.S. (American Rivers 2004). In 1980 the Forest Service found that twenty percent of the river corridor from the National Forest Boundary near the old Morgan Ranch to Tangle Creek Junction is capable of having quality productive vegetation (USDA 1980).

The riparian corridor of the upper Verde River is dominated by mixed-age classes of a diverse array of deciduous tree species, including Freemont cottonwood (*Populus fremontii*), velvet ash (*Fraxinus velutina*), netleaf hackberry (*Celtis reticulata*), burrobrush (*Ambrosia spp.*), desert willow (*Chilopsis linearis*), coyote willow (*Salix exigua*), and velvet mesquite (*Prosopis velutina*). These species create a dispersed canopy allowing enough sunlight to reach the ground for a mixed understory to develop. These species provide wildlife such as beaver,

(*Castor canadensis*), and elk, (*Cervus elaphus*), with abundant and diverse habitat, forage, and breeding area. See Figure 3 for a picture illustrating the vegetative zones of the upper Verde River.

Figure 2. Vegetative community zones from riparian to upland at Bear Siding.

(Direction SE, photo P2190084)

The understory species in the riparian corridor are mostly wetland species such as willow species (*Baccharis sp.)*. Some unidentified burrs are present, and in places overtake the riverbanks. Russian thistle, (*Salsola tragus),* is common in places and desert cliffrose, (*Cowania mexicana*), is abundant throughout the segment. The groundcover species in the riparian area consist mostly of unidentified grasses and some small flowering plants. The aquatic vegetation is consistently made up of watercress, green, hair-like algae, and marsh species, creating yet another diverse microhabitat for many aquatic fauna and bird species. The predominant aquatic species are cattails (*Typha latifolia*), reeds (*Phragmites spp.*), sedges (*Carex spp.*), watercress (*Rorippa nasturum-aquaticum*), and a species of green algae that is common throughout the segment.

Southwestern riparian areas are some of the most productive ecosystems that contribute to the health and species diversity of the land. These ecosystems act as nutrient sinks for runoff from uplands. Much energy is exchanged between upland terrestrial ecosystems, riparian, and aquatic ecosystems through seasonal flooding and runoff into the aquatic environment, resulting in a highly productive ecosystem (Mitsch and Gosselink 1993). Flooding provides adequate water supply to support vegetation, nutrients are supplied and varied soil chemistry occurs because of the nutrients coming into the riparian environment from upland areas, and higher water flows result in oxygenating root systems and flushing waste products

(Mitsch and Gosselink 1993). The Forest Service currently has management guidelines in place to protect this productivity from degradation. Directive 2522.02 in the Forest Service Manual requires Forest Service employees to restore and protect degraded watershed conditions through stabilizing soil conditions, improve long-term soil productivity, and limit erosion. Through protection of these watershed conditions, the upper Verde River can remain one of the most productive river systems that supports high density and diversity of species.

The river corridor has maintained its natural character throughout time despite the historic grazing that has occurred on the upper Verde River. There are small sections of the upper Verde that are closed to grazing, but because the fencing surrounding a closure to protect the watershed and wildlife has been breached on the Prescott National Forest boundary at FR 638, and other closures are ineffective, the upper Verde River is still grazed by cattle (see Figure 4). Although grazing has occurred along the river for almost a century, the riparian habitat has persisted and the vegetation is predominantly composed of native species such as cottonwood (*Populus spp.*), seep willow (*Baccharis salicifolia*), cattails (*Typha spp.*), reeds (*Phragmites spp.*), sedges (*Carex spp.*), and watercress (*Rorippa nasturtium-aquaticum*).

The surrounding vegetative community beyond the riparian corridor consists of pinyon-juniper woodlands, mixed with a shrub understory and grassland groundcover. Pinyon pine (*Pinus edulis*), Utah juniper (*Juniperus osteosperma*), and Oneseed juniper (*Juniperus monosperma*) are the primary components of this woodland. The shrubby species are mesquite (*Prosopis velutina*), catclaw acacia (*Acacia greggii*), scrub oak (*Quercus turbinella*), prickly pear (*Opuntia sp.*), and creosote (*Larrea tridentata*). The dominant grasses include dropseed (*Sporobolus heterolepis)*, three-awn species (*Aristida spp)*, galleta, blue grama (*Bouteloua gracilis*), and sideoats grama (*Bouteloua curtipendula*) (USDA 1980).

The upper Verde River is an important corridor link in a system of riparian corridors in central Arizona used for mammal migration. Riparian ecosystems are the most rare and most threatened community types in the Southwest and must be preserved for the best interest of humans as well as other biota (USFWS 1995). The flow of the upper Verde is less than that of its downstream channel and still it is an important segment for a diverse number of flora

and fauna. Vegetation here is dependent upon a perennial, unpolluted water flow, which in turn supports a multitude of wildlife species.

A common invasive species is Tamarisk (*Tamarix ramosissima*). These trees are very successful in the desert southwest because they can tolerate drought more than the native species they tend to occur with, such as Fremont cottonwood (*Populus* fremontii), coyote willow (*Salix exigua*), and Goodding's willow (*Salix gooddinggii*). Tamarisk also reproduces incredibly fast and depends on wind and flood to disperse seeds (Warren and Turner 1975, Stevens and Waring 1985, and Stevens, in press, as referenced in Stevens, no date). Because of the free-flowing character upstream, Tamarisk here has not become dominant (Moser and Crisp, no date).

F. Wildlife

The upper Verde River provides habitat to innumerable wildlife species in the riparian environment and the transition zone between the aquatic and terrestrial habitats. It provides habitat for wildlife migrating through the river corridor or for wildlife that seasonally visit the river for mating, nesting, foraging, or caring for young. Some of these species, such as the Bald eagle (*Haliaeetus leucocephalus)*, observed on the upper Verde multiple times in the spring 2004, are of special concern and require specific management and protection by the managing agency under the Endangered Species Act.

The upper Verde River provides exceptional opportunities for wildlife-viewing.
Wildlife that can be commonly seen either on the drive through the valley or in the riparian corridor range from the American pronghorn (*Antilocapra americana*), to birds such as Clapper rails, robins (*Turdus sp.*), mallards (*Anas platyrhynchos*), mammals such as coyotes (*Canis latrans*), and evidence of river otter (*Lontra Canadensis*), beaver (*Castor canadensis*), mountain lion (*Felis concolor*), and elk (*Cervus elaphus*).

The beaver is an important part of this riparian habitat because it creates diversity in the flow regime of the river, allowing for more diverse aquatic habitat and therefore permits a higher species richness throughout the whole riparian corridor (Meffe and Carroll et al. 1997). Their dams help reduce streambank erosion, counteracting the impacts f cattle grazing on the river

corridor and stability. The ponds formed create habitat for many lifeforms such as insects, fishes, waterfowl, and mammals (National Audubon Society 1996). Evidence of beavers inhabiting the upper Verde River within the past year has been documented in photos DSCF0024 and DSCF0025.

There are federally listed as threatened or endangered species that inhabit the river either seasonally or year-round (see Table 1). Bald eagles are federally listed as threatened and occur within the Verde River year-round. Bald eagles are threatened by the long-term loss habitat quality along the Verde River as mature cottonwood trees become less abundant. Within the downstream Verde WSR, recreational-related disturbance has the highest potential to affect reproduction and fledging success (Prescott National Forest 2002).

The Mexican spotted owl (*Strix occidentalis lucida*), also federally listed as threatened, is connected with conifer stands near the Mogollon Rim, and nests in rocky canyons like those found in the Verde River Canyon. It winters in lowland riparian areas and may use these areas as travelways between nesting sites (Prescott National Forest 2002). Although the habitat quality is exceptional here, there are no known nesting sites on the upper Verde River for the Mexican spotted owl. The Prescott National Forest, (2002), has explained that management implications for the species restrict grazing because of potential removal of habitat for the prey species of the Mexican spotted owl and an increases in recreational use and the development of campgrounds can also adversely affect the owl.

The Southwestern willow flycatcher (*Empidonax traillii extimus*) is federally endangered and may possibly occur on the upper Verde River. Current estimates show that only 300 - 500 nesting pairs remain within the southwestern United States. Habitat occupied by breeding pairs of this species occurs above and below the Verde WSR in the Verde Valley (Prescott National Forest 2002).

The Southwestern river otter (*Lontra canadensis sonora*) is a federal species of concern and is an historic inhabitant of the Verde River watershed. Otters feed on fish, amphibians, turtles, crayfish, and other aquatic animals. In 1981 and 1982 the Arizona Game and Fish (AZGF) Department introduced river otters from Louisiana into Fossil Creek and the Verde River

near the Fossil Creek and East Verde confluences. This species may have interbred with any southwestern otters that remained in the river (Prescott National Forest 2002). Because there have been sightings of this species in the upper Verde River within the past two years, it seems that this species could have migrated into the upper Verde River to expand its habitat. According to University of New Mexico Research Associate Professor Paul Pochela, "The Southwestern river otter is one of the most endangered mammals in North America, even more so that the Mexican gray wolf. There is no captive population and no one has identified an existing population in the wild". He also stated that, "Otters are indicators of good water quality for humans. They are also a great model for the health of the aquatic environment" (University of New Mexico 2004).

Table 1 shows special status species of the Verde Watershed. It contains federally listed species and some sensitive species and wildlife of special concern for USFS, BLM, NPS and species of concern for the Arizona Game and Fish Department.

Table 1: Arizona Game and Fish Department Heritage Data Management System, April 5, 2004
Special Status Species within the Upper Verde Buffer Area

Scientific Name	Common Name	ESA	BLM	USFS	WSCA	NPL
Gila robusta	Roundtail chub	SC		S	WSC	
Meda fulgida	Spikedace	LT		S	WSC	
Rhinichthys osculus	Speckled dace	SC	S			
Aquila chrysaetos	Golden eagle					
Buteogallus anthracinus	Common black-hawk			S	WSC	
Coccyzus americanus occidentalis	Western yellow-billed Cuckoo	C		S	WSC	
Haliaeetus leucocephalus	Bald eagle	LT		S	WSC	
Bat colony						
Myotis thysanodes	Fringed myotis	SC	S			
Thamnophis rufipunctatus	Narrow-headed gartersnake	SC		S	WSC	
Bufo microscaphus microscaphus	Arizona toad	SC		S		
Eriogonum ripleyi	Ripley wild-buckwheat	SC		S		SR
Salvia dorrii ssp. mearnsii	Verde Valley sage	SC		S		SR

*Critical Habitats for the spikedace and loach minnow (*Tiaroga cobitis*) in the project area

Continuation of Table 1: AZ Game and Fish Special Status Species Definitions

Federal Status:

1. *ESA* Endangered Species Act (1973 as amended) USDI, USFWS

Listed

LT Listed Threatened: imminent jeopardy of becoming Endangered.

Candidate (Notice of Review: 1999)

C Candidate. Species for which USFWS has sufficient information on biological vulnerability and threats to support proposals to list as Endangered or Threatened under ESA.

SC Species of Concern. describes the entire realm of taxa whose conservation status may be of concern to the US Fish and Wildlife Service, but neither term has official status

2. *USFS* US Forest Service USDA, USFS

Sensitive: those taxa occurring on National Forests in Arizona which are considered sensitive by the Regional Forester.

3. *BLM* US Bureau of Land Management (2000 Animals, 2000 Plants)
USDI, BLM, Arizona State Office

S Sensitive: those taxa occurring on BLM Field Office Lands in Arizona which are considered sensitive by the Arizona State Office.

State Status:

1. *NPL* Arizona Native Plant Law (1999), AZ Department of Agriculture

SR Salvage Restricted: collection only with permit.

2. *WSCA* Wildlife of Special Concern in Arizona AZGF

WSC Wildlife of Special Concern in Arizona. Species whose occurrence in Arizona is or may be in jeopardy, or with known or perceived threats or population declines, as described by the Arizona Game and Fish Department's listing of Wildlife of Special Concern in Arizona (WSCA, in prep). Species indicated on printouts as WSC are currently the same as those in **Threatened Native Wildlife in Arizona** (1988).

The following wildlife list is compiled from the AZGF website, the AZGF Heritage Data Management System special status species listing, field documentation provided by Sue Schuhardt at the Prescott National Forest Chino Valley Ranger District, and personal field documentation. Species with "(?)" next to their common names may possibly be found in the upper Verde study area, but have not been confirmed.

Birds of the upper Verde River	
Common Name	**Scientific Name**
Family Ardeidae	
Great Blue Heron	*Ardea herodias*
Green Heron	*Butorides virescens*
Family Anatidae	
Mallard Duck	*Anas platyrhynchos*
Bufflehead	*Bucephala albeola*
Common Merganser	*Mergus merganser*
Family Accipitridae	
Bald Eagle	*Haliaeetus leucocephalus*
Golden Eagle	*Aquila chrysaetos*
Coopers Hawk	*Accipiter cooperii*
Northern Harrier	*Circus cyaneus*
Osprey	*Pandion haliaetus*
Common Black-hawk	*Buteogallus anthracinus*
Ferruginous Hawk	*Buteo regalis*
Red-tailed Hawk	*Buteo jamaicensis*
Swainson's Hawk	*Buteo swainsoni*
Zone-tailed Hawk	*Buteo albonotatus*
Family Cathartidae	
Turkey Vulture	*Cathartes aura*
Family Falconidae	
American Kestrel	*Falco sprverius*
American Peregrine Falcon	*Falco peregrinus anatum*
Family Odontophoridae	
Gambel's Quail	*Callipepla gambelii*
Family Rallidae	
Clapper Rail	*Rallus longirostris*
Virginia Rail	*Rallus limicola*
Family Scolopacidae	
Kildeer	*Charadrius vociferus*

Least Sandpiper	*Calidris minutilla*
Family Columbidae	
Mourning Dove	*Zenaida macroura*
White-winged Dove	*Zenaida asiatica*
Band-tailed Pigeon	*Columba fasciata*
Family Cuculidae	
Western yellow-billed Cuckoo	*Coccyzus americanus occidentalis*
Family Psittacidae	
Roadrunner	*Geococcyx californianus*
Family Strigidae	
Great Horned Owl	*Bubo virginianus*
Mexican Spotted Owl (maybe)	*Strix occidentalis lucida*
Common Screech Owl	*Otus asio*
Family Caprimulgidae	
Common Nighthawk	*Chordeiles minor*
Lesser Nighthawk	*Chordeiles minor*
Family Apodidae	
White-throated Swift	*Aeronautes saxatilis*
Family Trochilidae	
Black-chinned Hummingbird	*Archilochus alexandri*
Broad-tailed Hummingbird	*Selasphorus platycercus*
Rufous Humminingbird	*Selasphorus rufus*
Family Alcedinidae	
Belted Kingfisher	*Megaceryle alcyon*
Family Picidae	
Acorn Woodpecker	*Melanerpes formicivorus*
GilaWoodpecker	*Centurusuropygialis*
Yellow-bellied Sapsucker	*Sphyrapicus varius*
Red-shafted Flicker	*Colaptes auratus*
Ladder-backed Woodpecker	*Dendrocopus scalaris*
Family Tyrannidae	
Western Wood Pewee	*Contopus sordidulus*
Hammond's Flycatcher	*Empidonax hammondii*
Southwestern Willow Flycatcher	*Empidonax traillii extimus*
Gray Flycatcher	*Empidonax wrightii*
Black Phoebe	*Sayornis nigricans*
Vermillion Flycatcher	*Pyrocephalus rubinus*
Ash-throated Flycatcher	*Myiarchus cinerascens*

Brown-crested Flycatcher	*Myriarchus tyrannulus*
Cassion Kingbird	*Tyrannus vociferans*
Western Kingbird	*Tyrannus verticalis*
Family Laniidae	
Loggerhead Shrike	*Lanius ludovicianus*
Family Vireonidae	
Arizona Bell's Vireo	*Vireo belliiarizonae*
Plumbeous Vireo	*Vireo plumbeus*
Family Corvidae	
Scrub Jay	*Aphelocoma coerulescens*
Common Raven	*Corvus corax*
Family Alaudidae	
Horned Lark	*Eremophilia alpestris*
Family Hirundinidae	
Violet-green Swallow	*Tachycineta thalassina*
Northern Rough-winged Swallow	*Stelgidopteteryx serripennis*
Cliff Swallow	*Petrochelidon pyrrhonota*
Family Paridae	
Bridled Titmouse	*Parus wollwebri*
Family Remizidae	
Verdin	*Auriparus flaviceps*
Family Aegithalidae	
Bushtit	*Psaltriparus minimus*
Family Sittidae	
White-breasted Nuthatch	*Sitta carolinensis*
Family Troglodytidae	
Bewicks Wren	*Thryomanes bewickii*
House Wren	*Troglodityes aedon*
Canyon Wren	*Catherpes mexicanus*
Rock Wren	*Salpinctes obsoletus*
Family Slyviidae	
Blue-gray Gnatcatcher	*Polioptila caerula*
Family Turdidae	
Robin	*Turuds migratorius*
Family Regulidae	
Ruby-crowned Kinglet	*Regulus calendula*
Family Mimidae	
Mockingbird	*Mimus polyglottos*

Family Sturnidae	
Starling	*Sturnus vulgaris*
Family Ptilogonatidae	
Phainopepla	*Phainopepla nitens*
Family Parulidae	
Yellow Warbler	*Dendroica petechia*
Black-throated Gray Warbler	*Dendrioca nigrescens*
Yellow-rumped Warbler	*Dendroica coronata*
Lucy's Warbler	*Vermivora luciae*
Orange-crowned Warbler	*Vermivora celata*
Worm-eating Warbler	*Helmitheros vermivorus*
Common Yellowthroat	*Geothlypis trichas*
Yellow-breasted Chat	*Icteria virens*
Family Thraupidae	
Summer Tanager	*Piranga rubra*
Western Tanager	*Piranga ludoviciana*
Family Cardinalidae	
Northern Cardinal	*Cardinalis cardinalis*
Indigo Bunting	*Passerina cyanea*
Lazuli Bunting	*Passerina amoena*
Black-headed Grosbeak	*Pheuticus melanocephalus*
Rose-breasted Grosbeak	*Pheucticus ludovicianus*
Family Emberizidae	
Abert's Towhee	*Pipilo aberti*
Brown Towhee	*Pipilo fuscus*
Canyon Towhee	*Pipilo fuscus*
Rufous-sided Towhee	*Pipilo erythrophthalmus*
Chipping Sparrow	*Spizella passerina*
Lark Sparrow	*Chondestes grammacus*
Dark-eyed Junco	*Junco hyemalis*
White-crowned Sparrow	*Zonotrichia leucophrys*
Song Sparrow	*Melospiza melodia*
Lincoln's Sparrow	*Melospiza lincolnii*
Family Icteridae	
Meadowlark	*Sturnella neglecta*
Bronzed Cowbird	*Molothrus aeneus*
Brown-headed Cowbird	*Molothrus ater*
Red-winged Black Bird	*Agelaius phoeniceus*

Great-tailed Grackle	*Quiscalus mexicanus*
Hooded Oriole	*Icterus cucllatus*
Bullock's Oriole	*Icterus bullockii*
Northern Oriole	*Icterus sp.*
Family Fringillidae	
House Finch	*Carpodacus mexicanus*
American Goldfinch	*Spinus tristis*
Lesser Goldfinch	*Spinus psaltria*

Mammals of the upper Verde River	
Common Name	**Scientific Name**
American beaver	*Castor canadensis*
Arizona Myotis	*Myotis occultus*
Badger	*Taxidea taxus*
Big Brown Bat	*Eptesicus fuscus*
Black bear	*Ursus americanus*
Black-tailed jack rabbit	*Lepus californicus*
Bobcat	*Lynx rufus*
Brazilian free-tailed bat	*Tadarida brasiliensis*
California myotis	*Myotis californicus*
Cliff chipmunk	*Tamias dorsalis*
Coyote	*Canis latrans*
Deer mouse	*Peromyscus maniculatus*
Desert cottontail (?)	*Sylvilagus audubonii*
Desert shrew	*Notiosorex crawfordi*
Eastern cottontail	*Sylvilagus floridanus*
Elk	*Cervus elaphus*
Fringed Myotis	*Myotis thysanodes*
Gopher	*Thomomys*
Gray fox	*Urocyon cinereoargenteus*
Hog-nosed skunk	*Conepatus mesoleucus*
Javelina	*Pecari tajacu*
Long-legged myotis (?)	*Myotis volans*
Mexican Free-tailed Bat	*Tadarida brasiliensis*
Mexican Free-tailed Bat (likely)	*Tadarida brasiliensis*
Mountain lion	*Felis concolor*
Mule deer	*Odocoileus hemionus*
Muskrat (?)	*Ondatra zibethicus*
Northern grasshopper mouse (?)	*Onychomys leucogaster*

Pale Townsend's Big-eared Bat	*Corynorhinus townsendii pallescens*
Pallid bat	*Antrozous pallidus*
Pinon mouse	*Peromyscus truei*
Pocketed free-tailed bat (?)	*Nyctinomops femorosaccus*
Porcupine	*Erethizon dorsatum*
Raccoon	*Procyon lotor*
Ringtail	*Bassariscus astutus*
Rock pocket mouse	*Perognathus intermedius*
Rock squirrel	*Spermophilus variegatus*
Silky pocket mouse	*Perognathus flavus*
Small-footed myotis	*Myotis leibii*
Sonoran pronghorn	*Antilocapra americana sonoriensis*
Southwestern myotis (?)	*Myotis auriculus*
Southwestern river otter	*Lontra canadensis sonora*
Spotted bat (?)	*Euderma maculatum*
Spotted skunk	*Spilogale putorius*
Striped skunk	*Mephitis mephitis*
Wapiti (?)	*Cervus elaphus*
Western pipistrelle	*Pipistrellus hesperus*
Western Red Bat	*Lasiurus blossevillii*
White-footed mouse (?)	*Peromyscus leucopus*
White-throated woodrat	*Neotoma albigula*

Amphibians and Reptiles of the upper Verde River	
Common Name	**Scientific Name**
Arizona alligator lizard (?)	*Gerrhonotus kingii*
Arizona Toad	*Bufo microscaphus microscaphus*
Black-necked garter snake	*Thamnophis cyrtopsis*
Black-tailed rattlesnake	*Crotalus molossus*
Bullfrog	*Rana catesbeiana*
Canyon Treefrog	*Hyla arenicolor*
Canyon treefrog (?)	*Hyla arenicolor*
Collared lizard	*Crotaphytus collaris*
Common kingsnake	*Lampropeltis getulus*
Desert spiny lizard (?)	*Sceloporus magister*
Eastern fence lizard	*Sceloporus undulatus*
Gila spotted whiptail	*Cnemidophorus flagellicaudus*
Glossy snake	*Arizona elegans*
Ground snake	*Sonora semiannulata*
Lesser earless lizard	*Holbrookia maculata*
Little striped whiptail (?)	*Cnemidophorus inornatus*
Long-nosed leopard lizard	*Gambelia wislizenii*
Mexican Garter Snake	*Thamnophis eques megalops*
Mexican spadefoot	*Scaphiopus multiplicatus*
Mohave rattlesnake (?)	*Crotalus scutulatus*
Narrow-headed Garter snake	*Thamnophis rufipunctatus*
Night snake	*Hypsiglena torquata*
Northern Leopard Frog (?)	*Rana pipiens*
Plateau striped whiptail (?)	*Cnemidophorus velox*
Ring-necked snake	*Diadophis punctatus*
Short-horned lizard	*Phrynosoma douglassii*
Side-splotched lizard	*Uta stansburiana*
Sonoran mountain kingsnake (?)	*Lampropeltis pyromelana*

Southwestern black-head snake	*Tantilla hobartsmithi*
Striped whipsnake (?)	*Masticophis taeniatus*
Tree lizard	*Urosaurus ornatus*
Western patch-nosed snake	*Salvadora hexalepis*
Western rattlesnake (?)	*Crotalus viridis*
Western terrestrial garter snake (?)	*Thamnophis elegans*
Western whiptail	*Cnemidophorus tigris*
Yavapai leopard frog	*Rana yavapaiensis*

G. Fish

E.O. Wilson, in his book, The Diversity of Life (1999), emphasizes the importance of protecting fish and wildlife habitat and the existence of native species:

> In the United States, Canada, and Mexico, 1,033 species of fishes are known to have lived entirely in fresh water within recent historical times. Of these, 27 or 3 percent have become extinct within the past hundred years, and another 256 or 26 percent are liable to extinction…The changes that forced them into decline are: destruction of physical habitat, 73% of species; displacement by introduced species, 68% of species; alteration of habitat by chemical pollutants, 38% of species; hybridization with other species and subspecies, 38% of species; overharvesting, 15% of species. (p 254)

The upper Verde River fishes are some of the many species that have been affected by these changes, especially from introduced species. The upper Verde used to be home to native fishes such as the spikedace (*Meda fulgida)*, the speckled dace (*Rhinichthys osculus)*, and longfin dace (*Agosia chrysogaster*), which are all threatened species and have inhabited the upper Verde River within the past ten years (Neary and Rinne 1997). As shown in Table 2, the percent of native fishes has been decreasing over the past ten years in the upper Verde River. However, the Verde River is still a significant source of diverse river conditions for the existence of loach minnow. The spikedace and loach minnow are two species that have been federally listed as threatened fish species since 1986. Critical habitat for these species was designated on sections of the upper Verde in April of 2000 (U.S. Fish and Wildlife Service 2003). These species of fishes are historically significant to the upper Verde area. The U.S. Fish and Wildlife Service, in its Final Designation of Critical Habitat Report (2000) explain that:

> Critical habitat is defined in the section 3(5)(A) of the Endangered Species Act of 1973 as – (i) the specific areas within the geographic area occupied by a species, at the time it is listed in accordance with the Act, on which are found those physical or biological features (I) essential to the conservation of the species and (II) that may require special management considerations or protection; and (ii) specific areas outside the geographic area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

The upper Verde is especially significant currently because of the historical range of these two species. Spikedace have been present throughout Arizona on additional rivers such as the Gila, Salt, and San Pedro since the 1880s. However, the upper Verde River has not shown viable populations since 1994 (Albert Sillas, personal communication 2004). The critical habitat that is necessary for the survival of spikedace populations consists of zones where rapid flow meets slow flow, sand and gravel bars where spawning can occur, a natural flood regime, water temperatures ranging from 35-85° F depending on time of day and season, and many other constituents that are all interdependent (U.S. Fish and Wildlife Service 2003).

Table 2. Fish community composition at seven sampling sites in the upper Verde River, 1994-1999. (Rinne 1999)

	1994	1995	1996	1997	1998	1999
Native Spp.						
Longfin dace	1319	12	282	21	13	2
Desert sucker	2644	328	471	231	126	167
Sonora sucker	1810	322	654	240	125	118
Roundtail chub	776	341	259	50	64	25
Spikedace	428	72	140	0	0	0
Speckled dace	171	25	68	1	12	2
Nonnative Spp.						
Yellow bullhead	31	29	9	40	33	15
Common carp	23	6	13	19	9	4
Red shiner	1473	97	275	2238	1047	545
Channel catfish	5	2	0	1	0	0
Mosquito fish	0	0	0	3	6	59
Flathead catfish	0	1	1	1	1	0
Green sunfish	4	29	6	8	21	49
Smallmouth bass	14	10	32	35	66	104
Flathead minnow	7	0	0	0	0	0
Total fishes	*8750*	*1274*	*2210*	*2288*	*1523*	*1090*
Percent native	*82*	*86*	*85*	*19*	*2*	*29*

Neary and Rinne (1997) found that longfin dace and speckled dace are most abundant in the upper reaches of the Verde River. They found that with increased in human impacts, there is a decrease in native fish species abundance and an increase in exotic species abundance. Because the upper Verde River is so wild, it contains higher populations of native species than do the lower reaches toward the towns of Clarkdale and Cottonwood. The spikedace is found in only four river systems of Arizona and New Mexico, and is most likely extirpated from this study area. In 1997 no individuals were found following a six-year census of the species (Rinne 1999). The historical range of loach minnow also includes portions of the upper Verde but is no longer present in this area (U.S. Fish and Wildlife Service 2003). There are remnant populations in the neighboring Gila River, which are fairly isolated. The Verde River, despite the absence of populations of loach minnow, is still critical habitat for this species and maintains the qualities necessary for the existence of either spikedace or loach minnow (U.S. Fish and Wildlife Service 2003). According to the U.S. Fish and Wildlife Service (2000):

> The relatively stable hydrologic and thermal regimes of the Verde River complex (including the Verde River upstream of Fossil Creek and sections from the confluences of the Verde-Fossil Creek, Verde-West Clear Creek, Verde-Dry/Wet Beaver Creek) are unique compared to other river systems for the arid southwestern United States,

and show a significant possibility for successful reintroduction efforts of both species on the upper Verde River as well as a regionally significant characteristic.

Furthermore, because the establishment of secure, self-sustaining populations is necessary for species conservation, it has been stated that the areas where these species have been extirpated or depleted are essential to their recovery and conservation (U.S. Fish and Wildlife Service 2000). Protection and restoration of native species is essential to maintaining the wild quality of the upper Verde River. See Table 3 for Native, Extirpated, and Nonnative species in the Verde Watershed (U.S. Fish and Wildlife Service 1998).

Table 3. Native, extirpated, reintroduced, and nonnative fishes of the Verde Watershed (USFWS 1998)

Natives		**Extirpated Natives**	
Spikedace (T)	*Meda filgida*	Gila Trout (E)	*Onochrynchus gilae*
Gila Chub	*Gila intermedia*	Bonytail Chub (E)	*Gila elegans*
Roundtail Chub (C)	*Gila robusta*	Woundfin (E)	Plagopterus argentissumus
Longfin dace (C)	*Agosia chrysogaster*	Loach minnow (T)	*Tiaroga cobitis*
Speckled dace (C)	*Rhininchthys osculus*	Desert pupfish (E)	*Cyprinodan macularius*
Sonora sucker (C)	*Catostomus insignis*	Flannelmouth sucker	*Catostomus latipinnis*
Desert Sucker (C)	*Catostomus clarki*		

Extirpated Natives That Have Been Reintroduced	
Colorado squawfish (R,D)	*Ptychocheilus lucius*
Razorback sucker (E,CH)	*Xyrauchen texanus*
Gila topminnow (E)	*Poeciliopis occidentalis*

Nonnative Species			
Threadfin shad	*Dorosoma petenense*	Yellow bullhead	*Ameiurus natalis*
Rainbow trout	*Oncorhynchus mykiss*	Mosquitofish	*Gambusia affinis*
Cutthroat trout	*Oncorhynchus clarki*	Smallmouth bass	*Micropterus doloe*
Brown trout	*Salmo trutta*	Largemouth bass	*Micropterus salmonides*
Northern pike	*Esox lucius*	Spotted bass	*Micropterus punctulatus*
Carp	*Cyprinus carpio*	Green sunfish	*Lepomis cyanellus*
Goldfish	*Carassius auratus*	Bluegill	*Lepomis macrochirus*
Red shiner	*Cyprinella lutrensis*	White crappie	*Pomoxis annularis*
Golden Shiner	*Notemigonus chrysoleucus*	Black crappie	*Pomoxis nigromaculatus*
Fathead minnow	*Pimephales promelas*	Walleye	*Stizostedion nigromaculatus*
Flathead catfish	*Pylodictis olivaris*	Yellow perch	*Perca flavescens*
Channel catfish	*Ictalurus puntatus*	Tilapia	*Tilapia mossambica*
Black bullhead	*Ameiurus melas*		

E- endangered T- threatened
C- species of concern D- delisted in Verde Watershed
CH- critical habitat in Verde Watershed
R- reintroduced as experimental, nonessential population

H. Cultural

The upper Verde River had much to offer prehistoric peoples traveling through central Highlands of Arizona. The water offered a chance to sustain life and the high canyon walls and diverse topography provided ultimate protection from other peoples in the area. The following information was found clearly presented in Tellman, Yarde and Wallace (1997). The first inhabitants of the Verde River between 2,000 – 10,000 years ago were nomadic. After these people came the Sinagua, from about 700 – 1425 A.D. The Sinagua were believed to have traded with the Ancestral Pueblan to the north and used dry farming techniques on the mesas and grew corn on the floodplains. These people are responsible for the construction of Tuzigoot, Montezuma's Castle, and other pueblo archaeological sites in the area. The Verde River sustained the Pueblo I to Pueblo IV people, Prescott Culture, and the Sinagua people (Lopez and Springer, no date; Rice and LeBlanc 2001). By the date 1425 A.D., it is assumed that something like drought, war, overpopulation, depletion of resources, or loss of trade networks happened and the Verde Valley was abandoned. The people moved north to find a better life there (Tellman, Yarde, and Wallace 1997).

The prehistoric people of the upper Verde were agricuilturalists and inhabited almost every high hilltop. Because of the limestone geology of the region, cliff-dwellings and cave habitations predominate. Extensive archaeological sites have been found on terraces and riverbanks where agriculture was a possibility; see Figure 4 (Fewkes 1913). Sites of cliff-dwellings and stone structures called "corrals" by ranchmen occur in this section of he river. There is a site that sits atop a 300-400' volcanic cliff as a large fort. The site is of aboriginal creation and is said to give the appearance of a castle "towering above and commanding a view of the stream" (Fewkes 1913). Prehistoric artifacts like potsherds and arrowheads can be found around these sites, which suggests that the prehistoric people were not only passing

Figure 4. Overgrown archaeological site on mesa above study area.

(Direction NW, photo P1010007)

through, but inhabited the area for periods of time. See photos P1010010; P1010015; and P1010144.

Preserving the many archaeological sites will provide future generations the opportunity to gain insight into prehistoric cultures and learn to appreciate human history through direct experience of a place of prehistoric habitation. Being an observer of these sites is an exquisite opportunity that is not common in the U.S. As I hiked this part of the river in my inventory, I felt a sense of place that allowed me to imagine what the river was like when these people were here. Was the vegetation different? Was there more water? Would it be possible to farm here today? What kind of relationship did the people at this site have with those at a site downstream only a few miles? The questions and wonder I experienced connected me to the area in a way not many places have in the past. The value of this type of experience where one is allowed to connect to their prehistoric ancestry is one that should be protected.

I. Historic

After the Sinagua people abandoned the Verde Valley in 1425 A.D., the Apache and Yavapai peoples moved into the area. When miners arrived in central Arizona in the 1860's, they observed the Native Americans practicing agriculture, hunting, gathering, and some ditch irrigation. The Spanish were said to have moved through the Valley without much interest (Tellman, Yarde, and Wallace 1997). The largest impact the Spaniards had on the natives was the introduction of horses. Americans entered the Verde Valley for the first time in the 1850's and trapped beaver in the Verde River, but didn't explore it much. In the 1860's miners entered the valley looking for copper, silver and gold. The Verde River was likely a place of battle between the Yavapai, Apache, and the U.S. Army in their efforts to claim the southwest as their own and protect the miners from the natives (Prescott National Forest 2002; Tellman, Yarde and Wallace 1997). The Army was successful in resettling the Yavapai and Apache tribes onto reservation lands.

In the 1860's Fort Whipple and Fort McDowell were established to protect settlers and miners in the Verde and Salt River Valleys. This allowed for mining prospectors to claim land, and in the late 1880's a man named Clark decided to buy a mine that had revealed gold.

Clarkdale was established and populated. This mine was one of the most profitable in the U.S., but also one of the most impactful on the surrounding landscape. The open mines devastated the air quality and vegetation in the Verde Valley. Agriculture and grazing developed along the river and also had impacts on the water quality and ecology of the Verde Valley (Tellman, Yarde and Wallace 1997).

The Verde River played an important part in the survival of many prehistoric cultures and later enabled the first modern settlers to graze cattle, mine, and farm the southwest. Without riparian areas such as the Verde River, the southwest would still be mostly uninhabited. Within the upper Verde River there are a few historic corrals dotting the river corridor and historic mining camps, like the one in Figure 5, to remind us of the history of the southwest's settlement.

Figure 5. Historic mining site.
(Direction NE, photo P2250034)

Michael King has written a passage on the Verde River's history, emphasizing the importance of protecting this value in order to learn from it:

> More than just the landscape, though, the heritage resources of the Verde River provide evidence of what we are only now beginning to recognize as a remarkable history of cultural development. Initially one of several corridors of travel, trade, and migration between northern and southern Arizona, the river eventually became the scene of historical and cultural events that transcended mere topography. Before it was abandoned prehistorically (undoubtedly quite a story in itself), the river ceased to function as a long distance trade and travel route. Instead, it was incorporated into the geographic territories of cultural groups that spanned it from east to west and whose boundaries crossed it north to south. The information contained in and represented by the archaeological sites present here can make an outstanding contribution to the reconstruction of prehistoric lifeways in Arizona. (Prescott National Forest 2002)

These archaeological sites, both prehistoric and historic, can be protected from unnatural degradation from ORVs and cattle grazing if the river corridor can be protected as Wild and Scenic. This protection will stress the value Americans place on learning from the historical occurrences of the past and from confrontations with other cultures.

J. Recreation

The unique cultural, historic, wildlife, geological, and scenic qualities have given reason for the Verde River to become a widely appreciated escape from the desert heat. It has become a place to take the family fishing, and a place to camp, kayak, canoe, and view wildlife such as Bald eagles and other bird species. Because of its hidden location it is a place where local people are able to access the riparian corridor without encountering many other recreationists. The natural landscape is filled with vegetation that is uncommonly lush in Arizona and is surrounded by the arid pinyon juniper environment. This contrast of ecosystem and temperature regime almost forces one to appreciate the riparian environment. Many people also visit the Verde River to bird watch, day-hike, backpack, take photographs, and explore the wild nature of the Verde River hoping to have a wilderness experience (see Figure 6). Because of the remote nature of the upper Verde, a wilderness experience is not hard to attain.

Figure 6. People recreating in the study area. (Photo 027_26)

Another form of recreation is one that is more detrimental to the health of the riparian ecosystem, off road travel. Off Road Vehicles (ORVs) often illegally use closed routes to access and cross the river, like the one in Figure 7. This misuse of the river corridor causes more damage to the vegetation and wildlife in the river corridor than any other activity on the upper Verde River. The closed Forest Service Routes do not effectively protect the river corridor from ORV destruction of vegetation, wildlife habitat, and riverbank stability. The increase in these extended illegal routes has negative impacts on wildlife such as Bald eagles. Havlick (2002) explains that bald eagle reproduction has been known to diminish with proximity to roads. He continues to show adverse effects o roads by stating that "illegal,

user-created roads lack the planning, grading and maintenance of many constructed routes and are particularly susceptible to erosion from use" (p 46). Havlick mentions that higher road densities usually correspond to diminished water quality and damaged fisheries. Not only do ORVs commonly create new routes in the sparsely-vegetated pinyon-juniper scrubland, but they also create the majority of litter within the river corridor. Effective management of this type of recreation will be necessary to protect this endangered riparian ecosystem. As Wallace Stegner said in "Coda: Wilderness Letter":

Figure 7. Illegal route crossing river, damaging habitat beyond end of FR 638.

(Direction N, photo P2130016)

> Something will have gone out of us as a people is we ever let the remaining wilderness be destroyed; if we permit the last virgin forests to be turned into comic books and plastic cigarette cases; if we drive the few remaining members of the wild species into zoos or extinction; if we pollute the last clean air and dirty the last clean streams and push our paved roads through the last of the silence, so that never again will Americans be free in their own country from the noise, the exhausts, the stinks of human and automotive waste. (As referenced in Havlick 2002, p xiii)

K. Scenic

The from the rim of the upper Verde River canyon, one can see the Sycamore Canyon Wilderness to the northwest, the San Fransisco Peaks to the northeast, and Mingus Mountain to the east, and the Verde Valley to the south. In every direction, all one can see is undeveloped land! This is one of the last undeveloped riparian areas in Arizona - we must preserve it in this form. The beauty of the upper Verde can be seen in Figure 8. There is one 500KV power line that crosses the river section near the middle section of the upper Verde that can be seen from FR 164. Although it crosses the river, it does not have significant bearing on the scenic qualities of the riparian corridor. The area is so natural that one does not feel its presence crossing the river high above them. It does not physically impact the

river or its ½ mile corridor in any way, as the towers holding up the cable are outside the corridor.

The geology and vegetation of the Verde River enhance its scenic beauty and allow for a sense of isolation. A visitor may be aware of the unique vegetative community that serves as a good contrast to the vegetation of the surrounding deserts of the Central Highlands and the pine forests of the Colorado Plateau as these geographic provinces are very different from one another. The Verde River is a place where visitors commonly find rest from their routine lives and can take in the scenic beauty of the riparian corridor.

Figure 8. Scenic view of the study river.
(Direction SE, photo P1010085)

III. Basis for Eligibility Evaluation

To determine the eligibility of classifying the Upper Verde River as Wild, Scenic, or Recreational, the river must be free-flowing, defined in Section 16 of the Wild and Scenic Rivers Act of 1968:

> Applied to any river or section of a river, means existing or flowing in natural condition without impoundment, diversion, straightening, rip-rapping, or other modification of the waterway. The existence, however, of low dams, diversion works, and other minor structures at the time any river is proposed for inclusion in the national wild and scenic rivers system shall not automatically bar its consideration for such inclusion,

and must possess one or more regionally or nationally significant outstanding and remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar value.

A. Free-flowing Character

The upper Verde River is one of the last undammed perennial rivers in the Southwest. It is completely free-flowing. Protection of the river is necessary for the existence of this endangered riparian ecosystem.

B. Outstanding Remarkable Values

The framework and criteria used to evaluate the upper Verde River's resource values were taken from Wild and Scenic River Review in the State of Utah- Process and Criteria for Interagency Use (July 1996). Under the Utah criteria, a river segment can be evaluated based on eight resources: scenic, recreation, geologic, fish, wildlife, historic, cultural and ecological. The Utah WSR document states the resource values are ORVs if they are *rare, unique or exemplary* on a regional, national or global scale. Outstanding Remarkable Values are identified based on an analysis of the upper Verde River's resource values within the Central Arizona Highlands. The Central Mountains/Sonoran region encompasses two biologically rich and unique eco-regions. The Central Mountains encompasses almost the entire watershed of the Verde River. With the beautiful slot canyons of the Mogollon Rim to the north and the Sonoran Desert to the south, this region has it all. Phoenix and Tucson have over 4 million people and they are continuously growing outward. The upper Verde River, as the transition between the threatened Sonoran Desert and the highlands of the Mogollon rim, is one of the most important links between these two ecosystems as well as an endangered ecosystem on its own. This area is still unprotected from the pressures of off road vehicle use, water diversion, and consumptive water mining threats from the surrounding cities. The designation of the upper Verde River as Wild, Scenic, or Recreational will surely help protect its unique resources and regionally significant values. Eligibility criteria from the Outstanding Remarkable Value standards were applied to the upper Verde River's resources and if elements from the criteria definitions were met it provided a basis for regional and national assessment.

Geology

The river corridor contains an example of a geologic feature, process, or phenomena that is rare or unique to the geographic region, or an outstanding example of a commonly occurring feature. The feature may be in an unusually active stage of development, represent a "textbook" example and/or represent a rare or unique combination of geologic features (erosional, volcanic, glacial, etc.) (USFS, NPS & BLM 1996).

The upper Verde River is characterized by a diverse canyon which allows for a diverse range of wildlife and river morphology. The Verde Valley, one of the three great valleys in the Transition Zone, is regionally significant in its existence as a separate physiographic feature from the Colorado Plateau and the Basin and Range province. A visitor may find joy in observing the beautiful geologic diversity of the canyon and possibly wondering about the geologic history of the Verde Valley. This, however, is not enough to qualify as regionally or nationally significant. Although the geologic formations in the upper Verde River are of local importance and scenic beauty, they are not outstanding in comparison to those geologic formations in the nearby red rocks of Oak Creek Canyon, the travertine formations of Fossil Creek, or the nationally significant scale of the Grand Canyon.

Ecology

The river corridor constitutes an important element of a regional plan to conserve biological diversity or other specific ecological resources. Examples of important elements include rare communities or ecosystems, watersheds with special values or that are the focus of special management, essential corridors for species migration and genetic interactions, and other values of importance (USFS, NPS & BLM 1996).

The upper Verde River provides one of the most diverse ecosystems found in Arizona and is supported by a significant perennial base flow. Riparian areas in Arizona represent some of the most significant habitat in the Southwest. Arizona's landscapes are composed of less than 1% of streams and riparian ecosystems, and 90% of these have been degraded from grazing, logging, mining and impacts from urban development (USFWS 1995). The upper Verde River is one of the rivers that comprises this 1% and can be referenced as an endangered ecosystem.

Riparian areas provide the harsh desert climate with water, cover, shade, and travel corridors for hundreds of species. The upper Verde's surface water has maintained an ecologically

important corridor functioning in relatively pristine, intact conditions. These waters create an oasis in the arid lands of central Arizona and support a high percentage of species richness and biodiversity. Today, the biodiversity of the upper Verde River can be protected by allowing the riparian area to remain connected to other protected areas in the region, such as the Sycamore Canyon Wilderness. Not only is the river an important corridor for animal migration, but it provides linkages between core habitat areas for these animals on a larger scale. It provides animals in the Woodchute Wilderness with a place to find forage and water before reaching the Mogollon Rim or the Sycamore Canyon Wilderness. The regional importance of this riparian corridor qualifies the ecology of the upper Verde River as an Outstanding Remarkable Value.

Wildlife

Wildlife values shall be judged on the relative merits of either populations, habitat, Native American cultural use, or a combination of these factors.

> Populations: The river corridor contains nationally or regionally important populations of indigenous wildlife species. Of particular interest are species considered to be unique or rare species (federally listed, state listed or candidate threatened or endangered species). Diversity of species is an important consideration and could in itself, lead to a determination of outstandingly remarkable.
>
> Habitat: The river corridor provides exceptionally high quality habitat for wildlife of national or regional significance, or may provide unique habitat or a critical link in habitat conditions for rare species (federally listed, state listed or candidate threatened or endangered species). Contiguous habitat conditions are such that the biological needs of the species are met. Diversity of species is an important consideration and could, in itself, lead to a determination of outstandingly remarkable value (USFS, NPS & BLM 1996).

The upper Verde River supports one of the most diverse areas of Arizona, with recorded sightings of many migratory and year-round birds, including the Western Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*), a candidate for federal listing on the Endangered Species List, sighted nesting on the Verde River in 1998, and 1999; many local and migratory mammals including mountain lion (*Felis concolor*), river otter (*Lontra canadensis*), and elk (*Cervus elaphus*); amphibians and reptiles such as the Arizona toad (*Bufo microscaphus microscaphus*) and the Narrow-headed garter snake (*Thamnophis rufipunctatus*); and 16 sensitive species or Federally listed species of concern such as the Golden eagle (*Aquila chrysaetos),* and the Bald

eagle (*Haliaeetus leucocephalus*). The Verde River supports a diverse vegetative community as well, consisting of sensitive plant species, including the Verde Valley sage (*Salvia dorrii ssp. Mearnsii*) and the endangered Desert cliffrose (*Cowania mexicana*), which may be found in the upper Verde River. The biodiversity found in the upper Verde River is so regionally and nationally significant that its wildlife character qualifies as an Outstanding Remarkable Value.

Fish

Fish values may be judged on the relative merits of fish populations, habitat, Native American cultural use, or a combination of these factors. Consideration shall be given to potential as well as existing values.

> Populations: The river is internationally, nationally or regionally an important producer of resident and or anadromous fish species. Of particular significance is the presence of wild stocks or rare species (federally listed, state listed or candidate threatened or endangered species). Diversity of species is an important consideration and could, in itself, lead to a determination of outstandingly remarkable value.
>
> Habitat: The river provides exceptionally high quality habitat for fish species indigenous to the region. Of particular significance is habitat for wild stocks or rare species (federally listed, state listed or candidate threatened or endangered species). Diversity of habitats is an important consideration and could, in itself, lead to a determination of an outstandingly remarkable value (USFS, NPS & BLM 1996).

The aquatic habitat of the upper Verde River is so wild and pristine that it has been designated critical habitat for the spikedace and loach minnow by the U.S. Fish and Wildlife service in 2000. The upper Verde River is the only place where small, isolated populations of spikedace have been recently detected. The critical habitat that is necessary for the survival of spikedace populations. Although loach minnow no longer inhabit the river, reintroduction can revitalize this river with native populations of these fish. Critical habitat designation may require specific management actions, such as reintroduction or habitat restoration. Before the introduction of cattle and nonnative fishes, the upper Verde River was home to more than seven native species of fishes, most of which now are either threatened, endangered, species of concern, or have been nationally extirpated.

Because of the past abundance of native fishes, there are possibilities of prehistoric Native American cultures finding them useful for survival. The quality of habitat for wildlife and

fishes, combined with the abundance of water in a desert ecosystem is most likely what allowed Natives to inhabit the Area.

The abundance of base flow and the diverse stream morphology of the upper Verde River create a river channel that is advantageous to the existence of healthy populations of these historically known native fishes. This quality, combined with the abundance and diversity in wildlife species, such as beaver, which create a more diverse stream character, further enhances the regional significance of this river. The presence of native fish diversity together with the potential to restore the upper Verde River to a natural, completely native and highly productive habitat is extremely important for the continuing existence of riparian habitats in the American Southwest. The national significance of these qualities reminds us of the importance of labeling this aquatic environment as an Outstanding Remarkable Value that we must protect and restore.

Cultural

The river corridor contains a site where there is evidence of occupation or use by Native Americans or some other prehistoric culture. Sites must have unusual characteristics or exceptional human interest values. Sites may have national or regional importance for interpreting prehistory; may be rare or represent an area where a culture or cultural period was first identified and described; may have been used by cultural groups for rare or sacred purposes. Of particular significance are sites or features listed in or eligible for inclusion in, the National Register of Historic Places (USFS, NPS & BLM 1996).

The upper Verde River and its watershed, which cover 14,000 km^2, possess an extremely high density of Native American archaeological sites. Because of the regional and local topography surrounding and within the Verde River canyon are so isolated and undisturbed, these cultural sites have remained intact and naturally preserved. Many more ruins are believed to have existed where natural preservation did not occur – on the terraces where flooding may have washed them away. The cliff dwelling documented in this proposal (see photo 017_16) has been preserved well because of the natural geologic protection of a rock roof above it. This dwelling is of regional and national interest in understanding and further studying prehistoric cultures of the American Southwest. The abundance and quality of archaeological sites and the potential for educational research of them qualifies the upper

Verde River cultural resources as nationally and regionally Outstanding and Remarkable Values.

History

The river corridor contains a site or feature associated with a significant event, an important person, or a cultural activity of the past that was rare, unusual or unique in the region. An historic site and/or feature in most cases is 50 years old or older. Of particular significance are National Historic Landmarks, or sites or features listed in, or eligible for inclusion in, the National Register of Historic Places (USFS, NPS & BLM 1996).

The upper Verde River is dotted with historical evidence, from historic mining ruins to historic railways that used to travel the river canyon transporting cattle and other merchandise. The story of the southwest's settlement is one of historical importance and helps to define the southwest lifestyle today. The prehistoric sites lead to historic inhabitation, as some of the cultures that inhabited the Verde Valley were pushed out by westerners or Mexicans in their efforts to politically control the southwest and California. The presence of ranching as a way of life for over one hundred years is represented in this river by the numerous historic corrals, now rusted and hidden by overgrown vegetation. Grazing permits are still sold for these ranching families who have been in the Verde Valley for generations. Although the impacts of grazing can be detrimental to the riparian vegetation and aquatic habitat and may need to be phased out in the near future, it is important to recognize the role these families have played in the historic settlement of Arizona. It is important to appreciate their way of life and understand that partly because of them, and partly because of mining history and the Santa Fe Railway, the history of the upper Verde River is an Outstanding Remarkable Value.

Recreation

Recreational opportunities are, or have the potential to be, unique enough to attract visitors from outside of the geographic region. Visitors would be willing to travel long distances to use the river resources for recreational purposes. River-related opportunities could include, but are not limited to, sightseeing, wildlife observation, photography, hiking, fishing, hunting and boating. Interpretive opportunities may be exceptional and attract, or have the potential to attract, visitors from outside the geographic region. The river may provide or have the potential to provide settings for national or regional usage or competitive events. Consider evaluating specific, high use recreation activities (e.g. whitewater boating) separately (USFS, NPS & BLM 1996).

There are many recreational opportunities along the upper Verde River, such as hiking, wildlife viewing, swimming, camping, fishing, and interpretation or observation of geological features, cultural features, and ecological features. However important these recreational activities are, they are unfortunately not regionally significant. The one recreational activity that would qualify this section of the Verde River as Outstandingly Remarkable is the opportunity for whitewater boating. Although this section of the river can be canoed, the water level is not high enough to allow for outstanding whitewater boating opportunities. Much of this section of the river must be portaged because the maximum flows do not exceed 100 ft^3/sec. Because there are other rivers in the regions that allow for similar recreational activities, recreation cannot be said to be an Outstanding Remarkable Value here.

Scenic

The landscape elements of landform, vegetation, water, color, and related factors result in notable or exemplary visual features and/or attractions within the region. When analyzing scenic values, additional factors such as seasonal variations in vegetation, scale of cultural modifications, and the length of time negative intrusions are viewed may be considered. Scenery and visual attractions may be highly diverse over the majority of the river or river segment. Existing agency procedures for evaluating scenery may be used to identify rivers with outstanding scenic resources (USFS, NPS & BLM 1996).

The Verde Valley is the Transition Zone between the Mogollon Rim and the most threatened ecosystem in Arizona – the Sonoran Desert. Because this valley lies in between two completely opposite eco-regions, it is one of the most beautiful areas in the state of Arizona. When standing on any point on the rim of the upper Verde River, one can look north across the pinyon-juniper scrubland at the snowcapped 12,000-foot Mount Humphrey's in Flagstaff, Arizona, northeast of the river at the red rocks of Sedona, east of the river at Mingus Mountain toward the historic town of Jerome, west of the river at the Sycamore Canyon Wilderness, and south of the river into the Sonoran Desert ecoregion. The placement of this river canyon is perfectly set in between a diverse array of geologic features that form the Central Arizona Highlands Region.

The cultural sites in this section of river are of scenic quality. The cliff dwellings and mesa archaeological sites allow one to gaze into the past and imagine what life must have been like before modern civilization. A pastime that can only be undertaken while immersed in the area of habitation, this journey into the prehistoric ways of life, is certainly one of the upper Verde River's scenic values.

In addition to its geological and cultural features, the scenic quality of the upper Verde River itself is regionally significant and is an Outstanding Remarkable Value. The presence of the perennial river is in and of itself a treasure found in the desert Southwest that needs to be protected from exploitation. The amount of water available in this ecosystem allows for beautiful seasonal changes in vegetation. For Arizona, the seasonal cycles in this river are comparable in beauty to those that occur in the northeast. The summer is lush and busy with wildlife; the autumn sees the coloring and loss of deciduous leaves; the winter hosts quiet, calm dormant life and snow-touched hillsides; and the spring energizes the dormant wildlife and is one of the most enlivening times to be witness to one of the largest bird migrations in the western United states. All this is right here in our backyard!

C. Eligibility Findings

Of this 19-mile segment, 18.5 miles of the upper Verde River is eligible for inclusion in the National Wild and Scenic Rivers System (see Overview Map). It is one of the last free-flowing, perennial rivers in the Southwest and sustains several Outstanding Remarkable Values. It meets the criteria for these six Outstanding Remarkable Values: ecology, wildlife, fish, cultural, historical, and scenic.

IV. Classification

Each classification has distinct qualities and must be managed accordingly so as to protect the Outstanding Remarkable Values observed in the river area. The levels of classification are determined with the intent of preserving the present quality of the river. Under section 2(b) of the Wild and Scenic Rivers Act of 1968, the river must be classified as one of these three types: wild, scenic, or recreational (see Glossary for definitions).

Based upon the guidelines for these three classification types, it has been determined that the nineteen-mile segment of the upper Verde River be classified in three segments.

Segment One: The National Forest Boundary to the western boundary of the Verde Ranch*, 4 miles: **Wild** (see overview map)

This segment can only be accessed by one road, FR 638, which is about a mile downstream of the National Forest boundary. This road requires a high-clearance, 4WD vehicle and on the southern access point is closed at the Arizona Game and Fish permanent concrete closure. This closure lies just under ¼ mile from the river and has been illegally bypassed. The access point of FR 638 from the northern side of the river is ineffectively closed off about ¼ mile from the river's edge. This section of the river segment is free of impoundments. There are no man-made structures in this segment of the upper Verde River that are in current use. There is an old corral that is falling into disrepair and is set back from the river's edge about one hundred feet. The presence of cattle is insignificant until one reaches the active Verde Ranch property. Upstream of the ranch, there is no recent evidence of cattle and cows are not usually seen in this segment. This segment is not impacted by timber harvesting and the watersheds or shorelines are essentially primitive. Most importantly, because this segment is closest to a pristine water source, the Verde Springs, native fishes inhabit the river. This segment is a prime area for human activity that leaves little or no human evidence, such as hiking, camping, and fishing.

*Note: Under the Wild and Scenic Rivers Act, Section 6(a)(2):

> When a tract of land lies partially within and partially outside the boundaries of a component of the national wild and scenic rivers system, the appropriate Secretary may, with the consent of the landowners for the portion outside the boundaries, acquire the entire tract.

If the Verde Ranch can be mostly acquired by the National Forest, this segment of river within the property has the potential to be classified as **Wild**. Restoration of the river corridor would be necessary. Cattle would need to be removed from the river corridor. The old concrete road and culvert that lie on each side of the riverbank and the old living structures and new house would most likely be kept in a Conservation Easement with The Nature Conservancy; these buildings would not be an issue.

Segment Two: The eastern boundary of the Verde Ranch to about 2 miles upstream of Bear Siding where the 500 kv power line crosses the river canyon, 7 miles: **Wild**

This segment is only accessible by one road, FR 9097U, which requires a high-clearance vehicle. This road ends at an effective closure more than ¼ mile from the river. The topography of this segment is diverse and in the middle contains multiple cultural sites and steep cliffs over two hundred feet high. This segment is also free of impoundments. Cattle have historically been grazed and corralled here, as there are two old corrals that are falling apart. One lies at the confluence of Verde Canyon and Bull Basin Canyon and the other is located at Duff Spring, downstream of Bull Basin Canyon. Because the corrals are no longer in use and are in disrepair, they present a feeling of history to the river segment rather than the presence of adverse human impact. Although there is weathered evidence of cattle, this segment is not impacted by the current presence of cattle or timber harvesting and the watersheds or shorelines are essentially primitive. The base flow and water quality of this segment suggest that it can support populations of native fishes. This segment seems to be the most wild of the upper Verde because of its steep cliff walls and inaccessibility. The opportunity for solitude here is outstanding.

Segment Three: From the 500kv power line to the Perkinsville Bridge, 7.5 miles: **Scenic**

Although presence of the power line is insignificant to anyone within the river corridor, the Wild and Scenic Rivers Act states that watersheds or shorelines should be free of power lines to qualify as Wild. This segment is more impacted by man's historical uses of the upper Verde River. Recreational uses are the most concentrated at Bear Siding, downstream of the power line. The end of the road leading to the river corridor, FR 492A, lies less than one hundred feet from the river's edge. This is a popular camping area as qualifies for Scenic designation. There is a quarry here that is in current use that lies just outside the river corridor by barely ½ mile. However, the shorelines and the immediate river environment still present an overall natural character and are largely primitive and undeveloped. About three miles downstream of FR 492A, there is an old corral and rusted metal cable that runs across the river, becomes buried underground, and surfaces again, attaching to a large metal three-sided post. There are two coils of unused barbed-wire rusting on the ground at the entrance

of the old corral. It is indiscernible what this cable's purpose was in the past. Between this access point and the Perkinsville Bridge, the river becomes fairly wild and lacks human impact. From the Perkinsville Bridge upstream about ¼ mile, the river corridor is used heavily for camping. Above this camping area, the river is essentially unvisited by humans.

V. Suitability

The upper Verde River is a suitable river segment for WSR designation based upon the Outstandingly Remarkable Values outlined in this proposal. The goal of WSR designation is to protect these Values.

A. Forest Planning Process – Other Factors Affecting WSR Designation

The characteristics which make the river suitable for designation were outlined in the Eligibility section of this proposal. The factors that adversely affect the river currently and lead to the demand for its protection and better management are important to note here. The illegal use of ORVs within the river corridor leads to erosion of stream banks, potential damage to archaeological sites unknown to the ORV user, disturbance of nesting or sensitive wildlife, and degradation of the scenic values of the river corridor. Overgrazing of cattle can cause damage to a riparian corridor. Of these, the most harmful are habitat fragmentation and disturbance to threatened, endangered or sensitive wildlife species. Impacts from recreational camping are devastating in places to the vegetation that immediately surrounds the river. Bear Siding and the area at the Perkinsville Bridge are the areas within the upper Verde River that need better management. Both areas have been stripped of vegetation at dispersed campsites and degraded from user-created looping routes leading to the campsites. The accumulation of trash at these campsites is common as well. In the Forest Service Directives, under directive 2350.2 (3) Objectives, the management guidelines require the Forest Service to "mitigate adverse impacts of users on the natural resources, cultural and historical resources, and on other users" (USFS 2004). The camp sites at Bear Siding obviously adversely impact the natural vegetative resources through live cutting of juniper trees for firewood. Carrie Christman (personal communication)at the Prescott National Forest noted that near the Bear Siding camping area there is an archaeological site that may be degraded from users as well.

Land ownership affects the WSR designation of the upper Verde River. All but just over ½ mile of the river segment lies on National Forest lands, and the ½ mile that does not is privately owned. The Forest Service and The Nature Conservancy are currently working to acquire most of this land and out the rest into a conservation easement. This would potentially allow the private land to fall under Forest Service management, and allow Wild designation, merging segments One and Two to create one Wild segment that runs from the National Forest boundary at the western end of the upper Verde River segment all the way to where the 500 kv power line crosses the river. There is one mine located at Bear Siding on the Scenic segment, segment Three. This is an active rock quarry and runs into the ¼ mile river corridor. However, the boundary does not have to be exactly ¼ mile from each side of the riverbank- it can be more or less, but must total the same acreage.

If the river were included in the NWSRS, the protection it would offer could help safeguard this river from consumptive extraction or diversion. If the Big Chino aquifer helps feed the upper Verde River and if pumping from this aquifer lowered the flow of this river, there could be conflicting resource demands on the river. The Outstandingly Remarkable Values that demand protection within the river corridor would be devastated from lowering of the river flow by consumptive diversion. There would be no chance for wildlife or vegetation to exist as they do in this endangered ecosystem. Lowering or diverting the river flow would be disastrous for this river and all the migrating, seasonal, and year-round wildlife that depend upon this river for survival, as well as disastrous for the vegetation that supports this wildlife and acts as a transition between the higher elevation pine forests of the Mogollon Rim and the lower elevation incredibly biodiverse Sonoran Desert.

The upper Verde River runs almost completely through the Prescott National Forest. Agricultural crops and/or timber harvesting are not issues within the river corridor. However, cattle grazing is a use that would be affected by designation. The river corridor is affected by the Chino Grazing Project China Dam, Muldoon, Sand Flat, and Perkinsville Allotments, as well as on the private inholding. The new 10-year Environmental Assessment that includes guidelines for the grazing permits on these allotments, which include the entire upper Verde River, are currently in the planning process. The desired conditions for the Chino Grazing Project, which covers part of the Prescott National Forest, are (1) a diverse

vegetative community that provides for watershed health, wildlife habitat, and forage for herbivores" (p 1-4); (2) adequate vegetative ground cover to "provide biological productivity and maintain environmental quality" (p 1-4); and (3) "soil conditions that sustain long-term productivity" (p 1-4) (USFS 2004). The area has not been managed to meet these draft criteria, and if these criteria become part of the final Environmental Assessment, grazing may have to be excluded from the river corridor. To meet these criteria more strict enforcement will have to be taken in keeping cattle out of the river corridor to allow a buffer zone along the river to re-vegetate and regulate itself. Under Section 10(a) of the Wild and Scenic Rivers Act any part of a river in the NWSRA must be managed to "enhance the values which caused it to be included", and the management emphasis should be placed on protecting these values.

The upper Verde River is a very popular river in the region because of its importance to wildlife and its regional significance as being one of the last perennial streams in Arizona. There are a few local citizen-based organizations that have invested time and energy into its protection and may possibly be able to help the tightly budgeted Forest Service to enforce the protection under WSR designation. The Verde Watershed Association (VWA) strives to educate the public about the forums, conferences and upcoming decisions about the watershed that the public has a voice in. They state on their internet site, http://vwa.southwest-water.org, that the "VWA strives to preserve and manage the Verde River watershed with local direction while encouraging long term, productive use of natural resources". The VWA is based out of Camp Verde and has meetings every third Tuesday of the month. There is also a group of partners of the Verde Nature Tourism Alliance which support local events such as the Verde Valley Birding and Nature Festival that will occur April 23-25, 2004. A few of these partners, who have shown interest in the protection and celebration of the magnificent wildlife the Verde attracts to the Verde Valley, are the Northern Arizona Audubon Society, Arizona State Parks, Arizona Game & Fish, the Yavapai-Apache Nation, Montezuma Castle & Tuzigoot National Monuments, the Prescott and Coconino National Forests, Yavapai College, the Bureau of Land Management, and the Verde Natural Resources Conservation District (Verde Watershed Association). Other organizations that may be great volunteers or do volunteer projects already to support the

Verde watershed are the Cattlemen's Association, Backcountry Horsemen, and the Citizen's Water Advisory Group (CWAG).

These organizations are key to the education of water use and awareness as well as important groups that can coordinate local volunteers to help physically protect or manage the river. There are endless opportunities for volunteer service work for the Forest Service such as trash pick-up, patrolling of closed vehicle routes within the corridor, help taking wildlife and vegetation and fish censuses, and general local citizen education of WSR designation and what its management entails. The potential here for the regional community to work together with the local Forest Service to find common ground and cooperation is enormous and potentially a saving grace for the wild rivers of Arizona. WSR designation can lead to this method of building community in the "Land of Many Uses" where resource and land uses often have conflicting interests.

B. Coordinated Studies and Other Planning Processes

Because the upper Verde River is almost completely on National Forest land it is easier to assess the management implications of wild and scenic designation. In November of 1980, the Forest Service completed a Draft Environmental Statement and Wild and Scenic River Study for the entire Verde River. In this study, the upper Verde River was contained in Segment A, which ran 38.5 miles from Sullivan Lake to the town of Clarkdale. Within this segment, there were ninety-four private inholdings. This segment met some of the criteria for WSR eligibility, however, the Forest Service found that Alternative A did not meet the criteria of protecting free-flowing conditions and outstandingly remarkable characteristics of the river. In this document, the classification that was suggested as meeting the eligibility criteria was recreational, "After evaluating the combined impacts of the shoreline improvements and numerous access routes, the study team determined that this section of the river does not meet the criteria for wild or scenic classification. However, is could be classified as recreation" (USDA 1980 p 36).

This segment, because it covered so many miles and covered over 12,000 acres, had many diversions, inholdings, developments, and other impacts to keep it from meeting the wild or scenic classification. Following the Draft Statement and Study of 1980, in September 1982

the Forest Service completed the Verde River Wild and Scenic River Study Report and Environmental Impact Statement. The "preferred alternative" in this statement was that Segment A have no designation, even though it met the recreational designation criteria.

VI. Existing Assessment

Because the upper Verde River segment in this proposal is shorter, and land ownership has changed. See overview map. This citizen's proposal focuses directly on an unimpacted section of the upper Verde River that was dropped from designation in 1982 as part of Segment A. It includes new land ownership information and new information based on sensitive species and the importance of protecting one of Arizona's few last perennial rivers and riparian corridors. Because there have been changes in the land ownership of the study area, the upper Verde River needs to be reassessed by the Forest Service. The study area now meets the criteria for wild and scenic designation.

VII. Conclusion

Healthy riparian areas and streams are extremely rare in Arizona representing only 1% of the landscape. Riparian environments of the American Southwest have been lost, modified, or face severe degradation from recreation, grazing, logging, mining, and other impacts from development. In addition, 90% of Arizona's rivers no longer run year round due to diversions, withdrawals, and dams. Water is a critical resource in the arid southwest; it is needed for livestock and agriculture, some hydroelectric projects, drinking water, and recreation. Water is also an essential aspect to maintaining ecosystem health in arid landscapes. Often when riparian areas face development or multiple use impacts, the health of the overall landscape suffers serious consequences. Both state and federal agencies have a responsibility to preserve the ecosystem integrity and natural conditions of the upper Verde River, as it is a vestige river of the American Southwest. This river has a great opportunity to be protected and thrive as an undisturbed, intact, natural riparian ecosystem. The Wild and Scenic Rivers Act was designed to protect places exactly like this, places that are endangered ecosystems, places that have clean water that is demanded for many purposes. My hopes for this project are to heighten local awareness of the upper Verde River and its related resources, and lead the Forest Service to assess this segment of wild river for potential inclusion to the NWSRS, while providing temporary protection from any development or

recreational uses that might impact the identified resource values. The proposed WSR designation for the 18.5 of the nineteen-mile length of the upper Verde River is based on the Outstanding Remarkable ecology, wildlife, fish, cultural, historical, and scenic Values.

This proposal for WSR designation of the upper Verde River represents an important opportunity to protect and restore critical riparian and aquatic habitat as well as the natural and cultural resource values this river possesses. It is a milestone for the reversal of riparian degradation in Arizona and the American Southwest. Wild and Scenic River designation is the most effective way to preserve the unique, rare, and exemplary conditions that thrive on the upper Verde River.

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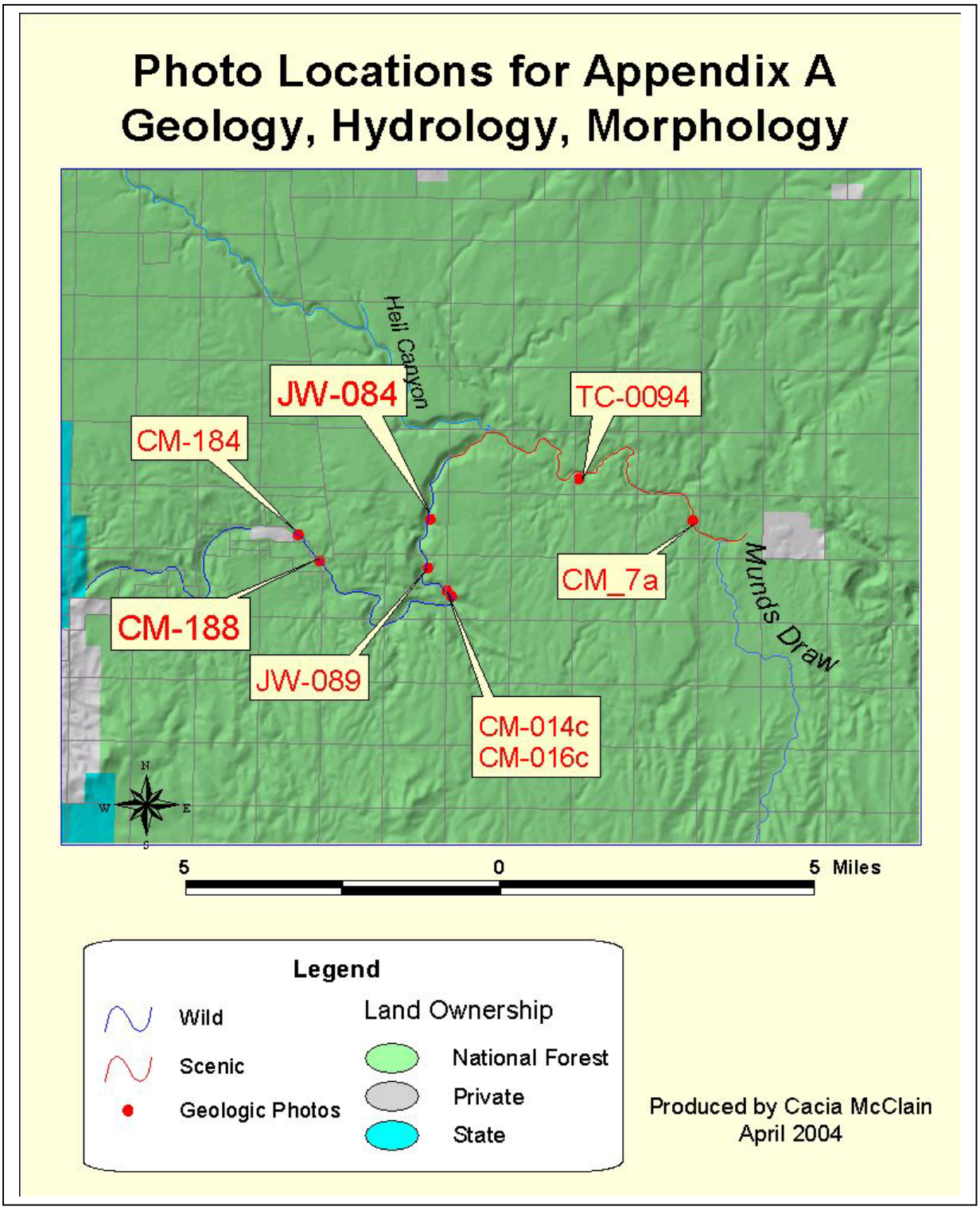
IX. Appendices

Appendix A



Geology, Hydrology, Morphology Photos

Photo CM-016c: Tapeats sandstone

Photo CM-014c: Tapeats sandstone spire

Photo JW-084: Basaltic rock, distributed from upstream canyons

Photo JW-089: Martin limestone layered above Tapeats sandstone layer

Photo CM-184: Tapeats sandstone

Photo CM_7a: Redwall limestone cave

Photo CM-188: Granite basement rock of the Great Unconformity

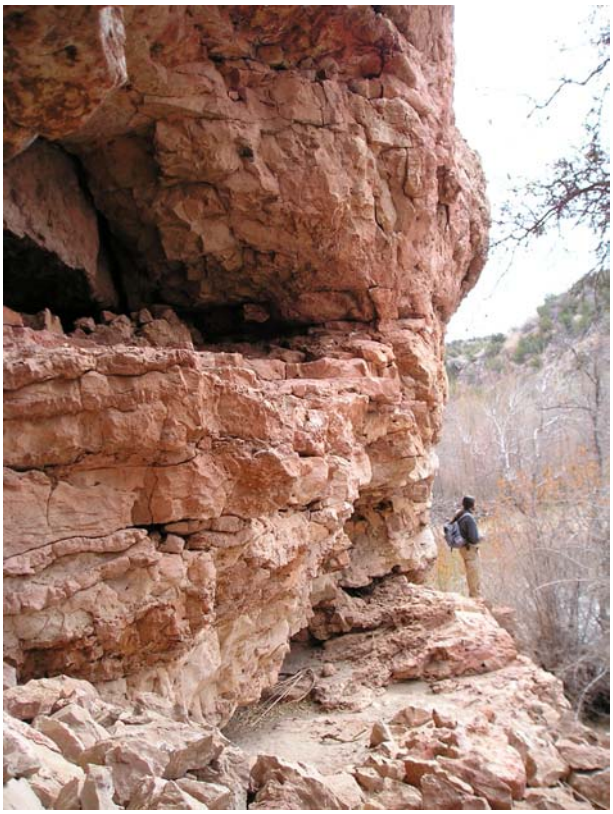


Photo TC-0094: Redwall limestone cave in canyon wall

Appendix B

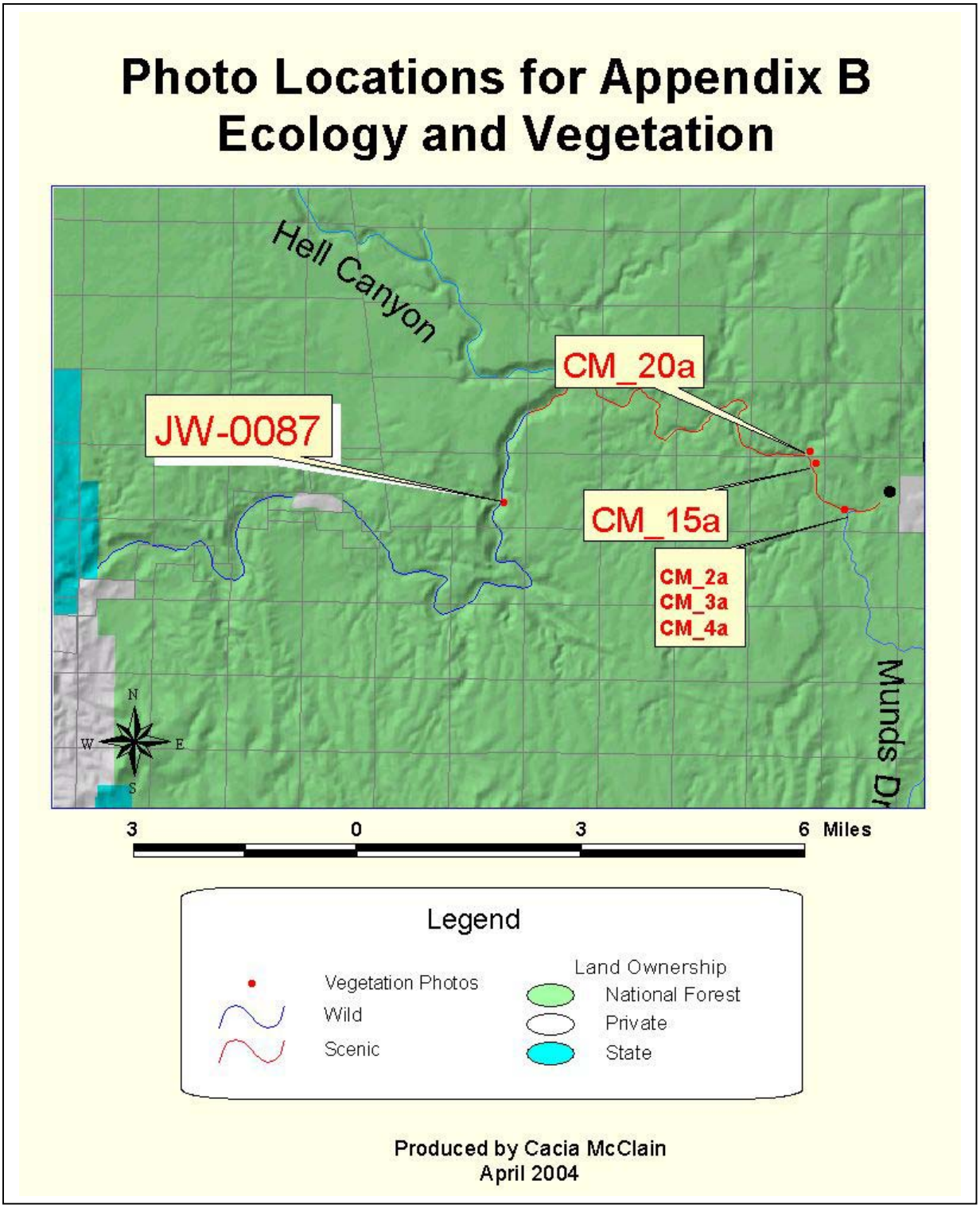


Photo Locations for Appendix B
Ecology and Vegetation
Hell Canyon
CM_20a
JW-0087
CM_15a
CM_2a
CM_3a
CM_4a
Munds Dr
N
W
E
S
3
0
3
6 Miles
Legend
Vegetation Photos
Wild
Scenic
Land Ownership
National Forest
Private
State
Produced by Cacia McClain
April 2004

Ecology and Vegetation Photos

Photo JW-0087: Cattails and seep willow

Photo CM_4a: Even-aged stand of cottonwoods and seep willow, burrs in foreground, river on left side of photo

Photo CM_3a: Marsh species, overstory species, and upland species transitions

Photo CM_2a: Cottonwoods surrounding a meadow, ~1/2 mile upstream of Perkinsville Bridge

Photo CM_15a: Mexican vervain (*Verbena ciliata*) in railroad bed above river

Photo CM_20a: Penstemon next to railroad above river corridor

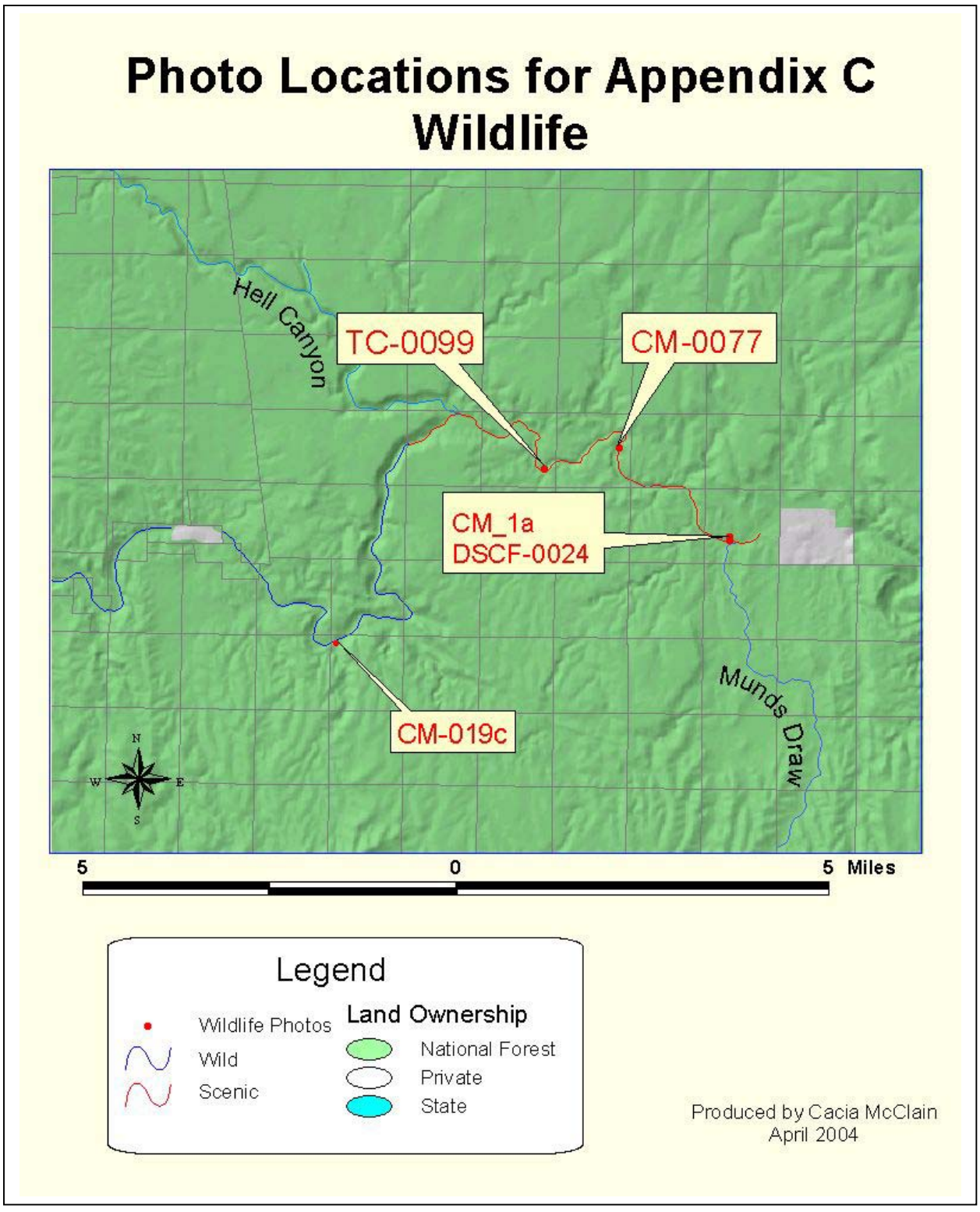


Photo Locations for Appendix C
Wildlife
Hell Canyon
TC-0099
CM-0077
CM_1a
DSCF-0024
CM-019c
Munds Draw
N
W
E
S
5
0
5 Miles
Legend
Wildlife Photos
Wild
Scenic
Land Ownership
National Forest
Private
State
Produced by Cacia McClain
April 2004

Wildlife Photos

Photo DSCF-0024: Fresh, wet, beaver-chewed stick

Photo CM-0077: Fish caught by bird and partly eaten

Photo CM_1a: Small lizard

Photo CM-019c: Javelina skull

Photo TC-0099: Bark scratched from tree, likely by Elk

Appendix D

This map has been left out to protect cultural sites.

Cultural Photos

Photo CM-008c: Cliff dwelling high up the side of the canyon

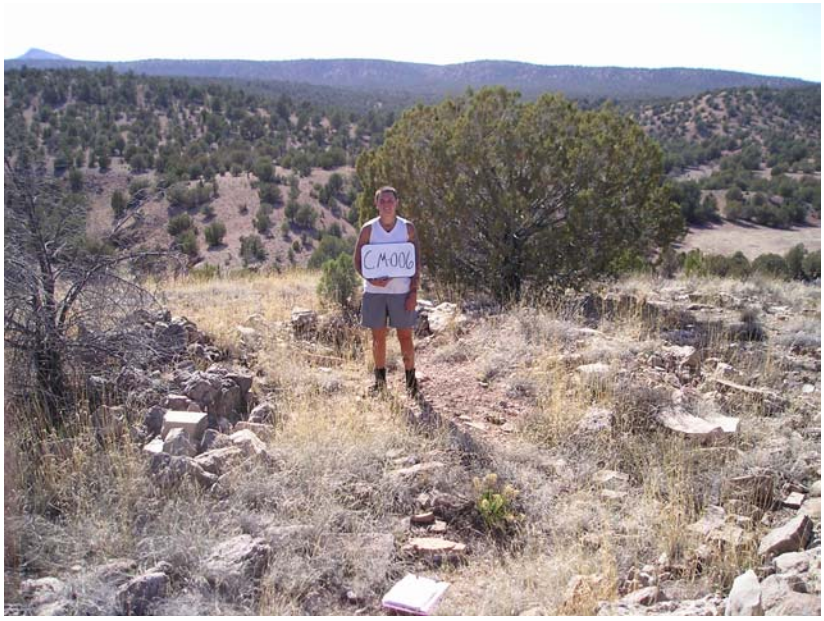


Photo CM-006b: Middle room of archaeological site

Photo CM-010b: Arrowhead and stone flakes

Photo CM-013b: Overgrown ruin wall, ~2 ft high

Photo CM-015b: Numerous potsherds of sand, red, and white-on-gray coloring

Photo CM-144: White-on-black colored potsherd

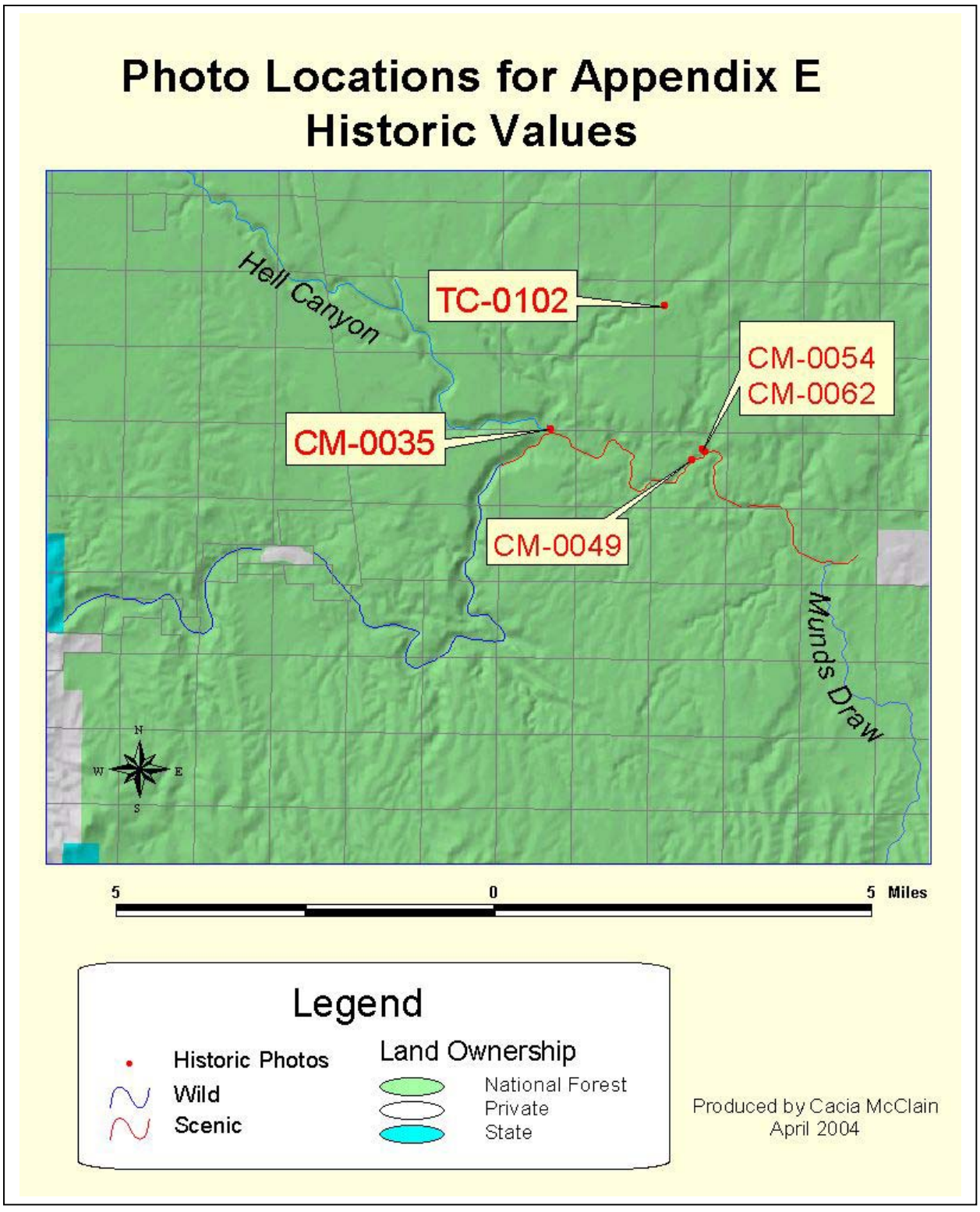


Photo Locations for Appendix E
Historic Values
Hell Canyon
TC-0102
CM-0054
CM-0062
CM-0035
CM-0049
Munds Draw
N
W
E
S
5
0
5 Miles
Legend
Historic Photos
Wild
Scenic
Land Ownership
National Forest
Private
State
Produced by Cacia McClain
April 2004

Historic Photos

PhotoCM-0035: Historic mining site, made with 4x4s and metal nails

Photo CM-0049: Historic railroad

Photo CM-0054: Cable across river, leading to this short, steel tripod

Photo CM-0062: Historic railroad bed, eroding underneath it

Photo TC-0102: Old railroad bridge, on FR 492A to Verde Canyon

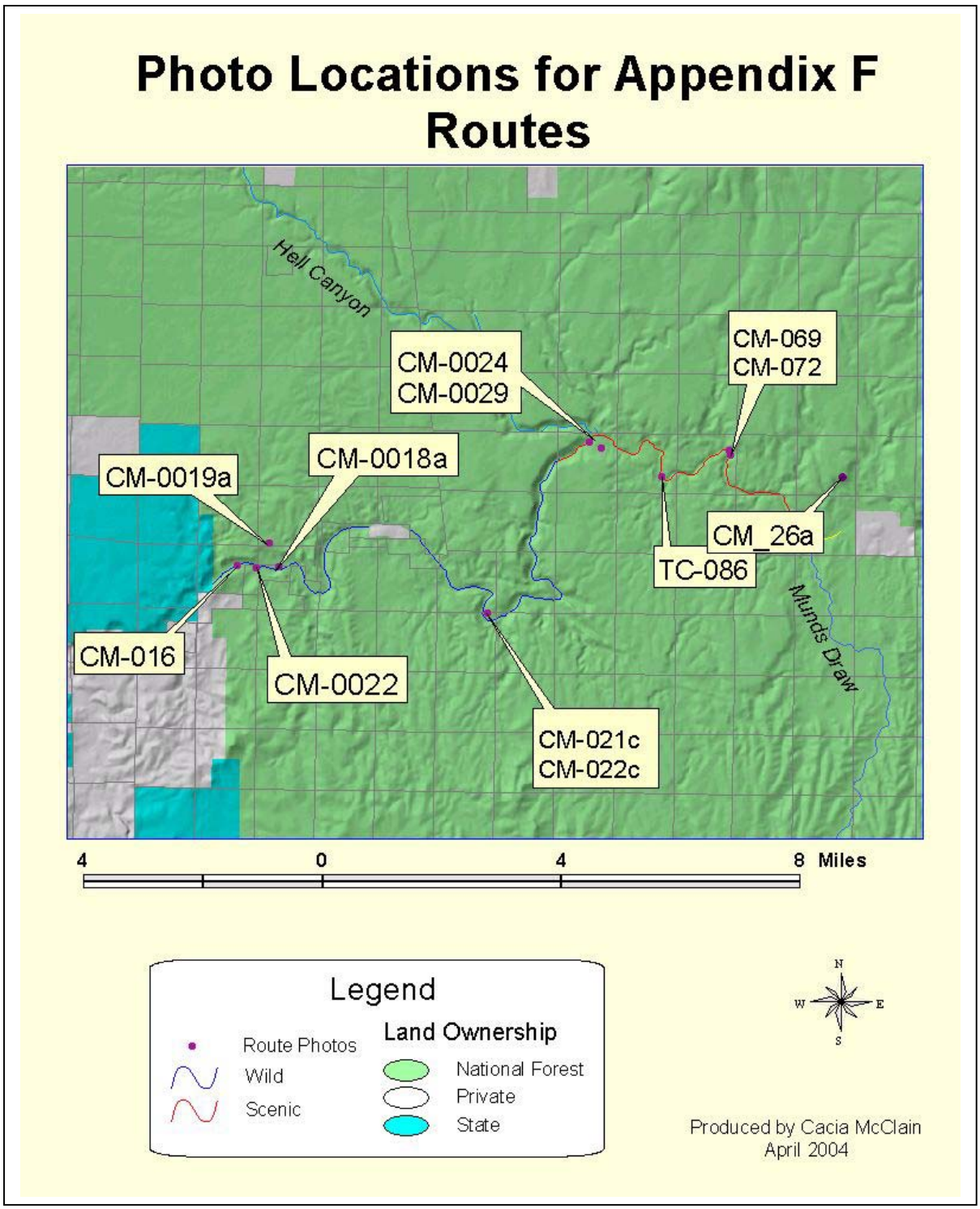


Photo Locations for Appendix F Routes
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CM-0029
CM-069
CM-072
CM-0019a
CM-0018a
CM_26a
TC-086
Munds Draw
CM-016
CM-0022
CM-021c
CM-022c
4
0
4
8 Miles
Legend
Route Photos
Wild
Scenic
Land Ownership
National Forest
Private
State
N
W
E
S
Produced by Cacia McClain
April 2004

Route Photos

Photo CM-016: Illegal extension of FR 638 from south access, crossing Verde River

Photo CM-022c: Illegal route continuing from end FR 9097U, passes by an archaeological site

Photo CM-021c: Erosion ~6" deep, same route as photo 004_3

Photo CM-0019a: Illegal route bypassing route closure at end FR 164

Photo CM-0018a: Average conditions of illegal route extension of FR164

Photo CM-0024: Illegal 4WD tracks on closed FR 164

Photo CM-069: Illegal driving in wash, accessed from end FR 9110R

Photo TC-086: Bear Siding camping area, end FR 492A, extensive vegetation damage and soil erosion, many user-created routes

Photo CM-072: Illegal extension of FR9110R crosses Verde River

Photo CM-0029: Illegal extension of closed FR 164 crossing Verde River

Photo CM-0022: Average conditions closed FR 638 from southern access

Photo CM_26a: Perkinsville Bridge crossing Verde River

Appendix G

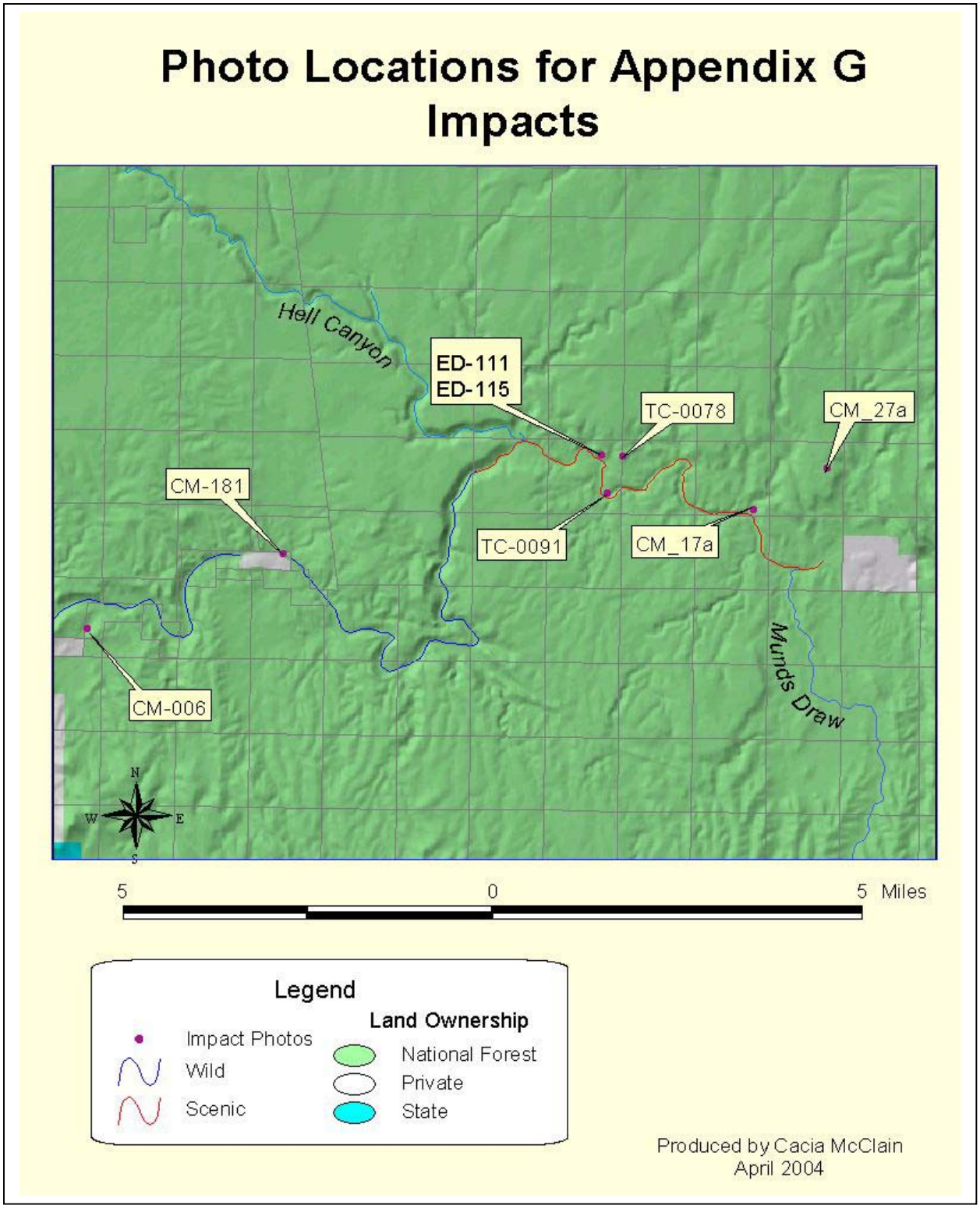
Photo Locations for Appendix G Impacts
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ED-111
ED-115
TC-0078
CM_27a
CM-181
TC-0091
CM_17a
Munds Draw
CM-006
N
W
E
S
5
0
5 Miles
Legend
Impact Photos
Wild
Scenic
Land Ownership
National Forest
Private
State
Produced by Cacia McClain
April 2004

Impact Photos

Photo CM-006: FS Route closure at end FR638 from south access

PhotoTC-0078: Rock quarry at Bear Siding, FR 492A

Photo TC-0091: Man-made dam at Bear Siding for swimming hole

Photo ED-115: Power line in distance from side of Verde Canyon, near Bear Siding

Photo CM-181: Old, unused concrete road leading to the river's edge to the old Verde Ranch buildings, Verde Ranch private property

Photo CM_17a: Railroad ties near railroad grade, ~1 mile upstream of Perkinsville Bridge

Photo CM_27a: Camping impacts at Perkinsville Bridge

Photo ED-111: Wooden survey marker on hillside

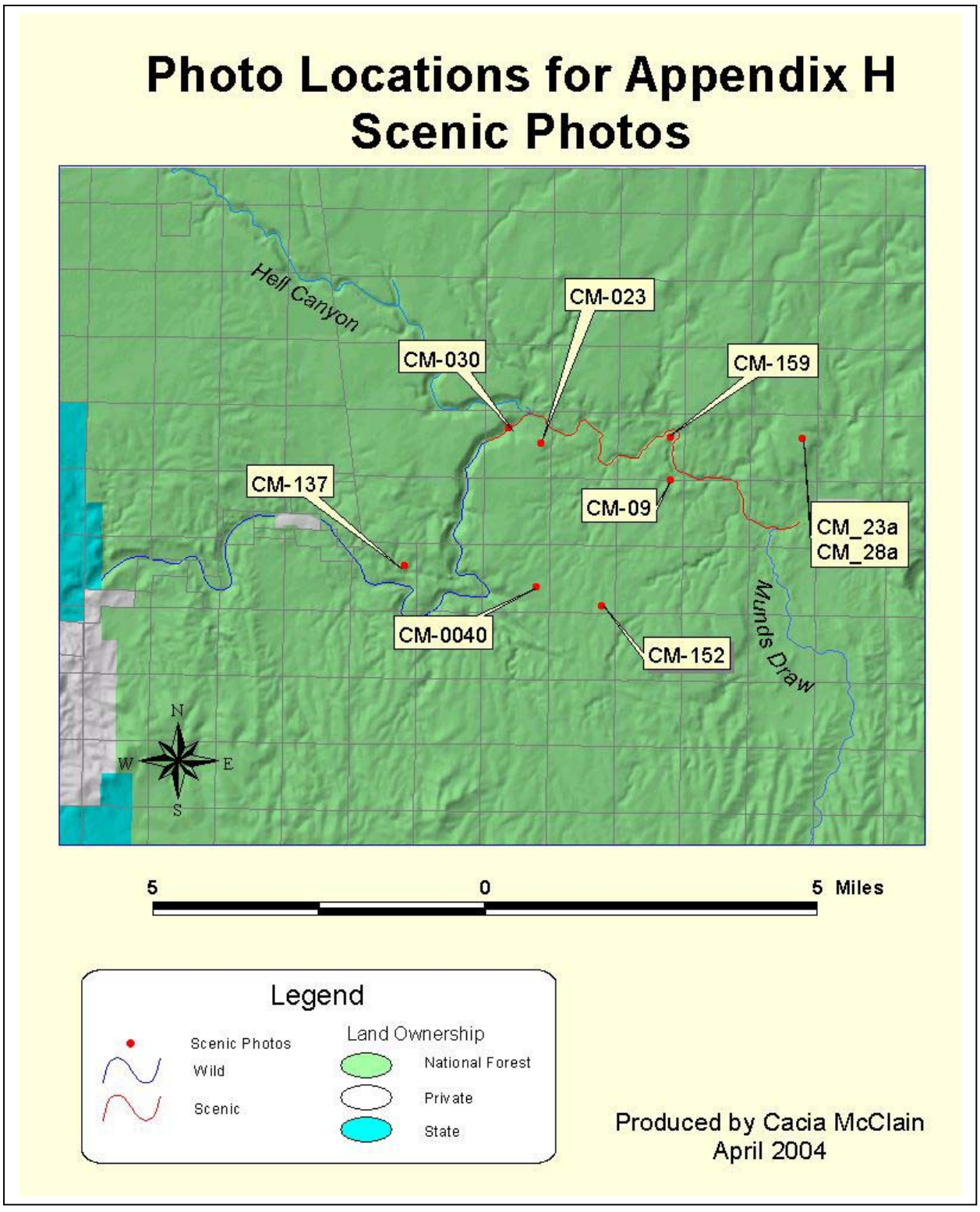
Photo Locations for Appendix H
Scenic Photos
Hell Canyon
CM-023
CM-030
CM-159
CM-137
CM-09
CM_23a
CM_28a
CM-0040
CM-152
Munds Draw
N
W
E
S
5
0
5 Miles
Legend
Scenic Photos
Wild
Scenic
Land Ownership
National Forest
Private
State
Produced by Cacia McClain
April 2004

Scenic Photos

Photo CM-030: Verde River, near end FR 164

Photo CM_23a: Verde River corridor, looking southeast toward Mingus Mountain

Photo CM-0040: Red rocks near Sedona, from FR 492A, sunset

Photo 9918230-R1-030-13A: Verde River below Verde Ranch

Photo 9918230-R1-046-21A: River with watercress and algae

Photo CM-137: Verde River from end FR 9097U, Mingus Mtn. in back

Photo CM-023: Verde River and San Francisco Peaks from end FR 164

Photo CM-159: Verde River and 100' cliff wall near end FR 9110R

Photo CM-152: Verde Valley overview, looking north toward Bill Williams Mountain

Photo CM-09: Overhanging cliffs

Photo CM_28a: Verde River corridor and sandstone cliffs

Appendix I

Field Data Photopaths

All photos can be accessed from the included CD by referencing the last characters in the potopath column and looking in the Photo folder on the included CD. This table included photo paths for only the photographs shown in the previous appendices. This table has been imported into ArcView GIS to create points and shapefiles that show the photo locations. The photos have been hotlinked and can be viewed by using the hotlinking extension in ArcView. The author hopes that this data can serve as a reference point for future studies and comparisons as the Forest service creates the new Management Plan for this portion of the Prescott National Forest.

easting	northing	photi_id	photo_path	description
			9918230-R1-030-13A	
			9918230-R1-046-21A	
380395	3859675	CM-022c	C:\GIS\upperverde\photos\004_3.jpg	average conditions FR 9097U
380395	3859675	CM-021c	C:\GIS\upperverde\photos\005_4.jpg	old road, erosion 6" deep,
386792	3862859	CM-09	C:\GIS\upperverde\photos\009_6A.jpg	scenic- nest 25' higgh in cliff
374550	3861535	CM-0019a	C:\GIS\upperverde\photos\010_7A.jpg	user-created road around FSR 638
382225	3860386	CM-016c	C:\GIS\upperverde\photos\010_9.jpg	scenic, sandstone cliffs and river
374812	3860909	CM-0018a	C:\GIS\upperverde\photos\011_8A.jpg	average FSR 638 conditions
381259	3860080	CM-008c	C:\GIS\upperverde\photos\017_16.jpg	cliff welling from riverbank, vertical
375174	3860966	CM-0007a	C:\GIS\upperverde\photos\022_19A.jpg	road closed sign on floodplain
388520	3862699	CM_15a	C:\GIS\upperverde\photos\CM_15a.jpg	flowers in middle of RR tracks
388380	3862964	CM_17a	C:\GIS\upperverde\photos\CM_17a.jpg	Blue bins near RR
389239	3861708	CM_1a	C:\GIS\upperverde\photos\CM_1a.jpg	small lizard
388380	3862964	CM_20a	C:\GIS\upperverde\photos\CM_20a.jpg	red flowers next to RR
389980	3863864	CM_23a	C:\GIS\upperverde\photos\CM_23a.jpg	scenic, full view of Mingus and river
389980	3863864	CM_27a	C:\GIS\upperverde\photos\CM_27a.jpg	camping impacts, Perkinsville Bridge
389980	3863864	CM_28a	C:\GIS\upperverde\photos\CM_28a.jpg	scenic, perkins ranch and river
389317	386171	CM_2a	C:\GIS\upperverde\photos\CM_2a.jpg	cottonwoods and meadow, river on right
389130	3861709	CM_3a	C:\GIS\upperverde\photos\CM_3a.jpg	upstream vegetation and scenic
389130	3861709	CM_4a	C:\GIS\upperverde\photos\CM_4a.jpg	cottonwood and willow, even-aged stand
388530	3862170	CM_7a	C:\GIS\upperverde\photos\CM_7a.jpg	cave and water
389125	3861704	DSCF-0027	C:\GIS\upperverde\photos\DSCF0027.jpg	Beaver dam
389941	3861893	DSCF-0028	C:\GIS\upperverde\photos\DSCF0028.jpg	flood evidence, inexact GPS location
379345	3860243	CM-010b	C:\GIS\upperverde\photos\P1010010.jpg	arrowhead? Rockshards next to it
379345	3860243	CM-013b	C:\GIS\upperverde\photos\P1010013.jpg	middle room between E and W rooms
379345	3860243	CM-015b	C:\GIS\upperverde\photos\P1010015.jpg	potsherds below CM-014b, ~5 pieces
386369	3863871	CM-0049	C:\GIS\upperverde\photos\P1010049.jpg	RR grade above river, saw 3 RTHa here
386602	3864107	CM-0054	C:\GIS\upperverde\photos\P1010054.jpg	cable corner post, looking across river
379345	3860243	CM-006b	C:\GIS\upperverde\photos\P101006.jpg	ruins, laura in westmost room
386639	3864056	CM-0062	C:\GIS\upperverde\photos\P1010062.jpg	RR bed closer up

386861	3863706	CM-0077	C:\GIS\upperverde\photos\P1010077.jpg	beaver created pad of grass and sticks
381800	3862200	JW-0084	C:\GIS\upperverde\photos\P1010084.jpg	looking north"wild" saw Bald Eagle
381780	3861850	JW-0087	C:\GIS\upperverde\photos\P1010087.jpg	scenic w/cattails
381750	3860950	JW-0089	C:\GIS\upperverde\photos\P1010089.jpg	sandstone in canyon, red w/ pebbles
381400	3861000	JW-0094	C:\GIS\upperverde\photos\P1010094.jpg	view on rim
385060	3864147	ED-111	C:\GIS\upperverde\photos\P1010111.jpg	wooden post 60' high on canyon slope
385066	3864163	ED-115	C:\GIS\upperverde\photos\P1010115.jpg	scenic, looking up the valley, power lines
380347	3860794	CM-137	C:\GIS\upperverde\photos\P1010137.jpg	scenic- river corridor, saw Bald Eagle
378328	3862410	CM-144	C:\GIS\upperverde\photos\P1010144.jpg	one potsherd at ruins near Verde Ranch
385113	3859814	CM-152	C:\GIS\upperverde\photos\P1010152.jpg	Bill Williams-Verde Valley from FR 9110R
386794	3863879	CM-159	C:\GIS\upperverde\photos\P1010159.jpg	scenic, looking downstream, end FR 9110R
376128	3860284	CM-164	C:\GIS\upperverde\photos\P1010164.jpg	fresh beaver chew, maybe this spring
378144	3862023	CM-181	C:\GIS\upperverde\photos\P1010181.jpg	cemented old road used to cross river
378428	3861807	CM-184	C:\GIS\upperverde\photos\P1010184.jpg	sandstone rock, beautiful features
378998	3861140	CM-187	C:\GIS\upperverde\photos\P1010187.jpg	scenic- side canyon, sandstone spires
378998	3861140	CM-188	C:\GIS\upperverde\photos\P1010188.jpg	granitic rock mound, limestone/sandstone
373900	3860374	CM-006	C:\GIS\upperverde\photos\P2130006.jpg	FS road closure, cement walls on FR 638
385524	3864117	TC-0078	C:\GIS\upperverde\photos\P2190078.jpg	random routes, mine gravel for the road here
385197	3863323	TC-0091	C:\GIS\upperverde\photos\P2190091.jpg	man made dam on the verde for swimming
385595	3863222	TC-0094	C:\GIS\upperverde\photos\P2190094.jpg	cave with Toby, no board
385243	3863266	TC-0099	C:\GIS\upperverde\photos\P2190099.jpg	elk scratch, about 10' high, end of FS 492A
385792	3867164	TC-0102	C:\GIS\upperverde\photos\P2190102.jpg	RR Bridge, historic, above verde river,FS 492A
383655	3863734	CM-0023	C:\GIS\upperverde\photos\P2250023.jpg	scenic- no board, Bill Williams Mtn
383462	3864110	CM-0024	C:\GIS\upperverde\photos\P2250024.jpg	4x4 vehicle tracks on closed road
383145	3864271	CM-0029	C:\GIS\upperverde\photos\P2250029.jpg	road crosses river for 2nd time
382888	3864109	CM-0030	C:\GIS\upperverde\photos\P2250030.jpg	scenic upstream, end illegal route
383358	3864551	CM-0035	C:\GIS\upperverde\photos\P2250035.jpg	ruins- doorway, no photo board
383543	3860259	CM-0040	C:\GIS\upperverde\photos\P2250040.jpg	scenic- red rocks