Section 5: Important Resources

The Little Colorado Watershed contains many important natural resources, with national, regional and local significance. It is home to Grand Canyon National Park, Painted Desert National Park, the Petrified Forest and Wupatki National Monuments, Sunset Crater, Kachina Peaks, Kendrick Mountain and Mount Baldy Wilderness areas. Mormon Lake, the largest natural fresh water body in Arizona is located in this watershed. The Little Colorado Watershed also includes a significant portion of the Navajo and Hopi Reservations. The watershed contains critical habitat for the Mexican Spotted Owl (U.S. Fish & Wildlife Service, 2004) and important recreational resources including extensive wilderness areas with hiking, bird watching and fishing.

As a result of our analysis, nine Natural Resource Areas (NRAs) have been identified for protection based on the combination of natural resource values. Factors that were considered in delineating these areas include: legal status (unique waters, critical habitat for threatened and endangered species, national monuments and wilderness areas), the presence of perennial waters, riparian areas, state parks, forests, recreational resources and local values.

The nine identified Natural Resource Areas consist of the following groupings of 10-digit HUCS:


2. Black Creek Colorado River NRA: Upper Black Creek, Lower Black Creek, Upper Pueblo Colorado Wash, Middle Pueblo Colorado Wash.

3. Clear Creek Chevelon Canyon NRA: Jacks Canyon, Lower Clear Creek, Upper Clear Creek, Upper Chevelon Canyon, Lower Chevelon Canyon, Black Canyon, Phoenix Park Wash-Dry Lake, Cottonwood Creek.


5. McDonald Canyon-Middle Little Colorado River NRA: McDonald Canyon-Middle Little Colorado River.


9. Upper Little Colorado River, Lyman Lake to Big Hollow Wash NRA: Lower Silver Creek, Show Low Creek, Upper Silver Creek,
Oso Draw, Big Hollow Wash, Carnero Creek-Little Colorado River Headwaters, Upper Little Colorado River, Lyman Lake to Big Hollow Wash, Coyote Creek, Nutrioso Creek, South Fork Little Colorado River-Little Colorado River Headwaters.

The NRAs have been categorized within the 10-digit HUC subwatershed area where they are located. Several 10-digit contiguous HUCs have been combined to form a unique NRA based on criteria such as State Parks, Forests, National Monuments, Wilderness and endangered species areas they have in common. The significance of each area is discussed in the following paragraphs.

**Lower Little Colorado River NRA**

This NRA includes two 10-digit HUC subwatersheds: Sheep Wash-Lower Little Colorado River and Lee Canyon-Lower Little Colorado River. The Lower Little Colorado River-NRA contains a portion of the Grand Canyon National Park, a portion of the Kaibab National Forest, and a section of the Little Colorado River. The Grand Canyon National Park is 277 miles long, an average of 10 miles wide and nearly 1 mile deep. The Grand Canyon is widely proclaimed as one of the wonders of the natural world. Since Grand Canyon was set aside as a National Monument by Theodore Roosevelt in 1908, and achieved official park status by Congress in 1919, millions of visitors have journeyed to see this awe-inspiring site. The very southeastern section of the Grand Canyon National Park is found in the Lower Little Colorado River NRA (a portion of the south rim). The South Rim of Grand Canyon averages 7,000 feet above sea level (National Park Service, 2006). The southeastern portion of the Kaibab National Forest, Tusayan, is located in the Lower Little Colorado River NRA. The Tusayan sits on the south rim of the Grand Canyon and is made up of aspen groves and lush pine forests. In 1934, the Tusayan National Forest south of the Grand Canyon was consolidated into the Kaibab National Forest. The Lower Little Colorado River NRA also contains a portion of the Little Colorado River. The Little Colorado River is a tributary of the Colorado River, approximately 315 mi (507 km) long. The river provides the principal drainage for the Painted Desert. It rises in eastern Arizona, in southeastern Apache County, and flows northwest, through a series of deep gorges, past the towns of St. Johns, Holbrook, and Winslow. It joins the Colorado in the Grand Canyon, approximately 70 mi (113 km) north of Flagstaff (http://en.wikipedia.org/wiki/Little_Colorado_River).

**Black Creek Colorado River NRA**

This NRA includes four 10-digit HUC subwatersheds: Upper Black Creek, Lower Black Creek, Upper Pueblo Colorado Wash and Middle Pueblo Colorado Wash. The Black Creek Colorado River NRA includes Mexican Spotted Owl habitat and several ADEQ designated unique waters, as well as critical riparian zones.
Ganado Lake, which has fishing, camping, hiking and picnicking opportunities, is also located in this NRA.

This NRA contains a portion of Mexican Spotted Owl habitat. The Mexican spotted owl was listed as a threatened species on 15 April 1993 (U.S. Fish & Wildlife Service, 2004).

The Hubbell Trading Post National Historic Site is located on the Navajo Reservation. The trading post was purchased by John Lorenzo Hubbell in 1878, and the Hubbell family operated the post until it was sold to the National Park Service in 1967. The trading post is still active, and operated by a non-profit organization that maintains the trading traditions the Hubbell family established. The site consists of the original 160 acre homestead, with the trading post, family home and visitor center as the primary attractions (National Park Service, 2005).

Clear Creek Chevelon Canyon NRA

This NRA contains eight 10-digit HUC subwatersheds: Jacks Canyon, Lower Clear Creek, Upper Chevelon Canyon, Lower Chevelon Canyon, Black Canyon, Phoenix Park Wash-Dry Lake and Cottonwood Creek. The Clear Creek Chevelon Canyon NRA includes several perennial streams, lakes, two national forests, Mexican Spotted Owl habitat, the Mogollon Rim Botanical Area, the Chevelon Canyon Ranch Wildlife area, and a Wildcat Research Natural Area (RNA).

This NRA contains portions of the Coconino and Apache-Sitgreaves National Forest. The Mormon Lake Ranger District of the Coconino National Forest occurs within this NRA. It contains ponderosa pine forests and pinyon, juniper woodlands clustered around broad prairies and small lakes.

The Apache-Sitgreaves National Forest encompasses magnificent mountain country in the eastern portion of the NRA along the Mogollon Rim and the White Mountains. On the Sitgreaves, the major attractions for visitors from the hot valleys of Phoenix or Tucson are the Mogollon Rim and strings of man-made lakes. From the Rim's 7,600-foot elevation, vista points provide inspiring views of the low country to the south and west. The Mogollon Rim, a 2,000-foot (600 m) escarpment, cuts across the central section of the state and marks the southwestern edge of the Colorado Plateau (Source: Wikipedia).

The Chevelon Canyon Ranch Wildlife area is managed by Arizona Game and Fish. This area provides great opportunities to enjoy the cool mountain weather atop the Mogollon Rim, as well as possibilities to view wildlife, including mule deer, elk, turkey, falcons, hawks, bats and reptiles. The excellent stream, meadow and upland pine habitats attract many species of wildlife (Arizona Game and Fish, 2006).

Dry Lake, Hay Lake and Tremaine Lake, all man made lakes, are found in the Clear Creek Chevelon Canyon NRA.
Walnut Canyon NRA

This NRA is made up of seven 10-digit HUC subwatersheds: Citadel Wash-Lower Little Colorado River, Deadman Wash, Kana-a Wash-Lower Little Colorado River, Rio de Flag, San Francisco Wash, Walnut Creek, and Canyon Diablo. It contains portions of a National Forest, several wilderness areas, several national monuments, endangered species habitat, lakes, perennial streams and a historic park.

Wupatki National Monument is one of several sites preserving pueblos (houses) of ancient peoples, but unlike the Tonto, Montezuma, Casa Grande and Tuzigoot monuments where there is only one main building, here there are many ruins scattered over a large area of desert northeast of Flagstaff. The pueblos all have a distinctive red color and were made from the local Moenkopi sandstone. All the houses were inhabited by the Anasazi and Sinagua Indians during the 12th and 13th centuries. The settlement of this region was influenced by the eruption of nearby Sunset Volcano during the winter of 1064-5, as the resulting ash and lava made the surrounding land infertile and so the residents of that area moved further afield into land previously considered too dry and barren. In the early 13th century all the pueblos were abandoned, as were most other settlements in this part of the Southwest, although it is believed that the present day Hopi are descended from the former inhabitants of this region (www.americansouthwest.net).

Sunset Crater Volcano National Monument is located northeast of Flagstaff and contains the results of much volcanic activity including several colorful cinder cones formed by extinct volcanoes, and large expanses of lava and ash. The dominant peak is Sunset Crater; as with the other cones it has distinctive dusky red-brown patches formed by oxidized iron and sulphur - this caused John Wesley Powell, who was the first modern-day explorer of the area in 1887, to name the mountain ‘Sunset Peak’. The contrasting colors of the cinders provide the most striking aspect of the Monument but the buckled and twisted lava fields are also very dramatic (www.americansouthwest.net).

Walnut Canyon National Monument, an Arizona National Park Service historical site is located in densely-wooded country southeast of Flagstaff. The small seasonal stream, Walnut Creek, has carved a 600 foot deep canyon into the local Kaibab limestone as it flows east, eventually joining the Little Colorado River en route to the Grand Canyon. The exposed rocks in the canyon walls occur in various layers, of slightly differing hardness, some of which have eroded more rapidly forming shallow caves. During the 12th to 13th centuries the caves were used by the local Sinagua Indians who constructed many cave-dwellings along the steep well-protected ledges, high above the canyon floor. Many of the dwellings were built around a U-shaped meander in Walnut Canyon, where the creek circles around 3 sides of a high rocky plateau, almost creating an 'island', and this region

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now forms the central attraction of the National Monument (www.americansouthwest.net).

The Kachina Peaks Wilderness Area is located just north of Flagstaff. This Wilderness is part of a large, heavily vegetated composite volcano 7,400 to 12,643 feet high including Humphreys Peak, the highest point in Arizona. Kachina Peaks was designated as a wilderness area in 1984 and has a total of 18,616 acres which is managed by the Forest Service. The "Peaks" exhibit a rich diversity of past geologic events such as lava flows, violent volcanic explosions, glaciation, erosion, and frost action. The only Arctic-Alpine vegetation in the state is found on the Peaks in a fragile 2-square mile zone and contains a threatened plant, Senecio Franciscanus, a dwarf perennial alpine plant.

The Peaks are outstanding examples of past volcanic activity and preserve the best example of Ice Age glaciation in Arizona in lateral and medial moraines and former stream beds. The Peaks are sacred to several western Indian tribes including the Zuni, Havasupai, Hopi and Navajo. A number of religious shrines have been documented that have historic and religious value and are currently in use. (http://gorp.away.com/gorp/resource/us_wilderness_area/az_kachi.htm)

Strawberry Crater, a Wilderness area designated by the United States Congress in 1984 is managed by the Forest Service and is comprised of 10,743 acres. Part of the huge San Francisco volcanic field, Strawberry Crater is one of its roughly 600 craters and cones, between 50,000 to 100,000 years old. The crater once sent lava flowing across the northwestern corner of this Wilderness, and low cinder cones dominate the southern end. Strawberry Crater is made up of gently rolling hills covered in pinyon and juniper, cinder-strewn terrain ranging in elevation from 5,500 feet to 6,000 feet. From the tops of many of the cinder cones you can see the Painted Desert, Hopi Buttes, and mesas of the valley of the Little Colorado River. Game animals and smaller mammals may be seen throughout the area (www.wilderness.net).

Arizona's largest natural lake, Mormon Lake, is located here. The area is also known for its plentiful wildlife. Large herds of elk roam the forests and edgelands. Bald eagles and ospreys live and hunt around the lakes. Pronghorn antelope graze the prairies. Lakes Mary, Ashurst, Indian, Ducksnest, Vail, Upper Tank, BigFill and Long are also found in the Walnut Canyon NRA.

This NRA also contains the nation's first United States Forest Service Experiment Station, Fort Valley, and the Raymond Ranch Wildlife Area (RRWA). Eighty-five to 90 bison are maintained at RRWA. Fifty to 100 elk use the wildlife area at one time or another during the year, along with pronghorn antelope and mule deer. Waterfowl, shorebirds and other wildlife are known or believed to occur seasonally, including several special status species (Arizona Game and Fish, 2006).
Mexican Spotted Owl habitat is also found throughout the Walnut Canyon NRA.

**McDonald Canyon-Middle Little Colorado River NRA**

This NRA is made up of one 10-digit HUC subwatershed: McDonald Canyon-Middle Little Colorado River. The NRA contains several lakes including Obed Meadow and McDonald's Canyon.

The Tanner Wash Area of Critical Environmental Concern (ACEC) is found within this NRA. An ACEC is defined as a place within Bureau of Land Management public lands where special management attention is required to protect and prevent irreparable damage to important historic, cultural, or scenic values; fish and wildlife resources; or other natural systems or processes or to protect life and safety from natural hazards.

**Cedar Wash NRA**

This NRA includes two 10-digit HUC subwatersheds: Lower Cedar Wash and Upper Cedar Wash. The Cedar Wash NRA includes portions of two national forests, the Coconino and Kaibab, Mexican Spotted Owl habitat, a wilderness area and a lake, Cedar Wash.

Kendrick Mountain Wilderness encompasses Kendrick Peak, one of the many peaks of the vast San Francisco mountain volcanic field located on the Coconino Plateau in north-central Arizona. Reaching an elevation of 10,418, the summit affords excellent views of the surrounding plateau, including the San Francisco Peaks to the east, the distant red rock of the Oak Creek-Sycamore Canyon country, Sitgreaves and Bill Williams Mountains to the south, Red Butte and distant views of the north rim of the Grand Canyon to the north. In 2000 a majority of the wilderness was involved in a large wildfire. Dramatic vegetation patterns were created by burn intensities ranging from light to very severe, most evident on the west, north, and east slopes. On-going natural recovery processes may be observed, with early seral species becoming established in the severely burned areas.

Characteristic montane coniferous forests, aspen stands, and high mountain meadow grasslands will re-establish with time. Unstable volcanic soils have undergone recurring severe erosion on the steeper slopes within burned areas, causing damage to the trails and access roads. Soils in the burn area will take many more years to re-stabilize.

**Oraibi Wash NRA**

This NRA contains four 10-digit HUC subwatersheds: Moenkopi Wash Headwaters, Upper Dinnebito Wash, Upper Oraibi Wash and Upper Polacca Wash. The Oraibi Wash NRA contains a significant portion of Mexican Spotted Owl habitat.
Puerco River Wash NRA

This NRA is made up of seven 10-digit HUC subwatersheds: Leroux Wash, Lithodendron Wash-Lower Puerco River, Porter Tank Draw-Middle Little Colorado, Washboard Wash-Upper Little Colorado River, Ninemile Wash-Lower Puerco River, Dry Wash and Milky Wash. The Puerco River Wash NRA contains the Petrified Forest National Park, Painted Desert National Park, Little Colorado River and Silver Creek (both of which are perennial streams).

Petrified Forest National Park is a surprising land of scenic wonders and fascinating science. The park contains one of the world’s largest and most colorful concentrations of petrified wood, multi-hued badlands of the Chinle Formation, portions of the Painted Desert, historic structures, archeological sites, and displays of 225 million year old fossils. Petrified Forest National Park features some of the best fossil records and rock formations from the Late Triassic (225 million years ago) in the world. The park is 93,533 acres, with a recently expanded boundary increasing the acreage to 218,533 acres (National Park Service, 2006).

Upper Little Colorado River, Lyman Lake to Big Hollow Wash NRA

This NRA includes ten 10-digit HUC subwatersheds: Lower Silver Creek, Show Low Creek, Upper Silver Creek, Oso Draw, Big Hollow Wash, Carnero Creek-Little Colorado River Headwaters, Upper Little Colorado River, Lyman Lake to Big Hollow Wash, Coyote Creek, Nutrioso Creek and South Fork Little Colorado River-Little Colorado River Headwaters.

This NRA is home to portions of a national forest, several wilderness areas and state parks, endangered species habitat, several lakes, and perennial streams.

The United States Congress designated the Escudilla Wilderness in 1984 and it now has a total of 5,200 acres managed by the Forest Service. Escudilla Mountain is the third highest mountain in Arizona at 10,912 feet. Escudilla sits on the third smallest Wilderness area in the state, home to acres of mountain meadows. The Wilderness encompasses the upper reaches of the mountain, and aspen cover about 40 percent of the area, regrowth from a terrible fire in 1953 (www.wilderness.net).

The United States Congress designated the Mount Baldy Wilderness in 1970 and it now has a total of 7,079 acres managed by the Forest Service. It is one of the most popular hiking areas in Arizona. An extinct volcano rising to 11,403 feet, Mount Baldy stands within the White Mountain Apache Reservation; the Wilderness occupies its eastern slope.

Most of the forest covering the mountain is mixed conifers with ponderosa pine in the lower elevations and fir and spruce higher up. Large meadows break open the forest, carpeted in summer with wildflowers such as Indian paintbrush, columbine, penstemon, iris, and lupine. Until winter cloaks the area in snow, elk and deer are commonly seen. Beavers, mountain
Lions, coyotes, bobcats, and black bears live here with a variety of smaller mammals. Bald eagles, falcons, and hawks are also found here (www.wilderness.net).

The Apache-Sitgreaves National Forest makes up a little over 25% of this NRA. The Upper Little Colorado River, Lyman Lake to Big Hollow Wash NRA also includes several important perennial rivers and streams: Little Colorado River, Silver Creek, Nutrioso Creek, Big Ditch, Water Canyon Creek, Mineral Creek, Show Low Creek, Benny Creek, Fish Creek, Coyote Creek and Lyman Lake.

This NRA contains the Grasslands Wildlife area, Wenima Wildlife Area, and the Sipe White Mountain Wilderness Area. These wildlife areas are managed by U.S. Fish & Wildlife.

Also included in this NRA is Lyman Lake State Park. The Park was created as an irrigation reservoir by damming the Little Colorado River. This 1,200-acre park encompasses the shoreline of a 1,500-acre reservoir at an elevation of 6,000 feet. Because of its size, Lyman Lake is one of the few bodies of water in northeastern Arizona with no size restrictions on boats. The fishery consists of walleye, channel catfish and largemouth bass.

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