

## Chapter 3. AFFECTED ENVIRONMENT

### 3.1 Introduction

The relevant resources described in this chapter are those that would be affected by the alternatives if they were implemented. Only resources that may be affected or impacted are described and only to the extent necessary to understand anticipated impacts. The effects (impacts or issues) to these resources created by the alternatives if implemented are discussed in Chapter 4.

### 3.2 Description of Relevant Affected Issues and Resources (See list of Issues in Section 1.6)

#### 3.2.1 Vegetation

Vegetation at the project area is dominated by non-native species including saltcedar (*Tamarix* spp.), Russian olive (*Elaeagnus angustifolia*), Siberian elm (*Ulmus pumila*), and other ground-layer weedy species. Native vegetation found in the project area includes Rio Grande cottonwood and coyote willow. According to the Wetlands/Riparian Database that exists for this portion of the Rio Grande (New Mexico Heritage Program 2000), the project area consists of highly disturbed vegetation communities that are frequently flooded, but not altogether scoured, and typically dominated by the Coyote Willow / Threesquare Bulrush Alliance (Muldavin et al. 2000). Other existing or potential vegetation alliances that are found within the project area include the Cottonwood / Coyote Willow Alliance, the Cottonwood-Gooding Willow Alliance, the Cottonwood / New Mexico Olive Alliance, and the Cottonwood-Russian Olive / Saltcedar Alliance.

#### 3.2.2 Wildlife including Threatened and Endangered Species

##### Mammal species:

Coyote (*Canis latrans*), raccoon (*Procyon lotor*), bobcat (*Lynx rufus*), skunk (*Mephitis mephitis*), beaver (*Castor canadensis*), and various species of mice, rats, bats, rabbits, and other small mammals are common to the area. Birds that can be found in the region at different times of the year include: herons, ducks, turkey vultures, hawks, doves, hummingbirds, crows, and numerous other species.

##### Threatened and Endangered Species (T&E):

The following describes relevant T&E species that may be found at the locations of the proposed alternative. The Rio Grande Silvery Minnow, Southwestern Willow Flycatcher, and the Bald Eagle have been identified as relevant to the analysis of this EA.

##### Rio Grande Silvery Minnow:

The Rio Grande silvery minnow (*Hybognathus amarus*) (minnow) was listed as a federally-endangered species by the U.S. Fish and Wildlife Service (Service) in July 1994 (U.S. Fish and Wildlife Service 1994a). Critical habitat was designated as the reach of the Rio Grande from

Cochiti Dam to the upper pool for Elephant Butte Reservoir, a distance of approximately 163 miles (U.S. Fish and Wildlife Service 2003a). The species was previously documented in Cochiti Reach in 1994 (Platania 1995) and may persist at low population densities. A more recent fish community survey conducted in 2002 did not encounter any silvery minnows in the project area (see Appendix). The most recent fish community surveys in the reach were conducted by the Service at Peña Blanca. The Final Critical Habitat Designation for the minnow includes the Cochiti Reach from Cochiti Dam to Angostura Diversion Dam, including the project area on Cochiti Pueblo (U.S. Fish and Wildlife Service 2003b).

Dudley and Platania (1997) documented habitat preferences of the minnow. They found that individuals were most commonly collected in shallow water (<40 cm) with low water velocities (<10 cm/second) and small substrate size, primarily silt and sand. Low-velocity habitats, such as backwaters and embayments, provide nursery areas for larvae (Dudley and Platania 1997, Massong et al. 2004), which grow rapidly in these areas. Restoration efforts that increase the availability of these habitat conditions would benefit the minnow. In addition to the quantity of preferred habitat, food availability may be influenced directly by river restoration activities. Minnows are herbivores that eat primarily diatoms, cyanobacteria, and green algae associated with sand or silt substrates in shallow areas of the river channel (Shirey 2004). Habitat created by the project would benefit possible remnant silvery minnow populations and facilitate future re-introduction in the reach.

### **Southwestern Willow Flycatcher:**

The Willow Flycatcher is a widely-distributed summer resident of much of the United States and southern Canada (Brown 1988). Currently, four subspecies of Willow Flycatcher are recognized in North America and distinguished by subtle differences in color, morphology, and breeding range (Phillips 1948, Aldrich 1953, Unitt 1987, Browning 1993). One subspecies breeds east of the Rocky Mountains, *E. t. traillii*. Three breed west of the Rocky Mountains, *E. t. brewsteri*, *E. t. adastus*, and *E. t. extimus* (Unitt 1987). Browning (1993) recognizes a fifth subspecies (*E. t. campestris*) that is said to occur in the central portion of the United States. Formerly known as the Traill's Flycatcher, *Empidonax traillii* was divided into two species in 1973 (American Ornithologists' Union 1973). The Willow Flycatcher (*Empidonax trailli*) was defined as the "fitz-bew" song form of the prairies and open habitats of the Midwest and eastern United States. The Alder Flycatcher (*Empidonax alnorum*) was defined as the "fee-bee-o" song form from the boreal regions of Alaska, Canada, and eastern United States.

*E. t. extimus* was initially described by Phillips (1948), from a collection by Gale Monson. The southwestern subspecies is generally paler than other subspecies and differs in morphology, primarily wing formula. The taxonomic status of *E. t. extimus* was reviewed and confirmed by Hubbard (1987), Unitt (1987), and Browning (1993). Generally, *E. t. extimus* is paler on its back and head than either *E. t. adastus* or *E. t. brewsteri*, and the breast band found on *E. t. extimus* is less distinct and paler gray than on other subspecies (Browning 1993). In 1992 the Service was petitioned to list *E. t. extimus* as an endangered species under the Endangered Species Act (ESA). Subsequently, the Service published a proposal in 1993 to list the subspecies as endangered with critical habitat. A final designation of critical habitat for the flycatcher was made in 2005 (U.S. Fish and Wildlife Service 2005).

Historically, the Southwestern Willow Flycatcher was widespread across the southwestern United States, breeding in riparian habitats ranging from sea level to approximately 7,000 feet in

Arizona, southern California, New Mexico, southern Nevada, southern Utah, southwestern Colorado, west Texas, and extreme northwest Mexico (Phillips 1948, U.S. Fish and Wildlife Service 1995, McKernan and Braden 2001, Smith et al. 2004). This subspecies has been documented at a total of 109 sites on 43 drainages throughout the southwestern United States. The majority of the population occurs in Arizona, California, and New Mexico, accounting for 92 percent of all breeding territories (Marshall 2000).

In New Mexico Southwestern Willow Flycatcher breeding territories have been documented on the upper, middle, and lower Rio Grande; the Rio Chama; the Zuni River; and the middle and lower Gila River (Sogge et al. 1997, Williams 1997, Finch and Kelly 1999, Marshall 2000). During Southwestern Willow Flycatcher surveys conducted from 1994 to 1996, 17 territories were found along the middle Rio Grande. Sites were located on the Isleta Pueblo, Bosque del Apache, and San Marcial (Finch and Kelly 1999). More recently, 10 to 11 territories were located on the San Juan Pueblo and 6 to 8 pairs were found on the Isleta Pueblo (N. Baczek, pers. comm.). During presence/absence surveys conducted in 2006 along the middle Rio Grande, 177 Southwestern Willow Flycatcher territories were documented between the Pueblo of Isleta and the upper half of Elephant Butte Reservoir (Moore and Ahlers 2006).

### **Bald Eagle:**

Historically widely distributed across North America, the Bald Eagle suffered great declines in southern and eastern portions of its range (Buehler 2000). By the early 1990s, populations in many areas had rebounded from the low levels that occurred before DDT use was banned in the United States. The number of breeding territories in the continental United States nearly tripled between 1980 and 1990 (Kjos 1992), and breeding populations have doubled every 6 to 7 years since the late 1970s (U.S. Fish and Wildlife Service 1994b).

In New Mexico the Bald Eagle is known to occur in Bernalillo, Catron, Colfax, McKinley, San Juan, and Sierra Counties. Watersheds in New Mexico where the species is known to occur include the Rio Grande headwaters, Alamosa-Trinchera, San Luis, Saguache, Conejos, Rio Grande, and Elephant Butte and Caballo Reservoirs (Buehler 2000).

The Bald Eagle was listed endangered in 1967, and a Federal recovery plan was written and approved in 1995. A proposed rule to reclassify the Bald Eagle from endangered to threatened in most of the lower 48 states was published in 1994 (U.S. Fish and Wildlife Service 1994b), and a final rule to reclassify the species from endangered to threatened in the lower 48 states was published in 1995 (U.S. Fish and Wildlife Service 1995). The Bald Eagle has been delisted as a threatened species as of July 9, 2007 (Federal Register 72(130): 37345-37372).

Roosting or perching (often communally) on snags, large deciduous trees, and cliffs, the Bald Eagle is primarily water-oriented, and the majority of the populations in New Mexico are found within 4 kilometers of streams and lakes. However, Bald Eagles have been known to regularly occur in considerably drier areas to include the region between the Pecos Valley and Sandia, Manzano, Capitan, and Sacramento Mountains, and areas of the Mogollon Plateau (Haynes and Schuetz 1997). Bald Eagles on the middle Rio Grande (from Albuquerque to the Rio Chama confluence) have been monitored by the U.S. Army Corps of Engineers since 1988 (Reclamation 1999). Reclamation has also conducted winter surveys for Bald Eagles at Elephant Butte and Caballo Reservoirs since 1997.

Wintering habitat for the Bald Eagle occurs almost statewide in New Mexico, though most of its wintering habitat is found in the north and west parts of the state. These sites have large numbers of waterfowl from November to March and fisheries supported by reservoirs that provide the prey base to support foraging Bald Eagles. Winter and migrant populations appear to have increased in New Mexico, apparently as the result of reservoir construction and the expansion of fish and waterfowl populations. This species is found occasionally elsewhere in New Mexico in the summer (Reclamation 1999).

### **3.2.3 Noxious Weeds**

Populations of State-listed noxious weeds have been observed in the project area during site visits. Most of the species observed are considered Class B and Class C noxious weeds, according to the current State list of noxious weeds as shown in Appendix B. Some control efforts were recently implemented at the project area following a fire in 2003. Saltcedar, Russian olive, and Siberian elm were the species targeted during the control efforts.

### **3.2.4 Water Resources**

Turbidity, from erosion in the reach of the Rio Grande that flows through the project area, is greatest during periods of high runoff. High-flow events from rainstorms or rapid snow melts in the mountains cause scouring of the banks and bottom of the Rio Grande as well as the streams and arroyos that empty into the river. This scouring results in high sediment loading and gradual erosion of the river's banks. Over time this erosion leads to a natural tendency of the river to meander back and forth from side to side. Surface runoff adds to sediment loading and turbidity in the river.

Any activities that reduce or eliminate vegetation have the potential to result in erosion until vegetation is re-established. The project area is surrounded by a region of farming, ranching, and, more recently, residential development. Farming activities (e.g., plowing and tilling), ranching activities (e.g., livestock grazing), and clearing activities for development often eliminate or reduce vegetation, even if only temporarily, and thus become a potential cause of sediment loading in the river during periods of high runoff.

### **3.2.5 Environmental Justice**

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires that the effects on minority and low-income populations within a project area be given special consideration to determine if the proposed action would result in disproportionate adverse effects to their communities. According to the most recent data from the U.S. Bureau of Economic Accounts (2005), the annual per capita income for the State of New Mexico in 2003 was \$24,995. The 2003 annual per capita income for Sandoval County was \$25,523. According to the most recent data from the U.S. Census Bureau (2005), 29.4 percent of the residents of Sandoval County were Hispanic or Latino in 2000 and 16.3 percent of the residents of Sandoval County were of American Indian or Alaskan Native descent in 2000.

### 3.2.6 Indian Trust Assets

Indian Trust Assets (ITAs) or resources are defined as legal interests in assets held in trust by the U.S. Government for Native American Indian tribes or individual tribal members. Examples of ITAs are lands, minerals, water rights, other natural resources, money, or claims. An ITA cannot be sold, leased, or otherwise alienated without approval of the Federal government. The project area is located primarily on Native American Indian Trust lands as part of the Pueblo of Cochiti.

### 3.2.7 Cultural Resources

Section 106 consultation with the New Mexico SHPO will be handled under the terms of a Programmatic Agreement, which sets out guidelines for the consultation process regarding Middle Rio Grande river maintenance projects. Native American tribes were consulted for the Programmatic Agreement. A copy of this Programmatic Agreement is contained in Appendix A.

### 3.2.8 Air Quality and Noise

The Clean Air Act of 1970, as amended, established National Ambient Air Quality Standards (NAAQS) (40 CFR 1 § 81.332) to protect the public from exposure to dangerous levels of several air pollutants. Sandoval County is in Air Quality Control Region (AQCR) 152 – Albuquerque – Mid Rio Grande. The AQCR 152 has been classified as an attainment area for all air pollutants identified in the NAAQS (eCFR 2005). Because of this classification for Sandoval County, the proposed project located on the Pueblo of the Cochiti is not subject to EPA requirements for ambient monitoring. The project area is occasionally used by people driving utility vehicles along the east levee, which results in the generation of a small amount of exhaust and fugitive dust during dry conditions.

## Chapter 4. ENVIRONMENTAL CONSEQUENCES

### 4.1. Introduction

This chapter discusses the predicted achievement of the objectives, effects, and cumulative effects for each alternative in section 2.4 of Chapter 2. Included is a discussion of each alternative's effect on relevant issues summarized in section 1.6 (issues) and resources described in section 3.2.

### 4.2. Predicted Attainment of Project Objectives for Each Alternative

#### No Action

Under the no action alternative, the project objectives would not be attained. The river would continue to erode the east stream bank at river mile 228.9 until the levee breaches. In addition, at river mile 231.3 the west bank would continue to erode eventually causing damage to the road and Cochiti Pueblo land.