

silvery minnow (Platania 1990; IBWC 1994). Moreover, water quality, compared to the reach upstream of the Park, is greatly improved in this reach by the many freshwater springs within Big Bend National Park (MacKay 1993; R. Skiles, pers. comm. 2001; IBWC 1994). This area is protected and managed by the National Park Service, and the river currently supports a relatively stable hydrologic regime (R. Skiles, pers. comm. 2001). The National Park Service's management authority over the wild and scenic river designation currently extends 0.25 mi (0.4 km) from the ordinary high water mark. Thus, the area designated as a wild and scenic river outside of Big Bend National Park is currently managed by the National Park Service under its authorities and is considered part of the National Park System.

As discussed above, we have determined that recovery of the silvery minnow requires reestablishing populations outside of the middle Rio Grande (see "Recovery Plan" section above) and should include areas within the lower Rio Grande. Because the silvery minnow has been extirpated from this reach, Federal agencies have determined that their actions will not adversely affect the silvery minnow and therefore have not consulted with us under section 7(a)(2) about their actions related to this reach. We believe it is important to ensure that the assistance of Federal agencies, the State of Texas resource agencies, and non-Federal entities in future recovery actions, such as the establishment of an experimental population, is not compromised. Although Big Bend National Park expressed support for a critical habitat designation for the silvery minnow within the National Park, it also indicated that if areas outside the National Park but within the wild and scenic river were included, their attempts at developing a river management plan could be compromised (F. Deckert, Big Bend National Park, pers. comm.).

We have determined that this reach is essential to the conservation of the silvery minnow. However, our conservation strategy for the silvery minnow is to establish populations within its historic range under section 10(j) of the Act, and all or portions of this river reach could be included in such an effort. We believe that this area will contribute to the recovery of the silvery minnow, but have not designated this river reach as critical habitat.

7. The Terrell/Val Verde County line, TX to the Amistad Dam, TX. This short reach is highly influenced by the

Amistad Dam at its terminus. It is also believed that introduced fish played a role in the extirpation of silvery minnow in this reach (Bestgen and Platania 1991). Water quality conditions within this reach are generally degraded, and are also a concern for this reach, particularly during low-flow conditions (Texas Water Development Board 2001; Texas Natural Resource Conservation Commission 1996). For these reasons, we do not believe that this river reach is essential to the conservation of the silvery minnow; therefore, it is not designated as critical habitat.

8. Downstream of the Amistad Dam to the Falcon Dam, Val Verde, Kinney, Maverick, Web, Zapata, and Starr Counties, TX. This reach provides continuous base flows ranging between 500 and 3000 cfs (Service 1999), but the reach is highly urbanized and has many instream barriers (e.g., earthen dams) at Maverick, Eagle Pass, and Indio that would prevent movements of silvery minnow. Water quality is also a potential concern for this reach, particularly during low-flow conditions (Texas Water Development Board 2001; Texas Natural Resource Conservation Commission 1996). This reach is heavily channelized with little to no stream braiding and inappropriate substrate (e.g., cobble) in areas. There is no suitable habitat for the silvery minnow within this reach, and the species was last recorded here in the 1950s (Service 1999). The fish community within this reach is dominated by warm water non-native predators (Platania 1990; Service 1999). Because this reach does not have suitable habitat for the silvery minnow and water quality during variable flow conditions is a concern, this reach of river is not essential to the conservation of the silvery minnow and is not designated as critical habitat.

9. Downstream of Falcon Reservoir to the Gulf of Mexico, Starr, Hildago, and Cameron, Counties, TX. The silvery minnow historically occupied this reach of river (Service 1999). In fact, the type locality (the location from which the species was originally described) for the species is Brownsville, TX (Hubbs and Ortenburger 1929). However, the last collection of the silvery minnow occurred in 1961 just downstream of Falcon Reservoir (Bestgen and Platania 1991). The flow regime of this reach of the Rio Grande is highly influenced by releases from Falcon Reservoir. Most of the tributary inflow is controlled or influenced by small impoundments off the main river channel. The lower portion of this reach is often dewatered, with the river flow stopping before the confluence with the Gulf of Mexico

(IBWC 2001b). The fish community in this reach of the Rio Grande has shifted significantly toward estuarine (a mixture of fresh and salt water) type species (IBWC 1994; Contreras-B. and Lozano-V. 1994). There has also been a significant loss of the native fish fauna in the Mexican tributaries in the last several decades (Hubbs *et al.* 1977; Almada-Villela 1990; Platania 1990), apparently from poor water quality (e.g., Texas Water Development Board 2001; Texas Natural Resource Conservation Commission 1996). Finally, invasive weeds (e.g., hydrilla and hyacinth) have clogged many areas of this reach and have reduced the amount of dissolved oxygen in the water (IBWC 2001b). Because this reach does not have suitable habitat, there appears to be little benefit in trying to intensively manage the flow regime in this reach of river. For these reasons, this reach is not considered essential to the conservation of the silvery minnow and is not designated as critical habitat.

10. Pecos River from Santa Rosa Reservoir to Sumner Dam, Guadalupe County, NM. This reach is approximately 55 mi (89 km) and is typified by wide fluctuations in flow regimes from upstream releases from Santa Rosa Reservoir (Hoagstrom 2000). Within this reach there is one diversion at Puerto del Luna, NM. The silvery minnow has not been collected within this reach since 1939 (Bestgen and Platania 1991; Service 1999). The habitat in this reach is not suitable for the silvery minnow because much of the surrounding topography is composed of steep cliffs and canyons (Hoagstrom 2000). Canyon habitat does not provide suitable habitat (e.g., shallow, braided, streams with sandy substrates) for the silvery minnow (Bestgen and Platania 1991; Dudley and Platania 1997; Remshardt *et al.* 2001). Because of the short length of this reach, fluctuations in the flow regime, and the absence of suitable habitat for the silvery minnow, this reach of river is not essential to the conservation of the silvery minnow and is not designated as critical habitat.

11. Middle Pecos Reach—approximately 214 mi (345 km) of river immediately downstream of Sumner Reservoir to the Brantley Reservoir Dam in De Baca, Chaves, and Eddy Counties, NM. The Pecos River was historically occupied but is currently unoccupied by the silvery minnow (Bestgen and Platania 1991). In fact, the silvery minnow was once one of the most common fish species present between Sumner and Avalon Reservoir (the area currently inundated by Brantley Reservoir) (Bestgen and Platania 1991). The Pecos River can support a relatively