Lower San Pedro River – Key Ecological Attributes **(revised July, 2012)**

Lower San Pedro River Land Ownership Map

The San Pedro River heads in Sonora, Mexico and flows northward for approximately 100 miles to its confluence with the Gila River near the Town of Winkelman, Arizona. It is the last major undammed river in the American Southwest, and exhibits a remarkably intact riparian system including extensive stands of Fremont cottonwood (*Populus fremontii*)/ Goodding's willow (*Salix gooddingii*) gallery forest and large mesquite (*Prosopis velutina*) bosques.

An approximately 40-mile reach of the upper San Pedro River between the International Boundary and St. David is encompassed by the Bureau of Land Management's (BLM) San Pedro Riparian National Conservation Area (RNCA), one of only two RNCAs in the nation. The San Pedro RNCA was designated in order to protect the "…unique riparian area and the aquatic, wildlife, archeological, paleontological, scientific, cultural, educational, and recreational resources of the public lands surrounding the San Pedro River."

The San Pedro River serves as a corridor between the Sky Islands of the Madrean Archipelago in northern Sonora and southern Arizona in its southernmost reaches and, in the north, Arizona's Central Highlands. The river is not only a major corridor between varied habitat types and ecoregions; it represents a ribbon of water and riparian vegetation in an otherwise arid environment. The river thus exhibits a remarkably high biodiversity, both in resident and migratory species.

Over 100 species of breeding birds and another approximately 250 species of migrant and wintering birds occur in the area, representing roughly half the number of known breeding species in North America. The San Pedro RNCA serves as a migratory corridor for an estimated 4 million migrating birds each year.

Notably, 36 species of raptors, including the Gray Hawk (*Asturina nititda* = *Buteo nitidus*), Mississippi Kite (*Ictinia mississippiensis*), Common Black Hawk (*Buteogallus anthracinus*), and Zone-tailed Hawk (*Buteo albonotatus*) can be found within the San Pedro RNCA. Regarding the Gray Hawk, the San Pedro RNCA is thought to support 40 percent of the nesting Gray Hawks in the United States. The lower San Pedro River, like the upper reaches, also supports appreciable numbers of nesting Western Yellow-billed Cuckoos (*Coccyzus americanus occidentalis*), currently a candidate for Federal listing as a threatened or endangered species. The abundance of mammals, reptiles,

and amphibians is also high; over 80 species of the former and more than 40 species of the latter. Fourteen species of native fish formerly occurred in the San Pedro River; two persist today. The upper reaches of the San Pedro River and its watershed also support populations of the endangered Huachuca water umbel (*Lilaeopsis schaffneriana* var. *recurva*), a semi-aquatic plant.

In special recognition of the San Pedro RNCA's appreciable avian diversity, the unit was designated North America's first Globally Important Bird Area by the American Bird Conservancy in 1996. The Audubon Society has also named the San Pedro RNCA an Important Bird Area. A Monitoring Avian Productivity and Survivorship (MAPS) bird banding and research site has been established on the San Pedro RNCA.

The lower reaches of the San Pedro River, from the so-called Narrows upstream of the community of Cascabel to the Gila River confluence, are surrounded by saguaro cactus-dominated Sonoran Desertscrub, rather than the Chihuahuan Desert-influenced uplands adjoining the upper San Pedro River. The lower San Pedro River, while not the subject of the intensive current research carried out on the river's upper reaches, supports similar biodiversity. Investigations conducted in the 1940s and 1970s documented between 95 and 111 bird species solely within the mesquite bosque currently owned by BHP-Billiton (Arnold 1940, Gavin and Sowls 1975). The Lower San Pedro is designated an Important Bird Area (IBA) by the Audubon Society. Furthermore, the lower reaches of the San Pedro River are currently subject to intensive survey efforts, largely conducted by Arizona Game and Fish Department biologists, for the endangered Southwestern Willow Flycatcher (*Empidonax traillii extimus*).

The aforementioned survey effort has shown the reach between Three Links and the Gila River confluence to be densely occupied by Southwestern Willow Flycatchers. Indeed, in 2005, the most-recent year for which complete survey data have been summarized, the reach thus described contained 164 Southwestern Willow Flycatcher territories consisting of 307 adult birds (English *et al*. 2008). These lower reaches thus contain over 99 percent of the Southwestern Willow Flycatcher territories on the entire San Pedro River within the United States. The San Pedro RNCA hosted the remaining < 1 percent of the territories (one) and adults (a single pair). It must be noted that the middle reaches of the river, between St. David and Three Links, are largely unsurveyed due to limited habitat and poor access to private lands. Little to no surveys are conducted in Sonora.

The high importance of the lower San Pedro River for the recovery of the Southwestern Willow Flycatcher contributed to its designation as critical habitat for the species. The current critical habitat includes approximately 60 river miles of the lower San Pedro River between a point approximately 3.5 river miles south of Hot Springs Canyon to the Gila River confluence. In

2011, the U.S. Fish and Wildlife Service proposed to redesignate (and increase the length of) Southwestern Willow Flycatcher critical habitat over a 79-mile reach of the lower San Pedro River.

Aravaipa Creek, a major tributary to the lower San Pedro River, contains an intact native fish assemblage, including the endangered spikedace (*Meda fulgida*) and loach minnow (*Tiaroga cobitis*). The presence of a robust population of these fishes in Aravaipa Creek, and the largely unregulated hydrology of its waters, led to a 46.1-mile reach of Aravaipa Creek and its upper tributaries – Deer Creek and Turkey Creek - being designated as spikedace critical habitat. Similarly, critical habitat for these species exists within Hot Springs Canyon (5.8 miles plus 3.4 additional miles within Bass Canyon, an upper tributary) and in Redfield Canyon (4.0 miles). Hot Springs and Redfield canyons are tributaries to the lower San Pedro River near Cascabel.

Ownership of lands along the lower San Pedro River is mixed. The BLM and Bureau of Reclamation (BOR) own disjunct parcels within the reach. The BLM and TNC also own and co-manage lands within the Aravaipa Canyon and Muleshoe Ecosystem Management Areas, both located on major tributaries to the lower San Pedro River. Lands along the lower San Pedro, however, are predominately in private ownership.

Some of the private lands are essentially wild while others support mining, farming, livestock operations, and/or residences. The Nature Conservancy (TNC) and the Salt River Project (SRP, a utility) also own lands along the lower San Pedro River. These TNC and SRP lands, along with those owned by the BOR, are encumbered by easements and are specifically managed to conserve southwestern willow flycatchers and mitigate for the impacts of raising Roosevelt Dam and flooding territories there. Pima County owns the Bingham Cienega Preserve and is actively restoring riparian and sacaton wetland ecosystems.

The Resolution Copper parcel involved in the proposed land exchange, the 7B Ranch, is managed by TNC on behalf of the mining company. The 7B Ranch contains a mesquite bosque similar in structure and value to that on the BHP-Billiton parcel. The site is undergoing its first year of protocol-level surveys for Southwestern Willow Flycatchers at this writing.

Too, TNC is working with the U.S. Fish and Wildlife Service's Partners for Fish and Wildlife Program to restore an artesian spring-fed Cienega (wetland) and reestablish endangered Gila topminnow (*Poeciliopsis occidentalis occidentalis*) and lowland leopard frog (*Rana yavapaiensis*) on

the 7B Ranch.

References

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