



Fall 2024 Bi-National Beaver Survey of the San Pedro River: Summary May 2025

Watershed Management Group

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Data collected by: Community Scientist Volunteers, Watershed Management Group, Profauna, Mike Foster, Steve Merkley, Sky Island Alliance, CONANP, the National Park Service and others

Introduction. Beavers were once a keystone species in the rivers of southeastern Arizona but were extirpated by trapping over 100 years ago. In an effort to revive the species locally and to regain the ecosystem services provided by beaver, the Arizona Game and Fish Department (AZGFD), in partnership with Bureau of Land Management (BLM), reintroduced beaver to the San Pedro River. Building on previous monitoring efforts, Watershed Management Group (WMG) and partners launched an annual bi-national beaver survey along the San Pedro River in 2021. Through a community-science collaboration, WMG and partners collected evidence of beaver presence in the watershed, including dams, tracks, and beaver chews. In Fall 2024, WMG conducted the fourth and most recent annual bi-national beaver survey on the San Pedro River.

Methods. Our survey methods are based on community science models and informed by a comprehensive literature review of similar studies, as well as consultations with local experts. All volunteers were required to attend a virtual training that outlined the purpose of the beaver surveys, survey procedures, necessary gear, and what to expect during the survey. During the surveys, volunteers and staff traversed riverbanks while documenting evidence of beaver activity, including tracks, tree chews, dams and lodges. Observations were recorded using the ESRI ArcGIS Survey123 app for data collection.

In Fall 2024, we extended the surveyed 77.5 river miles of the San Pedro River from the headwaters in Sonora, Mexico, to the lower San Pedro in Mammoth, Arizona. WMG designated 29 reaches in total to survey (Figure 1): eight reaches in Sonora totaling 21

miles, 14 reaches in the Upper San Pedro River, also known as the San Pedro Riparian National Conservation Area (SPRNCA) totaling 41 miles, and seven new reaches in the middle and lower San Pedro totaling 15.5 miles. In total, 120 volunteers, including WMG staff, participated in the Fall 2024 survey efforts.

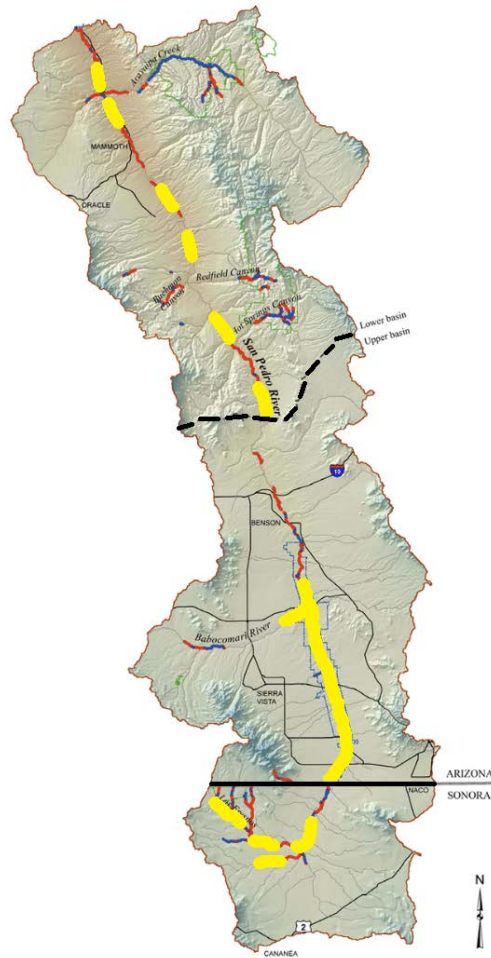


Figure 1: Map of reaches that were surveyed in the Fall 2024 San Pedro Beaver Survey highlighted in yellow. Map credit: The Nature Conservancy

Results. Based on survey observations along the reaches that were surveyed, we estimate that between 30-38 beavers are present on the San Pedro River (see Table 1). Of the total, we estimate that there are approximately 13-17 beavers, including three family groups present in the reaches surveyed in Sonora. Within Arizona, we estimated 17-21 beavers, including 3-4 families. The SPRNCA had an estimated 9 beavers, including one family, while the middle and lower San Pedro had 8-12 beavers with 2-3 family groups clustered together along the San Miguel river reach.

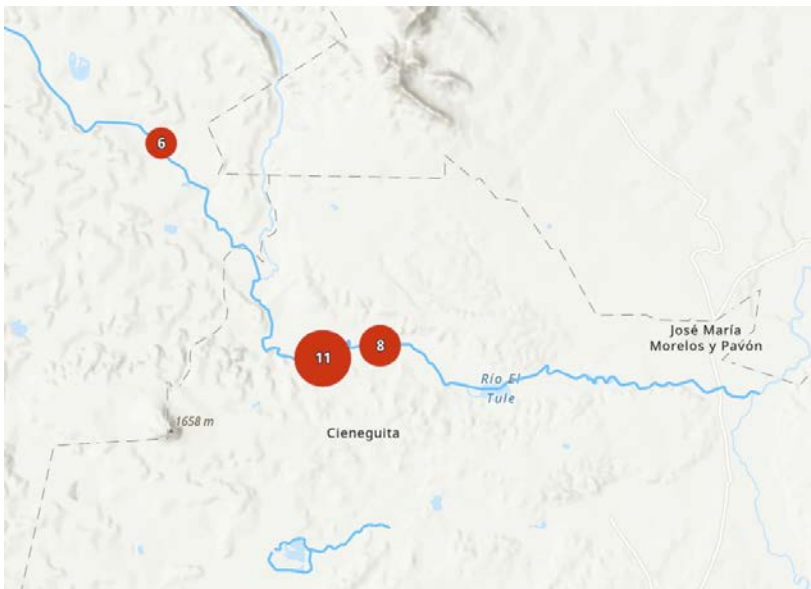
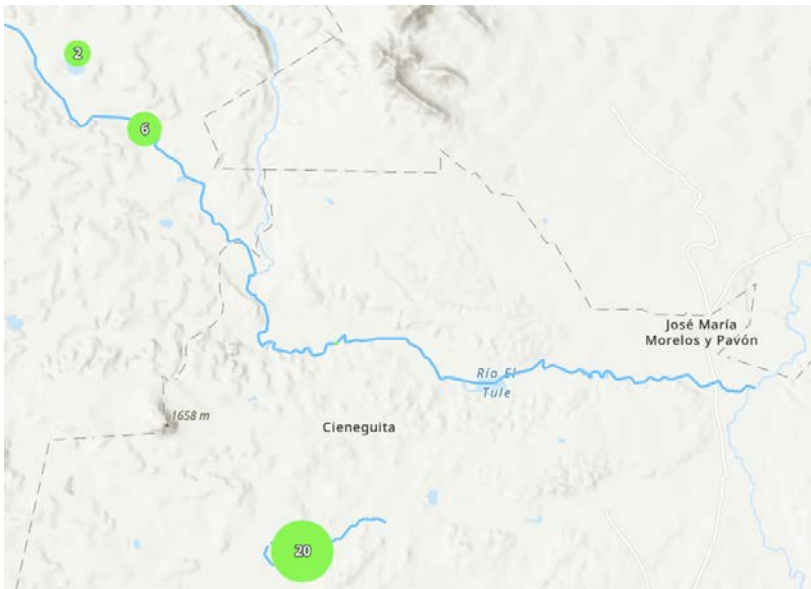


Figure 2: Maps of recent beaver signs seen in reaches surveyed from 2021-2024 San Pedro Beaver Surveys in Sonora. Fall 2021 (Green), Winter 2022-2023 (Yellow), Spring 2024 Not Surveyed, and Fall 2024 (Red)

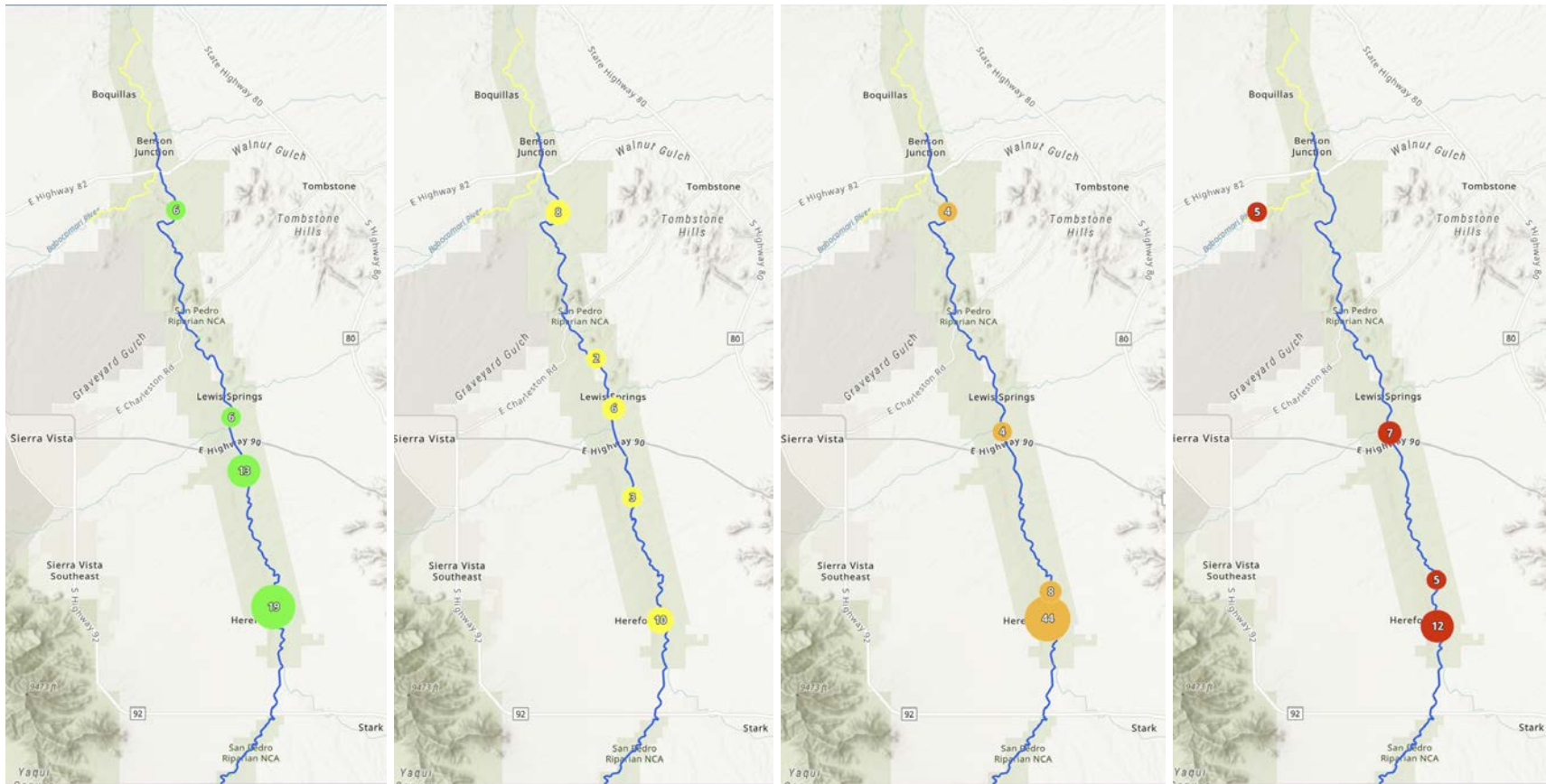


Figure 3: Maps of recent beaver signs seen in reaches surveyed from 2021-2024 San Pedro Beaver Surveys in SPRNCA. Fall 2021 (Green), Winter 2022-2023 (Yellow), Spring 2024 (Orange), and Fall 2024 (Red).

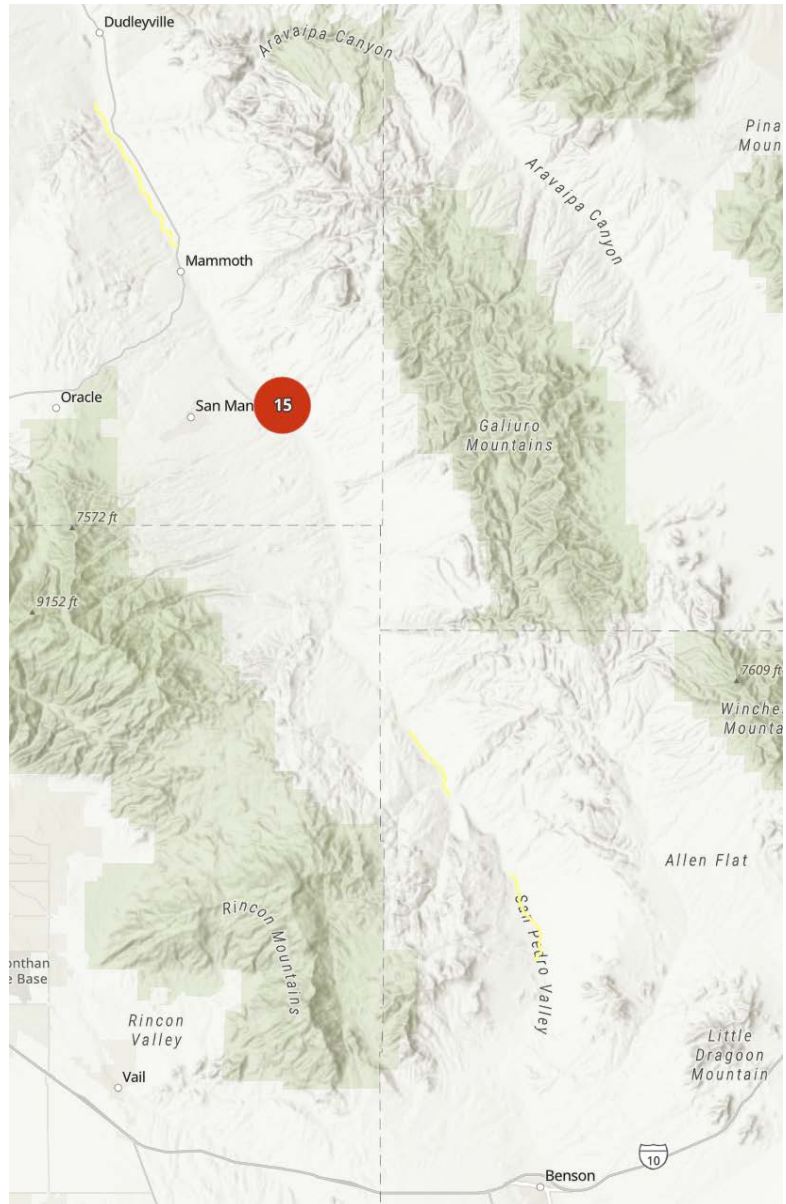


Figure 4: Map of recent beaver signs seen in reaches surveyed in Fall 2024 (red) along the middle and lower San Pedro River.

Estimate of San Pedro Beaver Population by Survey Year				
Location	Survey Year			
	Fall 2024	Spring 2024	Winter 2022-23	Fall 2021
San Pedro Headwaters, Sonora, MX	13-17	-	24-26	20-32
Upper San Pedro, AZ, US	9	11-14	13-17	16-20
Lower San Pedro, AZ, US	8-12	-	-	-
Total	30-38	11-14	37-43	36-52

Table 1: San Pedro Beaver population estimate by year and location.

Discussion. The southern Arizona beaver population has declined significantly since peaking at over 100 individuals around 2010. The main clusters of beaver activity are around the same location year-to-year, suggesting limited distribution of the beaver population, except for Reach 12 of the SPRNCA (see Figure 3). This reach had shown recent beaver presence in the past three surveys. However, the absence of recent activity in Fall 2024, combined with a lack of presence in adjacent reaches, suggests a trend in continued population decline, movement elsewhere, or surveyors did not detect recent beaver signs. The ongoing beaver population decline is a cause for concern. Partners have proposed potential reasons including fluctuating low/high flow monsoon seasons in recent years, seasonal and annual drought conditions, and increased predation by local species such as mountain lions, but these have not been investigated in detail. Further research is needed into other potential factors for the beaver population decline. WMG will continue to advocate for beaver conservation in southern Arizona and use the results of this

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