

# **VERDE RIVER BASIN**

## BUILDING FORMAL COLLABORATIVES TO LEVERAGE FEDERAL FUNDING

#### Watershed Context

The Verde River is located in Central Arizona, just below the southern rim of the Colorado Plateau. As a perennial stream in an arid landscape, the Verde River is of great ecologic, economic, recreational and cultural importance to its surrounding communities and those who rely on its water. However, over the past few decades, its flows have been reduced through surface water diversions, groundwater pumping and climatic factors. The watershed has been experiencing rapid commercial and residential growth, increasing demands for surface and groundwater and threatening future flows in the river. Friends of the Verde River (FVR) and The Nature Conservancy (TNC) have collaborated on restoration projects to sustain and restore instream flows, improve habitat and build supportive communities in the Verde Valley. The two organizations plus the Environmental Defense Fund (EDF) have developed an effective partnership by meeting regularly, establishing an efficient division of labor and roles and working together to build relationships with local landowners and agricultural producers. Their work has been effective along the Middle Verde River, and they now face the challenge of expanding to the rest of the watershed while maintaining the relationships and progress already developed in the Valley.

#### **Characterization of the Watershed**

The Verde River travels about 189 miles southward from Paulden, Arizona to discharge into the Salt River just south of Fort McDowell, Arizona. Downstream of its confluence with the Salt River is the Phoenix metropolitan area. The watershed is characterized by a semiarid climate with seasonal rainfall patterns – it receives low-intensity, long-duration precipitation in the winter and shorter, high-intensity storms during the summer monsoon season (Paretti et al. 2018). The Verde watershed contains over 500 miles of perennial streams. Its headwaters begin as ephemeral washes in the Prescott and Chino Valleys and the Big Chino Wash. Just below Sullivan Lake, perennial flow begins in the upper Verde River, supported by groundwater discharge from the Big Chino and Little Chino aquifers. Lower-middle Verde River streamflow is supported by surface runoff, groundwater discharge and contributions from its perennial tributaries, including Sycamore Creek, Oak Creek, Beaver Creek and West Clear Creek. Flows in the middle Verde River are largely unregulated and the watershed is the only in Arizona to contain reaches designated as "wild and scenic" in the Wild and Scenic Rivers Act (Paretti et al. 2018). Large parts of the watershed are maintained by the US Forest Service – in Coconino, Prescott, Kaibab and Tonto National Forests.

The Verde River watershed covers 4.2 million acres and contains the communities of Jerome, Camp Verde, Clarkdale, Cottonwood, Sedona, and Chino Valley, as well as areas of Williams, Flagstaff, Prescott, Prescott Valley, Payson, Scottsdale, Fountain Hills, and other unicorporated communities. Groundwater that feeds the river is the primary source of domestic fresh water for communities and rural households within the watershed. The Salt and Verde Rivers supplies about 40% of surface water delivered to the Phoenix Metropolitan Area through the Salt River Project. Within the Verde Valley, surface flows support an agricultural lifestyle. A study found that recreation associated with rivers in Yavapai County, including the Verde River, brings in \$1 billion and 9,400 jobs to the region annually (Audubon Arizona 2019). The region is also the ancestral home of the Hualapai, Yavapai Prescott, Yavapai-Apache Nation, Tonto Apache, Ft McDowell Yavapai, and the Salt River Pima Maricopa Indian Community and other tribes (Paretti et al. 2018). The Verde Valley has experienced considerable commercial and residential development in recent decades, increasing demands on the watershed's water resources. In 2006, American Rivers recognized the Verde on its list of America's Most Endangered Rivers due to the threat that increased groundwater pumping poses on the river's base flows.

The Verde River's riparian corridor is an important ecological oasis that supports a diverse array of wildlife. This includes 270 bird species, 94 mammals and 76 species of amphibians and reptiles (Verde River Basin Partnership 2015). It has historically been home to at least 13 native fish species, including seven that are now threatened or endangered. The watershed provides one-third of the breeding areas for an endangered population of desert-nesting bald eagles and supports populations of endangered southwestern willow flycatcher and threatened yellow-billed cuckoo (Paretti et al. 2018). Ecological flows in the Verde River are of critical importance to sustain the rich riparian habitat upon which its wildlife relies. Efforts in the watershed focus on maintaining ecological flows despite increasing pressure from development and its associated water demands.

## Agencies / Entities Interviewed

**Friends of the Verde River (FVR)** is a nonprofit organization located within the middle Verde River watershed in Cottonwood, Arizona. Their mission is to work collaboratively for a healthy, flowing Verde River and tributaries that support our natural environment, vibrant communities, and quality of life for future generations (Friends of the Verde River n.d.). Their work focuses on restoring habitat, sustaining and restoring instream flows and building supportive communities. FVR proactively addresses these issues through a combination of on-the-ground projects and policy solutions supported by sound conservation principles.

**The Nature Conservancy (TNC)** has worked towards a shared vision with partner organizations in the Verde Valley, including FVR. Their work in the area is also focused on protecting a healthy Verde River system, with perennially flowing water, healthy riverside habitat and vibrant local economies. Since the late 1980's, TNC has been involved in various efforts to address these issues, starting with the acquisition of the Verde River Greenway. They have continued to work with local agricultural producers and communities to increase river flows in the Verde (The Nature Conservancy n.d.).

**Geographies of Focus** In the past decade, the primary focus of conservation efforts in the Verde watershed has been in the Verde Valley, along the middle Verde River. The middle reach of the Verde River begins just downstream of Paulden, where perennial flow begins and extends to just south of the town of Camp Verde. The Verde Valley is generally considered to be from Perkinsville to Camp Verde. It contains the tributaries of Sycamore Creek, Oak Creek, Beaver Creek and West Clear Creek (Figure 1). While the main focus is on the middle Verde, some restoration work has been done in the upper and lower reaches. TNC has done some projects on Horseshoe Reservoir, however, the TNC representative interviewed acknowledged that this is the furthest downstream they would go in their past work. One of FVR's current focuses is on trying to expand their efforts into the lower Verde through its connections with partners (Tracy Stephens, personal communication). TNC is working towards implementing strategies from the Verde in other watersheds in Arizona (John Ford, personal communication).

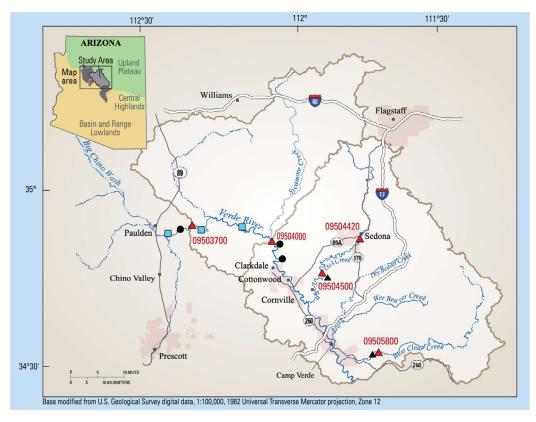


Figure 1. Map of the Middle Verde River watershed. Source: USGS.

## **Coalition of Partners**

The three main partners in the Verde River coalition are FVR, TNC and Environmental Defense Fund (EDF). The relationship between FVR and TNC is particularly close in this coalition. They share a common mission and vision for the watershed and find ways to collaborate effectively. Typically, FVR's role is more focused on working with landowners on riparian restoration projects while TNC has established agricultural relationships for irrigation efficiency projects.

Tribes, including the Yavapai-Apache Nation, are one of the biggest and most important partners in the Verde watershed, with whom both TNC and FVR have been working on maintaining and building relationships. TNC has been trying to make their relationship with tribes more collaborative. In recent years they have had some breakthroughs with their agriculture department. As a result, TNC is currently working extensively with tribes on crop switching and groundwater modeling projects.

The main coalition of FVR, TNC and EDF also work with many other partners on the Verde River.

*Verde Watershed Restoration Coalition* The Verde Watershed Restoration Coalition (VWRC) is a key collaboration in the watershed, led by FVR. VWRC is a coalition of private landowners, non-profit organizations, local communities and businesses and federal and state agencies with a common interest in the health of the Verde River watershed. Tracy Stephens of FVR noted that 25-30 agencies and 240 private landowners participate in VRWC (personal communication). The group was established in 2012, with the initial goal of removing invasive plant species from the watershed's riparian corridors. They have since expanded their scope to include other projects that support a properly functioning Verde River system and local economy (Friends of the Verde River n.d.).

Through VWRC, FVR has worked with the USFS on restoring native plants in the parts of the watershed that fall within the Coconino and Prescott National forests. FVR have also partnered with the Arizona Department of Environmental Quality on a monitoring program in the Verde. Communities and municipalities also play an important role in VWRC. They are especially important in the coalition's

efforts to restore flows, as they have partnered on municipal stormwater programs and river friendly developments. In addition, a lot of riparian invasive plant management work occurs on city or town lands. VWRC's efforts also help improve recreational value of the river corridor as it passes through cities or towns, so these relationships are beneficial to community partners as well. VWRC is guided by a multi-stakeholder steering committee that meets quarterly to coordinate, share information and plan restoration projects. The full list of stakeholders that have partnered to form VWRC is in Figure 2.

Arizona Department of Environmental Quality Arizona Department of Water Resources Arizona Game & Fish Department AZ Conservation Corps City of Cottonwood **Coconino National Forest** Friends of the Verde River **Kaibab National Forest** National Audubon Society National Forest Foundation National Park Service Natural Resources Conservation Service **Oak Creek Watershed Council** Prescott National Forest Salt River Project Southwest Conservation Corps

The Nature Conservancy The Wildlife Habitat Council Tonto National Forest Town of Camp Verde Town of Clarkdale U.S. Bureau of Reclamation U.S. Fish & Wildlife Service Verde Natural Resource Conservation District Verde Valley Land Preservation Walton Family Foundation Yavapai-Apache Nation

Figure 2. The list of stakeholders and partners in the Verde Watershed Restoration Coalition. Source: FVR.

## **Priority Conservation Issues and Efforts**

**Conservation Issues** The major conservation issue being addressed in the middle Verde River is stream flow protection and restoration. Flows issues are the result of increased surface water diversions, groundwater pumping and other climatic factors, including reductions to natural recharge. A study in 2013 found that base flow at the Clarkdale gaging station (just north of Cottonwood, AZ) had declined by about 4,900 acre-feet per year as a result of human impacts to the river system (Garner et al. 2013). The Verde River Report Card, published in 2020, found the decline in flows to be 34% at the Clarkdale gaging station since 1990, and 41% at the Camp Verde station (University of Maryland Center for Environmental Studies 2020). By 2013, certain stretches of the Verde had already begun to go nearly dry at certain times of year, negatively impacting stream connectivity. As an important riparian corridor in an arid landscape, maintaining a perennially flowing and connected Verde River is of critical importance to the ecological diversity and recreation that it supports. Future development in the watershed is expected to continue to increase stress on surface and groundwater demand. Conservation efforts focus on trying to address these human impacts to protect habitat for wildlife, create accessible and healthy recreation opportunities and maintain function throughout the watershed.

*Strategic Approach* The approach taken by FVR and TNC in addressing flow issues in the Verde is very driven by strategic planning efforts and documents, including the "Roadmap" for a Flowing Verde River. The purpose of the Roadmap is to help describe, shape and document the efforts of a core group of actors with a shared goal of preventing surface and groundwater diversions from depleting flows below target thresholds (Freshwater Policy Consulting, LLC 2015). After defining this goal, the Roadmap

proposes a general "theory of change" that is used as the overall strategy for achieving it. This is broken down into three strategic "paths" that could be pursued concurrently to achieve perennial flow in the Verde River. The three paths are:

- **Surface water path** to prevent current and future surface water diversions from depleting flows below target levels;
- **Groundwater path** to prevent past, ongoing and future groundwater withdrawals from depleting flows below target levels; and
- **Political will/stakeholder path** to build decision-maker and stakeholder support for the overall goal and for individual tactics or outcomes.

The projects implemented by both FVR and TNC both follow the Roadmap and its strategic paths. However, they have taken an approach in which projects are implemented by different partners based on the strengths and capacity. For example, TNC is best at working with private landowners while FVR is best at working with agencies managing the public lands within the watershed. TNC's strategic focus is to work on the ground with private landowners and water stakeholders, specifically those with legal access to water. This includes landowners, water managers, agricultural producers and local governments. This works seeks to build trust and complete projects on private lands. They also typically focus on projects that inform broader statewide policy. FVR has strong relationships with the US Forest Service, which is important as a majority of the Verde watershed is public land. Their focus has been to work on a variety of projects in partnership with the forest service. While FVR and TNC have utilized different partnerships and worked in different areas of focus, they still maintain collaboration through discussions to ensure that they're working together to accomplish the conservation objectives that they've developed jointly. They hold regular meetings monthly and communicate on specific projects as needed (Tracy Stephens/John Ford, personal communication).

## **Project Types and Scale**

#### Friends of the Verde River

FVR implements a variety of conservation projects that align with the goals and strategies laid out in the Roadmap for a Flowing Verde River. FVR focuses on the following project types in the Verde Valley:

- Riparian invasive plant removal
- Wildlife corridors and connectivity
- Sediment reduction and erosion control
- Water quality monitoring
- Community science program
- Verde Valley Birding & Nature Festival

Over the first 10 years, they have performed riparian invasive plant management on 10,500 acres throughout the watershed and have a monitoring crew to learn from work and assess if any areas are in need of retreatment. Their work on habitat connectivity and wildlife corridors started more recently and is still at a small, local scale. FVR has worked with private landowners and the forest service to identify bottlenecks to wildlife connectivity. Sediment reduction projects focus on management of gullies and structures to build soil back up. FVR has developed a community science program called Gully Busters to train community scientists to identify, monitoring and map gully systems so they can address management.

Water quality monitoring is another fairly new project type for FVR; they focus on monitoring E. coli in areas that ADEQ have identified as data gaps. FVR also does some work with stormwater management.

They have completed two stormwater management projects, both with private landowners. They have done the engineering and are waiting on permits to do a large scale stormwater project with a city and school district.

FVR's focuses on community-based education and certification programs to create watershed stewards. Their community science program includes annual events, like the BioBlitz, in which participants are invited to explore the Verde River and its tributary systems and collect photos and data on plant, animal, bird and insect species. This serves as a way for community members of current and future generations to better understand the ecology of their river and to help FVR document native and invasive species. This program is centered specifically on the Verde Valley. More community involvement comes from FVR's River Friendly Living program, in which homes, businesses and developments throughout communities can get certified as river-friendly. So far, 15 homes and businesses in the Verde Valley has signed on to this program, but FVR hopes to expand across the watershed and statewide. FVR also hosts a bi-annual conference called the "State of the Verde Watershed Conference." This conference was held in 2017, 2019 and 2022 (scheduled for 2024).

## The Nature Conservancy

TNC has mostly focused their work at a Verde Valley scale but have been expanding into the Upper Verde on certain projects. The types of projects TNC has implemented in the Verde are:

- Irrigation and conveyance infrastructure improvements,
- Market interventions to increase value of low-value crops,
- Water trading platform to manage ditch supply,
- Municipal and stormwater management,
- Irrigation water measurement, and
- Design for fish passage.

TNC has worked extensively with local agricultural partners on irrigation system upgrades and conveyance improvements for large-scale farms and piping projects. They have utilized other market mechanisms to improve the value of low-value crops and encourage farmers to grow low water-use crops rather than traditional cropping. This includes paying farmers for crop switching and investing in graincleaning machines with the Yavapai-Apache Nation to increase their value to make grains competitive with alfalfa. They have done several projects focused on specific ditches within the Verde Valley – including developing a water trading platform on a ditch to match align current and historic water use. They have also worked on projects establishing telemetry on ditches and designing ditches to improve fish passage.

TNC has received completed a feasibility analysis for the Upper Verde River and convened a stakeholders group to better understand project implementation roles and responsibilities. Projects are related to the management of previously unmanaged groundwater pumping, groundwater recharge and utilization of stormwater effluent. They also have small implementation projects on rainwater capture and stormwater recharge that are in the strategy and development phase in the Upper Verde.

#### In Partnership - Verde River Exchange

In 2016, after two years of extensive analysis, stakeholder input and program design, EDF, FVR and TNC launched the Verde River Exchange program (Exchange). The Exchange is a groundwater mitigation program that allows users to offset the impact of their groundwater use by purchasing credits. These credits can be developed and sold by water users who voluntarily reduce their water use. This is a community-based program with the support of local businesses, decision makers, community members and conservation organizations.

#### In Partnership - VWRC

Since 2012, VWRC has focused their efforts on removing invasive plant species from riparian corridors in the Verde River watershed. In 2015, VWRC added nine additional priorities to achieving their collective vision of a healthy watershed and formed working groups for each priority. These include:

- Cooperative invasive plant management
- Sustaining flows
- Research, monitoring, and adaptive plant management
- Verde native seed and plant cooperative
- Verde outdoor volunteer network
- Streambank stabilization/erosion hazards
- Youth pathways
- Sustainable funding

## Funding

TNC has been a significant funding partner to FVR. They have collaborated on joint funding proposals, allowing FVR to take advantage of the in-house capacity of TNC to find funding. Together, they have applied for and secured funding from various federal, state and private sources for restoration work in the Verde watershed (Table 1).

Program	Federal Source(s)	State Source(s)	Other Source(s) - Private, Foundation, Local	Example Project	Funding Received
Riparian Invasive Plant Removal	USFS, USFWS - Partners for Fish & Wildlife Grant	AZ Forestry - Invasive Plant Grant; Arizona Game and Fish Department - Heritage Grant	Forever Our Rivers - Southwest River Stewardship Fund, Walton Family Foundation; Yavapai County - RAC Grant	Arundo Free Oak Creek	\$200,000
Sustaining Flows	NRCS - RCPP	n/a	Charitable trusts, corporate offsets	Verde River Flow and Habitat Restoration Program	\$2,800,000
Wildlife Corridors & Connectivity	n/a	n/a	Charitable trusts, corporate offsets	Dry Creek Restoration	\$2,750
Water Quality Monitoring	BOR WaterSMART: Cooperative Watershed Management Program	ADEQ	Charitable trusts, corporate offsets	Verde Water Quality Monitoring	\$97,000
Irrigation & Conveyance Infrastructure Improvements	NRCS - EQIP	n/a	Nina Mason Pulliam Charitable Trust, Bonneville Environmental Foundation	Diamond S Ditch automated diversion system	\$85,676
Verde River Exchange	n/a	n/a	Nina Mason Pulliam Charitable Trust, corporate offsets	Four flow protection projects	\$600,000

Table 1. FVR and TNC funding source summary by program with example projects.

*Federal Funding Sources - Federal, State, and Private* Grant funding, primarily from federal sources, makes up a majority of the revenue brought in for restoration work in the Verde. For example, FVR's annual revenue in fiscal year 2020 was comprised of 81.6% grant funding, with an additional 10.1% coming from events and 7.6% from private contributions.

TNC and FVR have sought funding from large federal sources offered by NRCS, USFS, Bureau of Reclamation (BOR). TNC has used money from NRCS's Environmental Quality Incentives Program (EQIP)

for its agricultural infrastructure projects like irrigation system upgrades and conveyance improvements for large-scale farms. Quite a bit of FVR's funding comes through the forest service – this is primarily focused on riparian restoration and sediment reduction projects which are located on forest service lands that surround the Verde Valley. Both FVR and TNC have utilized BOR WaterSMART funding for various projects. FVR received a BOR WaterSMART Cooperative Watershed Management Program (CWMP) Phase I grant for its water quality monitoring plan (Tracy Stephens, personal communication). TNC has a WaterSMART Small-Scale Efficiency Grant right now with 50% cost share and a WaterSMART Drought Resiliency Projects grant in partnership with the Apache Tribe with 100% cost share. In addition, they are currently consolidating money in BOR's WaterSMART Environmental Water Resources Projects (EWRP) program (John Ford, personal communication). However, both FVR and TNC are making a big push to apply for future opportunities, as there is currently a lot of funding available through its programs. The application process has proven to be very daunting for BOR's WaterSMART grants, though – FVR has acknowledged a need to streamline that process.

While most of FVR's funding comes from federal sources, they have also secured state funding for certain projects. Their water quality monitoring efforts have mostly been through an Arizona Department of Environmental Quality (ADEQ) program. VWRC efforts have received funding support from Arizona Department of Forestry and Fire Management's Invasive Plant Grant and Arizona Game and Fish Department's Heritage Grant.

Private funding comes from two main sectors – charitable trusts and corporate water stewardship. Charitable trusts are more interested in funding projects and putting their dollars towards supporting the community of the Verde Valley. Corporate water stewardship investments are looking to fund projects that save certain amounts of water to offset their own usage. The Walton Family Foundation has been a major private donor to FVR and its projects throughout the watershed. John Ford of TNC acknowledged a preference for securing more private funding in the future over applying for BOR grants due to the cumbersome and clunky application process (John Ford, personal communication).

*VWRC - Sustainable Funding Working Group* One of the working groups of VWRC is focused on assuring that developing a sustainable revenue stream for its work in the Verde. Sustainable funding is defined by VWRC as "sufficient in magnitude to accomplish our program's goals and reliable enough to confidently ensure long-term watershed health" (Friends of the Verde River n.d.). They seek to do this by expanding new funding sources, being proactive in grant writing, collaborating with cities, counties and tribes on funding assistance and maintaining and enhancing current relationships with state and federal agencies. The Sustainable Funding working group meets monthly and includes representatives from FVR, Prescott National Forest, Arizona Game and Fish, Vetraplex (a veteran's organization) and RiversEdge West. These meetings are for identifying potential grants that would be a good fit for their mission, to keep track of proposal submission deadlines and explore new fundraising approaches. Through the working group, VWRC is better positioned to request agency funding for its projects at the beginning of the fiscal year and to facilitate transfers of unspent funds at the end of the fiscal year. VWRC funding comes from Walton Family Foundation, Arizona Forestry's Invasive Plant Grant, USFWS's Partners for Fish & Wildlife Grant, Yavapai County's RAC Grant and Arizona Game & Fish's Heritage Grant (Friends of the Verde River n.d.).

## Challenges, Opportunities, and Lessons Learned

A key takeaway from the work done in the Verde watershed is the importance of effective collaboration and relationship building. For FVR, its relationships with local landowners, agencies and TNC have been essential to getting any conservation work completed in the Verde Valley. These relationships have been developed through participation in the VWRC, on-the-ground collaboration and educational events put on by FVR for the community of the Verde Valley. Both FVR and TNC recognize that much of the necessary relationship-building occurs from going out into the field, meeting with community members and engaging with local stakeholders on the ground. As such, the local aspect has been a point of emphasis for TNC as a large organization. TNC staff working on Verde River restoration have extensive local knowledge from working and living within the watershed. In that way, TNC can work with various groups at a small level on specific projects and move up from there to build lasting relationships in the watershed. This type of collaboration is typical of a local nonprofit organization like FVR, which is comprised of local community members, but is rarer for a larger organization like TNC. However, it is this local emphasis that makes both FVR and TNC successful in developing and maintaining relationships in the Verde Valley.

TNC and FVR have taken a "bottom-up" approach to developing new relationships with local landowners and agencies. In this approach, they start small by meeting with various groups or landowners in person to discuss a plan for implementing certain projects that work towards their goals while being beneficial to the group or landowner. Once a plan has been discussed on the ground, the next step is to apply that plan at a higher level. This means taking the strategy discussed with the landowner or group and bringing it to a larger coalition to find ways to implement the strategy more widely. This has notably been the approach taken to strengthen the partnership with tribes in the watershed. TNC and FVR start by developing projects with individual farmers and landowners then move it up the chain and eventually propose those projects to the tribal council. As an important partner in the watershed, they will continue to employ this strategy and build relationships from the bottom-up.

Another key aspect of successful project implementation in the Verde is the effective collaboration between FVR and TNC. They have done this by defining their collaborative partnership and respective roles in accomplishing their shared goals. This means recognizing what each organization is best at and allocating tasks that play to their respective strengths. For example, TNC has developed strong relationships with agricultural producers, so they focus on irrigation efficiency projects with those partners while FVR has strong relationships with local landowners and community members and works with them on riparian restoration. They have established this division of roles and labor as being the most efficient for implementing projects with its various partners. In addition, the two organizations also share contacts with each other and help with relationship building wherever possible to continue to strengthen their collective ties in the watershed. The local aspect employed by TNC helps in this regard as well, as their presence and local knowledge helps make their partnership with FVR feel more collaborative on the ground. The dynamic between the two is less of a large nationwide organization coming in from afar to help out a local organization and more of a partnership of two groups of people living and working together in the watershed toward shared goals. As mentioned previously, FVR also utilizes TNC's inhouse capacity to bring in more funding to the Verde and they frequently collaborate on project proposals.

The next big challenge for the Verde partnership is to maintain its existing relationships while expanding into other areas of the watershed. As mentioned above, most of the work completed in the Verde has been focused in the Verde Valley, the stretch of the Middle Verde River between Perkinsville and Camp Verde. However, efforts have been made to expand their work to the upper and lower reaches of the river as well. This requires new relationships to be developed with different landowners in those reaches, which requires time and effort that takes away from their collective capacity to maintain the current relationships they have already developed in the Verde Valley. As they look to expand on this work, FVR and TNC will need to find a balance between new and existing partnerships so that they can work towards their goals at the Verde watershed scale.

One other challenge noted by both interviewees was the cumbersome and clunky application process for BOR grant funding. Even with the capacity of TNC to help find funding, they are finding it difficult or time-consuming to bring in BOR grants. There is a lot of money available right now through BOR's various WaterSMART programs, so it represents an important funding opportunity. It was recognized in the Verde and in other case studies that the process of applying for BOR grants needs to be streamlined to make it more accessible and put it to use on project implementation.

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