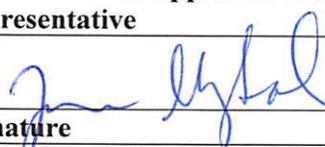


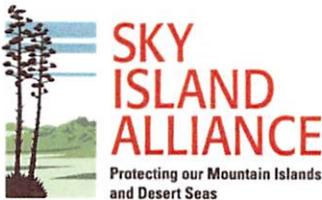
**Arizona Water Protection Fund
Application Cover Page
FY 2019**

Title of Project: Long-term Management of Invasive Vinca in Aravaipa Canyon																		
Type of Project: <input checked="" type="checkbox"/> Capital or Other <input type="checkbox"/> Water Conservation <input type="checkbox"/> Research	Stream Type: <input checked="" type="checkbox"/> Perennial <input type="checkbox"/> Intermittent <input type="checkbox"/> Ephemeral	Your level of commitment to maintenance of project benefits and capital improvements: <input type="checkbox"/> < 5 years <input type="checkbox"/> 5-10 years <input type="checkbox"/> 11-15 years <input checked="" type="checkbox"/> 16-20 years																
Applicant Information: Name/Organization: Sky Island Alliance Address 1: 406 S. 4 th Avenue Address 2: City: Tucson State: Arizona ZIP Code: 85701 Phone: 520-624-7080 Fax: Tax ID No.: XXXXXXXXXX		Inside an AMA: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, which AMA: <input type="checkbox"/> Phoenix <input type="checkbox"/> Tucson <input type="checkbox"/> Prescott <input type="checkbox"/> Pinal <input type="checkbox"/> Santa Cruz																
Contact Person: Name: Carianne Campbell Title: Restoration Director Phone: 520-624-7080 x 14 Fax: e-mail: carianne@skyislandalliance.org		Type of Application: <input checked="" type="checkbox"/> New <input type="checkbox"/> Continuation Any Previous AWPFF Grants: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, please provide Grant #(s):																
Arizona Water Protection Fund Grant Amount Requested: \$101,635.00 If the application is funded, will the Grantee intend to request an advance: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th align="center" colspan="2">Matching Funds Obtained and Secured:</th> </tr> <tr> <th align="center"><u>Applicant/Agency/Organization:</u></th> <th align="center"><u>Amount (\$):</u></th> </tr> </thead> <tbody> <tr> <td>1. Applicant</td> <td align="right">7,200.00</td> </tr> <tr> <td>2. USFWS Partners for Wildlife</td> <td align="right">10,000.00</td> </tr> <tr> <td>3. Arizona Conservation Corps</td> <td align="right">30,000.00</td> </tr> <tr> <td>4. The Nature Conservancy</td> <td align="right">13,500.00</td> </tr> <tr> <td>5.</td> <td></td> </tr> <tr> <td align="right" colspan="2">Total: 60,700</td> </tr> </tbody> </table>		Matching Funds Obtained and Secured:		<u>Applicant/Agency/Organization:</u>	<u>Amount (\$):</u>	1. Applicant	7,200.00	2. USFWS Partners for Wildlife	10,000.00	3. Arizona Conservation Corps	30,000.00	4. The Nature Conservancy	13,500.00	5.		Total: 60,700	
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4. The Nature Conservancy	13,500.00																	
5.																		
Total: 60,700																		
Has your legal counsel or contracting authority reviewed and accepted the Grant Award Contract General Provisions? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A																		
Signature of the undersigned certifies understanding and compliance with all terms, conditions and specifications in the attached application. Additionally, signature certifies that all information provided by the applicant is true and accurate. The undersigned acknowledges that intentional presentation of any false or fraudulent information, or knowingly concealing a material fact regarding this application is subject to criminal penalties as provided in A.R.S. Title 13. The Arizona Water Protection Fund Commission may approve Grant Awards with modifications to scope items, methodology, schedule, final products and/or budget.																		
Louise Misztal	Executive Director, 520-624-7080 x 19																	
Typed Name of Applicant or Applicant's Authorized Representative	Title and Telephone Number																	
	9/6/18																	
Signature	Date Signed																	

Long-term Management of Invasive Vinca in Aravaipa Canyon



*A Proposal to the Arizona Water Protection Fund
Capital Projects
September 7, 2018*



2) Executive Summary

Sky Island Alliance (SIA) is pleased to submit this proposal for a Capital Improvement Project to the Arizona Water Protection Fund Commission for Funding in the FY2019 Grant Cycle. Our proposal builds on several years of restoration work in Aravaipa Canyon and strong relationships that Sky Island Alliance (SIA) has with The Nature Conservancy (TNC) and the Bureau of Land Management (BLM) Safford Field Office. The main goal of the project is to remove a destructive and invasive non-native plant, vinca, from the riparian forest understory at the TNC's Aravaipa Canyon Preserve. This on the ground restoration work will restore habitat at the headwaters of Aravaipa Creek and protect additional habitat over 10 miles of perennial creek and riparian gallery forest habitat in the Aravaipa Canyon Wilderness, which is directly downstream.

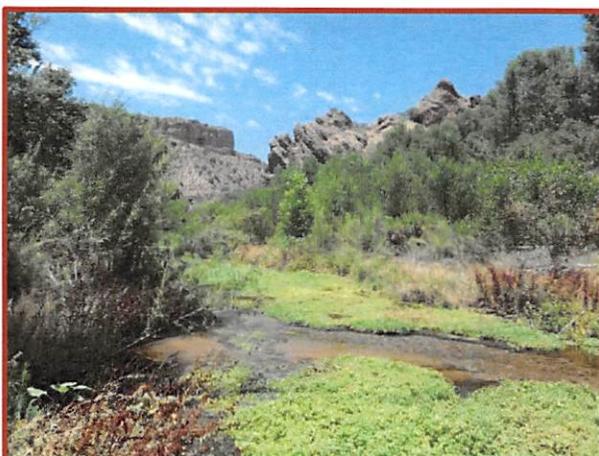
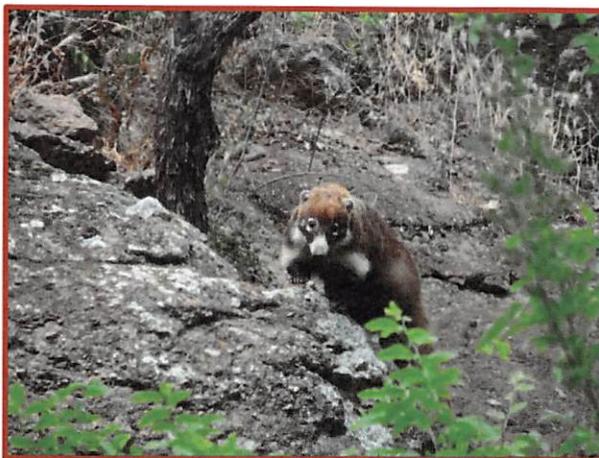
TNC manages the Aravaipa Canyon Preserve, and SIA has identified and mapped 112.5 acres of solid vinca infestation within the Preserve. We have conducted initial treatment on 41.5 acres. This project will allow us to continue our control efforts and to draft a comprehensive long-term management plan for the Preserve.

We have refined our approach and methods based on a pilot project funded by the US Fish and Wildlife Service's Partners for Wildlife Program and recent work funded by the Bureau of Land Management, Arizona Department of Fire and Forestry Management, and the Wildlife Conservation Society. We will be partnering with the Arizona Conservation Corps to conduct initial and follow-up treatment of vinca; we will also engage SIA volunteers to conduct detail work, including removal of incidental tamarisk plants and collection of native plant materials for future restoration planting. This approach will maximize the treatment area while remaining respectful of budgeting constraints.

This project directly addresses several of the objectives of the Capital Improvement category from the Arizona Water Protection Fund:

- Protect/Restore native riparian vegetation and habitat;
- Restore proper hydrologic conditions/functions;
- Improve watershed conditions using forest and/or near-stream restoration treatments that increase water quantity;
- Demonstrate benefits to a perennial stream;
- Demonstrate commitment to continued maintenance of proposed enhancements;
- Protect/Restore habitat needs for fish and wildlife; and,
- Decrease negative impacts of non-native species to riparian areas.

In addition to the ecological and hydrological benefits of this project, there will be economic benefits for Arizonans through employment and purchase of native plant materials from local businesses. We will engage at least 30 volunteers who will experience one of Arizona's natural wonders and gain insights into the value of Aravaipa Canyon for wildlife. In addition, we will make presentations to report on this project to professional organizations and public outreach events such as the annual meetings of the Society for Ecological Restoration SW Chapter, Southwest Vegetation Management Association, the Arizona Native Plant Society, and others.



Recent scenes from SIA volunteer trips to Aravaipa Canyon.

3) Project Overview

Background

Sky Island Alliance (SIA) has been working with the BLM Safford Field Office and The Nature Conservancy (TNC) at the Aravaipa Canyon Preserve over the past decade on a variety of restoration projects designed to increase watershed health and resources for wildlife. The Aravaipa Canyon Preserve, managed by TNC, includes 9,000 acres of land, including six miles of the creek. The creek cuts through the northern end of the Galiuro Mountains, and the flow begins at the canyon's east end, fed by springs and tributary creeks. Above-ground flow is intermittent at its lower end, where it joins the San Pedro River. Aravaipa Creek is an unparalleled riparian resource in southern Arizona, with over 10 miles of perennial water and a lush riparian gallery forest of cottonwoods, willows, sycamores, and walnut trees. The creek is known for its rare remaining diversity of native desert fish species, including the endangered spikedace and loach minnow. Aravaipa Creek also supports a rich suite of birds and mammals, including desert bighorn sheep.

An extensive, yet manageable population of invasive vinca (*Vinca major*, also known as periwinkle) has infested the canyon floor, and threatens the diversity of wildlife that is so spectacular in the canyon. Vinca directly suppresses the growth of native plants that support the entire food chain, particularly the insects that are also important pollinators. It forms a dense mat that intercepts and steals water from native riparian trees and other plants. SIA has been working with TNC and BLM since the beginning of 2015 to remove and treat vinca on the Preserve; these efforts have received funding from the US Fish and Wildlife Service's Partners for Wildlife Program, the Bureau of Land Management, the Arizona Department of Fire and Forestry Management, and the Wildlife Conservation Society. All of these previous projects have informed this proposal.

Goal

The goal of this project is to contain the spread of invasive vinca on the Aravaipa Canyon Preserve to protect the downstream BLM Aravaipa Canyon Wilderness and the wildlife and pollinator values that the creek supports. This is a long term effort; support from the Arizona Water Protection Fund would be leveraged to obtain additional funding to continue this work over the next several years.

Objectives

Project objectives include: 1) develop a detailed long-term management plan for vinca on the Aravaipa Canyon Preserve; 2) implement a removal strategy that protects the downstream Aravaipa Wilderness Area from vinca infestation, and remove/treat 40 acres of solid vinca; and, 3) collect seeds and cuttings from native plants that can be used in future restoration planting projects.

Statement of Problems and Causes

Vinca is an ornamental vine that was introduced to gardens in the US in the 1700s from its native habitat in Mediterranean Europe. It has an attractive blueish purple pinwheel flower, and evergreen leaves, making it a popular landscape plant in the arid southwest. To add to its appeal, it is low maintenance and spreads quickly. Unfortunately, these traits also make it a formidable pest when it escapes the garden, especially when it arrives in riparian areas. Along Aravaipa Creek, vinca was planted by homesteaders to help control floodwaters; over the decades it has spread to form solid patches underneath the shady riparian understory. Vinca is aggressively crowding out native species and creating a dense mat of leaves and stems that interfere with water infiltration for native riparian plants. The result is large swaths of riparian forest with depauperate understory plant diversity, and consequently, diminished resources for pollinators and other wildlife. Vinca spreads vegetatively, and as pieces break during floods, they can be washed downstream and take root to form new colonies. Vinca is in the dogbane (Apocynaceae) family, and is poisonous to livestock. A decline in pollinators across the world has been attributed to many factors, including loss of habitat and forage. The spread of vinca exacerbates this issue in Aravaipa Canyon, which is otherwise an excellent nectar corridor.

Statement of Solutions

A vinca infestation of this size and extent can be controlled through a combination of careful and digging and herbicide application. Hand removal is tedious and slow; it is critical to remove as much of the root and stem/stolon material as possible. Treatment with aquatic-safe glyphosate is much faster and can also be effective. Both methods require repeat treatments, and either may be preferable depending on the local conditions. Once areas are cleared of vinca, native vegetation can be re-established.

The result will be a more diverse understory and the restoration of natural water infiltration during flood events. SIA has conducted initial treatment on approximately half of the vinca at the Preserve with volunteer groups and the Arizona Conservation Corps. It is critical to maintain the momentum by re-treating areas and conducting initial treatment on new areas.

Project Years of Benefit to the Resource and the General Public

Vinca removal will result in water conservation through the re-establishment of natural flooding and water infiltration in the canyon bottom, both currently impeded by dense vinca growth. Restoration of the riparian understory could provide decades of ecological benefits – Aravaipa Canyon is a location that provides critical habitat resources to a wide variety of wildlife. This project will provide work for Arizona Conservation Corps and SIA staff and provide ample opportunities for community engagement in natural resource management through volunteerism.

4) Project Location and Environmental Contaminant Information

This project would take place within the Aravaipa Canyon Preserve, on the east end of the canyon at the headwaters of Aravaipa Creek. Aravaipa Creek is located in the San Pedro River Watershed, and is a very important tributary of the San Pedro River. See following map for the general location of the project area within the watershed.

Project Location & Environmental Contaminant Information FY 2019

Project Location Information			
1. County: <u>Graham</u>	2. Section(s): <u>19,20,21,27,28,34,35</u>	3. Township: <u>6S</u>	4. Range: <u>19E</u>
<p>5. Watershed: <u>San Pedro River</u></p> <p>6. 8 or 10 Digit Hydrologic Unit Code (HUC): <u>1505020307</u></p> <p>7. Name of USGS Topographic Map where project area is located: <u>Klondyke / Booger Canyon</u></p> <p>8. State Legislative District: <u>14</u> (Information available at: http://azredistricting.org/districtlocator/)</p> <p>9. Land ownership of project area: <u>The Nature Conservancy</u></p> <p>10. Current land use of project area: <u>Preserve</u></p> <p>11. Size of project area (in acres): <u>112.5 DIRECT</u></p> <p>12. Stream Name: <u>Aravaipa Creek</u></p> <p>13. Length of stream through project area: <u>4.6 miles</u></p> <p>14. Miles of stream benefited: <u>10 + miles</u></p> <p>15. Acres of riparian habitat: <u>560 acres</u> will be:</p> <div style="margin-left: 200px;"> <input checked="" type="checkbox"/> Enhanced <input checked="" type="checkbox"/> Maintained <input checked="" type="checkbox"/> Restored <input type="checkbox"/> Created </div>			
<p>16. General description and/or delineation for the area of impact of the project within the watershed. <u>We propose to work within the Aravaipa Canyon Preserve, within a vinca infestation area that includes 580 acres of potentially occupied habiata. A detailed mapping survey of the Preserve has revealed that there are 112.5 acres of solid vinca within athat areas, long 4.6 miles of the creek. The 580 acre area includes the entire floodplain of Aravaipa Creek within the Aravaipa Preserve (east side).</u></p>			
<p>17. Provide directions to the project site from the nearest city or town. List any special access requirements: <u>From Tucson: (155 miles) Take I-10 east to Willcox exit 340. Turn left onto Fort Grant Road and go north 30 miles to Bonita. Turn left onto Klondyke Road and go 32 miles to Klondyke. Preserve entrance is seven miles past Klondyke. The last 38 miles is a well-maintained dirt road and subject to closure during wet weather.</u></p>			
Environmental Contaminant Location Information			

<p>1. Does your project site contain known environmental contaminants? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO If yes, please identify the contaminant(s) and enclose data about the location and levels of contaminants: _____</p>
<p>2. Are there known environmental contaminants in the project vicinity? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO If yes, please identify the contaminant(s) and enclose data about the location and levels of contaminants: _____</p>
<p>3. Are you asking for Arizona Water Protection Fund monies to identify whether or not environmental contaminants are present? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO</p>

5) Scope of Work

Task 1: Permits, Authorizations, Clearances, Agreements, and Planning

- **Description:** SIA will obtain and submit to the AZWPF Project Manager all permits, authorizations, clearances and agreements, and perform any consultations necessary to complete the tasks listed in this Scope of Work. This may include but is not limited to: SHPO clearance, NEPA compliance, ESA consultation, access agreements, Section 401 Certification, Section 404 permit, data collection permits, and others. We are already working with the USFWS Partners for Wildlife Program on ESA compliance, and do not anticipate any delays.
- **Purpose:** To comply with all local, state, and federal permit requirements and laws, and to obtain/ensure legal access to the project area.
- **Deliverable Description:** Copies of all necessary approved permits, authorizations, clearances, and agreements.
- **Responsible Personnel:** SIA Restoration Director
- **Deliverable Due Date:** Prior to any ground-disturbing activities.
- **Reimbursable Cost:** \$3,192

Task 2: Long-term Management Plan

- **Description:** SIA will work with partners at The Nature Conservancy, the National Park Service Exotic Plant Management Team, and the University of Arizona Cooperative Extension to write a comprehensive management plan for vinca at the Aravaipa Canyon Preserve.
- **Purpose:** This document will provide a comprehensive framework for the management of vinca in the Aravaipa Canyon Preserve.
- **Deliverable Description:** The plan will detail current effective approaches to vinca control that have been tested and monitored within the canyon, along with cost benefit analysis and sustainable funding options. Because there are not vinca management guidelines for the southwestern United States, this document may be a valuable resource for other land managers in the region.
- **Responsible Personnel:** SIA Restoration Director will work directly with partners to draft the document.
- **Deliverable Due Date:** December 31, 2019
- **Reimbursable Cost:** \$9,576

Task 3: Initial Treatment

- **Description:** SIA and the Arizona Conservation Corps (AZCC) will work together to conduct initial treatment of vinca.
- **Purpose:** To increase the area of vinca that has undergone initial treatment.

- **Deliverable Description:** AZCC will provide a 6-person crew for 2 full-time weeks of vinca treatment. Up to 40 acres will be treated.
- **Responsible Personnel:** SIA Conservation Coordinator will direct and oversee the AZCC in this task.
- **Deliverable Due Date:** December 31, 2020
- **Reimbursable Cost:** \$38,986.50

Task 4: Follow-up Treatment and Collection of Native Plant Materials

- **Description:** Vinca is a vigorous re-sprouter, and re-treatment of initial removal areas is expected. This task is crucial to protect the investment and ecological gains made during through task 3.
- **Purpose:** To treat vinca that has re-sprouted from initial treatment areas.
- **Deliverable Description:** SIA will work with the Arizona Conservation Corps to conduct 3 weeks of follow up treatment on areas that have already undergone initial treatment. In addition, SIA will recruit and organize large groups of volunteers to conduct manual vinca removal and collection of seeds and cuttings of native plant that can be used strategically to revegetate treated areas.
- **Responsible Personnel:** SIA Conservation Coordinator will direct and oversee the AZCC and SIA volunteers in this task.
- **Deliverable Due Date:** December 31, 2020
- **Reimbursable Cost:** \$46,688.25

Task 5: Reporting and Presentations

- **Description:** SIA will generate progress and final reports and to the Arizona Water Protection Commission, TNC, and BLM, as well as to a wider audience.
- **Purpose:** To communicate project progress and lessons learned to a wide audience.
- **Deliverable Description:** SIA will submit progress reports and a final report and oral presentation to the Arizona Water Protection Commission. SIA will also share project results through posters and powerpoint presentations at conferences and meetings including the Southwest Chapter of the Society for Ecological Restoration, Arizona Native Plant Society, the Southwestern Vegetation Management Association, and others. These are meetings that SIA already plans to attend, and so this outreach is included in-kind. In addition, SIA will feature this project in a newsletter article, on its website, and through social media.
- **Responsible Personnel:** SIA Restoration Director.
- **Deliverable Due Date:** Ongoing; final presentation to the Commission will be due within 90 days of contract termination.
- **Reimbursable Cost:** \$3,192

6) Detailed Budget Breakdown

Direct Labor Hours				
TASK	Program Director	Conservation Coordinator		Total
1: Permits and Authorizations and Planning	40	0		40
2: Long Term Management Plan	120	0		120
3: Initial Treatment	60	300		360
4: Follow up Treatment and Plant Materials Collection	60	300		360
5: Reporting and Presentation	40	0		40
Subtotal SIA Labor Hours	320	600		920
Direct Labor Cost				
	<i>rates</i>	<i>\$76.00</i>	<i>\$58.00</i>	Total
1: Permits and Authorizations and Planning	3,040	0		\$3,040
2: Long Term Management Plan	9,120	0		\$9,120
3: Initial Treatment	4,560	17,400		\$21,960
4: Follow up Treatment and Plant Materials Collection	4,560	17,400		\$21,960
5: Reporting and Presentation	3,040	0		\$3,040
Subtotal SIA Labor	\$24,320	\$34,800		\$59,120
Outside Services				
	AZCC			Total
1: Permits and Authorizations and Planning	\$0			\$0
2: Long Term Management Plan	\$0			\$0
3: Initial Treatment	\$12,400			\$12,400
4: Follow up Treatment and Plant Materials Collection	\$18,600			\$18,600
5: Reporting and Presentation	\$0			\$0
Subtotal Subcontractor	\$31,000			\$31,000
Other Direct Costs				
	per diem	mileage	supplies	Total
1: Permits and Authorizations and Planning	\$0	\$0	\$0	\$0
2: Long Term Management Plan	\$0	\$0	\$0	\$0
3: Initial Treatment	\$1,180	\$1,090	\$500	\$2,770
4: Follow up Treatment and Plant Materials Collection	\$1,770	\$1,635	\$500	\$3,905
5: Reporting and Presentation	\$0	\$0	\$0	\$0
Subtotal Other Direct Costs	\$2,950	\$2,725	\$1,000	\$6,675
			Subtotal	\$96,795
			5% Admin	\$4,840
			Total	\$101,635

7) Detailed Matching Funds Breakdown

Sky Island Alliance	
600 volunteer hours @ \$12/hr	\$7,200
USFWS Partners for Wildlife	
work at TNC Preserve	\$10,000
The Nature Conservancy	
lodging at the TNC Guesthouse at \$250/night	\$12,500
herbicide and supplies	\$1,000
AZ Conservation Corps	
500 hours per hitch	\$30,000
TOTAL	\$60,700

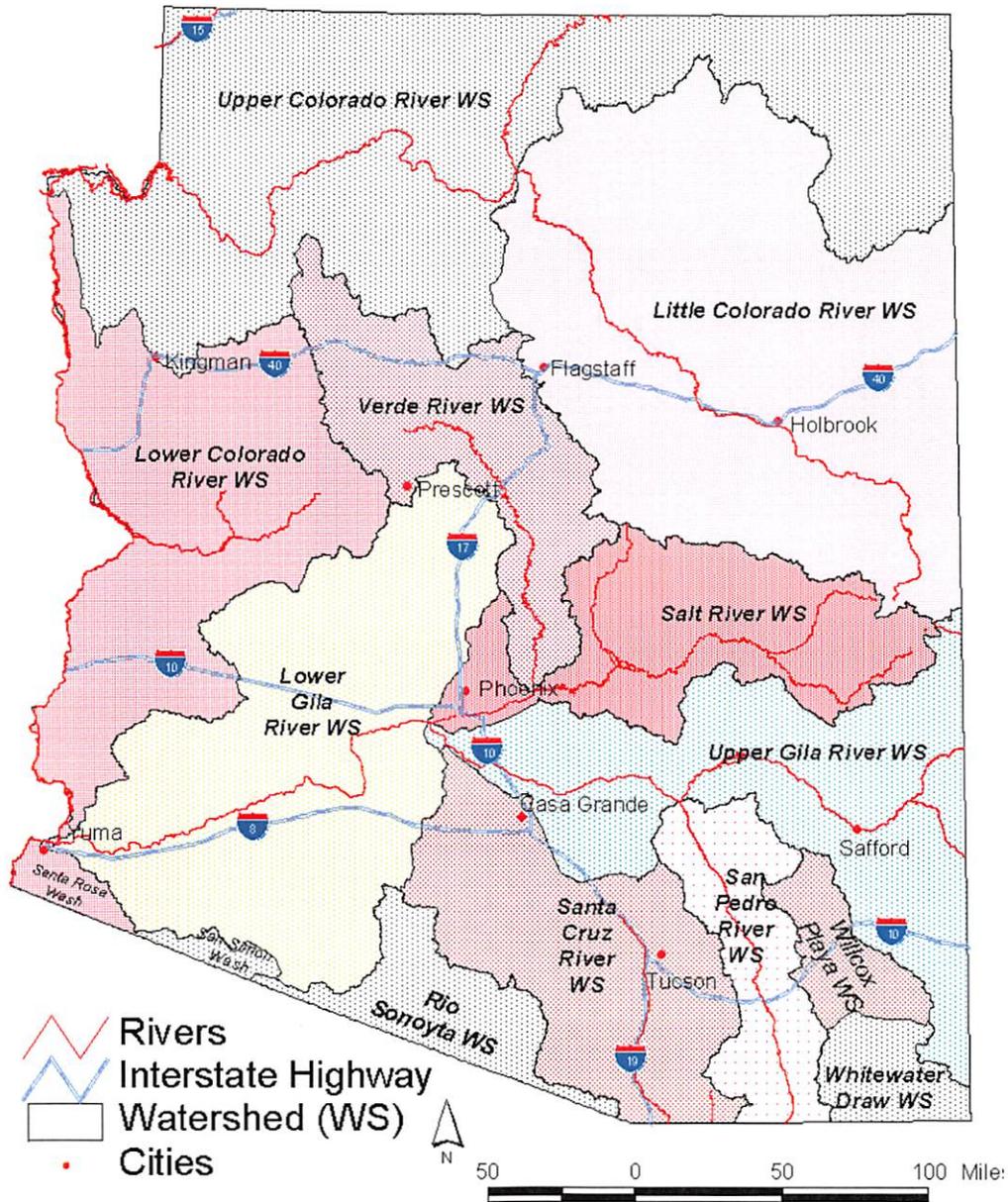
The table above details the matching funds that are included in the line items presented on this proposal cover page. Additional matching contributions were excluded because they have not yet been confirmed. Here is a list of other types of cash and/or in-kind contributions that may add to this project:

National Fish and Wildlife Foundation (NFWF): We have submitted a proposal to the NFWF Bring Back the Natives Program that, if funded, would be complementary to this project. The NFWF proposal includes funding to collect data on the effectiveness of manual removal and herbicide, including different concentrations and seasonality of treatment. The project will result in the drafting of Best Management Practices that will be used in the Long Term Vinca Management Plan that is included in this AWPf proposal. This is a collaboration between Sky Island Alliance, The Nature Conservancy, the University of Arizona Cooperative Extension, and the National Park Service Southwest Exotic Plant Management Team. We expect to receive notification about this grant in the fall.

SIA equipment and materials: SIA already has many of the tools and equipment needed to conduct this work, including a sub-meter accuracy GPS unit, picks, shovels, sod forks, tarps, buckets, and wire protectors for new plantings. The tool budget in this proposal is therefore much smaller, as it only needs to cover incidental tool purchase and replacement.

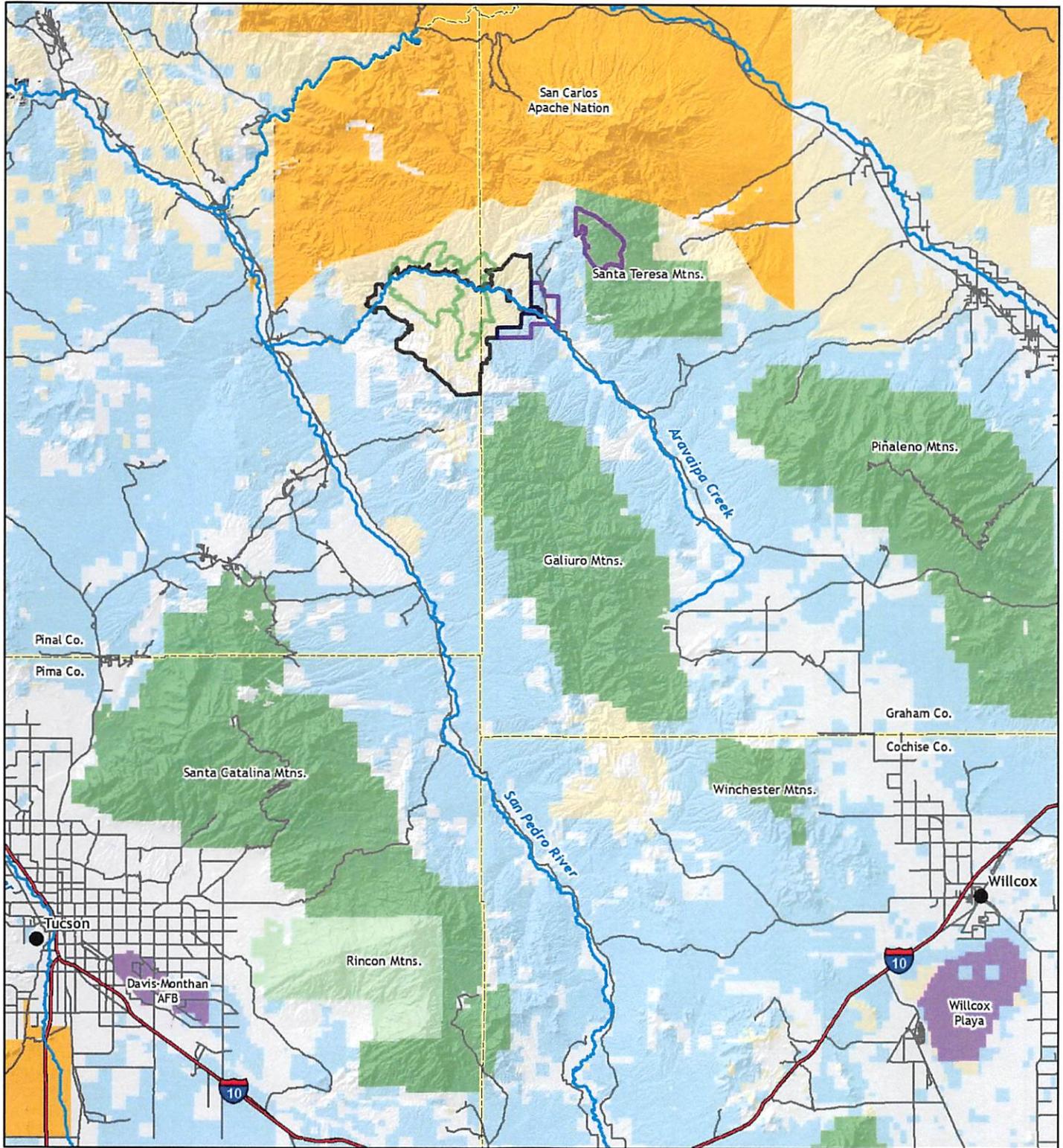
8) Project Maps and Schematics

Arizona Watershed Map FY 2019



Title of Project: Long-Term Management of Invasive Vinca in Aravaipa Canyon

Location (include UTM's & Township/Range/Section): T 6S, R 19E, Sections 19,20,21,27,28,34,35
(Location must include at least one Section delineation for large scale projects)



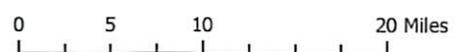
Vinca Removal Project Area Overview



- Aravaipa Preserve
- Bureau of Land Management
- Private
- BLM Aravaipa Wilderness
- Reservation Lands
- State
- Cobra Ranch
- Military
- US Forest Service
- National Park Service

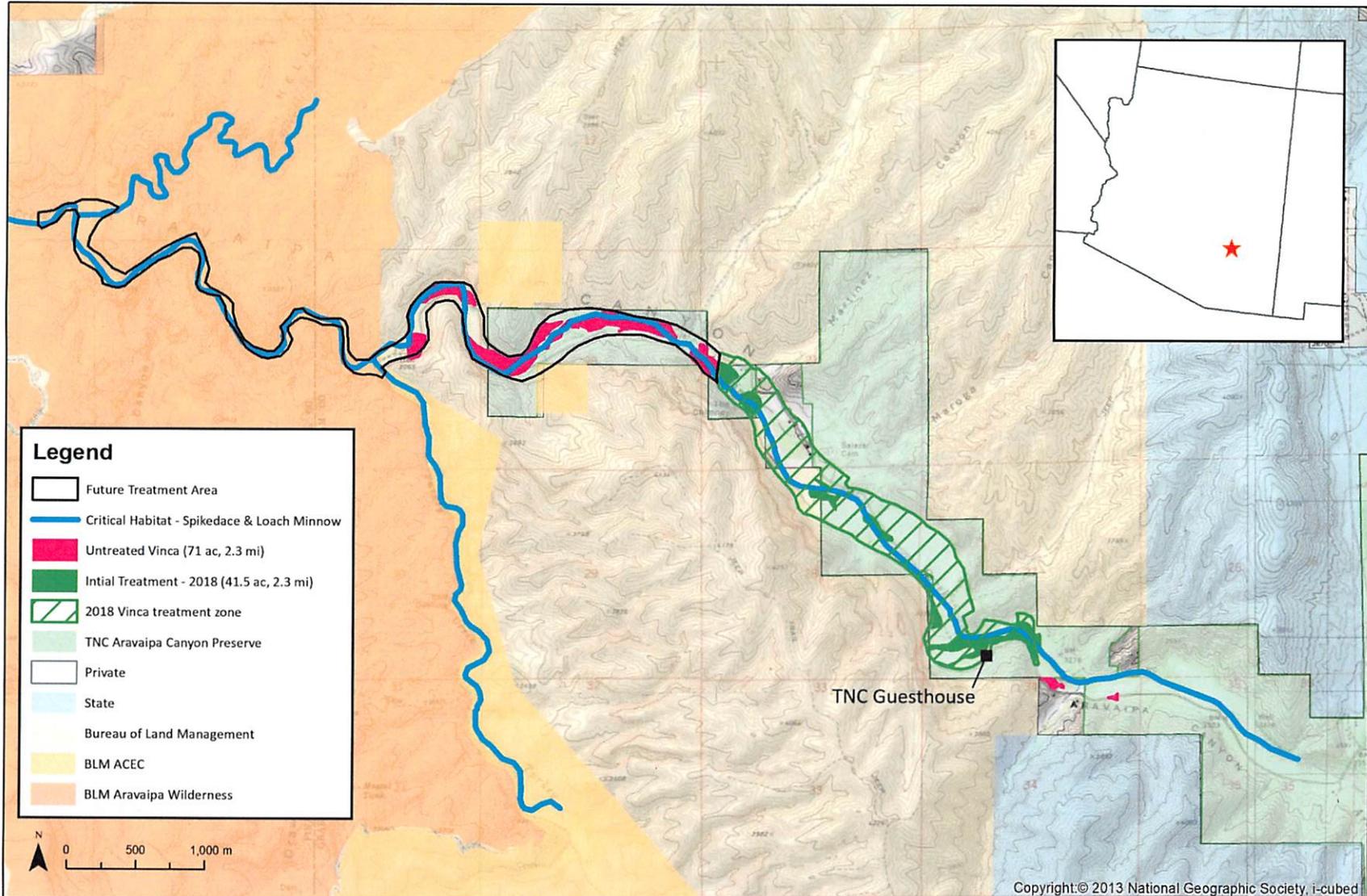


Projection: UTM Zone 12N
 Datum: NAD 1983
 ...RESTORE\Aravaipa_Vinca\mxds\Overview_map_vert.mxd





Long-term Management of Invasive Vinca in Aravaipa Canyon



9) Supplemental Information

STATE HISTORIC PRESERVATION OFFICE Review Form

In accordance with the State Historic Preservation Act (SHPO), A.R.S. 41-861 *et seq*, effective July 24, 1982, each State agency must consider the potential of activities or projects to impact significant cultural resources. Also, each State agency is required to consult with the State Historic Preservation Officer with regard to those activities or projects that may impact cultural resources. Therefore, it is understood that **recipients of state funds are required to comply with this law** throughout the project period. All projects that affect the ground-surface that are funded by AWPf require SHPO clearance, **including those on private and federal lands.**

The State Historic Preservation Office (SHPO) must review each grant application recommended for funding in order to determine the effect, if any, a proposed project may have on archaeological or cultural resources. To assist the SHPO in this review, the following information **MUST** be submitted with each application for funding assistance:

- A completed copy of this form, and
 - A United States Geological Survey (USGS) 7.5 minute map
 - A copy of the cultural resources survey report if a survey of the property has been conducted, and
 - A copy of any comments of the land managing agency/landowner (i.e., state, federal, county, municipal) on potential impacts of the project on historic properties.
- NOTE: If a federal agency is involved, the agency must consult with SHPO pursuant to the National Historic Preservation Act (NHPA); a state agency must consult with SHPO pursuant to the State Historic Preservation Act (SHPA),
- OR**
- A copy of SHPO comments if the survey report has already been reviewed by SHPO.

Please answer the following questions:

1. Grant Program: Arizona Water Protection Fund
2. Project Title: Long-Term Management of Invasive Vinca in Aravaipa Canyon
3. Applicant Name and Address: Sky Island Alliance, 406 S. 4th Avenue, Tucson, AZ 85701
4. Current Land Owner/Manager(s): The Nature Conservancy
5. Project Location, including Township, Range, Section: T 6S, R 19E, S 19,20,21,27,28,34,35
6. Total Project Area in Acres (or total miles if trail): 580 acres, 4.6 miles

7. Does the proposed project have the potential to disturb the surface and/or subsurface of the ground?
 YES NO

8. Please provide a brief description of the proposed project and specifically identify any surface or subsurface impacts that are expected: Sky Island Alliance proposes to treat an invasive groundcover vine called vinca from the flood channel of Aravaipa Creek. Treatment may consist of a combination of manual (digging) removal and herbicide application. Work requires the use of hand tools such as picks and shovels to remove the root material which extends 6 – 8 inches below the ground surface.

9. Describe the condition of the current ground surface within the entire project boundary area (for example, is the ground in a natural undisturbed condition, or has it been bladed, paved, graded, etc.). Estimate horizontal and vertical extent of existing disturbance. Also, attach photographs of project area to document condition: The ground within the proposed project area is within an active flood channel and adjacent overbank of Aravaipa Creek, where natural flooding occurs periodically. Representative photos follow.

10.

11. Are there any known prehistoric and/or historic archaeological sites in or near the project area? YES
 NO

12. Has the project area been previously surveyed for cultural resources by a qualified archaeologist? YES
 NO UNKNOWN

If YES, submit a copy of the survey report. Please attach any comments on the survey report made by the managing agency and/or SHPO

13. Are there any buildings or structures (including mines, bridges, dams, canals, etc.), which are 50-years or older in or adjacent to the project area? YES NO

If YES, complete an Arizona Historic Property Inventory Form for each building or structure, attach it to this form and submit it with your application.

14. Is your project area within or near a historic district? YES NO

If YES, name of the district:

Please sign on the line below certifying all information provided for this application is accurate to the best of your knowledge.

Qui J. Campbell 9/6/18
Applicant Signature /Date

Carlane Campbell
Applicant Printed Name

FOR SHPO USE ONLY

SHPO Finding:

- Funding this project will not affect historic properties.
- Survey necessary – further GRANTS/SHPO consultation required (*grant funds will not be released until consultation has been completed*)
- Cultural resources present – further GRANTS/SHPO consultation required (*grant funds will not be released until consultation has been completed*)

SHPO Comments:

For State Historic Preservation Office:

Date:

Key Personnel

SIA has assembled a diverse team for this project, with extensive experience in restoration in remote areas such as Aravaipa Canyon. Our team includes SIA professional staff, the Arizona Conservation Corps, and our cadre of capable volunteers.

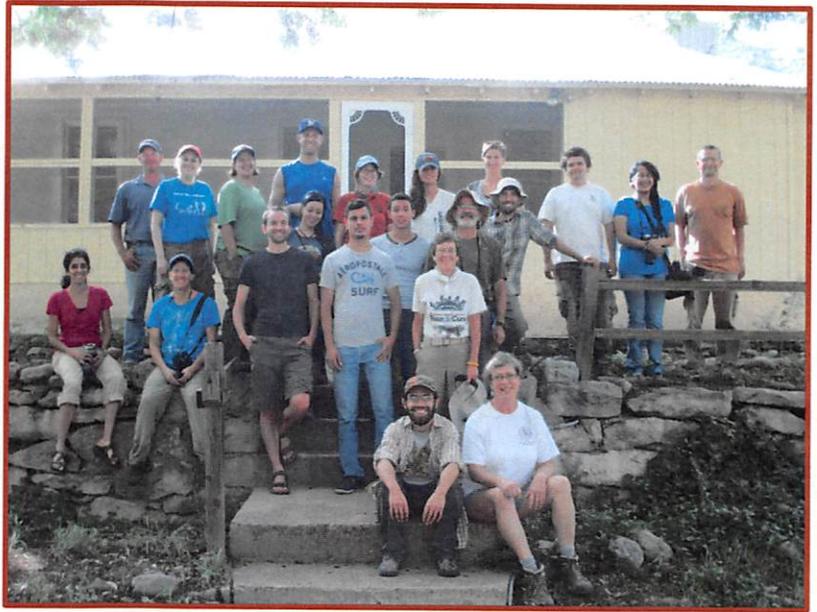
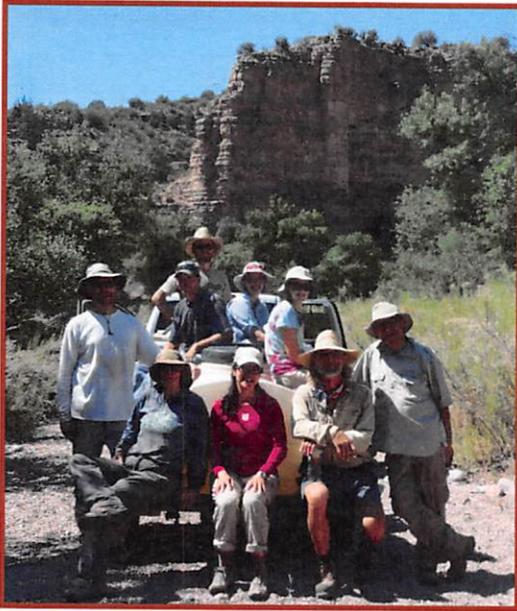
Carianne Campbell is the Restoration Director at Sky Island Alliance and will serve as the **Project Manager** for this project. Carianne has accomplished projects similar in scope to this proposed project in the past both as Principal Investigator and as a team member.

Carianne Campbell brings over 20 years of experience in documenting natural resources, and specializes in developing vegetation ecology methodologies and designing habitat restoration projects that incorporate novel and low-tech approaches to restoration to achieve conservation goals. She has extensive experience surveying and documenting plant and wildlife species and communities in the southwestern US and northwestern Mexico. She makes appropriate native plant landscaping recommendations, prepares invasive species management plans, and designs maintenance and monitoring plans. Campbell holds a BA in Botany, and currently serves as the President of the Southwest US Chapter of the Society for Ecological Restoration.

Brian Gold is the Regional Director for the Arizona Conservation Corps (AZCC) and is located in their Tucson office. Brian will be coordinating AZCC staffing and crews to complete the initial treatment of vinca for this project. He holds a Bachelor's degree in International Politics from the University of New York at New Paltz. His many years of experience in roles such as Veteran's Fire Corps Coordinator make him uniquely suited for organizing this effort.

SIA volunteers. Over the past 20 years, SIA has developed a corps of volunteers that are dedicated to on-the-ground actions to protect the natural resources of the Sky Island Region. SIA's capable corps of volunteers has reached over 500 individuals; many of whom have joined us in our previous years' of work in Aravaipa Canyon. SIA volunteers have a special connection to this place, and we are always able to recruit sizeable groups to join us in Aravaipa Canyon, ensuring adequate turn-out to accomplish restoration tasks as described in this proposal. This diverse set of volunteers includes university students from Arizona and Sonora, private landowners, natural resource professionals, and retired professionals from all walks of life. We also work with youth and veterans/active military groups to accomplish our goals. In addition, The BLM and TNC often supplement our work crews with staff and interns.

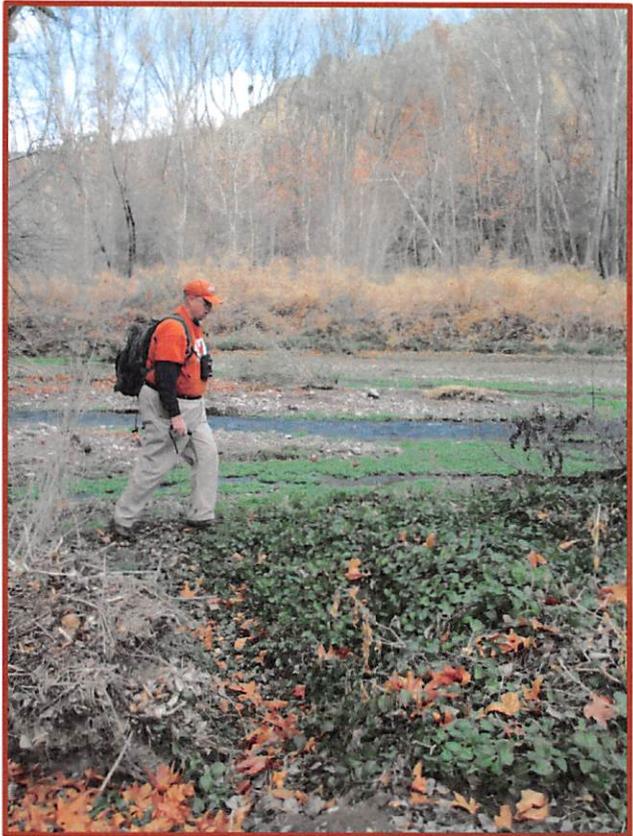
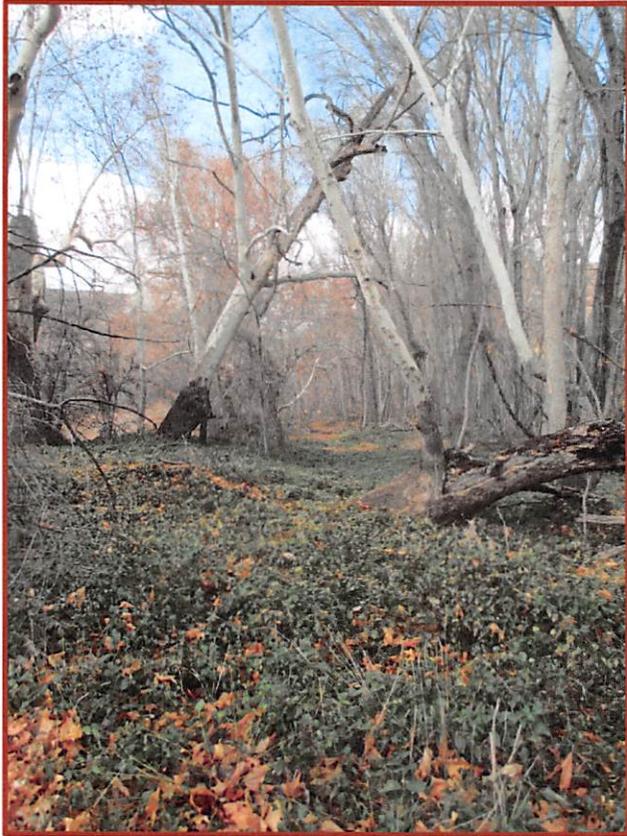




Recent volunteer groups at Aravaipa Canyon, excited to do restoration in such a beautiful place!

Project Site Photographs

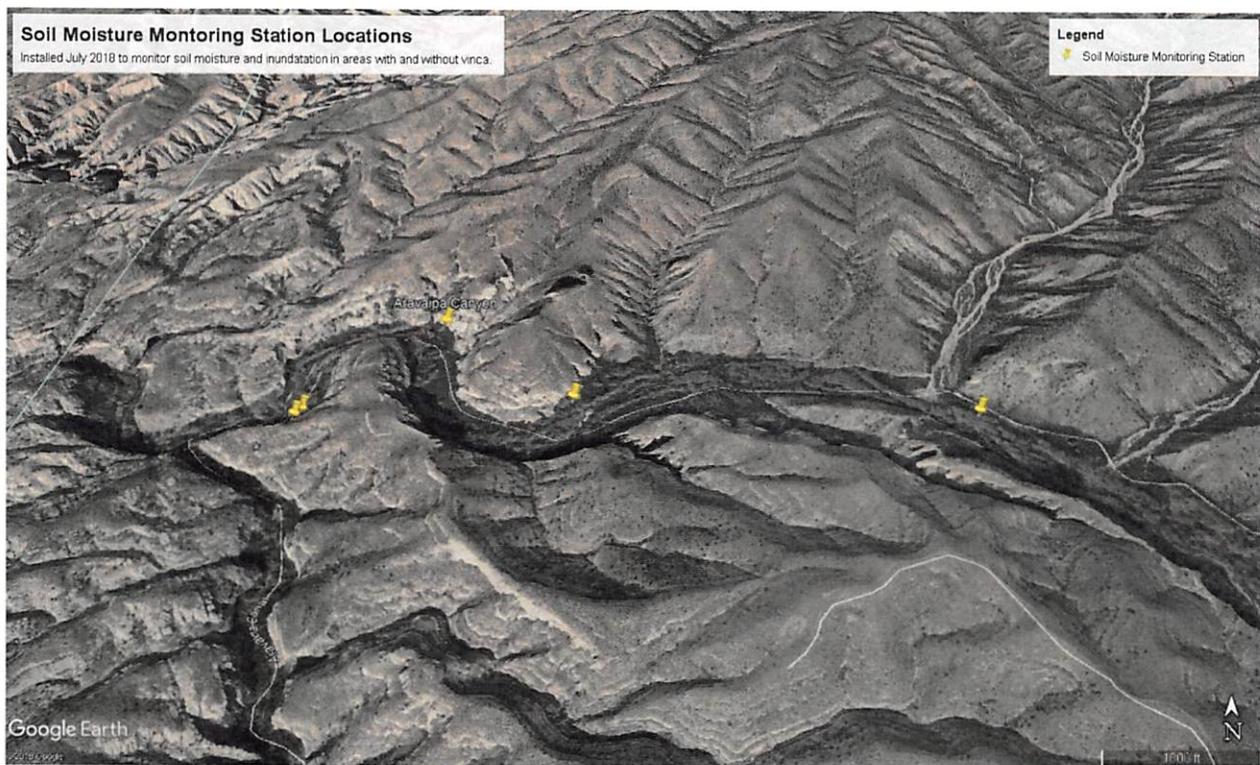
February 1, 2014 during preliminary mapping in the vicinity of the TNC Guesthouse:



Discussion of Plans - Monitoring and Documentation

SIA documents all activities with our sub-meter accuracy GPS unit so that we can keep careful track of areas of vinca that have been identified and/or treated. We document specific metadata regarding the type of treatment and whether it is initial or retreatment. These data allow us to then collect effectiveness data relative to the type of treatment and the timing so that we can build a body of knowledge about the most effective management strategies.

We are also working with GeoSystems Analysis, Inc. to conduct soil moisture monitoring at six locations in the canyon in areas infested with vinca and areas without vinca. We will be using the data to understand more about how vinca affects soil moisture and inundation, and the potential effects on native riparian vegetation establishment.



Existing Plans, Reports, Information

Activities included in this proposal are in accordance with the Aravaipa Ecosystem Management Plan and Environmental Assessment (Sept 2015), produced by the Bureau of Land Management, The Nature Conservancy, and the Arizona Game and Fish Department. It is available here: <http://www.azwild.org/action/documents/2015-aravaipa-rmp-final-web.pdf>

Community Support

See following letters of support from:



1. Mark Haberstitch, TNC Aravaipa Canyon Preserve Manager
2. Jeff Conn, National Park Service Exotic Plant Management Team
3. Elise Gornish, University of Arizona Cooperative Extension

In addition, many of the neighboring ranches are very supportive of the removal of a plant that is toxic to livestock.



SAVING THE LAST GREAT PLACES ON EARTH

August 15, 2018

RE: Sky Island Alliance Long-Term Management of Invasive Vinca in Aravaipa Canyon

Dear Arizona Water Protection Fund Selection Committee,

I wish to express The Nature Conservancy's support for the grant proposal that the Sky Island Alliance (SIA) has submitted to treat and remove vinca from Aravaipa Canyon. The Nature Conservancy owns about 6 miles of important riparian habitat at the headwaters of Aravaipa Creek. We strive to manage all of our property as diverse natural habitat, for the benefit of wildlife and people. Aravaipa Creek supports the state's best native fishery, including two endangered species, and Aravaipa Canyon is well known as a wilderness hiking destination.

Sky Island Alliance has been a valuable long-term partner. For several years now we have been working with SIA on a variety of watershed health projects, and they are able to bring a large number of motivated volunteers that are willing to camp out and provide numerous hours of physical labor. This is a great boon for the Preserve which has 2.5 full time employees to manage over 9,000 acres adjacent to the BLM's Aravaipa Canyon Wilderness Area.

Vinca or periwinkle, was introduced as a hearty ornamental around many of the old homesteads. It spread into irrigation ditches used to divert water for small farms and orchards. When these ditches were eventually abandoned the vinca was able to persist, eventually becoming entangled in the understory of otherwise healthy riparian forest and forming impenetrable mats. Treatment is complicated due to the proximity to sensitive aquatic habitats; physical and physiological traits of the plant including a very waxy epidermis that diminishes herbicide effectiveness and prolific vegetation propagation; debris and uneven surfaces that make mechanical control challenging.

Aravaipa Creek has become one of the southwest's best native fisheries because of its natural hydrograph, and relatively minor competition from exotic species. To manage Aravaipa effectively, we feel it is important to control both non-native fish, as well as non-native plant species. The Nature Conservancy will provide the use of our facilities, water for new planting of native species, and our staff will properly dispose of all vinca that is removed. We hope this project receives full funding, and eagerly look forward to the results so that we can have better guidance around how to most efficiently and effectively treat vinca.

Sincerely,
Mark Haberstich, Preserve Manager
The Nature Conservancy



United States Department of the Interior

NATIONAL PARK SERVICE
INTERMOUNTAIN REGION
12661 E. Broadway Blvd.
Tucson, Arizona 85748



August 16, 2018

Arizona Water Protection Fund

RE: Sky Island Alliance Riparian Restoration and Vinca Management Plan Aravaipa Creek,
Arizona

Dear Selection Committee,

As the Manager for the National Park Service Southwest Exotic Plant Management Team, I coordinate invasive plant management and restoration activities at 45 park units across the southwest and collaborate with researchers and other organizations to address issues which are regional and community concerns.

I am pleased to partner with Sky Island Alliance for this proposed work in Aravaipa Canyon. Our experienced team will be able to assist with the treatment of vinca and monitoring of effectiveness trials that will be cooperatively designed by project partners.

There is a paucity of research on effective control measures of vinca. Collaborating on a treatment and monitoring program with Sky Island Alliance, The Nature Conservancy, and the University of Arizona will not only benefit Aravaipa Canyon and the rich diversity it supports but will also provide much needed information to improve vinca control across the west. I look forward to my involvement in the conservation management at Aravaipa Creek to help ensure the long term health of its riparian area and improve management of vinca in other riparian habitats in the southwest.

Sincerely,

Jeff Conn
SW EPMT Manager
Manager, Southwest Exotic Plant Management Team



School of Natural Resources and the Environment
College of Agriculture and Life Sciences

1064 E. Lowell St, ENRII
P.O. Box 210137
Tucson, AZ 85719
Telephone: (520) 621-7255
Fax (520) 621-8801
www.snre.arizona.edu

Date: 8/30/18

To: AZ Water Protection Fund

From: Dr. Elise S. Gornish, Cooperative Extension Specialist in Ecological Restoration at the University of Arizona

Re: Sky Island Alliance Long-term Management of Invasive Vinca in Aravaipa Canyon, Arizona

Dear Selection Committee,

The Gornish lab at the University of Arizona, School of Natural Resources and the Environment focuses on using integrated approaches to develop and deploy effective restoration and land management strategies in working and natural landscapes. We develop research and outreach programs on a wide range of themes to address questions related to ecological restoration and weed management in Arizona and the western U.S. region. We have a special interest in developing best management practices for the effective control of Vinca for the southwest due to the massive ecological and economic damage that results from Periwinkle infestation. Moreover, there is a paucity of information regarding the special circumstances and challenges faced in our arid aquatic systems when Vinca invades. The bulk of the information available about Vinca treatment is focused on regions with very different environmental conditions and therefore, is not particularly useful for successful treatment in our region.

This proposed collaboration in Aravaipa Canyon is an exciting opportunity for my lab to develop different treatment trials that will result in publishable results to guide southwestern land managers and practitioners to meet the management challenge that Vinca poses in our precious few perennial riparian areas. My recent survey of over 150 land managers in Arizona (publication forthcoming) highlights a need and interest of local stakeholders for more successful, integrated approaches to weed control in riparian habitats. This work will directly address the needs of local stakeholders while providing information to weed control researchers across the western U.S.

Sincerely,

A handwritten signature in black ink that reads 'Elise S Gornish'.

Elise S. Gornish
University of Arizona

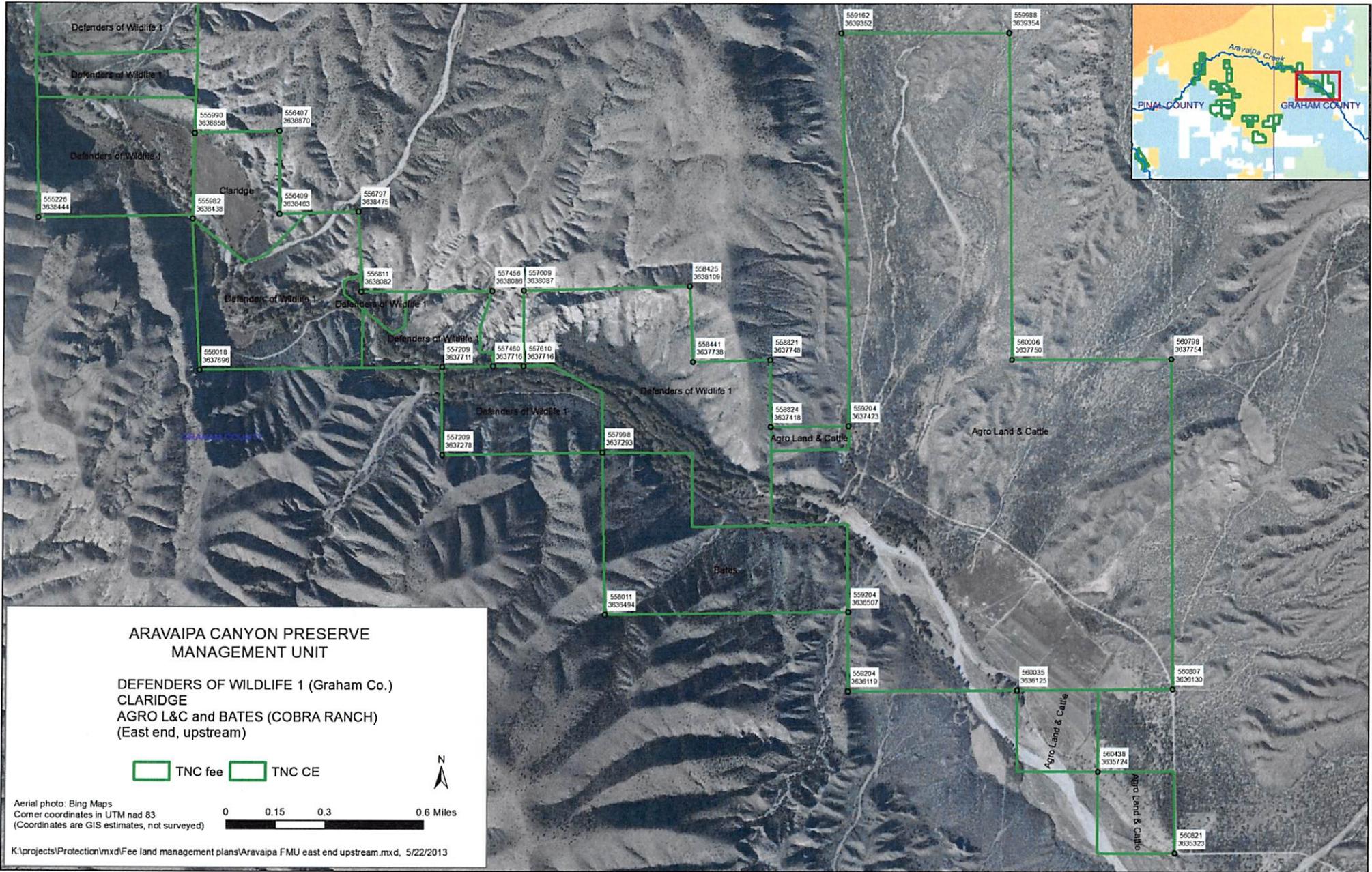
A faint, illegible handwritten note or signature in light blue or grey ink, possibly reading 'Elise S Gornish'.



Evidence of Control, Tenure of Land Including Legal Access, and Narrative of Project Permission

The following maps, provided by The Nature Conservancy (TNC), demonstrate the tenure of the lands included in this proposal as deeded to TNC (from Defenders of Wildlife). There is one section of private inholding land included on the maps; this area would be excluded from survey and vinca eradication activities under this grant. SIA will pursue separate funding to treat the vinca present in that section of the creek. TNC has provided SIA access to these parcels for many years to conduct volunteer-based watershed improvement projects. Sky Island Alliance and TNC already have a landowner agreement in place to conduct vinca removal on the Aravaipa Canyon Preserve through a USFWS Partners for Wildlife grant that was signed on December 5, 2014. The agreement expires 10 years after the signature date, and demonstrates TNC's commitment to maintaining the vinca removal project in the long term.

TNC has also provided a letter of support for this project, which includes in-kind support to cover lodging for work crews as well as disposal of the vinca biomass once it has been removed.



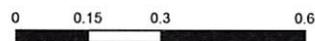
**ARAVAIPA CANYON PRESERVE
MANAGEMENT UNIT**

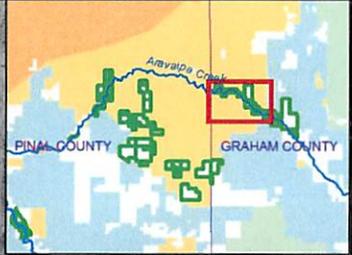
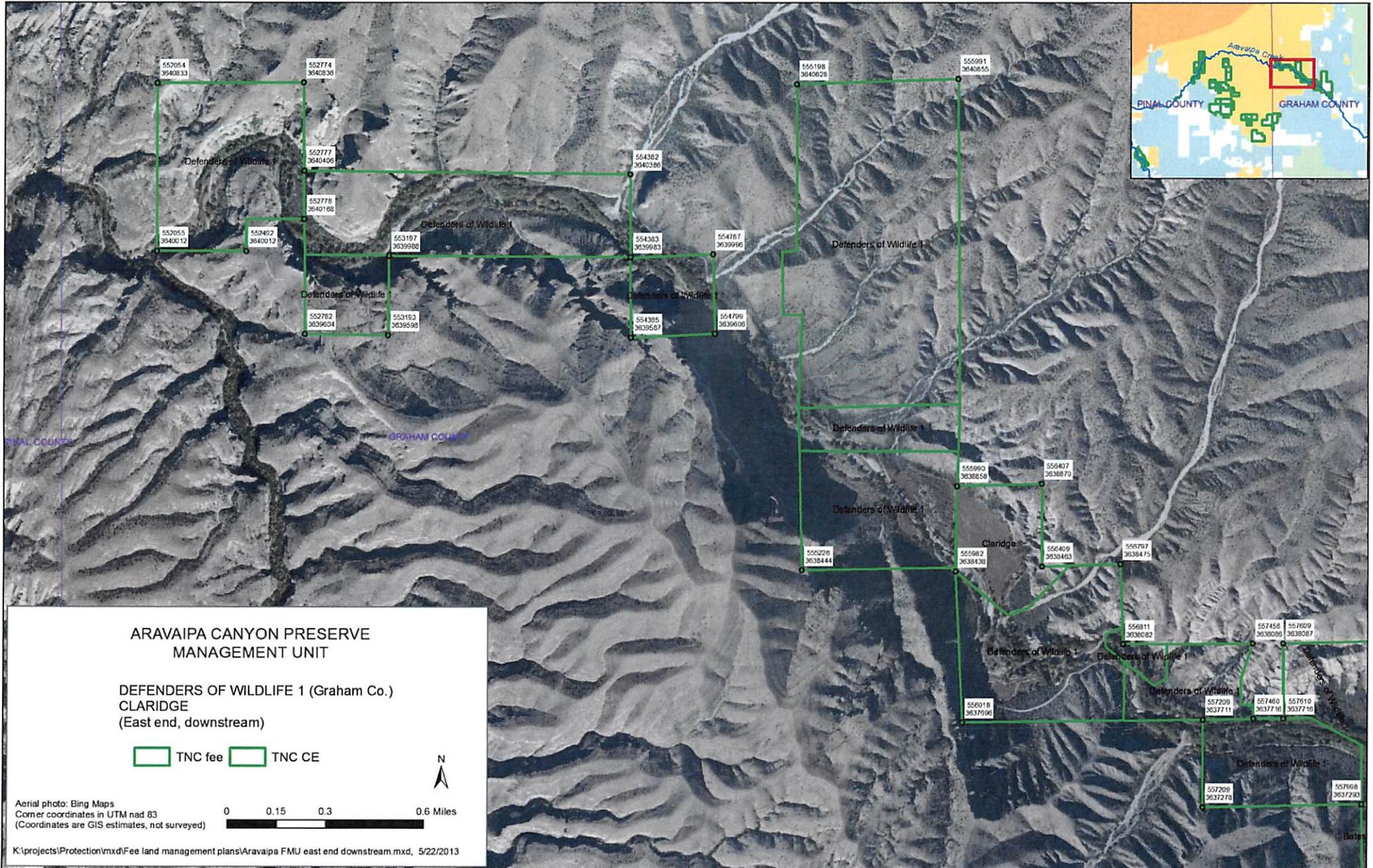
**DEFENDERS OF WILDLIFE 1 (Graham Co.)
CLARIDGE
AGRO L&C and BATES (COBRA RANCH)
(East end, upstream)**

TNC fee TNC CE



Aerial photo: Bing Maps
Corner coordinates in UTM nad 83
(Coordinates are GIS estimates, not surveyed)





Evidence of Physical and Legal Availability of Water

TNC has rights to instream water flow through the Aravaipa Canyon Preserve, and has agreed to allow water to be taken from the creek (by hand, with buckets) to water native plants. See enclosed letter from TNC.

"Flows in the upper reaches of Aravaipa Creek are intermittent. Within the preserve lands the flow becomes perennial, fed by springs, seeps, and tributary streams. A limited amount of groundwater is pumped along the creek from privately owned reaches for farming and grazing, at times drying short segments. The Nature Conservancy and the BLM have instream-flow rights that are used to maintain base flows for conservation purposes."

http://www.azheritagewaters.nau.edu/loc_aravaipa_creek.html