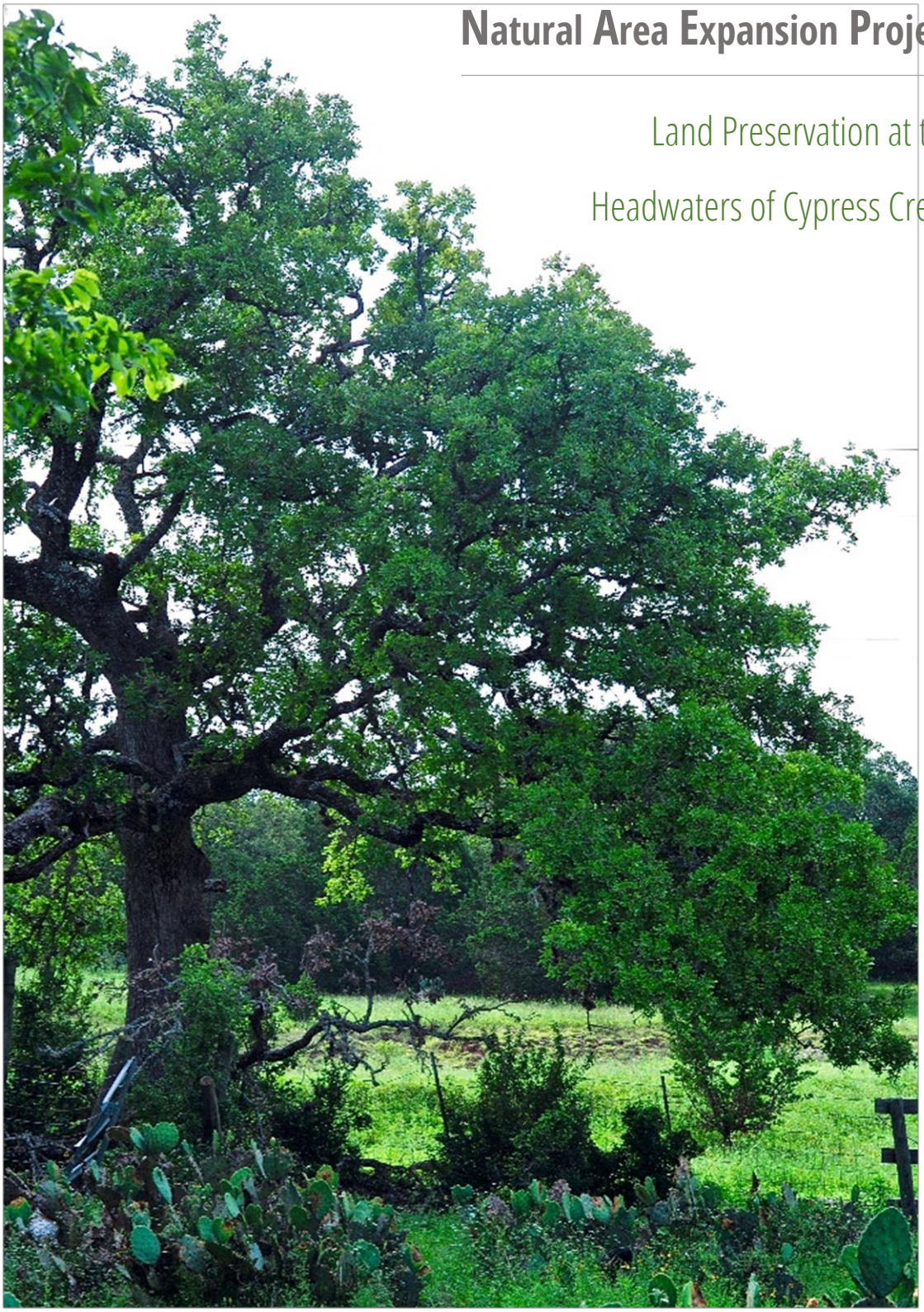
Natural Area Expansion Project

Land Preservation at the Headwaters of Cypress Creek



PREPARED FOR:

Wimberley Valley Watershed Association

PREPARED BY:

CONSERVATION consultancy

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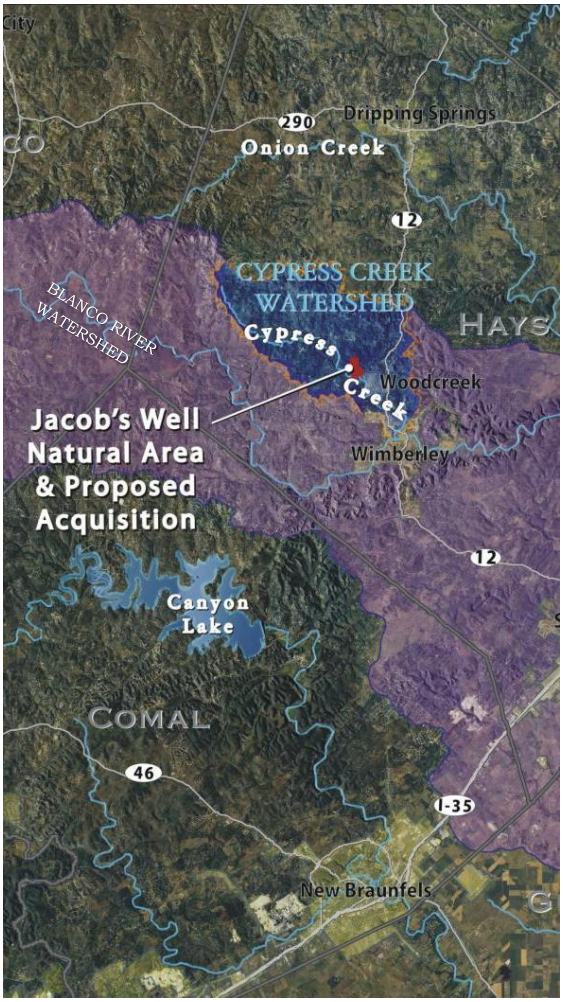


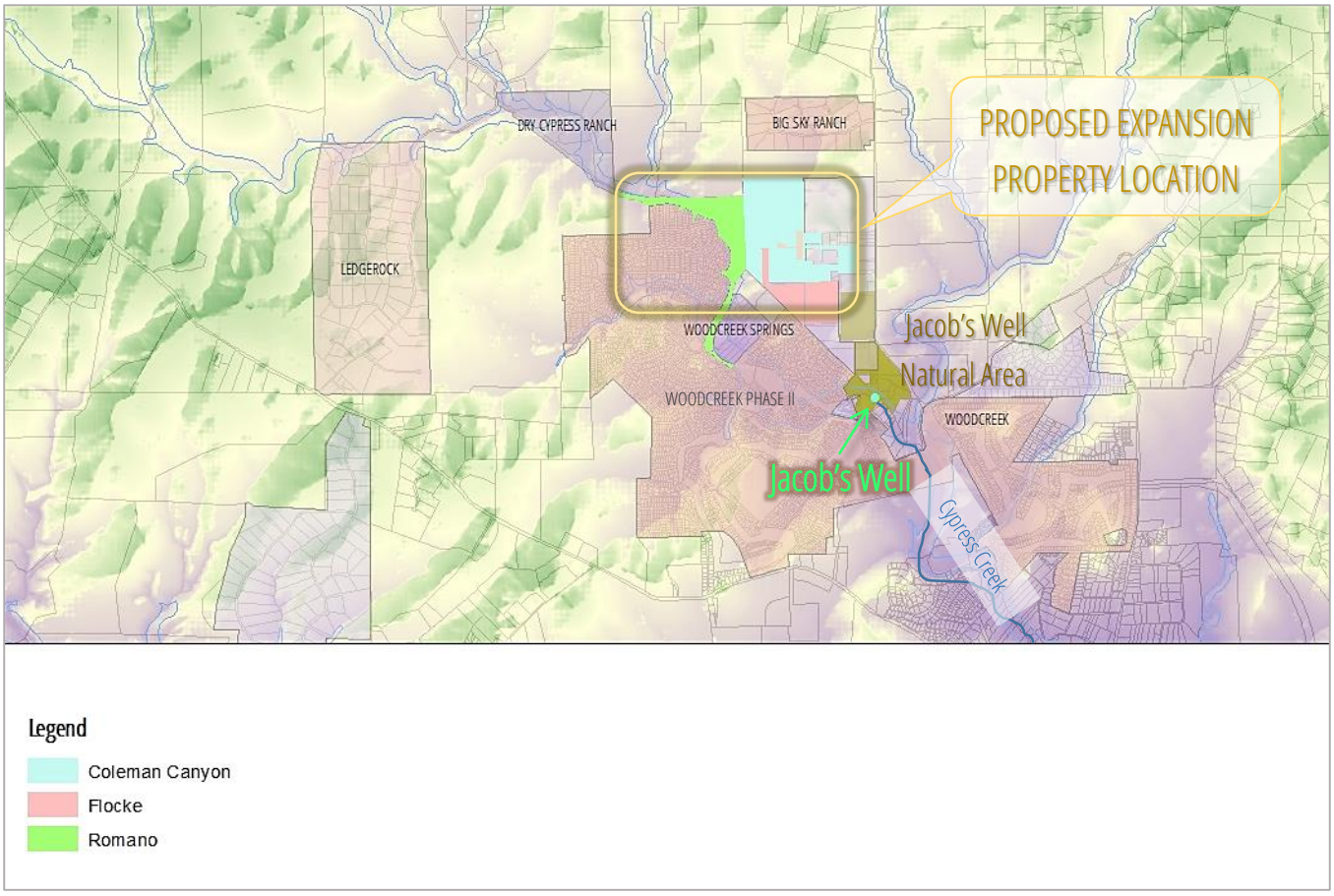
Introduction

The landowners interested in discussing the opportunity for participating in a conservation program include Colman's Canyon owned by the Coleman Family, the property owned by Stephen Flocke and the Rocky Romano tract.

The Coleman Family have one large parcel at just under 156 acres, Stephen Flocke owns just under 45 acres, and the Romano tract is just over 74 acres.

There are numerous natural features, with significant terrain characteristics and the Wimberley Bat Cave that help to give this project a compelling and identifiable tangible resource protection goal. The land as a resource lends itself well to preservation and proper management would enhance the ecologically sensitive area. The owners have all expressed interest in preserving the sites.

This report is a record of initial observations, one of the landowner's notes and monitoring data, as well as the initial site visit by a licensed field biologist.



The Properties

These properties are located in Western Hays County, Texas in the Wimberley Valley. A part of Upper Dry Cypress Creek drainage area, the slopes contribute to the scenery of this area and the creek receives overland flow and recharge from these properties.

This site has the appeal of the wide open spaces. The abundant tall and mid- grasses and scattered oaks produce beautiful fall color variations. The area is also used for hunting, birding and other eco-tourism related enterprises.

Limestone ridges and canyons and nearly level to gently sloping valley floors characterize the area. Well drained soils and rock outcrops make up a significant portion of the area. Shallow and moderately deep soils formed on the side of slopes and ridges, and on the mesas respectively, support vegetation characteristic of the Hill Country and the Balcones Escarpment. Very deep soils formed in nearly level to gently sloping valley bottoms support hardwoods and some of the very deep soil areas are helping to mitigation the flash-flood effects from our heavier rainstorms.

This area supports a plant community of trees, shrubs, and mid or tall grasses. Because the property encompasses the slopes of Coleman's Canyon from ridge top to creek-bottom, there are a variety of terrains on which the often dense canopy of oaks and Ashe Juniper are found. Denser woody cover and less grass-like vegetation is significant for the habitat it supports including the presence of seasonal protected Endangered Species. Some brush management has taken place, but much of the area vegetation is following a natural succession that happens in much of the fire suppressed region.

Because of the severe competition from woody species for sunlight, nutrients, and moisture, and the historical overgrazing, the shallow soils don't support much groundcover and due to the deferred management of the ecology for many years, restoration and maintenance could do more to support biodiversity and the ecosystem services associated with hydrology and water provisioning.

Terrain

The soil surfaces vary from densely canopied sites with a thick mat of juniper leaves or other shrub leaf material to open areas between canopies that produce a grass cover primarily composed of lower successional species.

On-going management concerns include: rangeland brush management inappropriately applied to steep slopes, mesic canyons and edges, rock outcrops and karst areas; cultural aversion to juniper; and historically overgrazed sites which accelerated the shift of canyon-adjacent vegetation to a dense shrubland-woodland.

Canopy cover can drive the transitions between plant communities because of the influence of shade and interception of rainfall.
This area proposed is underlain primarily by limestones in the Glen Rose and Edwards Formations of Cretaceous age. 10 to 30 percent bare ground with small areas of groundcover and non-connected areas exist. Slope gradients are mainly 1 to 8 percent but can range up to 12 percent. Slopes exceeding 12 percent are classified as Steep Rocky. Although the property is somewhat dominated by steep rocky slopes, smaller areas of very gentle grade occur on the hill top mesas and on the creek-banks as well.

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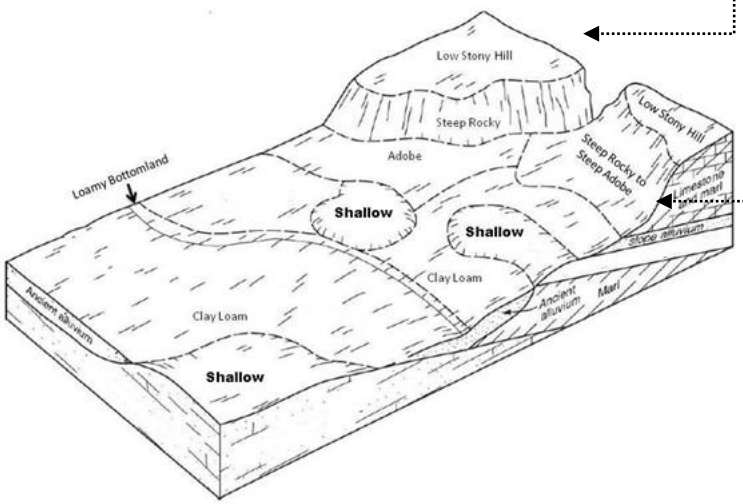
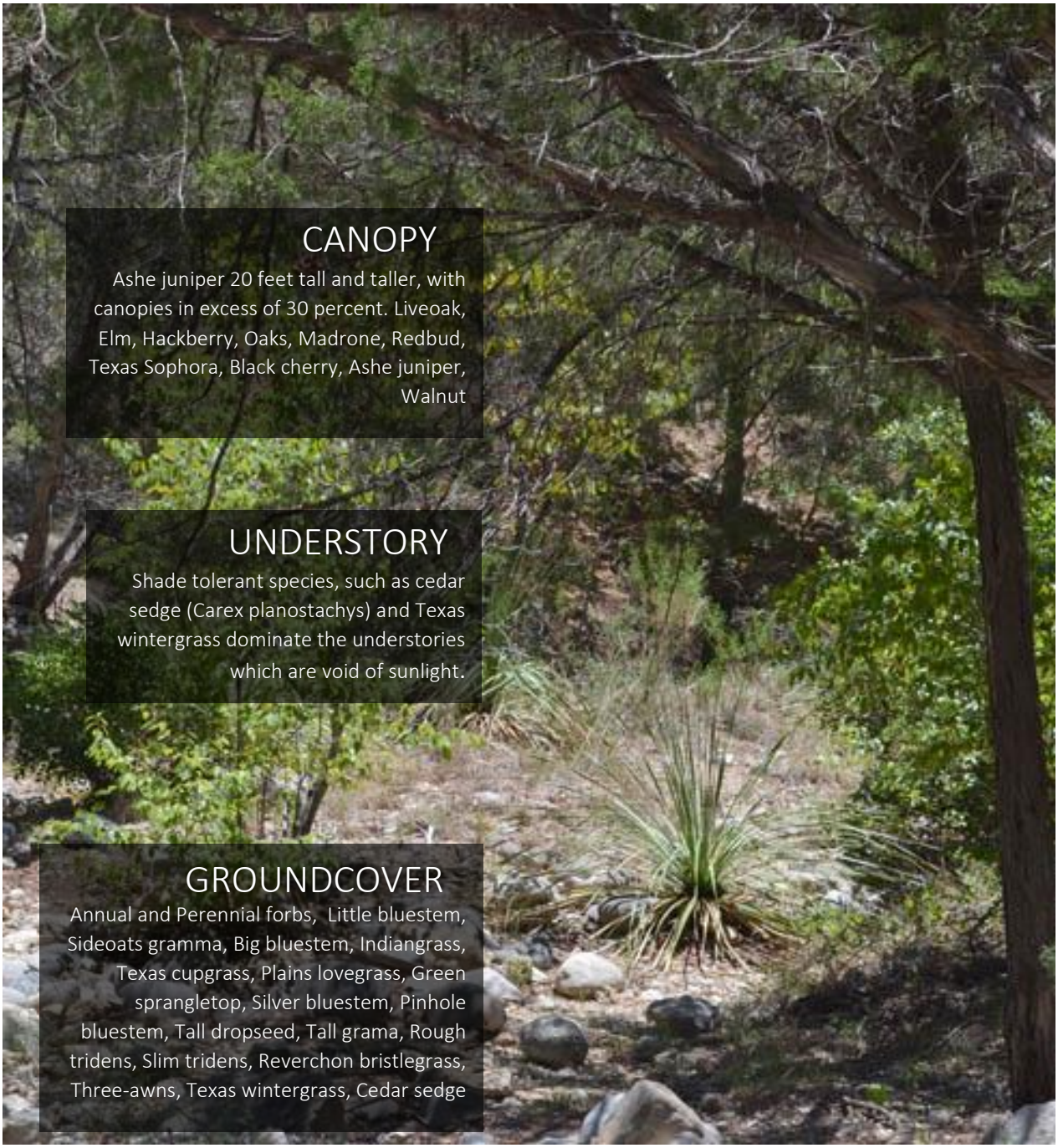


Much higher areas in elevation on the site have bare areas >30% exposed ground, lower areas and steep areas also present opportunities for re-vegetation or land management to enhance vegetation patterns

Vegetation

Grass and forb vegetation is somewhat reduced on these properties, as it is over much the Hill Country. Significant reduction in groundcover can occur from years of overgrazing and severe competition that Ashe juniper and other woody species present regarding sunlight and moisture. Large areas that were once vast grasslands are covered in heavy woody species, Texas live oak, honey mesquite, algerita, and Ashe juniper, also Texas persimmon, elbowbush, and lotebush.



Some of the major wildlife species on these properties and in the area are white-tailed deer, fox, raccoon, skunk, opossum, cottontail, bobwhite quail, white-winged dove, and mourning dove.

Many other species of medium- and small-sized mammals, birds, and insects can have significant influences on the plant communities in terms of pollination, herbivory, seed dispersal, and creation of local disturbance patches, all of which contribute to the plant species diversity.

Birds

The different species of songbirds vary in their habitat preferences. In general, habitat that provides a large variety of grasses, forbs, shrubs, vines, and trees benefit the most species. This complex ecosystem of grassland, savannah, shrubland, and woodland will support a good variety and abundance of songbirds. Birds of prey are important to keep the numbers of rodents, rabbits, and snakes in balance; therefore, the different plant communities of the site will sustain different species of raptors. These raptors can prey on domestic animals as well.

Over 71 million Americans spent nearly $45 billion (in retail sales) on observing, feeding, or watching wildlife in the US in 2013. Wildlife viewing has helped to diversify local economies through nature-based tourism.

*Species of Greatest Conservation Need**

Painted Bunting | *Passerina ciris*

Carolina Chickadee | *Poecile carolinensis*

Lark Sparrow | *Chondestes grammacus*

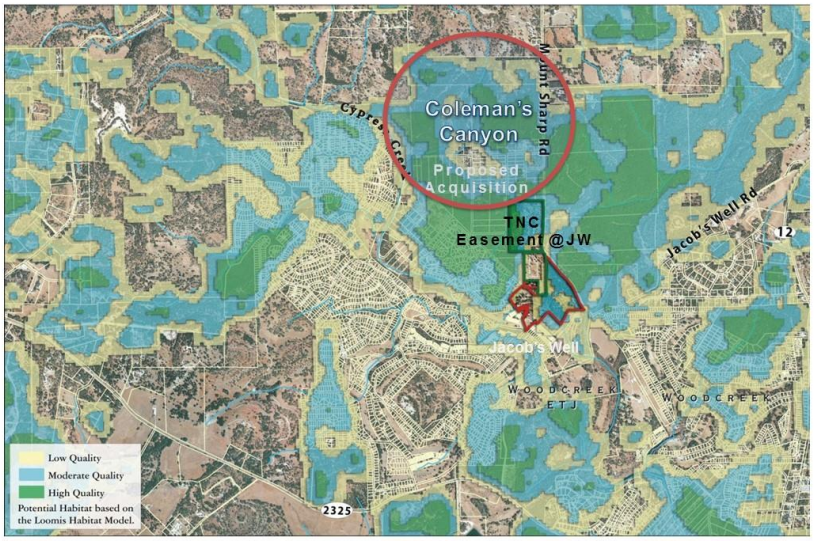
Summer Tanager | *Piranga rubra*

**Each of these birds are of concern and are documented on the properties proposed for consideration*

Golden-cheeked Warbler | *Dendroica chrysoparia*

Golden-cheeked Warbler (GCWA) are frequently seen foraging in Ashe juniper, young live oaks and Texas oaks, shin (scalybark) oak and brush where increases in insects have been documented. Breeding usually in closed canopy, dense, mature and old-growth stands of Ashe juniper and mixed hardwoods (e.g. Texas oak, shin oak, live oak, Lacey oak, post oak, Texas ash, cedar elm, hackberry, bigtooth maple, sycamore, little walnut, and escarpment cherry) in relatively moist steep-sided canyons, slopes, and adjacent uplands.

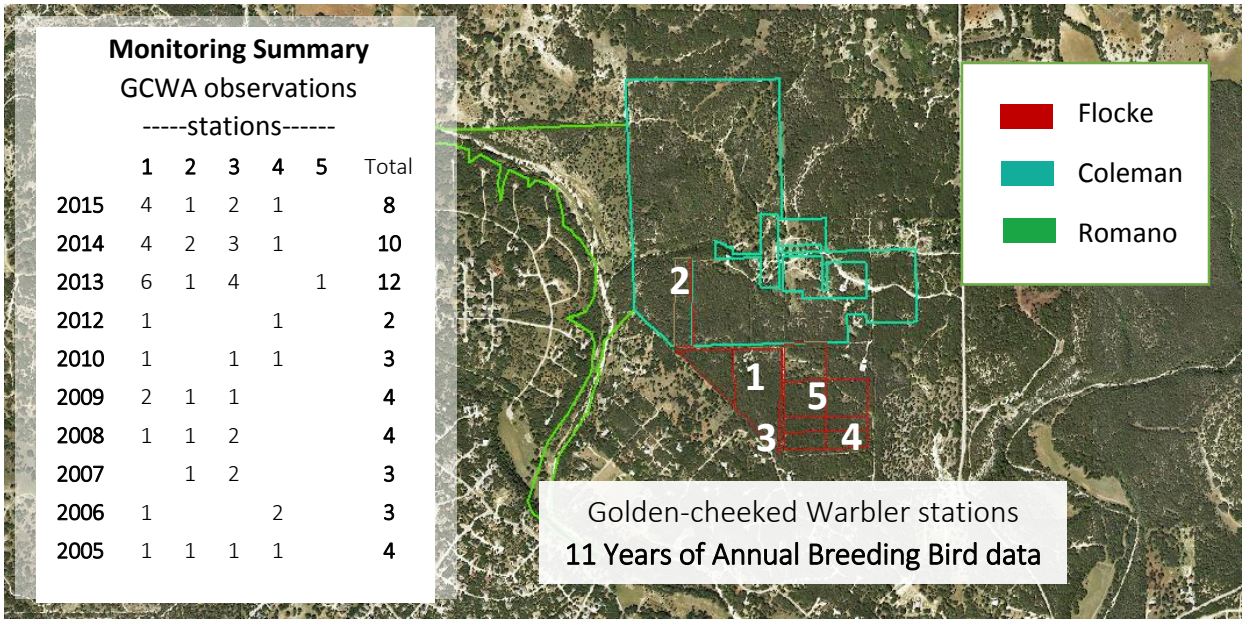
Jacob's Well Context – GCWA Potential Habitat



Found in drier, upland juniper-oak (i.e. Texas oak, live oak, post oak, blackjack oak) woodlands over flat topography, especially later in season (young dispersal); broad-leaved trees, especially oaks, are particularly important in providing habitat for insects during the first part of the nesting season.

TNC Field Notes: May 23, 2016

The Nature Conservancy's Associate Director of Conservation, Rich Kostecke, visited Flocke and Coleman properties. He detected 2 Golden-cheeked Warblers (denoted as blue dots in the image). Bird surveys have been conducted on both properties (more intensively on Flocke) in the past and several Golden-cheeked Warbler territories have been mapped on both the Flocke and Coleman properties. The Golden-cheeked Warbler he observed on the Flocke property is near what has been denoted as territory 1 in the Flocke file. The second was heard singing on part of the Coleman property where warblers have apparently not been traditionally observed. If conditions were more ideal, he suspected he would have detected additional warblers on both properties as much of the habitat on the properties is suitable for Golden-cheeked Warblers.

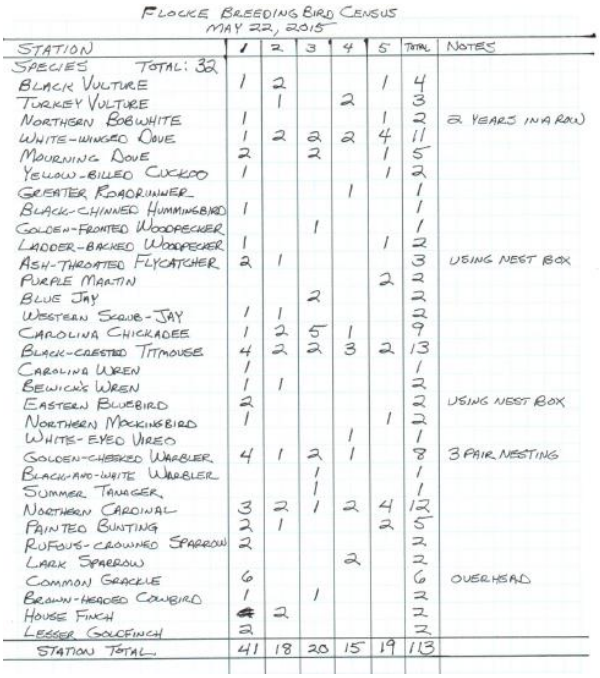


Monitoring Summary

GCWA observations

-----stations------

	1	2	3	4	5	Total
2015	4	1	2	1		8
2014	4	2	3	1		10
2013	6	1	4		1	12
2012	1			1		2
2010	1		1	1		3
2009	2	1	1			4
2008	1	1	2			4
2007		1	2			3
2006	1			2		3
2005	1	1	1	1		4



FLOCKE BREEDING BIRD CENSUS
MAY 22, 2015

STATION	1	2	3	4	5	TOTAL	NOTES
SPECIES TOTAL: 32							
BLACK VULTURE	1	2			1	4	
TURKEY VULTURE		1		2		3	
NORTHERN BOBWHITE	1				1	2	2 YEARS IN A ROW
WHITE-WINGED DOVE	1	2	2	2	4	11	
MOURNING DOVE	2		2		1	5	
YELLOW-BILLED CUCKOO	1				1	2	
GREATER ROADRUNNER				1		1	
BLACK-CHINNED HUMMINGBIRD	1					1	
GOLDEN-FRONTED WOODPECKER			1			1	
LADDER-BACKED WOODPECKER	1				1	2	
ASH-THROATED FLYCATCHER	2	1				3	USING NEST BOX
PURPLE MARTIN					2	2	
BLUE JAY			2			2	
WESTERN SCRUB-JAY	1	1				2	
CAROLINA CHICKADEE	1	2	5	1		9	
BLACK-CRESTED TITMOUSE	4	2	2	3	2	13	
CAROLINA WREN	1					1	
BEWICK'S WREN	1	1				2	
EASTERN BLUEBIRD	2					2	USING NEST BOX
NORTHERN MOCKINGBIRD	1				1	2	
WHITE-EYED VIREO				1		1	
GOLDEN-CHEEKED WARBLER	4	1	2	1		8	3 PAIR NESTING
BLACK-AND-WHITE WARBLER			1			1	
SUMMER TANAGER			1			1	
NORTHERN CARDINAL	3	2	1	2	4	12	
PAINTED BUNTING	2	1			2	5	
RUFOUS-CROWNED SPARROW	2					2	
LARK SPARROW				2		2	
COMMON GRACKLE	6					6	OVERHEAD
BROWN-HEADED COWBIRD	1		1			2	
HOUSE FINCH	~~4~~	2				2	
LESSER GOLDFINCH	2					2	
STATION TOTAL	41	18	20	15	19	113	

Field Notes by Steve Flocke

Birding enthusiast and avid ornithologist Steve Flocke has spent decades documenting his property, visiting others nearby during breeding season, and taking other birders on tours of property in the Wimberley area. He rigorously documented the regular and seasonal activities of more than the Golden-cheeked Warbler on his properties and part of the Coleman Canyon. In part because of his love for birds, and in part because he manages his land under a wildlife open-space designation he has over ten years of annual bird surveys, census counts, and hand-drawn maps of his observations. His records help establish the ecological significance of these and other adjacent properties. Documenting the presence of nesting, breeding, summer residents, winter residents, and visiting migratory birds.

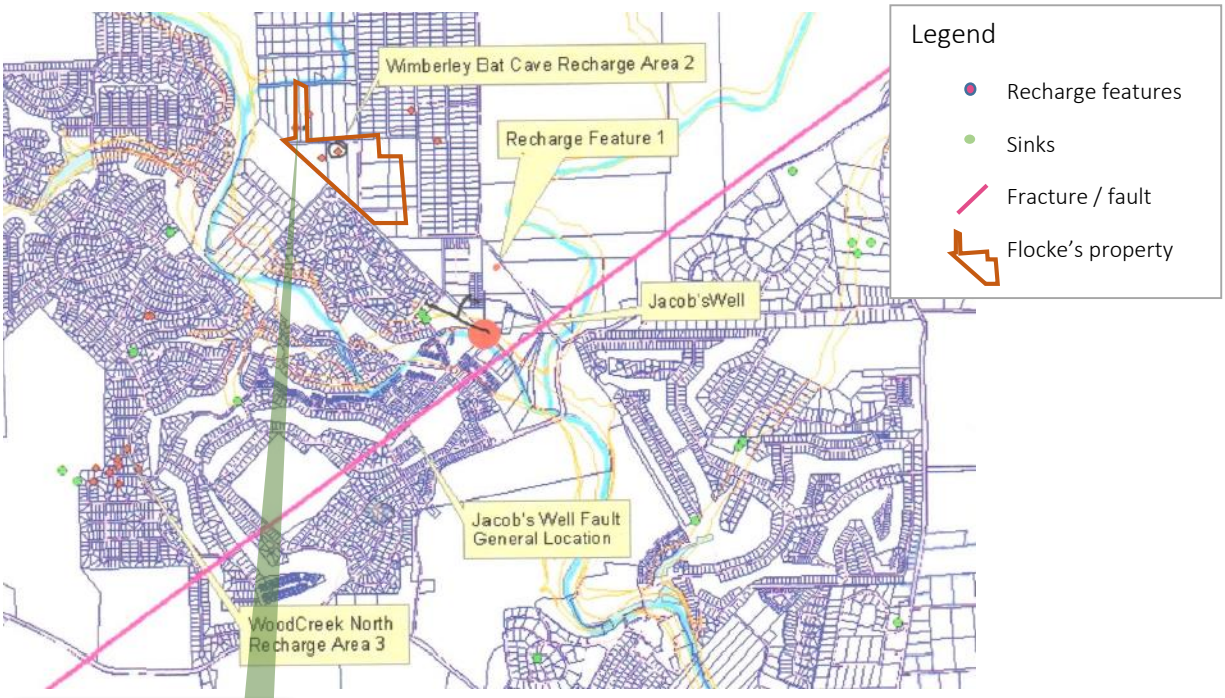
From 1977 to present 164 species have been extensively documented, including activities of birds on the Species of Greatest Conservation Need list. 10+ years of annual bird census (May 15th 2005 – May 21, 2015) exist with visits timed at the same week of the year. 5 years of focus (1999 to 2004) documented Golden-cheeked Warbler activity, nesting, and seasonal arrival / departure dates.

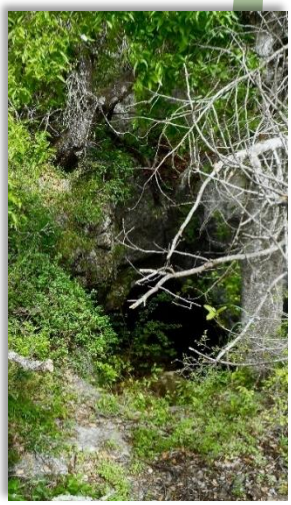
Hydrology

Because of small underground water-filled cavities slowly draining through the fractured rock and soil profile from the upper elevations small areas all over this property exhibit water seepage or spring flow following long periods of rainfall.

Following extremely high intensity storms, water flow patterns extensive and numerous create active erosion usually connected with suspended sediments being carried and deposited downstream. Flow patterns can remain visible, scarring the landscape leaving rills and trenching around tree roots.

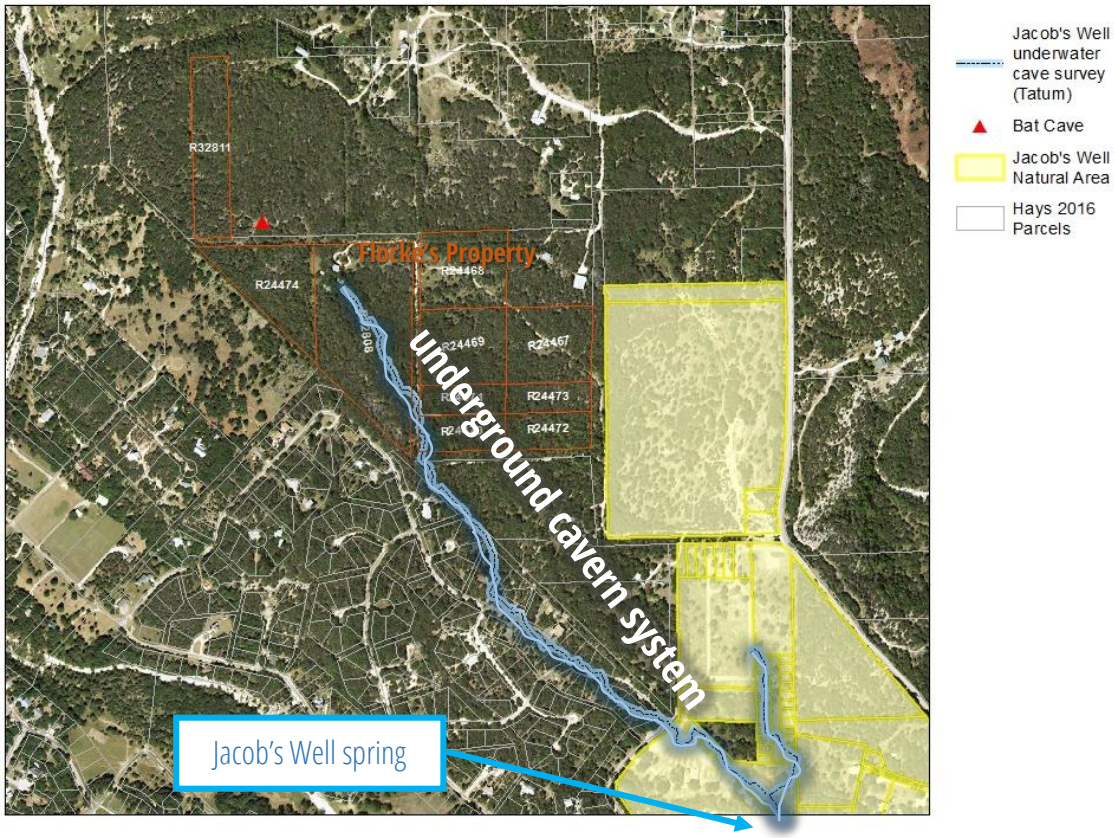
During high rainfall periods, water will percolate beyond the surface root zone via fractures in the limestone. As this water moves downward, it contributes to the recharge of aquifers if the underlying soils and geology are appropriate.





Wimberley Bat Cave is located on Flocke's property adjacent to Coleman's Canyon. There are numerous caves and recharge features documented on these properties. The Wimberley Valley Watershed Association, in cooperation with the U. S. Geological Survey, the University of Texas at Austin, the Edwards Aquifer Authority and the Hays Trinity Groundwater Conservation District performed a series of tracer tests to help define groundwater flow paths and velocities.

Jacobs Well spring formed along a series of fractures associated with a large fault along Cypress Creek. The tracer tests helped determine the areas that recharge Jacobs Well, the relationship of groundwater flow to faults and fractures, and how quickly groundwater flows in the area.



An underwater cave stretches from Jacob's Well to the northwest directly towards and under Flocke's property. Both this path and the one under JWNA have been surveyed by cave divers. The path that reaches to Flocke's house has been mapped to within very near proximity to recharge features on the property including the large opening at Wimberley Bat Cave.

References

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