

**PROJECT TITLE: Evaluation of a 30-year old restoration site in Wild Basin**

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**Objective:**

The goal of this project was to evaluate the woody vegetation and ant communities in a historic dump site 30 years after it was restored.

**Methods:**

We evaluated two sites as part of this project: the restored dumpsite and an undisturbed reference site nearby. The restoration site is located north of the Wild Basin driveway, on the southern slope of the North Hollow drainage. Both the restored and reference sites function as drainages that flow into North Hollow and are located approximately 250 meters apart (Fig. 1).

We delineated three 10 x 10m plots at low, mid, and high elevations within the restored dumpsite and the restoration site (six plots total). We recorded all woody plant species present in each plot and the percent cover of each. We also measured the diameter at breast height (DBH) of all trees greater than 4cm in diameter.

We also installed 9 pitfall traps in each 10 x 10m plot to determine the ant communities in the restored dumpsite and the reference site. The pitfall traps will had a non-toxic preservative in them and were left open for 5 days. After collecting the pitfall traps, we used a microscope to identify abundance and diversity of ants in each site.

**Results:**

The woody vegetation species richness was 22 in the restored dumpsite and 21 in the reference site. Fourteen species were common to both sites (Table 1).

The canopy of the *restored dumpsite* consists of Ashe juniper, plateau live oak and Texas oak. The understory was dense with shrubs (primarily elbow bush) and vines. The restored dumpsite had a greater variety of species with sizable trunks (>4 cm DBH) than the reference site. Two non-native invasive privet species were present only in the restored dumpsite.

The canopy of the *reference site* was also dominated by Ashe juniper, primarily small multi-trunked trees with a diameter between 4-10 cm. Silktassel, evergreen sumac, and yaupon were consistently found in all of the reference plots with a percent coverage ranging from 2-5% to 10-25%.

**Project status:**

St. Edward's University student Narda Salinas presented an oral presentation on this project at the Natural Sciences Summer Research Symposium in June 2014 and a poster at the Natural Sciences Poster Session in October 2014. She plans to pursue further research on the restored

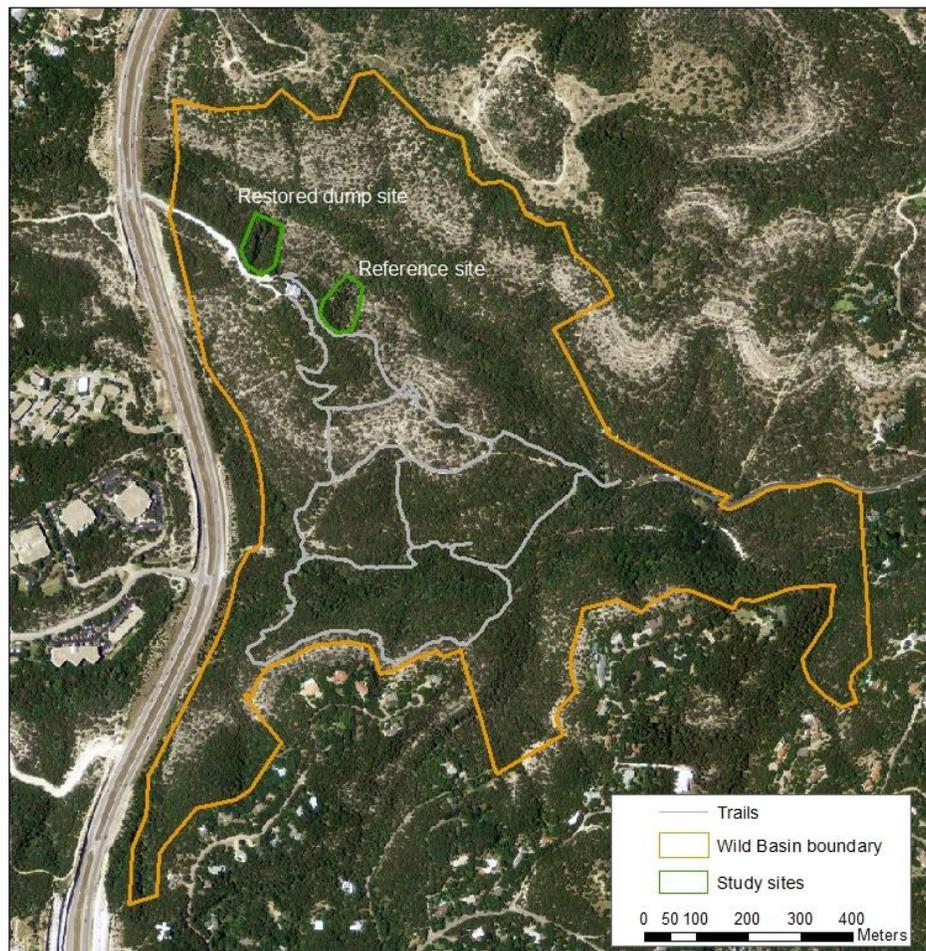
dumpsite and reference site in the Spring 2015 semester, possibly with analysis of soil characteristics. Analysis on the ant communities in both sites is still on-going and is being conducted by St. Edward's University student, James LaManna. He plans to finish analysis by January 1, 2015.

Table 1: Abundance of woody plant species in restored dumpsite (D1, D2, D3) and reference plots (R1, R2, R3)

	D1	D2	D3	R1	R2	R3
Agarita ( <i>Mahonia trifoliolata</i> )	4	0	1	1	0	0
American Beautyberry ( <i>Callicarpa americana</i> )	0	3	0	0	0	0
American Elm ( <i>Ulmus Americana</i> )	0	0	2	0	0	0
Ashe Juniper ( <i>Juniperus Ashei</i> )	6	5	5	8	7	8
Escarpment Black cherry ( <i>Prunus serotina</i> var.)	0	0	0	0	1	0
Carolina Buckthorn ( <i>Frangula caroliniana</i> )	0	0	0	0	0	1
Cat's claw ( <i>Mimosa aculeaticarpa</i> )	0	0	0	1	2	0
Elbow bush ( <i>Forestiera pubescens</i> )	1	4	5	0	0	0
Evergreen Sumac ( <i>Rhus virens</i> )	0	2	0	5	4	3
Grapevine ( <i>Vitis sp.</i> )	4	0	3	2	1	0
Gum Elastic ( <i>Sideroxylon lanuginosum</i> )	0	1	0	0	0	0
Hackberry ( <i>Prosopis glandulosa</i> )	0	1	4	0	0	0
Honey Mesquite ( <i>Prosopis glandulosa</i> )	0	0	0	1	0	0
Ligustrum ( <i>Ligustrum japonicum</i> )	0	1	0	0	0	0
Chinese Privet ( <i>Ligustrum sinense</i> )	4	0	0	0	0	0
Lindheimer Silktassel ( <i>Garrya ovate</i> ssp.)	0	3	4	3	5	4
Pink Mimosa ( <i>Mimosa borealis</i> )	0	0	0	0	0	2
Plateau Live Oak ( <i>Quercus fusiformis</i> )	0	4	5	0	0	1
Persimmon ( <i>Diospyros texana</i> )	5	0	1	3	0	0
Poison Ivy ( <i>Toxicodendron radicans</i> )	0	0	0	1	1	1
Prickly Pear ( <i>Opuntia Lindheimeri</i> )	0	3	0	0	0	0
Shrubby Boneset ( <i>Ageratina havanensis</i> )	1	4	1	1	2	0
Texas Redbud ( <i>Cercis Canadensis</i> var. <i>texensis</i> )	0	5	0	2	2	0
Texas Mountain Laurel ( <i>Sophora secundiflora</i> )	0	0	4	0	1	0

Texas red oak ( <i>Quercus buckleyi</i> )	0	5	5	3	4	0
Twisted-leaf yucca ( <i>Yucca rupicola</i> )	1	1	1	3	1	2
Virginia Creeper ( <i>Parthenocissus quinquefolia</i> )	4	3	1	0	0	0
Yaupon ( <i>Ilex vomitoria</i> )	0	5	2	5	2	4
Pearl Milkweed ( <i>Matelea reticulata</i> )	0	0	0	1	1	0
Bearded Swallow-Wort ( <i>Cynanchum barbigerum</i> )	0	0	0	0	1	0

\*Abundance based on percent coverage (0=not present 1= trace <1%, 2=1-2%, 3=2-5%, 4=5-10%, 5=10-25%, 6=25-50%, 7=50-75% 8=75-95% 9=>95%)



**Figure 1.** Location of restored dump site and reference site for vegetation inventory and mapping.