



SKY ISLAND ALLIANCE

23 September 2016

Carolyn Campbell
Coalition for Sonoran Desert Protection
300 East University Boulevard, #120
Tucson, Arizona 85705

RE: Wildlife Bridge and Underpass Field Visit

Dear Carolyn,

This letter summarizes the findings and recommendations from a casual field visit to the Wildlife Bridge and Underpass project on Oracle Road in Tucson, Arizona on September 20, 2016.

During the field visit, I observed 26 plant species (Table 1, next page). Of these, 4 species are non-native invasives, and 10 species were observed that had been included in the project seed mix. The most dominant species were the native annual grasses needle grama (*Bouteloua aristidoides*) and Rothrock grama (*B. rothrockii*). It should be noted that this was a casual site visit, not an exhaustive or systematic survey of the site; many other species are likely to be present on the site. Species composition at both the Wildlife Bridge and Underpass was generally similar. Vegetative cover in the areas leading up to the Wildlife Bridge and Underpass is generally good, however the most dominant species are monsoon-responding annuals that will not provide cover all year, and there are many bare spots, particularly on the Wildlife Bridge, that are devoid of vegetative cover altogether. Cover for small wildlife species is lacking. In addition, we observed deep erosion rills on the slopes adjacent to the Wildlife Bridge.



Representative vegetation on the west side of the Wildlife Bridge.



Example of serious erosion issues that need to be addressed.

7

1945
1946
1947
1948
1949

The following table shows the number of persons employed in the various occupations in the United States in 1945 and 1946.

Occupation
1945
1946

Source: Bureau of Economic Analysis, Department of Commerce, "Employment in Manufacturing and Construction, 1945-1946."



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Table 1. Plant Species Observed on September 20, 2016. **Red font** indicates non-native invasive species, and **bold font** indicates dominant species.

Latin Name	Common Name	included in seed mix?
<i>Acacia constricta</i>	white thorn acacia	x
<i>Amaranthus palmeri</i>	Palmer's amaranth	
<i>Baileya multiradiata</i>	desert marigold	x
<i>Boerhavia coccinea</i>	red spiderling	
<i>Boerhavia sp.</i>	spiderling	
<i>Bothriochloa barbinodis</i>	cane beardgrass	x
<i>Bouteloua aristidoides</i>	needle grama	x
<i>Bouteloua rothrockii</i>	Rothrock grama	x
<i>Chloris crinita</i>	two-flower chloris	
<i>Echinocereus engelmannii</i>	Engelman's hedgehog	
<i>Encelia farinosa</i>	brittlebush	x
<i>Enneapogon cenchroides</i>	feather pappusgrass	
<i>Eragrostis intermedia</i>	plains lovegrass	x
<i>Eragrostis lehmanniana</i>	Lehmann's lovegrass	
<i>Euphorbia hyssopifolia</i>	spurge	
<i>Ferocactus wislizenii</i>	fishhook barrel cactus	
<i>Heteropogon contortus</i>	tanglehead	x
<i>Heterotheca subaxillaris</i>	camphor weed	
<i>Kallstroemia grandiflora</i>	Arizona caltrop	
<i>Leptochloa dubia</i>	green sprangletop	x
<i>Pectis sp.</i>	dogweed	
<i>Porophyllum gracile</i>	odora	
<i>Salsola sp.</i>	Russian thistle	
<i>Senna covesii</i>	desert senna	x
<i>Tidestromia lanuginosa</i>	wooly tidestromia	
<i>Tribulus terrestris</i>	puncture vine	

We also visited the adjacent buffer area at the Santa Catalina Catholic Church, and observed that the larger shrubs and trees, installed adjacent to the fence line, appear to be not receiving adequate irrigation. Many of the smaller perennials and understory plants appear to be doing well, and no non-native invasive species were observed.



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Recommendations:

1. Install native container plants in strategic locations to increase cover for wildlife. Native perennials (shrubs and subshrubs) will provide habitat resources for wildlife throughout the year.
 - a. On the bridge, place larger shrubs, such as saltbush (*Atriplex* spp.) at the edges and in a strip down the middle, with smaller subshrubs interspersed. Focus on shallow-rooted species that have low water needs.
 - b. On the approaches to the bridge, install a suite of deeper rooted species such as native trees and large shrubs. Maintain clearance for wildlife cameras.
 - c. On the approach to the Underpass, install small shrubs and subshrubs to provide a bit of cover for small animals.
2. Address erosion issues with rock structures and plantings.
3. Work with the Santa Catalina Catholic Church to diagnose and address irrigation issues in the buffer area.
4. Aggressively remove invasive, non-native Sahara mustard (*Brassica tournefortii*) plants as they emerge next spring, beginning in late January/early February. It is crucial to remove these plants prior to flowering and seeding to prevent extensive management issues in subsequent years.
5. Monitor the project area for buffelgrass (*Pennisetum ciliare*) and fountain grass (*P. setaceum*).

Continued stewardship of the vegetation resources on the Wildlife Bridge and Underpass is critical to the proper functioning of this momentous wildlife crossing project, and of the utmost importance to Sky Island Alliance. I am eager to discuss how we might provide additional expertise and mobilize our army of volunteers to help address these issues.

Sincerely,

Carianne Campbell
Restoration Director