

Additions to the Flora of the Appleton-Whittell Research Ranch, Northeastern Santa Cruz County, Arizona

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ADDITIONS TO THE FLORA OF THE APPLETON-WHITTELL RESEARCH RANCH, NORTHEASTERN SANTA CRUZ COUNTY, ARIZONA

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ABSTRACT

This note describes the addition of 64 native and 8 exotic species to the known vascular flora of the Appleton-Whittell Research Ranch. Many of the additional species were found in unique riparian areas or during detailed plot inventories and are considered rare or uncommon in their abundance.

INTRODUCTION

This note describes additional plant species collected between 1999-2011 at The Appleton-Whittell Research Ranch (AWRR), operated by the National Audubon Society, in northeastern Santa Cruz County, Arizona. The known vascular flora (McLaughlin et al. 2001) has increased by 72 species, including three new families, Amaryllidaceae, Orobanchaceae, and Viscaceae (84 total), 31 new genera (321 total), 64 new native species (542 total), and 8 new exotic species (44 total). Several additions, typically smaller, ephemeral taxa, were species found during detailed plot inventories (McLaughlin and Bowers 2006). Additionally, in 2005, an area of 75 acres in Upper O'Donnell Canyon owned by the Nature Conservancy, came under the administration of AWRR. The riparian community is narrower, more shaded, and wetter than most of the broader, more open riparian areas to the north, and provides habitat for wetland species not found previously. Additional species also were documented by Dan Robinett of the Natural Resources Conservation Service during Ecological Site surveys in 2000. One species, *Bulbostylis funckii*, was discovered from plants grown in a greenhouse from a soil sample for seedbank studies (McLaughlin and Bowers 2007). Some conspicuous native wildflowers, such as *Eschscholtzia californica* ssp. *mexicana* and *Penstemon parryi*, were found along a major road going to the west gate of Fort Huachuca and may be local introductions from the highway department or from vehicular traffic. *Tamarix*, a highly invasive exotic, was discovered at AWRR in 2000 and 2005, but has not been included in the flora because the two individuals found were eradicated. One species, *Sisymbrium altissimum* (Brassicaceae) was incorrectly identified; the correct species is *Descurainia sophia*.

DISCUSSION

Over a period of about 11 years, the known flora increased by 15% with the contribution by exotics to the total flora holding fairly steady at 8%. In the absence of closely monitored plots or new intensive surveys it is unlikely that are many additional species to be documented at AWRR. Most new additions were discovered in a newly acquired property with a unique riparian zone or through intensive plot inventories.

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ADDITIONS TO THE FLORA OF THE RESEARCH RANCH

Collections were made by S. P. McLaughlin, unless otherwise noted. Voucher specimens are housed at AWRR. Nomenclature follows Kearney & Peebles (1960), as in the initial flora. Where we have used a more recent, widely accepted name, the synonym from Kearney & Peebles is listed in brackets. Species defined as uncommon are less frequently encountered, but still known from several localities and those defined as rare are found only a

few times in particular habitats. Exotic species are indicated with an asterisk (*).

ANGIOSPERMS – DICOTYLEDONS

Acanthaceae

Carlowrightii arizonica A. Gray. Kennedy 210. Uncommon, grasslands.

Apiaceae

Berula erecta (Huds.) Coville. Not collected, vegetative only. Noted as associated with specimen 9792. Rare, along stream.

Asclepidaceae

Asclepias brachystephania ex. Torr. Kennedy 283. Uncommon, loamy upland. East Corrals Road ditch.

A. macrotis Torr. Kennedy 226. Uncommon, East Mesa, south-facing, calcareous slope.

Asteraceae

Baileya multiradiata Harv. & A. Gray ex A. Gray. Kennedy 223. Uncommon, grasslands.

Erigeron divergens Torrey & A. Gray. 9333. Uncommon, grasslands.

Eupatorium greggii A. Gray. Kennedy 212. Uncommon, grasslands.

Gamochaeta purpurea (L.) Cabrera. 9164. [*Gnaphalium purpureum* L.] Uncommon, in Boer lovegrass, North Mesa.

Microseris lindleyi (DC.) A. Gray. [*M. linearifolia* (DC.) Schulz Bip.] 9162. Uncommon, in Boer lovegrass, North Mesa.

Pyrrhopappus multicaulis DC. 9790. Rare, in dense *Muhlenbergia rigens*, upper O'Donnell Canyon.

Rafinesquia neomexicana A. Gray. 9337. Uncommon, calcareous ridgetop grassland.

Ratibida columnifera (Nutt.) Woot. & Standl. Kennedy 200. [*R. columnaris* (Sims) D. Don]. Uncommon, found growing in disturbed area near buildings.

Boraginaceae

Cryptantha pusilla (Torrey & A. Gray) Greene. 10158. Uncommon, south-facing slope in Post Canyon.

Lithospermum cobrense Greene. Kennedy 195. Uncommon, in wash, loamy soil.

Brassicaceae

**Descurainia sophia* (L.) Webb ex Prantl. Anonymous April 19, 1987. Rare, disturbed sites.

Cactaceae

Opuntia phaeacantha Engelm. Kennedy photograph. Uncommon, grasslands.

Campanulaceae

Lobelia fenestralis Cav. Kennedy 216. Rare, growing in wash.

Triodanis perfoliata (L.) Nieuwl. 9166. Uncommon, native grassland.

Chenopodiaceae

Atriplex canescens (Pursh.) Nutt. Kennedy 281. Rare, outwash below St. David Formation near Finley Tank.

Chenopodium neomexicanum Standl. var. *neomexicanum* 10049. Uncommon, oak woodland south of McDaniel Well.

C. watsoni A. Nelson. 10047. Uncommon, oak woodland & Turkey Creek drainage.

Convolvulaceae

Ipomoea longifolia Kennedy 287. Rare, one plant found on rock outcrop on unnamed tributary to Post Canyon.

**I. purpurea* (L.) Roth. 9771. Rare, Vaughn Canyon.

I. thurberi A. Gray. 9794. Uncommon, Upper O'Donnell Canyon & Post Canyon.

Fabaceae

Acacia constricta Benth. Kennedy 230. Rare, one bush found along roadside.

Lathyrus eucosmus Butters & St. John. 9774. Rare, Vaughn Canyon.

Lamiaceae

Mentha canadensis L. [*M. arvensis* L.] 9788. Uncommon, Upper O'Donnell Canyon.

Scutellaria tessellata Epling. 9772. Rare, on slope in Vaughn Canyon.

Malvaceae

**Malva parviflora* L. 9170. Uncommon, grassland.

Sphaeralcea laxa Wooten & Standley. 9345. Uncommon, Grasslands on calcareous ridge.

Nyctaginaceae

Mirabilis linearis (Pursh) Heimerl. [*Oxybaphus linearis* (Pursh) Robins.] 9770. Uncommon, oak woodland.

Onagraceae

Oenothera brachycarpa A. Gray. 9340. Rare, Emory-oak woodland.

O. primiveris A. Gray. 9172. Uncommon, grasslands.

Orobanchaceae

Orobanche fasciculata Nutt. Kennedy 221. Rare, north-facing cliff.

Papaveraceae

Eschscholzia californica Cham. ssp. *mexicana* (Greene) C. Clark. [*E. mexicana* Greene] 9168. Uncommon, oak savanna.

Portulacaceae

Calandrinia ciliata (Ruiz & Pavon) DC. 9165. Uncommon, North Mesa in dense stand of exotic grass.

Cistanthe parryi (A. Gray) Hershkovitz Plot 1, April 8, 2001. Winter annual, rare, in Emory oak woodland.

Ranunculaceae

Clematic lagustifolia Nutt. Kennedy 282. Rare, outwash below St. David Formation near Finley Tank.

Ranunculus hydrocharoides A. Gray. 9791. Rare, along stream, upper O'Donnell Canyon.

Rubiaceae

Bouvardia ternifolia (Cav. Schltdl) [*Bouvardia glaberrima* Engelm.] Kennedy 182. Rare, rocky slope with oaks.

Scrophulariaceae

Maurandella antirrhiniflora (Humb. & Bonpl. Ex Willd.) Rothm. [*Maurandya antirrhiniflora* Humb. & Bonpl.] Kennedy 184. Rare, Post Canyon.

Mimulus rubellus A. Gray. 9344. Rare, Lyle Canyon.

Nuttallanthus texanus (Scheele) D. A. Sutton. [*Linaria texana* Scheele] 9163, 9174. Uncommon, grasslands.

Penstemon parryi A. Gray. 9169. Uncommon, oak savanna.

P. stenophyllus A. Gray. 9807. Uncommon, grassland drainage. Fall bloom.

Solanaceae

Petunia parviflora Juss. 9449. Rare, dry tank in O'Donnell Canyon.

Solanum jamesii Torr. Kennedy photograph. Uncommon, disturbed floodplain, O'Donnell Canyon.

Verbenaceae

Verbena bracteata Lag. & Rodr. 9449. Rare, dry tank in O'Donnell Canyon.

Viscaceae

Phoradendron macrophyllum (Engelm.) Cockerell. Kennedy 280. Rare, growing on several *Juglans major* in Post Canyon floodplain.

ANGIOSPERMS – MONOCOTYLEDONS

Amaryllidaceae

Zephyranthes longifolia Hemsl. Kennedy 194. Uncommon, East mesa grasslands on calcareous soil.

Cyperaceae

Bulbostylis funckii (Steud.) C.B. Clarke. Pokorny, K. Plant grown in greenhouse from grassland soil samples. Rare, from native grassland adjacent to Vaughn Canyon.

Carex praegracilis W. Boott. 9338. Uncommon, wet ground Upper O'Donnell Canyon.

C. spissa L.H. Bailey var. *ultra* (Bailey) Kukenthal. Kennedy 190 [*Carex spissa* Bailey] Uncommon, Post Canyon.

Eleocharis montevidensis Kunth. 10159. Rare, Finley Tank.

E. rostellata L. 9793. Uncommon, wet ground Upper O'Donnell Canyon.

Juncaceae

Juncus mexicanus Willd. Ex Schult. & Schult. f. D. Robinett, pers. comm. Uncommon, along stream in O'Donnell Canyon.

Liliaceae

**Asparagus officinalis* L. 9742. Rare, O'Donnell Canyon.

**Asphodelus fistulosus* L. 9171. Uncommon, disturbed grassland.

Poaceae

**Avena fatua* L. 9343. Uncommon, grasslands.

Bothriochloa laguroides (DC.) ssp. *torreyana* (Steud.) Allred & Gould. 9981. [*Andropogon saccharoides* Swartz.] Rare, Finley Tank.

B. wrightii (Hack.) Henr. [*Andropogon wrightii* Hack.] 9767. Rare, sparse sacaton, McDaniel Well.

Bouteloua barbata Lag. D. Robinett, pers. comm. Disturbed loamy upland.

B. rothrockii Vasey. Kennedy 196. Uncommon, growing on earth dam, Telles Tank.

- **Digitaria sanguinalis* (L.) Scop. Observed with specimen 9809. Rare, disturbed area near buildings.
- Heteropogon melanocarpus* (Ell.) Benth. 9795. Uncommon, draw in Upper O'Donnell Canyon.
- Leptochloa fusca* (L.) Kunth ssp. *fasicularis* (Lam.) N. Snow D. Robinett, pers. comm. Rare, summer annual found in wet year along margins of drying tanks, O'Donnell Canyon.
- L. fusca* (L.) Kunth ssp. *uninervia* (Lam.) N. Snow D. Robinett, pers. comm. Rare, summer annual found in wet year along margins of drying tanks, O'Donnell Canyon.
- **Melinis repens* (Willd.) Zizka. Kennedy 228. [*Rhynchelytrum roseum* (Nees) Stapf & Hubb.] Uncommon, grasslands.
- Muhlenbergia repens* (J. Presl.) Hitchc. D. Robinett, pers. comm. Uncommon, O'Donnell Canyon.
- Poa fendleriana* (Steud.) Vasey. 9447. Uncommon, north-facing slope, O'Donnell Canyon.
- **P. pratensis* L. 7888. Uncommon, riparian zone, wet soil, upper O'Donnell Creek.
- Tridens grandiflorus* (Vasey) Woot. & Standl. Kennedy 217. Uncommon, grasslands.
- T. muticus* (Torr.) Nash var. *elongatus* (Buckley) Shinnars – D. Robinett, pers. comm. Rare, calcareous slopes, East Mesa.