



North American Southwest collection of *obscura*-group *Drosophila* in summer 2015.

Ritz, Kathryn R.¹ and Mohamed A.F. Noor. Department of Biology, Duke University, Durham NC 27708; ¹Email: kathryn.ritz@duke.edu

Here we report our 2015 collection data for *obscura*-group *Drosophila* species from Madera Canyon in Arizona and American Fork Canyon in Utah (Ritz). Additionally, we have included previously unreported collection data from 1998 in the same region of Utah (Noor).

2015 collections took place in May/July in Arizona and Utah.

Madera Canyon, AZ (31°42'48.9"N, 110°52'22.4"W). Flies were collected from May 23, 2015, to May 26, 2015, in Madera Canyon, a riparian zone in the Santa Rita Mountains in Coronado National Forest, Arizona, USA. (MC 2015).

American Fork Canyon, AZ (40°26'38.9"N, 111°42'08.5"W). Flies were collected from July 7, 2015, to July 10, 2015, in American Fork Canyon in Uinta National Forest in American Fork, Utah, USA. (AFC 2015).

1998 collections took place in July in Utah.

American Fork Canyon, AZ (40°26'42.7"N, 111°42'44.4"W). Flies were collected from June 29, 1998, to July 2, 1998, in American Fork Canyon in Uinta National Forest in American Fork, Utah, USA. (AFC 1998).

Flies were baited using buckets of fermenting bananas, set up 3 or more hours prior to collection and left at the collection site over the course of collection. Fresh bananas were added daily. Flies were collected for two to three hours after sunrise, and again before sunset. Male flies were identified using sex combs as morphological identifiers (Beckenbach and Prevosti, 1986). *D. subobscura* females and *D. pseudoobscura* females were identified using wing bristles (Beckenbach and Prevosti, 1986). *D. pseudoobscura* females were distinguished from *affinis*-group females by rearing and identifying male offspring using sex combs (2015 collection only).

Table 1. Proportions of *obscura*-group *Drosophila* species collected in 2015, 1998, and 1997.

Site	% pseudoobscura females	% pseudoobscura males	% subobscura females	% subobscura males	% <i>affinis</i> subgroup	Total Count*
MC (2015)	11	34	0	0	55	76
AFC (2015)	7	14	14	60	5	643
AFC (1998)	47**	27	9	17	<1	308
AFC (1997)	8**	16	25	51	<1	253

*Total count includes only *obscura*-group flies collected.

**Indicates some may have been *affinis* subgroup, not reared to confirm species.

Notably, we observe fluctuations in the relative abundance of *D. subobscura* in AFC despite previous evidence for rapid population expansion. Collections in 1993 found no evidence of *D. subobscura* in AFC; however, by 1997 this species accounted for 75% of the *obscura*-group individuals seen (Noor *et al.*, 1998, these data included in Table 1). With the 2015 collection data, we find that the *D. subobscura* population growth has not displaced other *obscura*-group species such as *D. pseudoobscura*.

Although the sample size of *obscura*-group flies collected from Madera Canyon was low, the overall density of *Drosophila* was quite high. A total of 1736 Drosophilids were collected over 4 days, only 76 of which were *obscura*-group individuals.

References: Beckenbach, A.T., and A. Prevosti 1986, Am. Midl. Nat. 115: 10-18; Noor, M.A.F., J.R. Wheatley, K.A. Wetterstrand, and H. Akashi 1998, Dros. Inf. Serv. 81: 136-137.