

TABLE 1. Vascular plant taxa observed or reported at selected sites searched for *Penstemon bicolor*, indicated with + where present. Nomenclature generally follows *Intermountain Flora* (Barneby 1989; Cronquist 1994; Cronquist *et al.* 1972, 1977, 1984, 1997; Holmgren *et al.* 2005), *Flora of North America* Editorial Committee (1993-2005), or the *Jepson Manual* (Baldwin *et al.* 2002, Hickman 1993). ** indicates non-indigenous taxa.

	<i>Penstemon bicolor</i> var. <i>bicolor</i>								<i>Penstemon bicolor</i> var. <i>rosea</i>						
	1	2	3	4	5	6	7	14	8	9	10	11	12	13	15
Shrubs															
<i>Acacia greggii</i>											+			+	+
<i>Acamptopappus sphaerocephalus</i>														+	
<i>Adenophyllum porophylloides</i>										+					
<i>Ambrosia dumosa</i>						+		+			+		+		+
<i>Ambrosia eriocentra</i>	+		+		+	+		+							
<i>Atriplex canescens</i>		+				+	+	+							
<i>Bebbia juncea</i>									+						
<i>Bebbia juncea</i> var. <i>aspera</i>															+
<i>Chilopsis linearis</i>	+		+										+		
<i>Coleogyne ramosissima</i>															+
<i>Encelia virginensis</i>	+		+			+		+						+	+
<i>Ephedra californica</i>															+
<i>Ephedra nevadensis</i>				+				+							
<i>Ephedra torreyana</i>									+						
<i>Ericameria paniculata</i>	+			+									+		+
<i>Eriodictyon angustifolium</i>			+												
<i>Eriogonum brachypodium</i>															+
<i>Eriogonum fasciculatum</i> var. <i>polifolium</i>				+							+			+	+
<i>Eriogonum heermannii</i>												+			
<i>Fallugia paradoxa</i>				+				+							
<i>Gutierrezia microcephala</i>	+		+	+	+	+	+								
<i>Gutierrezia sarothrae</i>								+	+		+	+			+
<i>Hymenoclea salsola</i>	+		+	+		+		+			+		+	+	+
<i>Krameria grayi</i>								+							+
<i>Krascheninnikovia lanata</i>												+			+
<i>Larrea tridentata</i>								+			+				+
<i>Lepidium fremontii</i>									+						+
<i>Lycium andersonii</i>														+	+
<i>Prunus fasciculata</i>		+													
<i>Psoralea fremontii</i>														+	
<i>Psoralea polydenius</i>															+
<i>Purshia stansburiana</i>		+		+											
<i>Salazaria mexicana</i>						+		+							+
<i>Salvia dorrii</i>			+	+				+				+	+		
<i>Senecio flaccidus</i> var. <i>monoensis</i>			+			+									
<i>Viguiera parishii</i>															+
<i>Yucca schidigera</i>								+				+			+
Succulents															
<i>Cylindropuntia acanthocarpa</i>															+
<i>Cylindropuntia ramosissima</i>								+							
<i>Echinocereus triglochidiatus</i>															+
<i>Ferocactus cylindraceus</i>															+
<i>Opuntia basilaris</i>								+							+

Table 1, plants observed, continued

	<i>Penstemon bicolor</i> var. <i>bicolor</i>							<i>Penstemon bicolor</i> var. <i>rosea</i>							
	1	2	3	4	5	6	7	14	8	9	10	11	12	13	15
Graminoids															
<i>Achnatherum hymenoides</i>				+				+		+					+
<i>Aristida purpurea</i>						+			+	+					+
<i>Bothriochloa barbinodis</i>															+
<i>Bromus madritensis</i> var. <i>rubens</i> **		+		+				+				+			+
<i>Erioneuron pilosum</i>															+
<i>Erioneuron pulchellum</i>				+		+		+		+	+		+		
<i>Muhlenbergia porteri</i>															+
<i>Pleuraphis rigida</i>								+	+						+
<i>Sporobolus flexuosus</i>								+							
Non-graminoid Perennials															
<i>Allionia incarnata</i>															+
<i>Argemone corymbosa</i>															+
<i>Baileya multiradiata</i>		+		+		+	+	+						+	
<i>Brickellia</i> sp.															+
<i>Brickellia microphylla</i>															+
<i>Brickellia oblongifolia</i>									+						
<i>Castilleja</i> sp.								+							
<i>Cryptantha flava</i>			+												
<i>Eriogonum inflatum</i>			+				+	+					+		+
<i>Gaura coccinea</i>								+							
<i>Machaeranthera canescens</i>		+													
<i>Mirabilis multiflora</i>															+
<i>Nicotiana trigonophylla</i>															+
<i>Orobanche</i> sp.															+
<i>Penstemon bicolor</i> var. <i>bicolor</i>	+	+	+	+	+	+	+	+							+
<i>Penstemon bicolor</i> var. <i>roseus</i>								+	+	+	+	+	+	+	+
<i>Penstemon eatonii</i>			+												
<i>Penstemon palmeri</i> var. <i>palmeri</i>								+							
<i>Penstemon utahensis</i>			+												
<i>Petalonyx</i> sp.															+
<i>Phoradendron californicum</i>															+
<i>Physalis crassifolia</i>								+			+				+
<i>Porophyllum gracile</i>															+
<i>Psilostrophe cooperi</i>								+							
<i>Sphaeralcea ambigua</i>								+	+	+		+	+		+
<i>Stephanomeria tenuifolia</i> var. <i>tenuifolia</i>								+							+
<i>Thymophylla pentachaeta</i> var. <i>belenidium</i>								+							
<i>Xylorhiza tortifolia</i>															+
Non-graminoid Annuals															
<i>Amsinckia</i> sp.										+					
<i>Camissonia</i> sp.										+					
<i>Camissonia brevipes</i>															+
<i>Chaenactis</i> sp.														+	
<i>Cryptantha racemosa</i>									+						
<i>Cryptantha</i> sp.								+							+
<i>Eriogonum</i> sp.											+				
<i>Erodium cicutarium</i> **		+			+		+								
<i>Plantago insularis</i> or <i>patagonica</i>						+									+

TABLE 2. Climatic conditions observed at McCarran International Airport, located in Las Vegas, Nevada at an elevation of 2162 ft (659 m), just before and during field activities for this report.

Year	Month	Average Daily		
		Precipitation	Max. Temperature (°F)	Min. Temperature (°F)
2002	Jan	T	56.3	35.9
	Feb	T	64.5	39.2
	Mar	0.10	67.5	43.4
	Apr	0	81.7	57.7
	May	0	88.3	63.3
	Jun	0	101.3	74.8
	Jul	0.52	106.5	82.6
	Aug	0	103.4	77.8
	Sep	0.31	94.0	71.5
	Oct	0.32	78.6	56.2
	Nov	0.12	67.2	46.3
	Dec	0.07	56.2	38.8
2003	Jan	0.02	65.4	42.9
	Feb	2.13	60.0	43.2
	Mar	0.32	69.9	49.2
	Apr	0.38	72.8	52.9
	May	0.01	89.7	66.1
	Jun	0	99.8	76.0
	Jul	1.08	106.6	82.9
	Aug	0.83	101.1	79.4
	Sep	0.52	96.3	72.5
	Oct	0	87.2	63.5
	Nov	0.61	61.4	43.8
	Dec	0.96	56.5	39.2
2004	Jan	0.01	57.0	37.9
	Feb	1.46	57.3	40.3
	Mar	0.23	78.4	54.7
	Apr	0.92	78.1	57.6
	May	0	90.6	67.5
	Jun	0	100.2	76.0
	Jul	0.05	104.6	81.5
	Aug	0.51	100.8	78.2
	Sep	0.18	93.4	69.8
	Oct	0.59	77.9	58.6
	Nov	1.71	62.2	45.2
	Dec	2.10	57.8	40.5
2005	Jan	2.07	58.9	43.9
	Feb	2.45	61.0	45.3

TABLE 3. Specimens documenting known and reported *Penstemon bicolor* sites.

Site Number and Name	Form	Collector and Number	Date	Repository*
Arden	ssp. <i>bicolor</i>	Ripley & Barneby 2883	7 April 1940	NY
Bird Spring Range	(unknown)	Ertter and Strachan 3576	31 May 1980	NY
Black Mountain	ssp. <i>roseus</i>	Bostick, V.B. 3424	11 May 1968	UNLV
Blue Diamond	ssp. <i>bicolor</i> ssp. <i>bicolor</i> ssp. <i>bicolor</i>	Morefield, J.D. 5433 Groshan, S.A. 27 Fisher Jr, J.C. TE10	4 May 1991 23 April 1981 23 April 1980	NY UNLV UNLV
Bootleg Canyon	ssp. <i>roseus</i>	Holland, J.S. 96	5 April 1974	UNLV
Bootleg Wash	ssp. <i>roseus</i> ssp. <i>roseus</i>	Rood, N.S. 12 Plaisted, R. 12	9 April 1995 21 April 1995	UNLV UNLV
Boulder City	ssp. <i>roseus</i>	Berg, R.H 57	2 March 1961	UNLV
Boulder City & Nelson	ssp. <i>roseus</i>	Baggley, H.A.	18 April 1948	UNLV
Castle Mountains	ssp. <i>roseus</i> ?	Romspert, A.P. 1871	24 April 1990	NY
Charleston Mountains	ssp. <i>bicolor</i>	Train, P. 1673	11 May 1938	RENO, NY
Copper Canyon	ssp. <i>roseus</i>	Fisher Jr, J.C. TE46	1 May 1980	UNLV
Cottonwood Pass	ssp. <i>roseus</i> ssp. <i>bicolor</i>	Niles et al. 6128 Niles et al. 6129	14 May 1999 14 May 1999	UNLV UNLV
Cottonwood Springs (?)	ssp. <i>roseus</i> ssp. <i>roseus</i>	Clokey, I.W. Clokey, I.W. 8488	20 April 1939 20 April 1939	RENO USU
Dry Lake	ssp. <i>roseus</i>	Fisher Jr, J.C. TE3	25 April 1980	UNLV
Dutchman Pass	ssp. <i>roseus</i>	Fisher Jr, J.C. TE6	15 April 1980	UNLV
East of Potosi Mountain	ssp. <i>bicolor</i>	Grigg, R.L 38	22 April 1974	UNLV
Eldorado Canyon	ssp. <i>bicolor</i>	Train, P. 1503	27 April 1938	RENO
Eldorado Mountains	ssp. <i>roseus</i>	Pinzl 10270	31 March 1993	NY
Foothills of Charleston Mtns	ssp. <i>bicolor</i>	Ripley & Barneby 2878	6 April 1940	NY
Good Springs	(unknown) ssp. <i>bicolor</i> ssp. <i>roseus</i> ssp. <i>bicolor</i> ssp. <i>bicolor</i> ssp. <i>bicolor</i> ssp. <i>bicolor</i> ssp. <i>bicolor</i> ssp. <i>roseus</i>	Clokey, I.W. 5847 Clokey, I.W. 5847 Clokey, I.W. 5848 Balls, E.K. 20452 Bostick & Lyons 6796 Knight & Danley 2009a Fisher Jr, J.C. TE11 Fisher Jr, J.C. TE13	2 May 1938 2 May 1938 2 May 1938 4 May 1955 13 May 1991 2 May 1990 16 May 1980 16 May 1980	RENO,USU NY RENO,UNLV,USU NY UNLV UNLV UNLV UNLV
Harris Springs Canyon	spp. <i>roseus</i> ssp. <i>bicolor</i>	Lathrop & Peterson 1020 Peterson & Lathrop P1022	15 May 1983 15 May 1983	NY UNLV
Henderson	ssp. <i>roseus</i>	Fisher Jr, J.C. TE44	4 April 1980	UNLV
Hidden Valley	spp. <i>roseus</i> spp. <i>roseus</i>	Bostick, V. 4153 Smith. F. 4222	26 April 1969 30 April 1999	NY USU
Horsethief Canyon	(unknown)	Leary, P.J. 4484	19 May 1992	UNLV
I-15	ssp. <i>roseus</i>	Wiesner, P.B. 49	13 April 1981	UNLV
Ireteba Peaks	(unknown)	LaRivers & Hancock 65	19 May 1937	RENO
January Canyon	ssp. <i>roseus</i>	Kanim, N. 20	22 March 1982	UNLV
Jean to Goodsprings	ssp. <i>bicolor</i> ssp. <i>bicolor</i> (unknown)	Fisher Jr, J.C. TE11 Fisher Jr, J.C. TE9 Ertter & Strachan 3576	23 April 1980 23 April 1980 31 May 1980	UNLV UNLV USU

Table 3, specimens, continued

Site Number and Name	Form	Collector and Number	Date	Repository*
Keyhole Canyon	ssp. <i>roseus</i>	Bradley, W.G. 76	25 April 1960	UNLV
Kyle Canyon	ssp. <i>bicolor</i> ssp. <i>roseus</i> ssp. <i>bicolor</i>	Clokey, I.W. 8136 Clokey, I.W. 8137 Fisher Jr, J.C. TE44	20 May 1938 13 May 1938 4 May 1980	RENO,USU NY UNLV
La Madre Mountain	ssp. <i>bicolor</i> ssp. <i>bicolor</i>	Fisher Jr, J.C. TE19 Fisher Jr, J.C. TE15	8 May 1980 6 May 1980	UNLV UNLV
Las Vegas Range	spp. <i>roseus</i> ssp. <i>roseus</i>	Ackerman, T.L. 83298 Ackerman, T.L. 8390	15 May 1983 4 May 1974	NY UNLV
Las Vegas Wash	ssp. <i>roseus</i>	Ackerman, T.L. 76-363	9 May 1976	UNLV
McCullough Pass	(unknown) ssp. <i>roseus</i> ssp. <i>bicolor</i>	Bostick, V.B. 4836 Bostick, V.B. 4835 Niles & Bostick 961	5 April 1970 5 April 1970 3 May 1969	UNLV UNLV UNLV
McCullough Range	ssp. <i>roseus</i>	Bostick, V.B. 4153	26 April 1969	UNLV
McCullough Spring	(unknown)	Bostick & Niles 5365	18 April 1971	UNLV
Nelson	ssp. <i>roseus</i> ssp. <i>roseus</i> ssp. <i>roseus</i> (unknown) ssp. <i>roseus</i> ssp. <i>roseus</i>	Clokey, I.W. 5850 Fisher Jr, J.C. TE2 Leary, P.J. 1749 Edicola, M.A. Holland, J.S. 1239 Baggley, H.A.	14 May 1938 15 March 1980 11 May 1977 22 April 1978 1 May 1976 23 April 1949	RENO, NY UNLV UNLV UNLV UNLV UNLV
Potosi Mountain	ssp. <i>roseus</i>	Grigg, R.L 38	22 April 1974	UNLV
Red Rock Canyon	(unknown)	Ferguson, D. 51	4 May 1978	UNLV
Route 91	(unknown) (unknown)	Pennell & Munz 25036 Pennell & Munz 25034	8 April 1940 8 April 1940	NY NY
Route 159	ssp. <i>bicolor</i>	Pinzl & Work 12050	20 April 1997	NY
Route 161/53	(unknown)	Ertter B. 3576	31 May 1980	RENO
Searchlight	ssp. <i>roseus</i>	Brown, K.W. 51	12 April 1961	UNLV
Sloan on I-15	spp. <i>roseus</i>	Knight, T. 1665	12 May 1988	NY
South of Moapa	ssp. <i>roseus</i>	Fisher Jr, J.C. 494	27 March 1972	UNLV
South of Red Rocks	ssp. <i>bicolor</i>	Clokey, I.W. 8734	3 May 1941	NY
Spring Mountains	ssp. <i>roseus</i> (unknown)	Johnson, T. Johnson, T.	17 April 1960 17 April 1960	UNLV UNLV
U.S. Hwy 93	ssp. <i>roseus</i> spp. <i>roseus</i> spp. <i>roseus</i> spp. <i>roseus</i> ssp. <i>roseus</i> (unknown) ssp. <i>roseus</i>	Williams & Tiehm Pinzl 7131 Holmgren & Holmgren 8662 Welsh & Atwood 21030 Stanley, R.M. 47 Arcotta, K.F. 25 Holmgren & Holmgren 8662	10 April 1979 10 April 1986 13 May 1978 20 April 1982 23 April 1975 23 April 1975 13 May 1978	RENO NY NY NY UNLV UNLV USU
U.S. Hwy 95	ssp. <i>roseus</i>	Niles, W.E. 5538	13 March 1998	UNLV
Wheeler Wash	(unknown) (unknown)	Atwood & Weixelman 13670 Atwood & Thorne 10838	24 April 1990 1 May 1985	NY UNLV

* Abbreviations from Holmgren and Holmgren (1998-2006+).