

***Monardella linoides* ssp. *viminea* Surveys**

Based upon Station documentation in the *Monardella linoides* ssp. *viminea* files dated from 1981 to 2000 (both hardcopy and GIS format), this is a compilation of the available information regarding specific surveys for this endangered plant. Some site data refers to the *Mondardella* populations as having clusters or clumps rather than individuals. On the report sheets (particularly those for 1995), the individuals reported were the same number as the clusters discussed. Therefore, it will be assumed that cluster or clump are equivalent to individual for this survey summary. No formal survey reports for willowy monardella were found for 1980 - 2000. No original data sheets were found in Navy files, only transcribed write-ups from surveyor efforts for this time period.

2000 Survey

(August 17-18 & 30-31)

General Habitat Surveyed: Willowy monardella tends to occur along ephemeral streams in isolated populations. In general, it prefers benches cut from channel banks, mid-channel sandbars and floodplain terraces. The soils usually have high sand content and associated dominant vegetation includes California buckwheat (*Eriogonum fasciculatum*) and broom baccharis (*Baccharis sarothroides*). Where channels are narrow, populations are normally found on benches, low banksides or stable sandbars. In wide or main canyon bottoms, mid-channel sandbars and floodplain terraces are additional population locales.

Surveyors: Gail Bastillos, H. Boessow, Cindy Burrascano, Coralie Cobb, Judah Dinnelle (Priest?), Mark Elvin, Joshua Garcia, K. Greer, Ruth Hall, JoEllen Kassebaum, Mike Kelly, Robby Knight, Rodney Mouton, Kim O'Connor

Sites: Rose, San Clemente, Murphy, Elanus, West Sycamore, and Spring canyons

Conditions: Ninety degree temperatures, no precipitation, all streams and habitat dry

Phenology: Dormancy

Equipment: Personal hand held GPS units (brands & models unknown), measurement tapes, standard note pads

Methods: Two teams of surveyors (each included at least one experienced *Monardella* surveyor) walked through each canyon. The only experienced Station surveyor who had done *Mondardella* surveys on MCAS Miramar prior to this survey was Coralie Hull Cobb.

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June 20, 2001

Each canyon was walked its entirety or accessible drainage length. Three or four surveyors walked abreast the canyon's width canvassing the main channel and as many side channels as time permitted.

Known populations were re-surveyed for health and number of individual plants. In addition, the habitat preferences (as listed above) were investigated in all surveyed canyons for new populations. All populations were documented with GPS coordinates and written notes. Any question regarding population size, health, abnormalities, etc. was discussed and agreed upon by surveyors present.

Discussion: This survey was conducted during 90 degree weather during the summer season. Vegetatively, the plants were brown and dried except for two or three slightly green plants in West Sycamore canyon. Accurately identifying a plant as alive or dead required more than casual observation and on a few occasions not discernible. Future surveys need to be conducted during the growing or bloom season for more accurate population accounting.

The dried condition of the plants increased the opportunity for missing new plant locations or relocating previously documented ones since they tended to blend in with the landscape. There was not time to check every plant association in all the canyons. Some plants may have been overlooked, which may have affected population estimates.

Although the surveyors were experienced and knowledgeable, they were not the same surveyors as in previous years. As a result, the assessment of population health and numbers was not necessarily consistent with past efforts.

Sycamore and Clark canyons were not surveyed. Only portions of West Sycamore canyon were surveyed due to time constraints. The drainages in this canyon area with previously high numbers of individuals were surveyed. Side drainages with smaller individual numbers were not resurveyed.

All sites show evidence of disturbance from past military operations, ORV usage, hunters, bicyclists, camping, etc. Canyon populations assessed include: Elanus (9 plants), Murphy (62 plants), San Clemente (346 plants), Spring (133 plants), West Sycamore (865 plants). Total plant clusters: 1415.

1998 Survey

(July 24, 29-30, August 5-6, 17-19, 26 & 28)

Surveyors: Jessica Johnson and members of SCC students, not identified.

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Sites: Murphy, sections of Rose, San Clemente canyons and USMC Reserve Center.

Conditions: Hot temperatures, no precipitation, all streams and habitat dry

Phenology: Dormancy

Equipment: Paper notepad, map of area.

Methods: Single observer surveyed canyons and drainage areas that had not supported past *Monardella* populations for confirmation that these areas still did not support populations.

Discussion: No documentation of Elanus, Carroll, West Sycamore, or Sycamore canyons being surveyed. Notes included this assessment: USMC Reserve Center, (2 plants). San Clemente canyon from I-15 to Sim J. Harris, (0 plants). Rose canyon west to R-1, (0 plants). Carroll canyon, (0 plants). Murphy Canyon from Sheriff's pistol range northeast to NS-4 and then northeast to EW-4, from EW-4 east to southern part of road that forms a circle around ammo storage facility, (0 plants). Middle section of this Murphy canyon drainage was not surveyed because aerial photo shows it is choked with vegetation and therefore not suitable monardella habitat. The drainage was walked until the point where it became almost impassable—too many shrubs.

Vegetatively, the plants were brown and dried due to the survey timing. Accurately identifying a plant as alive or dead required more than casual observation. The surveyor recommended that future surveys be conducted during the growing or bloom season for more accurate population accounting.

The dried condition of the plants increased the opportunity for missing new plant locations (objective of these surveys) or relocating previously documented ones. There was not time or personnel to check every cover plant in all the canyons. Some of the plants may have been overlooked. This may have affected population estimates.

1996 Survey

(June 20-21, 26-27, July 6-11, 15-17, 23)

Surveyors: Carrie Smith

Sites: Clark, Murphy, San Clemente, Spring, Sycamore, West Sycamore canyons, and US Marine Corps Reserve Center

Conditions: ?

Phenology: Vegetative, flowering, fruiting

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Equipment: GPS unit, California Dept. of Fish & Game Natural Diversity Data Base survey sheets

Methods: Reported as "detailed surveys" using the California Dept. of Fish & Game Natural Diversity Data Base survey sheets. Based upon the job description for the monardella survey position at that time, the methods included: walking up and down steep slopes with GPS unit, inputting plant information into the GPS system, and filling-out appropriate state survey forms for each population location.

Discussion: Clark canyon (an eastern extension of Sycamore) showed disturbance from ORV usage that threatened existing populations (34 plants), however outside the Miramar boundary in this canyon an estimated population of 200 plants within a 100m area was found. No documentation of Elanus canyon being surveyed. Murphy canyon survey showed evidence of disturbance to populations from the Hwy 52 extension and landscaping (6 plants - population located near Caltrans culvert repair project 2001). Sycamore canyon had an overall site evaluation of fair and showed evidence of disturbance that threatened the populations from ORVs and campsites (80 plants). Overall site quality for San Clemente (135 plants), Spring (90 plants), and West Sycamore (1190 plants) canyons and USMC Reserve Center (1 plant) were good. Total plant clusters: 1536.

1995 Survey

(July 25-27, 31; August 1-2, 6, 9, 14-15, 18, 21-23, 31)

Surveyors: Megan Gross

Sites: Murphy, San Clemente, Spring, and West Sycamore canyons

Conditions: ?

Phenology: Vegetative, flowering, fruiting

Equipment: ?

Methods: Reported using the California Dept. of Fish & Game Natural Diversity Data Base survey sheets.

Discussion: No documentation of Clark, Elanus, Sycamore canyons and US Marine Corps Reserve Center being surveyed. Overall site quality for Murphy (6 plants - population located near Caltrans culvert repair project 2001), San Clemente (232 plants), Spring (326 plants), West Sycamore canyons (516 plants) were good. Total plant clusters: 1075.

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Notes indicated that the *Mondardella* in San Clemente canyon were in the open places above drainages rather than in them. Overall the sites where the *Monardella* were observed were either rocky, open areas or grassy, open areas.

1994 Survey

(June 27-29; July 5, 7-8, 11-14, 18-19, 21-22, 25-26; August 7)

Surveyors: Cary Weatherford

Sites: Carroll, Clark, Elanus, Murphy, San Clemente, Spring, Sycamore, and West Sycamore canyons

Conditions: ?

Phenology: Vegetative, flowering

Equipment: ?

Methods: Reported using the California Dept. of Fish & Game Natural Diversity Data Base survey sheets.

Discussion: No documentation of US Marine Corps Reserve Center area being surveyed. Spring (161 plants), Sycamore and Clark surveyed together (211 plants), and West Sycamore (1155 plants) canyons had overall site evaluations of excellent. Overall site quality for Carroll (1 plant), Elanus (9 plants), Murphy (6 plants - population located near Caltrans culvert repair project 2001), and San Clemente (120 plants) canyons were good. Elanus canyon population was presumed extirpated in 1985. The Spring canyon population was damaged by fire in mid-July 1994. Total plant clusters: 1654.

1992 California Department of Fish and Game Natural Diversity Data Base Report

(June 24, 1992)

RareFind Report

Sites: Carroll (This area was reported as owned by "DoD, Navy," however the location coordinates appeared to be outside Station boundaries.), Elanus (24 plants), Murphy (2 plants), San Clemente (148 plants), Spring (185 plants), West Sycamore (650 plants - some 1 meter in diameter), Sycamore and Clark--T15S, R1W, Section 4 (2-3000 plants) canyons. Total plant clusters: 3509

Discussion: Carroll canyon lost 181 plants (USIU site). Murphy canyon lost 15 plants due to I-15 construction. San Clemente canyon lost 140 plants due to construction of Hwy. 52 (transplanted).

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1980s Surveys

(May 18, 1981; July 29, 1981; August 12, 1981; March 4, 1982;
March 18, 1982)

(Jan 18, 1984 NAS Miramar memorandum to CalTrans of plant totals)

Surveyors: (1981 - J. Dice, T. Scott, M. Loy, K. de Queiroz, S. Lacy)
(1982 - K. de Queiroz, D. Darnell)

Sites: Carroll (1981 - outside of Naval Station boundaries), San
Clemente (1981, 1982), Murphy (1981), Elanus (1982), West
Sycamore (1981, 1984), and Spring (1984) canyons

Conditions: ?

Phenology: ?

Equipment: ?

Methods: ?

Discussion: These estimates were noted in the following canyons:
Carroll east/northeast of I-15 approximately 1.25-1.5 miles,
stated as US Naval Reserve Center area, but not within station
boundaries (171 plants*), Elanus (10 plants-1982), Murphy (55
plants-1981), San Clemente (175 plants-1981), Spring (185
plants), and West Sycamore (15 plants-1981; 325 plants-1984).
Total plant clusters: 440 on Station (1981-2); 765 combined
canyon information from the decade (1984). *Not included in
totals since land ownership hasn't been checked.