

following classes: <1%, 1-5%, 5-10%, 10-25%, 25-50%, 50-75%, 75%+. Tables of vernal pool indicator plant and fairy shrimp occurrence and representative photographs of the sites have been included in this section; species presence is indicated in Tables 4 through 63 by a dot (“•”). Facultative wetland species are listed by site in Appendix E and upland vegetation is listed by site in Appendix F.

3.2.1 Del Mar Mesa

Five vernal pool sites are found in the Del Mar Mesa area: Li Collins, Greystone Torrey Highlands, Rhodes, Del Mar Mesa, and Shaw Texas.

3.2.1.a Li Collins (H 40), near the intersection of Carmel Valley Road and Camino del Sur, is a 0.3 acre (13,361 square foot) parcel conserved and fenced as part of a Torrey Highlands Subarea residential development. Li Collins is owned and managed by the Environmental Trust; this site was grazed historically and was not included in Bauder’s report (1986). The two vernal pools on-site cover 1,659 square feet and do not support rare, threatened, or endangered plant or animal species. Vernal pool indicator species and fairy shrimp observed at this site are listed in Table 4. Li Collins is located on map 290-1725 in Appendix C.

<i>Callitriche marginata</i>	<i>Myosurus minimus</i>	
<i>Crassula aquatica</i>	<i>Navarretia fossalis</i>	
<i>Deschampsia danthoniodes</i>	<i>Orcuttia californica</i>	
<i>Downingia cuspidata</i>	<i>Phalaris lemmonii</i>	
<i>Elatine californica</i>	<i>Phalaris</i> spp.	
<i>Epilobium pygmaeum</i>	<i>Pilularia americana</i>	
<i>Eryngium aristulatum</i>	<i>Pilularia</i> spp.	
<i>Isoetes howellii</i>	<i>Plagiobothrys acanthocarpus</i>	
<i>Isoetes orcuttii</i>	<i>Plantago elongata</i>	
<i>Isoetes</i> spp.	<i>Plantago</i> spp.	
<i>Lilaea scilloides</i>	<i>Pogogyne abramsii</i>	
<i>Marsilea vestita</i>	<i>Pogogyne nudiuscula</i>	
<i>Malvella leprosa</i>	<i>Psilocarphus brevissimus</i>	•
<i>Branchinecta</i> spp.	<i>Branchinecta sandiegonensis</i>	
<i>Branchinecta lindahli</i>	<i>Streptocephalus woottoni</i>	



Li Collins
Vernal pool 2 looking southwest

3.2.1.b Greystone Torrey Highlands (H 39) is a 3.5 acre mitigation site bordering Camino del Sur and Highway 56. This conserved site is fenced and privately owned. Nineteen vernal pools, containing 29,824 square feet of basin area, were created in 2001. *E. aristulatum* was noted in three vernal pools and covered an estimated 188 square feet of pool basin. *P. abramsii* was noted in five vernal pools and covered an estimated basin area of 51 square feet. Vernal pool indicator species and fairy shrimp observed at this site are listed in Table 5. Fairy shrimp (*Branchinecta* spp.) were not observed on-site. Western spadefoot toad (*S. hammondi*) and Pacific treefrog (*H. regilla*) juveniles were noted in a total of seven basins. For a map of this site, please refer to 282-1713 in Appendix C.

Table 5		
Greystone Torrey Highlands		
Presence of Vernal Pool Indicator Species		
<i>Callitriche marginata</i>	•	<i>Myosurus minimus</i>
<i>Crassula aquatica</i>	•	<i>Navarretia fossalis</i>
<i>Deschampsia danthoniodes</i>		<i>Orcuttia californica</i>
<i>Downingia cuspidata</i>		<i>Phalaris lemmonii</i>
<i>Elatine californica</i>	•	<i>Phalaris</i> spp.
<i>Epilobium pygmaeum</i>		<i>Pilularia americana</i>
<i>Eryngium aristulatum</i>	•	<i>Pilularia</i> spp.
<i>Isoetes howellii</i>	•	<i>Plagiobothrys acanthocarpus</i>
<i>Isoetes orcuttii</i>	•	<i>Plantago elongata</i>

Table 5, con't			
Greystone Torrey Highlands			
Presence of Vernal Pool Indicator Species			
<i>Isoetes</i> spp.		<i>Plantago</i> spp.	
<i>Lilaea scilloides</i>		<i>Pogogyne abramsii</i>	•
<i>Marsilea vestita</i>		<i>Pogogyne nudiuscula</i>	
<i>Malvella leprosa</i>		<i>Psilocarphus brevissimus</i>	•
<i>Branchinecta</i> spp.		<i>Branchinecta sandiegonensis</i>	
<i>Branchinecta lindahli</i>		<i>Streptocephalus woottoni</i>	



Greystone Torrey Highlands
Vernal pool 2 looking north

3.2.1.c The Rhodes vernal pool site (H 18-23) covers 102 acres near the southern terminus of Carmel Mountain Road, contiguous to the Del Mar Mesa open space and vernal pool preserves. The vernal pools on these multiple privately owned parcels were recently approved for conservation and the conservation easement process is in progress. Historical activity on the site includes agriculture and off-road vehicles. One hundred fifty-two vernal pools and road ruts cover 32,841 square feet. Two federally endangered plant species are found on-site: *E. aristulatum* was noted in six vernal pools and covered an estimated 268 square feet of basin while *P. abramsii*, noted in seven vernal pools, covered an estimated 80 square feet of basin. These species, as well as *M. minimus* were noted on-site in 1986 (Bauder, 1986). Vernal pool indicator species and fairy shrimp observed at this site are listed in Table 6. *Branchinecta* spp. were observed in 73 basins, *H. regilla* were observed in 50 basins, *B. boreas* were observed in 22 basins, and *S. hammondii* were observed in 2 basins. Rhodes is located on map 282-1713 in Appendix C.

Table 6 Rhodes Presence of Vernal Pool Indicator Species		
<i>Callitriche marginata</i>	•	<i>Myosurus minimus</i>
<i>Crassula aquatica</i>	•	<i>Navarretia fossalis</i>
<i>Deschampsia danthoniodes</i>	•	<i>Orcuttia californica</i>
<i>Downingia cuspidata</i>		<i>Phalaris lemmonii</i>
<i>Elatine californica</i>	•	<i>Phalaris</i> spp.
<i>Epilobium pygmaeum</i>		<i>Pilularia americana</i>
<i>Eryngium aristulatum</i>	•	<i>Pilularia</i> spp.
<i>Isoetes howellii</i>		<i>Plagiobothrys acanthocarpus</i>
<i>Isoetes orcuttii</i>	•	<i>Plantago elongata</i>
<i>Isoetes</i> spp.		<i>Plantago</i> spp.
<i>Lilaea scilloides</i>	•	<i>Pogogyne abramsii</i>
<i>Marsilea vestita</i>		<i>Pogogyne nudiuscula</i>
<i>Malvella leprosa</i>		<i>Psilocarphus brevissimus</i>
<i>Branchinecta</i> spp.	•	<i>Branchinecta sandiegonensis</i>
<i>Branchinecta lindahli</i>		<i>Streptocephalus woottoni</i>



Rhodes
Vernal pool 47 looking west



Rhodes
Vernal pool 66 looking south

3.2.1.d The Del Mar Mesa habitat acquisition (H series, H 1-15), completed in 2002, protected one of the largest remaining extents of natural vernal pools in the City of San Diego.* Three hundred forty-four basins, covering 239,647 square feet, occur on 779 acres of publicly owned land. Prior to preservation, this area was impacted by off-road vehicles and portions of the site have been fenced to limit access. Located north of Peñasquitos Canyon, Del Mar Mesa vernal pools support robust populations of *E. aristulatum* and *P. abramsii*. *E. aristulatum* was observed in 186 basins, covering a total of 19,342 square feet; *P. abramsii* was observed in 63 basins, and covered a total of 2,490 square feet. *E. aristulatum*, *P. abramsii*, and *M. minimus* were present during Bauder's surveys in 1986. Vernal pool indicator species and fairy shrimp noted at this site are listed in Table 7. Unidentified fairy shrimp (*Branchinecta* spp.) were observed in 62 basins, while *B. sandiegonensis* were observed in 53 basins. City and USGS staff noted *S. hammondii* in 16 basins, *H. regilla* in 10 basins, *B. boreas* in 1 basin, and unidentified tadpoles in 8 basins. Del Mar Mesa is located on map 282-1713 in Appendix C.

* A small number of basins were enhanced by Dr. Paul Zedler in the early 1980s.

<p style="text-align: center;">Table 7 Del Mar Mesa Presence of Vernal Pool Indicator Species</p>		
<i>Callitriche marginata</i>	•	<i>Myosurus minimus</i>
<i>Crassula aquatica</i>	•	<i>Navarretia fossalis</i>
<i>Deschampsia danthoniodes</i>	•	<i>Orcuttia californica</i>
<i>Downingia cuspidata</i>	•	<i>Phalaris lemmonii</i>
<i>Elatine californica</i>	•	<i>Phalaris</i> spp.
<i>Epilobium pygmaeum</i>		<i>Pilularia americana</i>
<i>Eryngium aristulatum</i>	•	<i>Pilularia</i> spp.
<i>Isoetes howellii</i>		<i>Plagiobothrys acanthocarpus</i>
<i>Isoetes orcuttii</i>	•	<i>Plantago elongata</i>
<i>Isoetes</i> spp.		<i>Plantago</i> spp.
<i>Lilaea scilloides</i>	•	<i>Pogogyne abramsii</i>
<i>Marsilea vestita</i>		<i>Pogogyne nudiuscula</i>
<i>Malvella leprosa</i>		<i>Psilocarphus brevissimus</i>
<i>Branchinecta</i> spp.	•	<i>Branchinecta sandiegonensis</i>
<i>Branchinecta lindahli</i>		<i>Streptocephalus woottoni</i>



Del Mar Mesa
Vernal pool 21 looking east



Del Mar Mesa
Vernal pool 49 looking north



Del Mar Mesa
Vernal pool 30 looking east



Del Mar Mesa
Vernal pool 50 looking north



Del Mar Mesa
Vernal pool 126 looking south

3.2.1.e Shaw Texas (H 17) is located west of the Del Mar Mesa acquisition area adjacent to the Meadows Del Mar Golf Club. This privately owned site covers approximately 200 acres of historic agricultural land and the vernal pools in this area have recently been approved for conservation. The conservation easement process is currently in progress. Twenty-six basins, including several road ruts, cover 10,063

square feet. No sensitive plant species were observed on-site; however, *Branchinecta* spp. were found in nearly half (10) of the basins. This site was not surveyed for amphibians. Bauder (1986) noted that these pools had been destroyed by agriculture. Vernal pool indicators observed at this site are listed in Table 8. Shaw Texas is split between maps 274-1701 and 274-1713 in Appendix C.

Table 8 Shaw Texas Presence of Vernal Pool Indicator Species		
<i>Callitriche marginata</i>	•	<i>Myosurus minimus</i>
<i>Crassula aquatica</i>	•	<i>Navarretia fossalis</i>
<i>Deschampsia danthoniodes</i>		<i>Orcuttia californica</i>
<i>Downingia cuspidata</i>		<i>Phalaris lemmonii</i>
<i>Elatine californica</i>		<i>Phalaris</i> spp.
<i>Epilobium pygmaeum</i>		<i>Pilularia americana</i>
<i>Eryngium aristulatum</i>		<i>Pilularia</i> spp.
<i>Isoetes howellii</i>		<i>Plagiobothrys acanthocarpus</i>
<i>Isoetes orcuttii</i>		<i>Plantago elongata</i>
<i>Isoetes</i> spp.		<i>Plantago</i> spp.
<i>Lilaea scilloides</i>		<i>Pogogyne abramsii</i>
<i>Marsilea vestita</i>		<i>Pogogyne nudiuscula</i>
<i>Malvella leprosa</i>		<i>Psilocarphus brevissimus</i>
<i>Branchinecta</i> spp.	•	<i>Branchinecta sandiegonensis</i>
<i>Branchinecta lindahli</i>		<i>Streptocephalus woottoni</i>



Shaw Texas
Road ruts 8, 9, and 25 (near to far) looking northwest

3.2.2 Carmel Mountain

Thirty vernal pools were inventoried at Carmel Mountain (H 31-32, H 38), a 300-acre open space area owned by the City of San Diego. Prior to preservation, this site was impacted by off-road vehicles. Located south of Highway 56 near Ocean Air Drive, the basins cover 13,900 square feet and do not support populations of rare, threatened, or endangered plant species. Bauder (1986) reports *E. aristulatum* and *M. minimus* at H 31-33, but only one extant basin is near the area mapped in that report. Vernal pool indicator species and fairy shrimp observed at this site are listed in Table 9. Eight vernal pools contain *Branchinecta* spp., including two basins in which San Diego fairy shrimp were identified. Two amphibian species were observed on-site: *H. regilla* in 6 basins and *S. hammondi* in 10 basins. For a map of this site, please refer to 274-1701 in Appendix C.

Table 9		
Carmel Mountain		
Presence of Vernal Pool Indicator Species		
<i>Callitriche marginata</i>	•	<i>Myosurus minimus</i>
<i>Crassula aquatica</i>	•	<i>Navarretia fossalis</i>
<i>Deschampsia danthoniodes</i>		<i>Orcuttia californica</i>
<i>Downingia cuspidata</i>		<i>Phalaris lemmonii</i>
<i>Elatine californica</i>		<i>Phalaris</i> spp.
<i>Epilobium pygmaeum</i>		<i>Pilularia americana</i>
<i>Eryngium aristulatum</i>		<i>Pilularia</i> spp.
<i>Isoetes howellii</i>	•	<i>Plagiobothrys acanthocarpus</i>