3. One component of the wetland mitigation effort (at a minimum 1:1 ratio) must consist of wetland creation or wetland restoration. The remaining balance of the mitigation may occur as wetland enhancement.

VIII. ACKNOWLEDGMENTS AND BIBLIOGRAPHY

A. Acknowledgments

The following persons assisted in the preparation of these survey guidelines:

Holly Cheong, Associate Planner
Cathy Cibit, Project Officer I
Keith Greer, Program Manager
Anne Jarque, Associate Planner
Matt Kreplin, Intern
Holly Smit, Associate Planner
Chris Teng, Assistant Planner
Jeff Winters-Thomas, Biologist III

B. Bibliographical References

The following documents were used in the preparation of these Survey Guidelines:

1. "Biology Guidelines" refers to the City of San Diego, "San Diego Municipal Code - Land Development Manual/Land Development Code Update - Biology Guidelines"; otherwise known as the "Land Development Code, May 19, 2001.

2. "MSCP Subarea Plan" refers to the "City of San Diego, Multiple Species Conservation Program (MSCP) Subarea Plan", March 1997.

3. Mitigation Monitoring and Reporting Program (MMRP) Guidelines, City of San Diego, as amended.

4. Significance Determination Guidelines - Biological Resources, Page 11, City of San Diego, November July 2002, as amended.

IX. DEFINITIONS - Alphabetical Order

ACOE- Army Corps Of Engineers
CDFG- California Department of Fish and Game
CEQA- California Environmental Quality Act
EIR- Environmental Impact Report
ESL- Environmentally Sensitive Lands Regulations, Land Development Code
GIS - Geographic Information System
LDR- Land Development Review
MMRP- Mitigation Monitoring Reporting Program
MHPA - Mulitiple Habitat Planning Area (90% Preserve Area of the MSCP)
MSCP- Multiple Species Conservation Program
NAD- North American Datum
Regulating Agencies: Those governmental agencies with discretionary power to issue permits. i.e., U.S. Army Corps of Engineers; California Department of Fish and Game; City of San Diego, Development Services Department).
RUIS- Regional Urban Information System - now known as SANGIS - San Diego GIS
SANDAG- San Diego Association of Governments
SANGIS- San Diego Geographic Information System
USFW- United States Fish & Wildlife Service
www.sangis.org. - City of San Diego's web site which includes the MHPA mapping.

ATTACHMENT I

SAMPLE PROTOCOL SURVEY REQUIREMENTS

The following sample protocol survey requirements are representative of the typical sensitive species found within the City of San Diego. These focused survey protocols are consistent with the current regulations of the U.S. Fish & Wildlife Service (USFWS) and the California Department of Fish & Game (CDFG). **Please note that these requirements are subject to change as the status of a given species changes, as new information is discovered for a given species, and as the jurisdictions of the USFWS and CDFG dictate through their individual regulations.** All surveys must be conducted by individuals possessing appropriate permits through the USFWS and CDFG.

NOTE: Extreme weather conditions can cause variations in the breeding season of individual species. In such instances, additional coordination with the USFWS and CDFG may be required.

1. Coastal California Gnatcatcher (*Polioptila californica californica*)

Breeding Season:	March 1 to August 15
Minimum Number of Surveys Required:	3
Minimum Number of Days Between Surveys:	7

2. Least Bell's Vireo (*Vireo bellii pusillus*)

Breeding Season:	March 15 to September 15
Minimum Number of Surveys Required:	8
Minimum Number of Days Between Surveys:	10

3. Southwestern Willow Flycatcher (*Empidonax traillii extimus*)

Breeding Season:	May 1 to September 1
Minimum Number of Surveys Required:	5
Minimum Number of Days Between Surveys:	5

One survey must occur between May 15 and May 31. One survey must occur between June 1 and June 21. Three surveys must occur between June 22 and July 17.

4. Southwestern Arroyo Toad (*Bufo microscaphus californicus*)

Breeding Season:	March 15 to July 1
Minimum Number of Surveys Required:	6
Minimum Number of Days Between Surveys:	7

5. Quino Checkerspot Butterfly (*Euphydryas editha quino*)

Breeding/Flight Season:	Generally late February to early March
Minimum Number of Surveys Required:	5
Minimum Number of Days Between Surveys:	7

See also Staff Memo dated 22 February 1999 regarding Quino survey areas.

6. Fairy Shrimp (Branchiopods)

Minimum Number of Surveys Required: 2 full wet season surveys within a five-year period; or two consecutive seasons of one full wet season survey and one dry season survey (or vice-versa). Wet Season Surveys - Once inundated, pools/swales shall be adequately sampled once every two weeks, beginning no later than two weeks after their initial inundation and continuing until they are no longer inundated, or until they have experienced 120 days of continuous inundation. In cases where the pools/swales dry and then refill in the same wet season, sampling shall be reinitiated within eight days of refilling every time they meet the 3 cm of standing water criteria and shall continue until they have experienced 120 days of continuous inundation, or until they are no longer inundated.

7. Burrowing Owl (*Speotyto cunicularia*)†

Breeding Season:	February 1 to August 31‡
Minimum Number of Surveys Required:	4
Minimum Number of Days Between Surveys:	1 (24 hours)

† Survey protocol for this species is recommended by the California Burrowing Owl Consortium (*Burrowing Owl Survey Protocol and Mitigation Guidelines*, 1993) and is being reviewed by CDFG for formal adoption.

‡ Surveys may also be conducted outside of the breeding season for winter residents (non-breeding owls). Positive results (i.e., sightings) outside of the breeding season would be adequate to determine presence, but may be inadequate for mitigation planning because the number of owls and their distribution pattern may change between winter and nesting seasons.

ATTACHMENT II

MAP SUBMISSIONS & METHODOLOGY

I. Vegetation Community Subassociations

The mapping of vegetation should be based on the R.F. Holland system of natural communities as described in Preliminary Descriptions of the Terrestrial Natural Communities of California, California Department of Fish and Game, Non-Game Heritage Program, Sacramento, 1986 [and as modified for San Diego County (SANDAG 1992).] This system will provide the names and descriptions of the basic plant community associations. These documents are available in the office of the Environmental Analysis Section, Land Development Review Division, Development Services, City of San Diego. If additional mapping categories are used, a cross-reference table should be provided to clearly show how these "new" categories fit into the Holland system. In most cases, an aerial photograph at 1"=200" scale should be used to aid in the delineation of vegetation boundaries.

Where applicable to enhance the clarity of field data, subassociations should be mapped. For example, where a coastal sage scrub community is dominated by *Adolphia californica* rather than the more typical coastal sagebrush, the community should be identified as *Adolphia californica*-dominated coastal sage scrub. The study report should describe the subassociations in terms of the dominant elements and distinguishing characteristics.

All vegetation should be considered potential habitat whether it is disturbed or not, and/or if it supports a cover of approximately 30% of non-ruderal vegetation. This is applicable to fallow agricultural fields too. (No time frame is necessary as long as at least 30% cover is demonstrated). However, other factors may be present to preclude viable habitat..see below.

The use of the modifier "disturbed" should be limited to human-induced disturbance such as agriculture, prior grading activities, or off-road vehicle use. The probable cause of the disturbance should be noted. The modifier is not applicable to burned areas. Canopy cover varies by vegetation type. Therefore the percent canopy cover which represents a disturbed condition will vary according to vegetation type. The use of the term "disturbed" is within the discretion of the principal investigator, biologist, and/or City staff, and should be applied to provide a true and accurate representation of field conditions.

A. Problem Mapping Areas:

The following descriptions are given as guidelines for distinguishing difficult habitats in the field. If a habitat fits one of the descriptions below, but there is scientific information to classify the habitat otherwise, please submit that information in the biology report.

1. Non-Native Annual Grasslands vs. Other Disturbed Areas (Ruderal, Agricultural/Fallow):

Non-native annual grasslands (NNGL) contain annual grass species (Poaceae family) including, but not limited to, bromes (*Bromus* spp.), wild oat (*Avena* spp.), ryegrass (*Lolium* spp.), and fescues (*Vulpia* spp.). Typically, NNGL includes at least 50% cover of the entire herbaceous layer attributable to annual non-native grass species, although other plant species (native or non-native) may be intermixed. Other common plant species found in NNGL include filaree (*Erodium* spp.), California poppy (*Eschscholzia californica*), tecolote (*Centaurea melitensis*), mustards (*Brassica* spp.), artichoke thistle (*Cynara cardunculus*), sweet fennel *(Foeniculum vulgare*) and others.

Other Disturbed Areas include lands commonly defined as Ruderal Habitat or Agricultural/ Fallow. Ruderal habitat typically develops on sites with heavily compacted soils following intense levels of disturbance such as grading. Agricultural/fallow lands include areas of active agricultural cultivation (e.g., nurseries, orchards, field crops) and fallow areas which have been disturbed in the recent past by cultivation or agricultural activity. These types of disturbed areas should not be confused with areas that are degraded, yet still retain sufficient vegetation composition and structure to be considered a native vegetation community (e.g., "disturbed" coastal sage scrub does not meet the definition of disturbed under this definition). Disturbed areas are usually associated with prior development (i.e., previous grading) or agricultural use. These areas can consist of bare ground, or when vegetated, are dominated by at least 50% cover of invasive broad-leaved non-native plant species including, but are not limited to, horseweed (*Conyza* spp.), garland chrysanthemum (*Chrysanthemum coronarium*), pineapple-weed (*Chamomilla suaveolens*), sow-thistle (*Sonchus* spp.), Russian thistle (*Salsola tragus*), mustards, knotweed (*Polygonum* spp.), burclover (*Medicago polymorpha*) fennel and others. Minor amounts of other species including non-native annual grasses can also be present.

To distinguish between NNGL and other disturbed areas, the relative percent cover of the herbaceous species should be used as a diagnostic tool. Within the area in question, the percent cover and relative percent cover of all herbaceous species should be assessed. The cumulative total of each species should be determined and ranked in descending order of abundance (see example below). The vegetation community should be determined based upon the total cumulative relative percent cover of non-native grasses (Poaceae family). If native habitats have been ruled out and if the majority (50% or greater) of the observed species are introduced members of the Poaceae family, then the area should be characterized as non-native annual grassland. Otherwise, consideration should be given to identified types of disturbed areas.

Vegetative cover is **usually** determined by visual estimate. For example, if three out of four dominant plant species observed are non-native annual grasses, the

area in question should be considered a non-native annual grassland.

In more controversial cases, vegetative cover should be determined by standard vegetative sampling protocol such as the line transect or point intercept transect methods, as shown by the following example:

Example 1: (Point Intercept Transect; Site determined to be NNGL)

Species	Absolute % Cover	Relative % Cover
Avena barbata (P)	30	19.4
Bromus hordeaceus (P)	30	19.4
Lolium perenne (P)	20	12.9
Brassica nigra	25	16.1
Chrysanthemum sp.	40	25.8
Salsola tragus	10	(6.4) ◊
Bare Ground	20	◆
Total	175%	100%

Total Relative % Cover of Dominant Poaceae Species (P)
51.7%

Total Relative % Cover of Other Dominant Herbaceous Spp.
41.9%

(P) = Species within Poaceae (grass) family.

◊ For pragmatic purposes, dominant species (those that consist of greater than 20% herbaceous percent cover) should be used to determine the classification of an area. Therefore, in the above example *Salsola tragus* should not be considered when calculating the relative percent cover.

◆ Re-estimate of % cover on-site eliminating bare ground. Sites that contain more than 75% bare ground may be categorized as disturbed if there is evidence of historic soil disturbance (e.g., grading, agriculture, disking, compaction). This does not include naturally occurring open areas such as natural outcroppings, cryptogrammic crusts, vernal pools, ephemeral areas, etc.

2. Southern Maritime Chaparral vs. Southern Mixed Chaparral:

Distinguishing between Southern Maritime and Southern Mixed Chaparral can be difficult, especially in areas where the habitat may be transitional between the two. Please keep in mind when identifying these habitats, especially on smaller parcels, that it may be necessary to assess the adjacent, associated habitats, not just what occurs on site. If access to adjacent areas cannot be obtained, any data available such as historic records or aerial photos, should be used in making your determination.

Southern Maritime Chaparral is a rare vegetation community associated with the fog belt along the coastal areas and could extend inland to areas such as, but not limited to, Carlsbad, El Camino Real, and Palomar Road. The following characteristics and plant species are considered indicators of Southern Maritime Chaparral within the City of San Diego: occurrence on sandstone soils; occurrence within the coastal fog belt; Del Mar manzanita (*Arctostaphylos glandulosa* ssp. *crassifolia*), wart-stemmed ceanothus (*Ceanothus verrucosus*), Orcutt's spineflower (*Chorizanthe orcuttiana*), sea-dahlia (*Coreopsis maritima*), California aster (*Lessingia filaginifolia* var. *filaginifolia*), summer holly (*Comarostahylis diversifolia*), short-leaved dudleya (*Dudleya blochmaniae* ssp. *brevifolia)*, Torrey pine (*Pinus torreyana*), Nuttall's scrub oak (*Quercus dumosa*),

and Encinitas baccharis (*Baccharis vanessae*). The above plant species do not need to be dominant, only present, to be considered as an indicator of Southern Maritime Chaparral.

Southern Mixed Chaparral is a more common inland vegetation community, typically associated with drier, more drought-tolerant plant species. Typical plant species include chamise (*Adenostoma fasciculatum*), ceanothus (*Ceanothus* spp.), manzanita species excluding Del Mar manzanita (*Arctostaphylos* spp.or *Xylococcus bicolor*), and scrub oak (*Quercus berberifolia* or *Quercus dumosa*). If any single species dominates more than 50% of the cover, then the habitat is not a mixed habitat and should be designated according to that dominant species present (i.e. chamise chaparral).

3. Vernal Pools vs. Road Ruts:

Vernal Pools are seasonally flooded depressions that support a distinctive living community which is adapted to extreme variability in hydrologic conditions (seasonally very dry and very wet conditions). In the City of San Diego, vernal pools extend from Otay Mesa along the border, and in the Penasquitos and Rancho Bernardo areas. Other areas in the County of San Diego include Ramona, Proctor Valley, and Marron Valley. Vernal pools are usually associated with mima-mounds, occurring on mesas, especially where the hardpan or bedrock is underlain by clay soils (Zedler, 1987). Due to these soil conditions, vernal pools hold water after rain storms.

Under U.S. Army Corps regulations, for a seasonally flooded depression to be considered a vernal pool, it must have at least one vernal pool indicator species. The City of San Diego will consider similar factors. Depressions which are man-made, such as tire tracks or road ruts, may still be considered vernal pools if they contain at least one indicator plant species. A list of these indicator species has been compiled by the U.S. Army Corps of Engineers, (Special Public Notice, Regional General Conditions to the Nationwide Permits, Nov. 25, 1997), and this list should be used as a guideline to distinguish vernal pools from other seasonal depressions. Many of these species are endemic to vernal pools and are covered by the MSCP and/or are listed by federal and/or state agencies.

Road ruts and other seasonal depressions which are not vernal pools may contain wildlife associated with vernal pools, such as fairy shrimp, but will not contain vernal pool **plant** indicator species. Seasonal depressions not containing indicator plant species are usually not considered vernal pools by the City of San Diego. Careful consideration should be given to road ruts or other seasonal depressions adjacent to vernal pool complexes. These depressions are likely to contain vernal pool **plant** indicator species and should be examined throughly (i.e. multiple surveys) before they are dismissed as not being vernal pools.

II. Biological Resource Map Submittal Requirements

Biological resource maps must have the following format features, consistent with the following:

1. For projects with accompanying tentative subdivision maps or small projects (single-family dwellings, on lots less than 1.0 acre in size) :

   A. A 1" = 200' scale (minimum) of the overall project on a site plan.
   B. Topographic maps accurate at a 1"=200' scale (minimum), and/or use ortho-topographic photos as the base.

   C. One map on a non-distorting medium such as mylar should be used (but is not required) and submitted rolled, not folded.

   D. Four blueline copies should be submitted folded to 8 ½" X 11" size. A reduced version of c. to fit to 8 1/2" X 11" or 11 1/2" X 17 size " and incorporated into the Biology Report is required.

2. For projects without accompanying tentative subdivision maps:

   A. A 1" = 400' scale (minimum) map may be used with prior approval by Development Services.

   B. Same as c - d. above.

The minimum mapping unit should be based on the project scale and type of vegetation being mapped. However, splits of vegetation community subassociations, as described above, should be made if they are accurately labeled and described. The maps should contain all the necessary biological information on the same sheet, as long as it is clearly readable. If there is too much information to make a single legible map, mylar or acetate overlays may be used. Maps should be dated and at the original scale (not photo-reproduced).

III. Vernal Pool Requirements:

Show all vernal pools on the full scale biological resource map. In addition, provide another map of appropriate scale (such as a minimum of 1"=40 feet), that depicts the limits and/or boundaries of the basins and watersheds. This map must be delineated using standard survey techniques or GPS. Identification of the presence/ absence of vernal pool plant and animal species, shall be done, where appropriate, utilizing the U. S. Fish and Wildlife Service's Vernal Pool Guidelines. Techniques include, but are not limited to, cyst sampling in dry pools, presence/absence of mima-mound topography, and /or historical indicators.

IV. Optional Maps (SANGIS/digitally-compatible submittals):

If the digital information is available for the project, a 3 ½ " disk with the information in ARC/info-compatible format should be provided. Until SANGIS standards have been agreed upon for digital submittal of information, the hard copy mapping is requested in addition to the computerized data. When topography becomes available on the SANGIS system, standard base maps will be available, and required, for use in mapping areas within the City. The coordinate system used by the City is the California State Plane Coordinate System NAD 83; all information submitted must be consistent with this coordinate system. At least four registration points should be identified on each sheet or layer of information, compatible with NAD 83. Digital files provided should be clean, error-free and final versions.

ATTACHMENT III

GENERAL OUTLINE FOR
REVEGETATION/RESTORATION PLANS

The following outline represents an update to Attachment B of the City's Biology Guidelines and is intended to provide guidance in the preparation and review of conceptual revegetation/restoration plans. This outline is not intended as an exhaustive list of all design elements to consider when planning a revegetation effort. Consideration must also be given to the City's Land Development Code Landscape regulations (Chapter 14, Article 2, Division 4) and Landscape Standards when preparing conceptual revegetation plans and detailed revegetation construction drawings.

Introduction
Background - Purpose
Project location(s) with maps (regional, vicinity, site plan)
Restoration goals and objectives/Mitigation requirements

Existing Conditions
Environmental setting of impacted areas – vegetation & wildlife affected, functions and values, impact acreages, Reference sites for development of reveg specifications [can be in intro]
Environmental setting of revegetation areas - land ownership, existing land uses
Revegetation site characteristics: description/evaluation of topography, vegetation, soils, hydrology/drainage, access, site constraints (figures/maps)
Regulatory requirements

Mitigation Roles & Responsibilities
Financially responsible party – Performance bonds
Revegetation Team: Applicant, Landscape Architect, Revegetation Installation Contractor, Revegetation Maintenance Contractor (if different), Project Biologist, Nursery (Seed/plant procurement)

Site Preparation
Site and resource protection - staking/flagging/fencing of sensitive habitat areas/limits of work
Weed eradication
Topsoil/plant salvage (if needed)
Clearing/grubbing
Grading/recontouring

Irrigation
Water source and supply
Temporary or permanent installation
Manual or automatic

Plant Installation Specifications
Species composition lists– container plants/seed mixes/quantities and sizes
Planting arrangement/design (Include conceptual planting plan)
Planting procedure – interim storage methods, seed application methods, cuttings, special handling
Timing of plant installation
Irrigation requirements – frequency and duration

Maintenance Program

120-Day Plant Establishment Period
- Weed control
- Horticultural treatments (pruning, mulching, disease control)
- Erosion control
- Trash & debris removal
- Replacement planting and reseeding
- Site protection and signage
- Pest management
- Vandalism
- Irrigation maintenance

Five-Year Maintenance Period
See 120-day plant establishment items above

Biological Monitoring
Reference sites for development of performance criteria
Monitoring procedures – qualitative (photo documentation) and quantitative (vegetation sampling methods)
Monitoring frequency
- 120-Day Plant Establishment (Does revegetation meet intended design requirement?)
- 5 year monitoring requirement (or until 5th year performance/success criteria met)

Performance/success criteria
Reporting program

Schedule of Activities
Remediation Measures
Completion of Mitigation Notification
Literature/Reference Citations

ATTACHMENT IV

SUGGESTED REFERENCES AND NAMING AUTHORITIES

Vegetation Communities

Barbour, M.G. and J. Major (eds.) 1977. Terrestrial Vegetation of California. Wiley Interscience, New York. 1002 pp.

Beauchamp, Mitchel. 1986. A Flora of San Diego County, California. Sweetwater Press, National City. 241 pp.

Holland, Robert F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. Non-game - Heritage Program, California Department of Fish and Game. October.

Holland, V. L. 1977. Native Plants, a Viable Option. "Major Plant Communities of California." Symp. Proc., Edited by R. Walters, M. McLeod, A.G. Myer, D. Rible, R.O. Baker, and L. Farwell. Calif. Native Plant Soc., Spec. Publ. No. 3.

Kuchler, A.W. 1977. Terrestrial Vegetation of California. "The Map of The Natural Vegetation of California.", pp.909-938, Edited by M.G. Barbour and J. Major. John Wiley and Sons, New York.

Plants

Beauchamp, Mitchel. 1986. A Flora of San Diego County, California. Sweetwater Press, National City. 241 pp.

Hickman, J.C. 1993. The Jepson Manual: Higher Plants of California. University of California , Press, Berkeley. 1182 pp.

Skinner, M.W., Pavlik, B.M.1994. Inventory of Rare and Endangered Plants of California,. California Native Plant Society Publication No.1, 5th edition. Sacramento.
California, State of. 1997a. Special Plants List. Natural Diversity Data Base. Department of Fish and Game. April.

Powell, W.R. (Ed.) 1988. Inventory of Rare and Endangered Vascular Plants of California. "California Native Plant Society". Spec. Publ. No. 1, 168 pp. (4th ed - or current)

Skinner, M.W., Pavlik, B.M.1994. Inventory of Rare and Endangered Plants of California,. California Native Plant Society Publication No.1, 5th edition. Sacramento.

U.S.D.I. 1975. Threatened or Endangered Fauna or Flora: Review of Status of Vascular Plants and Determination of "Critical Habitat". Red Regist. 40 (127): 27828-27924.

Mammals

Bond, S. I. 1977. An Annotated List of the Mammals of San Diego County, California. "San Diego Society of Natural History", 18 (14): 230-247.

California, State of. 1994. Special Animals. Natural Diversity Data base. Department of Fish and Game. August (or current).

-------- 1997. State and Federal Lists of Endangered and Threatened Animals of California. The Resources Agency, Department of Fish and Game. Revised April 1. (or current)

Department of Fish and Game, 1997. State and Federal Lists of Threatened and Endangered Animals of California. "The Resource Agency", Revised April 1.

Hall, ER and KR. Nelson 1959. Mammals of North America. Ronald Press, New York.

Jameson E.W. and Hans J. Peeters. California Mammals. 1988. 403 pp.

Jones, J.K., Jr., D.C. Carter, and H.H. Genoway, 1982. Revised Checklist of North American Mammals North of Mexico. Texas Tech. University., Occ. Pap. No. 28: 1-22pp.

Birds

American Ornithologist's Union 1983. Checklist of North American Birds. 6th Edition.Washington D.C. 691 pp. with Supplements in 1985, 1987, 1991, 1993 and 1995.

Arbib, R. 1977. The Blue List for 1978 American Birds. Auk, 31 (6): 1087-1096.

Eisenmann, E. 1976. Thirty-Third Supplement to The American Ornithologists' Union Checklist of North American Birds. Auk 93 (4): 875-879 pp.

Eisenmann, E. 1973. Corrections and Additions to The Thirty-Second Supplement to The Checklist of North American Birds. Auk 90 (4): 887.

Eisenmann,E. 1973. Thirty-Second Supplement to The American Ornithologists' Union Checklist of North American Birds. Auk 90 (2): 411-419.

U.S. Fish and Wildlife Service (USFWS). 1993. Endangered and Threatened Wildlife and Plants: Determination of Threatened Status for the Coastal California Gnatcatcher. Federal Register 58(59), March 30. 50 CFR 17.

Herptofauna

Ashton, R.E. (Come. Chrm.) 1976. Endangered and Threatened Amphibians and Reptiles in the United States. "Soc. Study Amphibians And Reptiles", Herpet.

Circular No. 5.

Bury, R.B. 1971. Status Report on California's Threatened Amphibians and Reptiles. "California Department of Fish and Game, Inland Fisheries Admin." Report No. 72-2: 31pp.

Collins, Joseph T. 1990. Standard Common and Current Scientific Names for North American Amphibians and Reptiles 3rd edition, "Herpetological Circular No.19" Society For The Study of Amphibians and Reptiles, Department of Zoology. Miami University, Oxford Ohio.

Stebbins, R.C. 1954. Amphibians and Reptiles of Western North America. McGraw-Hill, New York. 536 pp.

Stewart, J. 1971. Rare, Endangered, and Depleted Amphibians and Reptiles of California. Herpetology 5 (2): 29-35.

Zweifel, R.G. (Ed.) Catalog of American Amphibians and Reptiles. "Society For Study of Amphibians And Reptiles." Periodic Series.

Fish

American Fisheries Society 1960. A List of Common and Scientific Names of Fishes From the United States and Canada. "American Fisheries Society.", Spec. Publ. No. 2,102 pp.

Miller, D.J. and R.N. Lea 1972. Guide To The Coastal Marine Fishes of California. California Department of Fish and Game. 157: 1-235.

Moyle, P.B. 1977. Inland Fishes of California. University of California Press, Berkeley.

Invertebrates

Greenwalt, L.A. 1975. United States Butterflies: Review of Status. Fed. Regist. 40 (55) 12691.

Emmel, Thomas A. & John F. Emmell, Butterflies of Southern California, Barry Silver Publisher, Los Angeles Natural History Museum, Los Angeles, CA.

Vernal Pools

Davies, C. P. Population Genetic Structure in a California Endemic Branchiopod *Branchinecta sandiegonensis*. University of California, CA; 1996 M.S. Thesis. Note: 83 pp. + appendices.

Davies, C.P.; M.A. Simovich, and S.A. Hathaway. Population Genetic Structure of a California Endemic Branchiopod, *Branchinecta sandiegonensis*. Hydrobiologia (in Press). 1997.

Eng, L.L.; D. Belk, and D.L. Eriksen. California Anostraca: Distribution, Habitat, and Status. J. Crust. Biol. 1990; 10; 10:247-277.

Federal Register. Endangered and Threatened Wildlife and Plants; Determination of Endangered Status for San Diego Fairy Shrimp. Federal Register. 1997. 62:4925-4939.

____. Endangered and Threatened Wildlife and Plants: Determination of Endangered Status for Three Vernal Pool Plants and the Riverside Fairy Shrimp. Fed. Reg. 1993; 58-41,384-41392.

Fugate, M. *Branchinecta sandiegonensis*, a New Species of Fairy Shrimp (Crustacea: Anostraca) from Western North America. Proceedings of the Biological Society of Washington. 1993; 106:296-304.

Fugate, M. L. Branchinecta of North America: Population Structure and its Implications for Conservation Practice. In: C.W. Witham, E. Bauder, D. Belk, W. Ferren, and R. Ornduff Eds. Ecology, Conservation and Management of Vernal Pool Ecosystems - Proceedings from a 1996 Conference. Sacramento, CA: California Native Plant Society; 1997: Pages XX-XX.

____ . *Branchinecta sandiegonensis,* A New Species of Fairy Shrimp (Crustacia: Anostraca) from Western North America. Biol. Soc. Wa*sh.* 1993: 106:296-304.

____. Speciation in the Fairy Shrimp Genus *Brachinecta* (Crustacea: Anostraca) from North America. Ph.D. Dissertation. University of California, Riverside. 1992.

Hathaway, S. A.; D.P. Sheehan, and M.A. Simovich. Vulnerability of Branchiopod Cysts to Crushing. Journal of Crustacean Biology. 1996: 16(3):148-152.

Hathaway, S. A. and M.A. Simovich. Some Factors Affecting the Distribution and Co-Occurrance (of Two Southern California Anostracans Brachiopoda): *Branchinecta sandiegonensis* and *Streptocephalus wootoni*. J. Crust. Biol. 1996; 16:669-677.

Moorad, J. A.; M.S. Mayer, and M.A. Simovich. Extraction of DNA from Anostracan Cysts (Crustacea, Branchiopoda) for Use in RAPD-PCR Analyses. Hydrobiologia. 1997.

Simovich & Hathaway. Diversified Bet-Hedging as a Reproductive Strategy of Some Ephemeral Pool Anostracans (Brachiopoda). J. Crust. Biol. 1997; 17:38-44.

Simovich, M.A. Crustacean Biodiversity and Endemism in California's Ephemeral Wetlands. In: C.W. Witham, E.T. Bauder, D. Belk, W. R. Ferren Jr., and R. Ornduff Eds. Ecology, Conservation, and Management of Vernal Pool Ecosystems - Proceedings from a 1996 Conference. Sacramento, CA: California Native Plant Society; 1998: pp 107-118.

Simovich, M.A. C.A. Sassaman, and R. Jackson. Genetic Variation in Tadpole Shrimp (Triops). Amer. Zool. 1988; 28:135A.

Simovich, M.A.; M. Boudrais, and R. Gonzalez. Draft Vernal Pool Faunal Survey: Naval Air Station Miramar. Unpublished Report to the Department of Defense, U.S.A. 1995; Pp. 1-156.

Simovich, M.A. and M. Fugate. Branchiopod Diversity in San Diego County, California, U.S.A. Transaction Western Section Wildlife Society. 1992; 28:6-14.

Wells, M.L.; S.A. Hathaway, and M.A. Simovich. Resilience of Anostracan Cysts to Fire. Hydrobiologia. 1997; 359:199-202.

Zedler, P. H. 1987. The Ecology of California Vernal Pools: A Community Profile. U.S. Fish and Wildlife Service Biol. Rep. 85(7.11). 136 pp.

General Topics and References

California Office of Planning and Research. 1986. CEQA: California Environmental Quality Act, Statutes and Guidelines. (or current).

California Dept. Fish and Game 1976. At The Crossroads 1976: A Report on California's Endangered and Rare Fish and Wildlife. Sacramento, CA 101 pp.

City of San Diego. Multiple Species Conservation Program (MSCP). August 1996.

City of San Diego, Community and Economic Development Department. Multiple Species Conservation Program, (MSCP) Subarea Plan. March 1997.

City of San Diego. 1998. Mitigation Monitoring and Reporting Program (MMRP) Guidelines.

City of San Diego, "San Diego Municipal Code - Land Development Manual/Land Development Code Update - Biology Guidelines"; otherwise known as the "Land Development Code, May 19, 2001.

ATTACHMENT V

CALIFORNIA NATIVE SPECIES FIELD SURVEY FORM

California Native Species Field Survey Form

Mail to:
Natural Diversity Database
California Department of Fish and Game
1807 13th Street, Suite 202
Sacramento, CA 95814

For Office Use Only

Source Code _____ Quad Code _____
Elm Code _____ Occ. No. _____
EO Index No._____ Map Index No. _____

Date of Field Work: _____ - _____ - _____
month (mm) date (dd) year (yyyy)

Scientific Name:

Common Name:

Species Found? ☐ yes ☐ no _____ If not, why?
Total No. Individuals _____ Subsequent Visit? ☐ yes ☐ no
Is this an existing NDDB occurrence? _____ ☐ no ☐ unk.
Yes, Occ. #
Collection? If yes: _____ _____
Number Museum / Herbarium

Reporter: _____
Address: _____
_____
Email Address: _____
Phone: ( ) _____

Plant Information

Phenology: _____ _____ _____
% vegetative % flowering % fruiting

Animal Information

Age Structure: _____ _____ _____
adults # juveniles # unknown
☐ breeding ☐ wintering ☐ burrow site ☐ rookery ☐ nesting ☐ other

Location ***(please also attach or draw map on back)***

County: _____ Landowner / Mgr.: _____
Quad Name: _____ Elevation: _____
T _____ R _____ _____ 1/4 of _____ 1/4 of Section _____ T _____ R _____ _____ 1/4 of _____ 1/4 of Section _____
UTM: Zone: _____(10, 11) Datum: _____(NAD83,NAD27,WGS84, other)
Source: _____(GPS, map & type, etc.) Point Accuracy: _____ Meters
UTM Coordinates_____

Habitat Description *(plant communities, dominants, associates, substrates/soils, aspects/slope)*

Other rare species?

Site Information Overall site quality: ☐ Excellent ☐ Good ☐ Fair ☐ Poor

Current / surrounding land use:

Visible disturbances / possible threats:

Comments:

Determination: *(check one or more, and fill in blanks)*
☐ Keyed (cite reference): _____
☐ Compared with specimen housed at: _____
☐ Compared with photo / drawing in: _____
☐ By another person (name): _____
☐ Other: _____

Photographs: *(check one or more)*

	Slide	Print
Plant / animal	☐	☐
Habitat	☐	☐
Diagnostic feature	☐	☐

May we obtain duplicates at our expense? ☐ yes ☐ no