GARY L. PRYOR
DIRECTOR
(858) 694-2962

County of San Diego

SAN MARCOS OFFICE
338 VIA VERA CRUZ • SUITE 201
SAN MARCOS, CA 92069-2620
(760) 471-0730

EL CAJON OFFICE
200 EAST MAIN ST. • SIXTH FLOOR
EL CAJON, CA 92020-3912
(619) 441-4030

DEPARTMENT OF PLANNING AND LAND USE

5201 RUFFIN ROAD, SUITE B, SAN DIEGO, CALIFORNIA 92123-1666
INFORMATION (858) 694-2960

TOLL FREE (800) 411-0017

BIOLOGICAL RESOURCE MAPPING REQUIREMENTS

Updated: 2/21/2002

1. **Extent of Mapping Required**
   a) **Project Parcel Boundary plus 100'** - Biological Resource mapping must include the entire project parcel plus 100 feet onto adjoining property. In rare cases where a project only affects a small portion of a large parcel the need to map the entire parcel may be waived. If you wish to pursue this waiver contact the project Environmental Analyst with the Department of Planning and Land Use.
   b) **Off-site Improvement Areas:** Any offsite improvements required of the project that may result in biological resource impacts (e.g., road improvements) may need to be mapped in accordance with these requirements. If the project requires offsite improvements, contact the project Environmental Analyst with the Department of Planning and Land Use for direction on mapping requirements.
   c) **Off-site Biological Mitigation Areas:** If off-site biological mitigation is proposed and such off-site area is not part of a formally adopted mitigation bank, the proposed areas may also need to be mapped in accordance with these requirements. If the project proposes offsite mitigation, contact the project Environmental Analyst with the Department of Planning and Land Use for direction on mapping requirements**.**

2. **Base Map Requirements**
   a) **Base Map** - Biological Resource mapping must be completed using a base map that includes:
      - the most recent project plot plan including all utility, road and other easements,
      - the proposed maximum limits of disturbance for the project, including fire clearing, construction staging areas etc.
      - Proposed Biological Open Space/Conservation Easements and "limited building zone" easements located adjacent to biological open space easements used to limit the extent of fire clearing of biological open space easement areas. As a general rule, the Biological Open Space/Conservation easement areas must be designed so that fire clearing will not occur within the boundaries of the proposed easement.
      - topography (County topographic data is sufficient),
      - major roads and major road names,
      - both proposed (solid lines) and existing (dashed lines) parcel/lot lines,
      - Assessor Parcel Numbers,
      - North arrow,
      - Scale.

b) **Scale** – Acceptable scales are 1" = 20' through 1"=200'. The maximum allowable size of the map sheet is 48" x 36". Regardless of the scale used, the map must be legible. If the scale and the quantity of information on the map render the map illegible or overly complex, the map scale should be reduced or the information should be divided between the base map and an "overlay" map.

c) **Multiple Sheet Maps** – Biological Resource Maps must be one contiguous sheet of the entire project parcel(s) unless, given the scale and legibility limitations described above, a project's parcel size prohibits the use of a single sheet map less than (a maximum project parcel dimension of approximately 9000' x 6500'). In the rare occasion that the map cannot be placed on a single sheet, a multiple sheet map is acceptable. All multiple sheet maps must have a larger scale, single sheet index map showing the relationship of all detail sheets. Each detail map sheet must meet all of the requirements listed in this document, be of a consistent scale.

d) **Registration Points (applies only to multiple sheet maps or maps that do not include an entire parcel boundary)**
   - Registration points are surveyed points on a map sheet that allow the accurate digitizing of map data. Registration points are not required on single sheet maps that show the entirety of the project parcel do not require surveyed registration points because parcel corners can be used to accurately digitize single sheet maps.
   - Each map sheet of a multiple sheet map must have a minimum of 4 registration points.
   - The index map for a multiple sheet map must also have a minimum of 4 registration points which allow cross referencing with the smaller scale detail maps.
   - All registration point coordinates must be clearly labeled in California State Plane coordinates, North American Datum 1983 (NAD 83)
   - Registration points must be dispersed over the map and distributed in a non-linear arrangement to give maximum two-dimensional offset (e.g., at the four corners of the map).

e) **Submittal Requirements:** For initial and other draft submittals, five (5) copies of the Biological Resource Map will need to be submitted. Upon finalization, multiple additional copies will be required based upon public review. Additionally, although not required, it is preferred that maps be submitted in digital format in addition to the hardcopy required above. Should a digital file be submitted, it must be in either AUTOCAD or ARC/INFO. For AUTOCAD files, drawing files (.DWG files) in versions 12, 13, or 14 may be submitted. Do not submit .DXF files. For ARC/INFO, the acceptable format must be ARC/INFO coverages exported as ARC/INFO export (.e00) files. The coverages must have an item in the PAT identifying the Holland vegetation habitat code (character field with a width of five). All digital files must be registered in State Plane, NAD 83 coordinates.

2. Habitat Identification

a) **Required Habitat Classification System:**
   - All Biological Resource maps and studies must use the latest San Diego Regional Holland code classification system for vegetation communities.
   - A Holland Classification must cover all areas on the project.
   - The map legend must reference both the Holland numeric code as well as the Holland vegetation community name.

- References:
  Holland, R. F., 1986, *Preliminary Descriptions of the Terrestrial Natural Communities of California*. Nongame-Heritage Program, State of California, Department of Fish and Game, Sacramento, CA, 157 p.
  Oberbauer, T., 1996, *Terrestrial Vegetation Communities in San Diego County Based on Holland's Descriptions*, San Diego Association of Governments, San Diego, CA, 6 p. (attached)

b) **Mixtures Of Habitat Components:** Where vegetation contains a mixture of component and indicator species from two or more Holland vegetation communities, the indicator species that appears with the greatest vegetation coverage must be used to identify the vegetation community.

c) **Burned Habitat:** Areas recovering from fire shall be mapped utilizing the resurgent vegetation as indicators of the probable resultant habitat. When the fire is so recent such that no new vegetation has emerged yet, historical evidence, such as aerial photos, will be used to map the habitat that once existed.

d) **Previously Graded/Cleared Lands:**
- **Illegal Grading/Clearing:** Areas graded or cleared without the legal authority to do so shall be mapped as the vegetation type that was previously present based on County records and regardless of the time that has lapsed since the clearing. Historical evidence, such as aerial photography or the County's vegetation mapping information, must be used to determine the habitat that once existed.
- **Legal Clearing Related To Prepare the Land for Development:** Areas legally graded or cleared in preparation for the proposed project shall also be mapped as the habitat that existed prior to the clearing unless previous environmental review was conducted and appropriate mitigation applied. The reason for this is that the California Environmental Quality Act requires the County to assess the "whole of the proposed project" which includes activities completed preparation for the project. Examples include geotechnical testing, well drilling/testing, surveying, and recent (less than 5 years prior to project application) clearing or grading (including agricultural clearing or grading) completed without a clear documented purpose. Historical evidence, such as aerial photography or the County's vegetation mapping information, must be used to determine the habitat that once existed.
- **Legal Clearing:** Areas graded or cleared with the legal authority that are not related to preparing the land for development may be mapped as the existing disturbed, agriculture, or as the appropriate habitat type, as required.

e) **Additional Habitat Identification Information:** While Holland gives information regarding habitat attributes, the following additional guidance shall be followed in determining the proper code for when disturbed, non-native grassland, agriculture, coastal sage-chaparral scrub, and native grassland classifications:

Disturbed: Only those lands meeting <u>all</u> of the following characteristics may be identified as "disturbed":

- Land that has been permanently altered by previous legal human activity including grading and/or repeated clearing for fuel management purposes or shows evidence of being built upon.
- The land must show evidence that the previous disturbance has eliminated all future biological value of the land for most species. Some species will persist in an urban environment (i.e. house sparrow, etc.) and should not be included in this analysis.
- No native or naturalized vegetation remains.
- The land does not exhibit moderate to high value for sensitive wildlife, including foraging potential for raptors.

Non-native grassland: Non-native grassland will be identified when the indicator species are present, including *Avena*, *Bromus*, *Erodium*, *Brassica* and many other broadleaf herbaceous species. When a discrepancy exists as to how to classify the habitat (between non-native grassland, disturbed or agriculture), the following criteria shall cause the land to be identified as non-native grassland:

- The land does not exhibit moderate to high value for sensitive wildlife, including foraging potential for raptors.
- Vegetation has a non-native grassland component.
- Documented rodent activity and/or raptor foraging.
- Potential wildlife habitat for small mammals and/or reptiles.
- An agricultural crop (current or recently fallow) does not dominate the habitat.

Agriculture: Any lands that currently support an agricultural operation will be classified as agriculture. Orchards, groves and field/pastures left fallow for any length of time may now support non-native grassland or other native habitat. The absence of active agricultural activity, such as irrigation or harvesting, for three years is considered a general guideline after which the land may support habitat suitable for sensitive species. However, some agricultural lands will go fallow after a much shorter time. Refer to the definition of non-native grassland for guidance in identifying the habitat of fallow agricultural land.

Coastal sage-chaparral scrub: Coastal sage scrub and southern mixed chaparral are identified by the dominant indicator species present. In cases where the two habitats are co-dominant and at least 50% of the habitat is indicative of coastal sage scrub, then the habitat shall be labeled as "coastal sage-chaparral scrub".

Native Grassland: Rarely will native grassland be confused with disturbed or agricultural lands. However, there is often a debate as to how to delineate native and non-native grassland, particularly when one often occurs as one or more patches within a larger expanse of the other. Native grassland should be identified when *Nasella* and other native herbs including *Sanicula*, *Sidalcea*, *Sisirynchium*, *Eschscholzia* or *Lasthenia* are present. The percentage cover of Native species at any one time may be quite low. An area qualifies as native grassland if there is more than a 20% cover of native perennial species.

3. Sensitive Species, Other Habitat Features and Wetland Mapping Requirements

a) **Sensitive Species**: Locations/areas of observed sensitive plant and animal species must be identified on the map. Sensitive species locations/areas should not be delineated from, but included within the mapped habitat classification that surrounds the sensitive species locations/areas.

b) **Significant Habitat Features:** Habitat features such as caves, rock outcroppings or cliff faces, must be identified. It is understood that many of these features do not have a unique Holland Classification. Therefore, while these significant habitat feature areas must be included a valid and appropriate Holland Classification must nonetheless identify all areas mapped. Habitat features should not be delineated from, but included within the mapped habitat that surrounds the feature (usually as some form of crosshatching).

c) **Wetlands:** County, State and Federally defined wetlands and waters of the U.S. may be included within several Holland vegetation communities. These communities are typically riparian in nature, such as southern coast live oak riparian forest and southern willow scrub. However, a wetland or waters of the U.S. may occasionally be within a vegetation community that is normally considered upland, such as a coastal sage scrub vegetated drainage. The boundaries of all wetlands and waters of the U.S. must be mapped in addition to the vegetation/habitat per the Holland Codes. This can usually be accomplished using crosshatching or similar methods. In all cases, the treatment of land considered wetlands and waters of the U.S. should follow wetlands standards and guidelines, at the County, State and Federal level, regardless of the overlying vegetation type.

County wetlands are defined by the Resource Protection Ordinance (RPO). The definition is still used as a County standard even when the ordinance does not apply to a given project. The following is the County's definition, taken directly from RPO:

All lands which are transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or where the land is covered by water. All lands having one or more of the following attributes are "wetlands":

- *At least periodically, the land supports predominantly hydrophytes (plants whose habitat is water or very wet places);*
- *The substratum is predominantly undrained hydric soil; or*
- *The substratum is nonsoil and is saturated with water or covered by water at some time during the growing season of each year.* (A "Non-soil" substrate includes, but is not limited to, rock outcroppings, deepwater habitats (generally greater than 6.6 feet in depth), cobble rock, bedrock, or scoured channels.)

The above definition of wetlands is based on the same basic attributes (hydrophytic vegetation, hydric soils, hydrology) as those of the CA Department of Fish and Game (CDFG) and the Army Corps of Engineers (ACOE), although those agencies do have definitions with slightly different language and requirements.

Simplified Method of Wetlands Mapping: This method may be used in most cases where riparian vegetation, areas of potentially hydric soils and drainage features with a defined bed and bank are/will be largely avoided through project design and the applicant wishes to minimize processing costs. The mapping of wetlands and/or waters of the U.S. can often be completed with site visits and review of aerial photographs, and topographical, vegetation and soil maps. Under this method wetlands and/or waters of the U.S. are conservatively identified to extend to the outermost limit of riparian vegetation (canopy drip line or scrub line boundary), hydric soils, or the defined bed and bank of a drainage feature, whichever is greatest.

Formal Method of Wetlands Mapping: A formal wetland delineation may be completed under the following conditions 1) there may be extensive impacts (both direct and indirect) to or within the immediate proximity of identified wetlands and waters of the U.S, 2) the project applicant believes that using the simplified method of wetlands mapping results in too conservative delineation of the extent of wetlands, 3) there is disagreement between the County and the individual completing the delineation. Under this method the delineation must conform to the *Army Corps of Engineers 1987 Wetland Delineation Manual*) understanding that the County definition of a wetland definition differs from the federal and State of California definitions. The boundaries of all wetlands and waters of the U.S., as defined by each of the agencies, must be clearly identified. When a formal wetland delineation is completed, a separate wetland delineation map is required in addition to showing the extent of wetlands on the vegetation map.

d) **Wetland Buffers:** The boundaries of all wetland buffers must be mapped in addition to the vegetation/habitat per the Holland Codes. This can usually be accomplished using crosshatching or similar methods. Wetland buffers are determined using the following formula:

0.5y(x+1) = minimum width of buffer (ft)

where:
y = Average width of wetland (ft)
x = # of the following questions answered "yes"
1) Does the wetland support native hydrophytic vegetation?
2) Does the wetland act as a wildlife corridor?
3) Does the wetland support any sensitive species?

Regardless of the results of the above calculation the following minimum wetlands buffer width criteria apply:

- The minimum wetland buffer width for wetlands supporting hydrophytic vegetation is 50 feet.
- The minimum wetland buffer width for wetlands that do not support hydrophytic vegetation is 25 feet.
- In cases where a formal method of wetlands delineation was used to define the wetland boundary, the wetland buffer must extend at least 50 feet from the drip line or scrub line boundary of any riparian vegetation associated with the wetland.

Terrestrial Vegetation Communities in San Diego County
Based on Holland's Descriptions

Suggested by Thomas Oberbauer
(revised February 1996)[1],[2]

10000 NON-NATIVE VEGETATION, DEVELOPED AREAS, OR UNVEGETATED HABITAT

- 11000 Non-Native Vegetion
  - 11100 Eucalyptus Woodland
  - 11200 Disturbed Wetland
  - 11300 Disturbed Habitat
- 12000 Urban/Developed
- 13000 Unvegetated Habitat
  - 13100 Open Water
    - 13110 Marine
      - 13111 Subtidal
      - 13112 Intertidal
    - 13120 Bay
      - 13121 Deep Bay
      - 13122 Intermediate Bay
      - 13123 Shallow Bay
    - 13130 Estuarine
      - 13131 Subtidal
      - 13132 Intertidal
      - 13133 Brackishwater
    - 13140 Freshwater
  - 13200 Non-Vegetated Channel, Floodway, Lakeshore Fringe
  - 13300 Saltpan/Mudflats
  - 13400 Beach
- 18000 General Agriculture
  - 18100 Orchards and Vineyards
  - 18200 Intensive Agriculture - Dairies, Nurseries, Chicken Ranches
  - 18300 Extensive Agriculture - Field/Pasture, Row Crops
    - 18310 Field/Pasture
    - 18320 Row Crops

20000 DUNE COMMUNITY

- 21000 Coastal Dunes
  - 21100 Active Coastal Dunes (occurred at one time but now nearly extirpated)
  - 21200 Foredunes
    - 21230 Southern Foredunes (tiny fragments remaining in Imperial Beach and Los Peñasquitos Lagoon)
- 22000 Desert Dunes
  - 22100 Active Desert Dunes (very little in Borrego Valley)

[1]Bold indicates current revisions to Holland.
[2]Asterisk indicates prior revisions to Holland (see May 1995 version).

22300 Stabilized and Partially-Stabilized Desert Sand Field (mostly in the eastern part of Borrego Valley; may be large enough to map from aerials)

24000 Stabilized Alkaline Dunes*

29000 ACACIA SCRUB*

30000 SCRUB AND CHAPARRAL

31000 Coastal Bluff Scrub
- 31200 Southern Coastal Bluff Scrub (mappable on Point Loma and Torrey Pines State Park)

32000 Coastal Scrub
- 32400 Maritime Succulent Scrub (Point Loma, etc.)
- 32500 Diegan Coastal Sage Scrub
  - 32510 Coastal form*
  - 32520 Inland form (>1,000 ft. elevation)*
- 32700 Riversidian Sage Scrub
  - 32710 Riversidian Upland Sage Scrub (scrub on Banner Grade may fit this category)
  - 32720 Alluvial Fan Scrub

33000 Sonoran Desert Scrub
- 33100 Sonoran Creosote Bush Scrub
- 33200 Sonoran Desert Mixed Scrub
  - 33210 Sonoran Mixed Woody Scrub
  - 33220 Sonoran Mixed Woody and Succulent Scrub
  - 33230 Sonoran Wash Scrub*
- 33300 Colorado Desert Wash Scrub*
- 33500 Calcicolous Scrub*
- 33600 Encelia Scrub*

34000 Mojavean Desert Scrub
- 34300 Blackbush Scrub (micro locations on eastern edge of mountains)

35000 Great Basin Scrub
- 35200 Sagebrush Scrub
  - 35210 Big Sagebrush Scrub

36000 Chenopod Scrub
- 36110 Desert Saltbush Scrub
- 36120 Desert Sink Scrub (in Borrego sink)

37000 Chaparral
- 37100 Upper Sonoran Mixed Chaparral
  - 37120 Southern Mixed Chaparral
    - 37121 Granitic Southern Mixed Chaparral
    - 37122 Mafic Southern Mixed Chaparral (occurs on Las Posas and Boomer soils)
  - 37130 Northern Mixed Chaparral*
    - 37131 Granitic Northern Mixed Chaparral*
    - 37132 Mafic Northern Mixed Chaparral*
- 37200 Chamise Chaparral
  - 37210 Granitic Chamise Chaparral*
  - 37220 Mafic Chamise Chaparral*

37300 Red Shank Chaparral (near Campo and Chihuahua Valley)
37400 Semi-Desert Chaparral (same as Desert Transition Chaparral; occurs in areas like Jacumba)
37500 Montane Chaparral
37510 Mixed Montane Chaparral
37520 Montane Manzanita Chaparral
37530 Montane Ceanothus Chaparral
37540 Montane Scrub Oak Chaparral
37800 Upper Sonoran Ceanothus Chaparral
37810 Buck Brush Chaparral
37830 Ceanothus crassifolius Chaparral
37900 Scrub Oak Chaparral
37A00 Interior Live Oak Chaparral
37B00 Upper Sonoran Manzanita Chaparral
37C00 Maritime Chaparral
37C30 Southern Maritime Chaparral (occurs in coastal San Diego County and has been described as Coastal Mixed Chaparral)
37G00 Coastal Sage-Chaparral Scrub
37K00 Flat-topped Buckwheat*

39000 Upper Sonoran Subshrub Scrub

40000 GRASSLANDS, VERNAL POOLS, MEADOWS, AND OTHER HERB COMMUNITIES

42000 Valley and Foothill Grassland
42100 Native Grassland
42110 Valley Needlegrass Grassland
42120 Valley Sacaton Grassland
42200 Non-Native Grassland
42300 Wildflower Field (this is actually a subset of the above, but would be pertinent in the Cuyamaca Lake and Mataguay Valley areas)
42400 Foothill/Mountain Perennial Grassland*
42470 Transmontane Dropseed Grassland*

44000 Vernal Pool
44300 Southern Vernal Pool
44320 San Diego Mesa Vernal Pool
44321 San Diego Mesa Hardpan Vernal Pool (northern mesas)
44322 San Diego Mesa Claypan Vernal Pool (southern mesas)
45000 Meadow and Seep
45100 Montane Meadow
45110 Wet Montane Meadow
45120 Dry Montane Meadows
45300 Alkali Meadows and Seeps
45320 Alkali Seep
45400 Freshwater Seep

46000 Alkali Playa Community
46100 Badlands/Mudhill Forbs*

50000 BOG AND MARSH

52000 Marsh and Swamp
- 52100 Coastal Salt Marsh
  - 52120 Southern Coastal Salt Marsh
- 52300 Alkali Marsh
  - 52310 Cismontane Alkali Marsh
- 52400 Freshwater Marsh
  - 52410 Coastal and Valley Freshwater Marsh
  - 52420 Transmontane Freshwater Marsh (San Felipe Creek)
  - 52430 Montane Freshwater Marsh
  - 52440 Emergent Wetland

60000 RIPARIAN AND BOTTOMLAND HABITAT

61000 Riparian Forests
- 61300 Southern Riparian Forest
  - 61310 Southern Coast Live Oak Riparian Forest
  - 61320 Southern Arroyo Willow Riparian Forest
  - 61330 Southern Cottonwood-willow Riparian Forest
- 61500 Montane Riparian Forest
  - 61510 White Alder Riparian Forest (Cold Spring in the Cuyamaca Mountains)
- 61800 Colorado Riparian Forest
  - 61810 Sonoran Cottonwood-willow Riparian Forest (Coyote Canyon)
  - 61820 Mesquite Bosque (Borrego Sink)

62000 Riparian Woodlands
- 62200 Desert Dry Wash Woodland
- 62300 Desert Fan Palm Oasis Woodland
- 62400 Southern Sycamore-alder Riparian Woodland (Pauma and Pala areas)

63000 Riparian Scrubs
- 63300 Southern Riparian Scrub
  - 63310 Mule Fat Scrub
  - 63320 Southern Willow Scrub
- 63500 Montane Riparian Scrub
- 63800 Colorado Riparian Scrub
  - 63810 Tamarisk Scrub
  - 63820 Arrowweed Scrub

70000 WOODLAND

71000 Cismontane Woodland
- 71100 Oak Woodland
  - 71120 Black Oak Woodland (Cuyamaca and Mesa Grande)
  - 71160 Coast Live Oak Woodland
    - 71161 Open Coast Live Oak Woodland
    - 71162 Dense Coast Live Oak Woodland
  - 71180 Engelmann Oak Woodland
    - 71181 Open Engelmann Oak Woodland
    - 71182 Dense Engelmann Oak Woodland
- 71200 Walnut Woodland
  - 71210 California Walnut Woodland (micro locations occur, such as in De Luz)

72000 Pinon and Juniper Woodlands
- 72300 Peninsular Pinon and Juniper Woodlands

72310 Peninsular Pinon Woodland
72320 Peninsular Juniper Woodland and Scrub

75000 Sonoran Thorn Woodland
75100 Elephant Tree Woodland (micro locations such as Indian Wash)

77000 Mixed Oak Woodland*

78000 Undifferentiated Open Woodland*

79000 Undifferentiated Dense Woodland*

80000 FOREST

81000 Broadleaved Upland Forest
81100 Mixed Evergreen Forest (Palomar Mountain)
81300 Oak Forest
81310 Coast Live Oak Forest
81320 Canyon Live Oak Forest (may be represented in San Diego County in some form but apparently is intended for more northern areas)
81340 Black Oak Forest (as described in Holland represents apparent patches of oak in the midst of coniferous forests)

83000 Closed-cone Coniferous Forest
83100 Coastal Closed-cone Coniferous Forest
83140 Torrey Pine Forest (not actually a closed cone pine)
83200 Interior Closed-cone Coniferous Forest
83230 Southern Interior Cypress Forest (83330, typo in original Holland document)

84000 Lower Montane Coniferous Forest
84100 Coast Range, Klamath and Peninsular Coniferous Forest*
84140 Coulter Pine Forest
84150 Bigcone Spruce (Bigcone Douglas Fir)-Canyon Oak Forest
84200 Sierran Coniferous Forest
84230 Sierran Mixed Coniferous Forest
84500 Mixed Oak/Coniferous/Bigcone/Coulter*

85000 Upper Montane Coniferous Forest
85100 Jeffrey Pine Forest