COUNTY OF SAN DIEGO

REPORT FORMAT AND CONTENT REQUIREMENTS

BIOLOGICAL RESOURCES

LAND USE AND ENVIRONMENT GROUP

Department of Planning and Land Use
Department of Public Works

Fourth Revision
September 15, 2010

PURPOSE

These Biological Survey and Report Requirements provide guidance on conducting biological resources surveys and preparing reports for discretionary projects being processed by the Land Use and Environment Group. These guidelines are designed to:

1. Ensure the quality, accuracy and completeness of biological surveys and reports.

2. Aid in staff's efficient and consistent review of maps and documents from different consultants.

3. Provide adequate information to make appropriate planning decisions and to make determinations regarding conformance with applicable regulations.

4. Increase the efficiency of the environmental review process and avoid unnecessary time delays.

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1.0 INTRODUCTION

All biological maps and reports shall follow the requirements in this document. The overall length of reports and the amount of information to include will vary depending on the size and scope of the project, the regional setting, the biological resources present and the degree of impacts proposed.

When biological resources are present on a project site, the County's Scoping Letter may require that one of the following documents be submitted.

1.1 Full Biological Resource Report (Full Report)

A Full Biological Resource Report (Full Report) is required for larger projects and/or projects with potential significant biological impacts. The full report must include a Biological Resource Map.

1.2 Biological Resource Letter Report (Letter Report)

A Biological Resources Letter Report may be adequate for smaller projects and those with limited biological resources present or expected. The determination of whether a letter report would be required is made by a County staff biologist, based on a project-specific analysis at project scoping. Based on the information provided in the biological letter report, and particularly if high-level sensitive species (A- and B-listed plants, Group I animals) were found during the survey, DPLU may require additional focused surveys and will generally require preparation a Full Biological Resource Report. The letter report must include a Biological Resource Map.

1.3 Biological Resource Map (Bio Map)

For projects with limited natural or naturalized areas and no sensitive species anticipated, a Biological Resources Map may be adequate without a report. The consultant may, at their option, submit a brief explanation of the map. If the County staff biologist determines that further information is necessary, the scoping letter may request other documentation be submitted with the Map.

2.0 SURVEY AND REPORT FORMAT REQUIREMENTS

2.1 General Report Guidelines

All written reports shall follow these general guidelines:

- Reports should be technical in nature and should avoid anecdotal or extraneous information.

- Reports should be concise and written in a professional manner suitable for peer review. Staff may reject reports based on quality if the report is written in such a manner that a timely and accurate review cannot be completed.
- Biological reports should be bound such that staff may easily review the document. Shorter reports may be stapled, but longer documents should be bound by other methods, such as comb binding.
- Attached plot plans and Biological Resource Maps must be to scale and contain a north arrow and both number and bar scales. When maps are reduced, adjust the scale, or mark the map "Reduced/Use Bar Scale".
- For Full Biological Resource Reports, each chapter and subsection of the report should be clearly delineated with bold print and/or underlining and will use the numerical headings contained in these Biological Resources Survey and Report requirements.
- Draft copies of the report shall have all changes made in response to staff comments in strikeout/underline form. Final copies of the report shall be clean, with all editing marks removed.

All biological reports will be reviewed for technical accuracy and completeness by a staff biologist. Reports are considered draft until staff determines the report to be complete. Each submittal and review of a draft biological report is considered an "iteration". During each iteration, staff will either determine the report to be complete or respond with comments for necessary changes. The County expects that the first iteration will be as complete and comprehensive as possible to address issues in the Scoping Letter. However, each report may have up to three iterations, after which project denial may be recommended due to inadequate environmental progress.

2.2 Full Biological Resource Report

2.2.1 Outline

The required sections of the full Biological Resource Report are provided in the outline below:

FULL BIOLOGICAL RESOURCES REPORT OUTLINE

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G. Open Space Map (if applicable, unless included within body of report)
H. Signed protocol survey reports

2.2.2 Content

Note: The numbering identified below should be used when preparing technical studies. The numbers and titles are shown in italics only for purposes of this document and are not required to be formatted in italics for the technical study.

COVER PAGE

The cover page shall include the following information:

- Project common name

- Project numbers (i.e. TM, ZAP, etc.) including the environmental log number (ER)
- Date (original report date plus all revisions) must be revised during each iteration of the draft report)
- Name of County Approved CEQA Consultant preparing document, firm name (if applicable) and address
- Signature of County Approved CEQA Consultant
- Project proponent's name and address
- The following statement: Prepared for The County of San Diego

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The table of contents must follow the order and format outlined in this document. Page numbers should be assigned when possible. Titles of each Appendix or Attachment should be listed in the order in which they are found in the document.

GLOSSARY OF TERMS AND ACRONYMS

Provide a list of terms and acronyms used in the report.

SUMMARY (ABSTRACT)

Provide a brief summary of the project, the biological resources present on the site, potential impacts and proposed mitigation. No new information should be provided in the summary that is not further explained elsewhere in the document. The purpose of the summary is to provide a quick reference for the public and decision-makers. Therefore, the language should be less technical than that used in the remainder of the document.

1.0 INTRODUCTION

1.1 Purpose of the Report

Discuss the purpose of the report. Depending on the site location, type of project and biological resources, the report may document compliance with the County's MSCP Subarea Plan, Resource Protection Ordinance, Biological Mitigation Ordinance or Habitat Loss Permit Ordinance and all applicable federal and state laws.

Example language: "The purpose of this report is to document the biological resources identified as present or potentially present on the project site; identify potential biological resource impacts resulting from the proposed project; and recommend measures to avoid, minimize, and/or mitigate significant impacts consistent with federal, state and local rules and regulations including the California Environmental Quality Act (CEQA), and

County of San Diego Multiple Species Conservation Program (MSCP) Subarea Plan, Resource Protection Ordinance (RPO) and Biological Mitigation Ordinance (BMO)."

1.2 Project Location and Description

Project Location. Discuss the project location in the regional and local context, and identify the Community Planning Area. Include as one of the numbered figure(s) in the report a USGS topographic map with the site and APN(s) clearly identified and labeled.

Project Description. Provide a very detailed description of the project, including all on-site and off-site components and any design alternatives. An 8.5"x11" or 11"x17" copy of the plot plan/map must be attached to the report as (a) numbered figure(s).

Describe the whole of the project, not just the immediate action being pursued. For example, a Tentative Map or Tentative Parcel Map proposes to subdivide property. The project in question is not just the increase in the number of lots, but the ultimate outcome of residential or commercial development. Another example is an application for a grading permit. The project is not just the immediate grading, but also the end result for which the land was graded.

The project description should be as detailed as possible, including details such as:

- Size of project site and area proposed for development.
- Purpose and scale of proposed uses associated with the project, such as residential development or recreational camping.
- Proposed structures (size, location, purpose, etc.).
- Location of all easements, including those for biological open space, steep slope easements, limited building zone easements, utilities and roads.
- Proposed or potential uses within open space, including proposed buffers, existing structures and/or uses that will continue under the proposed action, any requirements for access to archaeological/cultural sites, etc.
- Off-site improvements, such as for roads, utility extensions, or stormwater facilities.
- Fire fuel modification and vegetation management requirements including fuel modification adjacent to roads.
- Construction equipment staging areas.
- Proposed site access.

1.3 Survey Methods

Provide a discussion of literature reviews done prior to initiation of the surveys. Examples may include, but are not limited to: the U.S. Department of Agriculture Soil Conservation Service map for the project area; a database query of potential on-site sensitive species based on a determination of the site physical characteristics (*e.g.*, location, elevation, soils/substrate, and topography); documentation of California Department of Fish and Game (CDFG) California Natural Diversity Database (CNDDB)/U.S. Fish and Wildlife Service (USFWS) Geographical Information System (GIS) records for the project vicinity; and previous reports prepared for the project area.

Describe the methods and materials used to survey the property. At a minimum, the entire property must be walked and all biological resources recorded and mapped according to the County's Biological Resource Mapping Requirements. The length of time a survey should take is entirely dependent upon the size of the property and the resources present. Staff may request an additional survey if the time spent in the field does not appear adequate to have recorded all resources or the results of the survey would have been significantly affected by season, time of day or weather conditions.

Surveys must include the entire project parcel(s). In addition, habitat mapping must include land 100 feet off site consistent with section 3.1.1. In rare cases where a project only affects a small portion of a large parcel, the need to survey the entire parcel may be waived. If you wish to pursue this waiver, contact the County Project Manager.

Additional focused surveys may also be required based on season or sensitivity of species. Focused surveys must be performed by biologists with demonstrable knowledge in field detection of the subject species. Focused surveys for federally listed species must follow USFWS protocol, when such protocol exists. Permit numbers for biologists performing these focused surveys must be provided for each survey and must be included as a table in the biological report. The County's survey guidelines for burrowing owls have been described in the Strategy for Mitigating Impacts to Burrowing Owl in the Unincorporated County (Attachment A). The County's Hermes copper survey guidelines are described in the Guidelines for Hermes Copper (Attachment B). If no protocol has been established by the County or the USFWS, the methods of the focused survey must be described in the report. At the very least, focused surveys should include walking transects across all areas of the property with potential habitat for the species. All point locations and inferred territories of these species must be included on the Biological Resources Map.

In some cases, the Director of Planning and Land Use, Public Works, or Parks and Recreation may choose to postpone or suspend some seasonal

focused surveys during a particular calendar year if inaccurate or inconclusive survey results are expected due to unsuitable environmental conditions such as fires, floods, or droughts. In these cases, staff will work with project applicants to determine the best course of action. Options may include one or more of the following, determined on a case-by-case basis:

- Relying on previous year surveys.
- Resurveying the property the following year (assuming proper environmental conditions).
- Using the County's Species Predictive Model to determine presence/absence (access to data from this model is coordinated through the DPLU staff biologist).
- Reviewing records from the California Native Plant Society, California Natural Diversity Database, San Diego Plant Atlas, or other reliable sources.

When a sensitive species is identified on a property, the total number present or an estimate based on the density of individuals must be provided and the location of observed species mapped. It may also be necessary to provide these measurements (through additional field work and/or historical/available data) for off-site areas in order to fully determine the true size and extent of the local population. When feasible, the actual number of individuals should be counted in the field.

When a plant species covers several acres (3 acres or more), the approximate number and the relative density may be estimated using a reasonable sampling method. Describe the method in the report. When the plant species is too small and/or numerous to count individually or individuals are not easily discernable from one another, the quadrat sampling method may be used to determine the density and cover per unit of area. These methods rely on accurate mapping and area calculation of the population. For annual plant species and geophytes (those plant species that sprout each year from underground bulbs, corms or rhizomes), in addition to accurate mapping of the current population, provide and map the "likely limits of occurrence" (LLO) onsite based upon suitable habitat and physical conditions. The LLO is required because the population size and location will vary from year to year. Include a reasonable justification for the limits of the LLO. The amount of mitigation will be based on the LLO.

For wildlife species, the number of individuals should be approximated based on actual sightings and other available signs, such as fecal deposits, tracks and nests or burrows. The method by which the number of individuals and density of a species is determined must be described in the biological report.

Wetlands surveys will be required when a wetland resource or jurisdictional water is identified on project site. A basic wetland survey consists of mapping the boundaries of the wetland habitat based on the specific County, State and

Federal wetland definitions. Field site visits and aerial photographs generally provide enough information to complete the basic wetland survey. However, a full wetland delineation survey following the US Army Corps of Engineers standards, including soil testing, may be required when the boundaries of the wetlands are not easily discernable.

This section of the report should also include the following:

- Discuss any significant limitations to each of the surveys performed, such as timing, season or inability to access or observe portions of the property or observe adjacent properties. All reports should acknowledge the existence of time and seasonal variations such that not all species on the site would be detected.
- It may be necessary to include a map of the property depicting the areas surveyed. For example, some lands may not have been surveyed because access was denied. Where directed sensitive species surveys are required, portions of the property may not provide suitable habitat/conditions for the species. A map shall be included when transects, quadrat sampling or sample points are used.
- This section shall include a numbered table listing the dates, times and weather conditions (as applicable) as well as the biologist(s) and any applicable permit numbers performing each survey.

1.4 Environmental Setting

Describe the physical characteristics, such as topography, elevation, climate, water resources and soil types. Briefly describe the general vicinity in terms of type and density of development and infrastructure. Specify public and private ownership of land in the vicinity, particularly for preserved lands. Describe any preserved lands adjacent or contiguous with the site. Describe the existing land uses on site and on surrounding lands, including unauthorized activities.

1.4.1 Regional Context

Provide a general overview of the following, as applicable. This section is not intended to provide detailed analysis of habitats, corridors, etc., as that analysis is included in later sections.

- Location relative to approved or proposed conservation plans
- Adopted or proposed NCCP subareas
- NCCP designations (such as PAMA, BRCA, Take Authorized, etc.)
- Adjacent to preserved lands, national forests, BLM lands
- Jurisdictional waterways and watersheds
- The section should reference aerial photos as numbered figure(s) showing the relationship of the project site with surrounding lands.

1.4.2 Habitat Types/Vegetation Communities

Describe each vegetation community identified on the property, addressing the following information. This section shall include a numbered table containing acreages.

- Reference the modified Holland code classification system as modified by Oberbauer (Table 4 in the Guidelines for Determining Significance) for each vegetation community.
- List the dominant (indicator) species present.
- Describe the quality of the habitat in general, including the level of previous disturbance.
- Describe the species abundance, composition and diversity in terms of vegetative structure.
- When applicable, provide the sensitivity level (i.e. Tier level in MSCP) of each habitat type.
- Discuss the conservation value of each habitat type in terms of regional and local importance relative to other areas of similar habitat off-site.
- Discuss whether the habitat type is considered RPO Sensitive Habitat Lands, discuss the habitat tier (if MSCP), and discuss whether it is considered sensitive by state or federal agencies, as defined by these requirements.
- Describe any unique habitat types and/or physical features of the land that occur on-site. Unique habitats are generally those considered rare due to physical constraints, such as soil type or topography, or those habitats created by unusual circumstances. Examples of unique habitats include vernal pools, gabbro-based or rare successional habitat communities. Unique habitats may also be defined by a defined physical or biological habitat component providing a specialized function for a specific limited distribution species such as butterfly hill-topping or a heron rookery. Unique features include any physical characteristic that might have unusual or exceptional biological value such as cliff faces, rock outcrops, sandstone bluffs, stream banks and bars. Unique features will often be geological in nature, but may also be the result of a water resource, soil, or manufactured structures functioning as roosts or rookeries.

1.4.3 Flora

Provide a general overview of the types of plant species identified on the site. For example, determine whether the majority of the plant species are non-native, disturbance-related or natives generally found in more pristine environments. Briefly list the more common plant species identified. A complete list of all plant species identified on the site must be attached to the report, including the common name, scientific name and the vegetation community in which the plant species was identified.

1.4.4 Fauna

Format and discussion of fauna shall follow the instructions in Section 1.4.3. This section shall discuss large mammal use of the site, as well as its use for migratory birds and raptor foraging and/or nesting.

1.4.5 Sensitive Plant Species

The report must address all sensitive plant species that occur or have a high probability of occurring on the site or on land immediately adjacent to the site. This section should discuss the results of any directed surveys or habitat assessments.

Sensitive species are those considered sensitive by the County of San Diego, or any State or Federal agency. Potential to occur is derived from locality, known populations, soil or habitat types, elevation and a number of other factors.

The report must provide a table listing any sensitive species detected or having potential to be present, including its conservation status, preferred habitat (i.e. vegetation, soil, elevation range, etc.) and whether the species was detected on the site. This table shall be included as an appendix to the report. For species not detected, the table must include an evaluation of the potential for the species to be present currently or in the future and the probable reason why the species was not detected during the survey.

The report text must also contain a separate discussion for each sensitive species identified onsite or having a high potential to be present onsite. For each species, provide the number, density and location of individuals on the site (refer to *Section 1.3* for methods of measurement). The report shall also discuss the local and regional significance of the population found on the site. For each sensitive species identified, a Natural Diversity Database Form must be completed with one copy sent to the California Department of Fish and Game and one copy attached to the final report.

1.4.6 Sensitive Wildlife Species

Format and discussion of sensitive wildlife species shall follow the instructions in *Section 1.4.5*. Sensitive species are those considered sensitive by the County of San Diego, or any State or Federal agency.

1.4.7 Wetlands/Jurisdictional Waters

Describe any wetland resources and jurisdictional waters identified on the site. Provide an estimate of acreage classified as County, State and/or Federal wetlands and jurisdictional waters along with an explanation as to how the boundaries were delineated. Include a brief list of the dominant plant and wildlife species present. Describe the quality of the wetland habitat in terms of disturbance, canopy cover, species diversity and connectivity to off-site habitat. Discuss the wetland's local and regional importance.

Discuss the wetland functions and values, and include a description of the habitats' location relative to hydrologic features (*i.e.*, what is downstream from the waterway). Wetland function refers to biophysical benefits, such as groundwater recharge and discharge, flood control, flow alteration, sediment stabilization, erosion control, toxicant retention, nutrient removal and cycling, and wildlife habitat for diversity and abundance. Wetland value refers to anthropomorphic benefits such as commercial enterprise, recreation and waste assimilation, and non-market values such as aesthetics, uniqueness and heritage.

1.4.8 Habitat Connectivity and Wildlife Corridors

Describe the extent of habitat connectivity between on and off-site lands. Provide a general description of any connection that exists, including estimated acreage and habitat types. Since indirect habitat connectivity is often very important, especially in more urbanized area, discuss the project site relative to surrounding areas that might serve as an island or "stepping-stone"/archipelago connection. When a connection exists between on- and off-site habitats, list the species that are likely to use the connection.

Discuss whether the connectivity creates a block of habitat with one or more of the following values:

- A core area of habitat suitable for resident populations
- A local wildlife corridor
- A block of habitat within a larger regional linkage

This section must also discuss wildlife corridors and linkages. Include a separate discussion of local wildlife corridors and regional linkages, addressing the presence or absence of both. Corridors are generally local pathways connecting short distances usually covering one or two main types of vegetation communities. Linkages are landscape level connections between very large core areas and generally span several thousand feet and cover multiple habitat types. Regional linkages have been identified on the MSCP Subarea Plan maps. Outside MSCP, regional vegetation maps and aerial photos may be used to evaluate the potential for a linkage.

When discussing wildlife corridors and linkages, describe the topography, habitat connectivity (direct or indirect), and vegetative cover. Discuss whether linear features, such as watercourses, ridges or valleys, are present. If a corridor is present, provide widths, lengths and describe existing adjacent land uses. List the types of species that are likely to use the corridor. Describe any existing development or circumstance that might hinder existing corridors or prevent future connections from being formed.

1.5 Applicable Regulations

Briefly detail the County, State and Federal environmental regulations that apply to the project. Discuss permitting requirements such as species "take" permits, consultations, and wetland/waters permits. If consultations have occurred or permits obtained, discuss in this section.

2.0 PROJECT EFFECTS

This section shall summarize direct and indirect biological effects anticipated as a result of the proposed action, including but not limited to construction activities, post-construction impacts and off-site impacts. Significance determinations should not be discussed in this section, but should be presented in sections 3.2, 4.2, 5.2, and 6.2.

For habitats/vegetation communities, including wetlands and jurisdictional waters, summarize the acreages in a numbered table, generally following the example below. The table shall include all habitats/vegetation communities on site, including those that are not impacted or do not require mitigation. For species impacts, summarize the anticipated loss of sensitive plant and wildlife populations or individuals. Summarize any impacts to wildlife corridors, linkages and wildlife nursery sites.

Also discuss "impact neutral" areas that are not considered impacted but cannot be credited toward mitigation requirements (e.g., wetlands and wetland buffers, and circumstances discussed in the Biological Report Format and Content Requirements, section 4.2).

Table X. Sample, Habitat/Vegetation Communities and Impacts

Habitat / Vegetation Community	Existing (acres) [1]	Impacts (acres) [1]	Offsite Impacts (acres) [2]	Impact Neutral (acres) [3]
TOTAL				

[1] An estimate of the on-site acreage, generally rounded to the nearest tenth of an acre. For wetlands and vernal pools, the acreage may be presented in square footage or hundredths/thousandths of an acre.

[2] Include a column for offsite impact acreage, if the project will impact offsite biological resources.

[3] Include a column for impact neutral acreage, if applicable. For example, all wetlands and wetland buffers shall be counted as "impact neutral."

3.0 SPECIAL STATUS SPECIES

3.1 Guidelines for the Determination of Significance

The project would have a substantial adverse effect, either directly or through habitat modifications, on one or more species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

Each of the items listed under section 4.1 of the Guidelines for Determining Significance – Biological Resources should be evaluated in the report to provide evidence to support the determination of whether or not the impact is significant.

3.2 Analysis of Project Effects

Using the guidelines in *Section 3.1*, discuss the significance of any potential direct impacts to sensitive species identified on the site. Impacts are expected when a plant species was identified outside of areas proposed for preservation, or a wildlife species was identified as nesting, foraging or otherwise occurring in areas outside of the land proposed for preservation. Provide numbers of individuals and relative percentage of the population that will be impacted. Refer to *Section 1.3* for methods by which to measure population size and density and, for annual plant species and geophytes, the "likely limits of occurrence" (LLO). The report must also address whether impacts can be minimized onsite. The analysis must make a conclusion, based on the significance guidelines, whether or not these impacts are significant.

Guidelines that do not apply to the proposed action shall be listed with a brief explanation of why the guideline does not apply. For example, "The proposed project will not result in significant impacts under the following guidelines for the following reasons:

3.1.A. No state or federally listed species would be impacted by the project.
3.1.D. The site contains no habitat suitable for the arroyo toad.
3.1.E. No golden eagles are on site or within 4,000 feet of the site."

3.3 Cumulative Impact Analysis

A reasonable list of cumulative projects should be compiled based on past, present, and future projects that could also cumulatively contribute to the project's significant impacts. For each potential impact, a study area must be defined. The consultant, in consultation with County staff, must determine the extent of the area used in the cumulative analysis. The area should be defined by considering the following factors and others, as appropriate: land use, MSCP or HCP boundaries, species ranges, habitats, site conditions, topography, natural history of the species, best available scientific literature, etc., using best professional judgment. Analyze the significance of the cumulative impact to special status species, including raptor foraging habitat. The consultant shall determine whether the project makes a cumulatively considerable contribution to special status species, based on a project-specific analysis and the factors described above. When the project's contribution to the cumulative impact is significant, the analysis shall discuss mitigating effects of existing regional conservation plans if applicable. Mitigation may also include a reduction in the project's contribution to the loss, or a specific on- or off-site mitigation plan.

For larger projects and Environmental Impact Reports, the analysis of potential cumulative impacts should be structured as follows: "The cumulative projects study area was chosen because xxx. The cumulative projects will impact xxx (sample: xxx individuals or xxx percent). This is/is not significant because xxx." (If significant), "The project's contribution is xxx percent of the total cumulative impact. This is/is not considerable because xxx." For smaller-scale projects and those covered by an approved multi-species conservation plan, other formats for cumulative impact analysis may be appropriate. However, a project may have significant cumulative effects notwithstanding the project's conformance with a regulatory program or existing mitigation plan such as a Habitat Conservation Plan (HCP) or Natural Communities Conservation Plan (NCCP). CEQA requires an appropriate cumulative study area (geographic scope) when determining which projects to include in a cumulative analysis. If the appropriate study area is entirely within the MSCP, a project may rely on the MSCP to determine that the project's impacts are not cumulatively considerable. If, however, a project is

located on the periphery of the MSCP, or the project lies both within and outside the MSCP, the cumulative study area must extend beyond the boundaries of the MSCP as necessary to address the appropriate resource(s). Cumulative mitigation measures should only address significant cumulative impacts.

3.4 Mitigation Measures and Design Considerations

For sensitive species, mitigation must consist of compensatory habitat that provides equal or greater benefit to the species. For low-level sensitive species (C- and D-listed plants, Group II animals), this is generally done concurrently with habitat-based mitigation. For the high-level sensitive species (A- and B-listed plants, Group I animals), the mitigation requirement shall be ratio based. Survey results for the mitigation site must demonstrate it meets this basic mitigation requirement. Species-based mitigation land may also satisfy the habitat/vegetation community mitigation requirements of the same project.

Provide brief descriptions of proposed mitigation measures and design considerations. Refer to Attachment A of these report format and content requirements for mitigating impacts to burrowing owls, Attachment B for Hermes copper butterfly, Attachment C for cactus wren and Attachment D for Typical Mitigation Measures. For each measure, state the impact being mitigated. Some mitigation measures will require additional details, such as a Resource Management Plan (RMP)/Habitat Management Plan (HMP), or a Conceptual RMP to which more detail can be added later in the environmental review process to make it an RMP. Guidelines for preparing a Conceptual Resource Management Plan are given in Attachment E.

3.4.1 Plant Species

Species-based mitigation shall be provided for List A and List B plant species. Mitigation at a 2:1 or 3:1 ratio for A-listed species shall be provided, depending on the sensitivity of the affected population. Mitigation at a minimum ratio of 1:1 shall be provided for B-listed species. For annual plant species and geophytes, the report shall define impacts and mitigation in terms of the species' "likely limits of occurrence" (LLO) and confirmation of the species presence on the mitigation site (refer to *Section 1.3* for methods of measurement). The report must discuss habitat preservation and management of the mitigation site and measures to minimize impacts onsite, as applicable.

3.4.2 Animal Species

Species-based mitigation shall be provided for Group I animal species. The report shall determine whether the mitigation site directly benefits the species

(presence verified) and provides greater benefit to the species than that impacted. The report shall propose mitigation measures above normal habitat mitigation and may propose occupation by an equal or greater number of Group I individuals. The report must propose adequate mitigation which may include preservation and management of the mitigation site, construction limitations during breeding season, and measures to minimize edge effects.

3.5 Conclusions

For each significant impact, determine if the proposed mitigation measures have reduced the significance level to "less than significant" in accordance with the stated Significance Guidelines.

4.0 RIPARIAN HABITAT OR SENSITIVE NATURAL COMMUNITY

The format of the biology reports is based on the CEQA Guidelines, which discusses riparian and sensitive habitats in a separate section from wetlands. Jurisdictional wetlands are discussed in *Section 5.0.*

4.1 Guidelines for the Determination of Significance

> *The project would have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.*

Each of the items listed under section 4.2 of the Guidelines for Determining Significance – Biological Resources should be evaluated in the report to provide evidence to support the determination of whether or not the impact is significant.

4.2 Analysis of Project Effects

Using the guidelines in *Section 4.1*, discuss the significance of all direct and indirect vegetation and habitat impacts that might occur as a result of the proposed project. The evaluation should consider the type and density of proposed development, potential uses within the open space and basic project design. Along with each impact, provide a determination as to whether the impact is significant and whether mitigation may be applied to reduce the significance. The determination of significance should be accompanied by a brief explanation as to how the conclusion was reached.

All potential impacts resulting from any part of the project must be included, even if the impacts are temporary, off-site or may not occur until a future

phase of the project, such as grading following a Tentative Map. The impact analysis shall be separated according to the significance guidelines listed in *Section 4.1*. Guidelines that do not apply to the proposed action shall be listed with a brief explanation of why the guideline does not apply.

Habitat that will potentially be removed as a result of grading or clearing associated with the project is considered impacted. For most discretionary actions, any habitat not protected within open space easements is considered impacted since few restrictions apply to prevent future clearing. Use permits and other types of actions tied directly to plot plans may, in some cases, consider impacts only to that land specifically proposed for development. In all cases, fire fuel modification and vegetation management requirements, and off-site improvements are part of the project and are considered direct impacts.

Open space should be conserved in single blocks rather than multiple small patches, preferably with off-site connectivity to other open space areas. No isolated pockets of open space should be proposed for mitigation, except when avoidance is required for a particular resource by an ordinance. Existing and proposed open space, publicly owned lands, and established preserves or mitigation banks are preferred to provide off-site connectivity. The value of connectivity to adjacent unprotected vacant land shall consider the likely future viability of that connection. A site may be in a heavily developed area, but a small isolated drainage or creek may require protection under RPO. In these cases, only the resource requiring avoidance or protection, and its associated buffer, will be placed within open space. For impact analysis and mitigation purposes, land within these isolated open space areas should be considered "impact neutral", meaning they are not considered impacted, nor can they be used towards mitigation requirements.

The area within 100 feet of an existing permitted and occupied structure shall be considered "impact neutral." For this paragraph, structure is defined as a residence and attached garage, building or related facility that is designed primarily for human habitation or buildings designed specifically to house farm animals. Decking, fences, sheds, gazebos, and detached garages less than 250 square feet are not considered structures for the purposes of this paragraph.

When a project proposes a subdivision that will result in one or more residential lots larger than 15 acres, the applicant may choose to either consider the whole site impacted, or to limit the impact areas. For these large lot subdivisions, the options are:

1. Typical subdivision processing. The applicant for the proposed map may choose to consider all land not included within an open space easement as impacted. By doing this during the map phase, impacts would be

assessed and mitigation proposed for the entire site. The future parcel owner would still be required to obtain permits for new discretionary actions not foreseen in the map phase (such as additional fire fuel modification and vegetation management, agricultural clearing, and clearing for accessory structures), but the environmental review process for those future discretionary actions would be shortened.

2. Using "impact neutral" designations. The applicant may choose to have just 5 acres per new lot considered in the impact and mitigation analysis. The proposed map must show where these 5 acres would likely be cleared on each lot and those would be the areas analyzed. The environmental documents would state that any remaining areas not included within open space were considered "impact neutral" for purposes of analysis, meaning that the area is not considered impacted or used for mitigation credit. Any future clearing within the "impact neutral" areas would require appropriate permits and full environmental review.

The analysis must make a conclusion, based on the significance guidelines, whether or not these impacts are significant.

4.3 Cumulative Impact Analysis

Format and discussion shall follow the instructions in *Section 3.3*. For habitats and vegetation communities, the study area may be the County defined "ecoregion" or other applicable area. Format and discussion shall follow the instructions in *Section 3.3*.

4.4 Mitigation Measures and Design Considerations

Provide brief descriptions of proposed mitigation measures and design considerations. Refer to Attachment D of these report requirements for the County's Typical Mitigation Measures. For each measure, state the impact being mitigated. Some mitigation measures may require additional details, such as:

1. Revegetation Plans –A Final Plan may be required as a condition of the project, to be completed at a later date (i.e. prior to grading or finalizing the map). The biological report shall provide a Conceptual Revegetation Plan in accordance with the County's Guidelines. The Conceptual Revegetation Plan must follow the County's Report Format and Content Requirements – Revegetation Plans; however, the conceptual plan need not be prepared by a consultant on the County's Approved Revegetation Plan Preparer list, and neither a cost estimate nor detailed irrigation and landscape architect drawings are required.

2. Resource Management Plans (RMP) (formerly known as Habitat Management Plans (HMPs) – a Final Plan may be required as a condition of the project, to be completed at a later date (i.e. prior to grading or finalizing the map). The biological report shall provide a Conceptual Resource Management Plan in accordance with the County's Guidelines.

4.5 Conclusions

Format and discussion shall follow the instructions in Section 3.5.

5.0 JURISDICTIONAL WETLANDS AND WATERWAYS

The format of the biology reports is based on the CEQA Guidelines, which discusses riparian and sensitive habitats in a separate section from wetlands. Riparian habitat is discussed in *Section 4.0.*

Each of the items listed under section 4.3 of the Guidelines for Determining Significance – Biological Resources should be evaluated in the report to provide evidence to support the determination of whether or not the impact is significant.

5.1 Guidelines for the Determination of Significance

> *The project would have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption or other means.*

Refer to Section 4.1 guidelines above.

5.2 Analysis of Project Effects

Describe all impacts to Federal, State, and County wetlands and/or jurisdictional waters. The report shall state whether impacts would require State or Federal wetland permits or Regional Water Quality Control Board (RWQCB) permits. The analysis must make a conclusion, based on the significance guidelines, whether or not these impacts are significant. Note: For projects subject to the RPO, avoidance of wetlands and wetland buffers is required.

5.3 Cumulative Impact Analysis

Format and discussion shall follow the instructions in Section 3.3.

5.4 Mitigation Measures and Design Considerations

Format and discussion shall follow the instructions in Section 3.4. Note that wetlands and wetland buffers that are required to be preserved by the Resource Protection Ordinance (RPO) are considered "impact neutral" and cannot be credited toward mitigation requirements.

5.5 Conclusions

Format and discussion shall follow the instructions in Sections 3.5.

6.0 WILDLIFE MOVEMENT AND NURSERY SITES

6.1 Guidelines for the Determination of Significance

> *The project would interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.*

Each of the items listed under section 4.4 of the Guidelines for Determining Significance – Biological Resources should be evaluated in the report to provide evidence to support the determination of whether or not the impact is significant.

6.2 Analysis of Project Effects

Using the guidelines in Section 6.1, discuss the project site in terms of existing wildlife corridors and linkages and wildlife nursery sites. Discuss corridor/linkage functions and what species are likely to be using the site for movement and breeding activities. Analyze whether there will be impacts to existing habitat connectivity both on- and off-site, or to a native wildlife nursery sites, based on the likely functions that will be retained after project implementation. Provide details such as extent of impact and whether connectivity and nursery sites might be retained elsewhere.

This section must also discuss the potential for increased wildlife road fatalities due to increased project-related traffic. Analyze the potential impacts, including the effects of corridor constriction or elimination from the project itself and/or from any proposed barriers or crossings. Include details regarding corridor widths and lengths that will result from the project. The analysis must make a conclusion, based on the significance guidelines, whether or not these impacts are significant.

Guidelines that do not apply to the proposed action shall be listed with a brief explanation of why the guideline does not apply.

6.3 Cumulative Impact Analysis

Format and discussion shall follow the instructions in Section 3.3.

6.4 Mitigation Measures and Design Considerations

Format and discussion shall follow the instructions in Section 3.4.

6.5 Conclusions

Format and discussion shall follow the instructions in Section 3.5.

7.0 LOCAL POLICIES, ORDINANCES, ADOPTED PLANS

7.1 Guideline for the Determination of Significance

> *The project would conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance, and/or conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan.*

Each of the items listed under section 4.5 of the Guidelines for Determining Significance – Biological Resources should be evaluated in the report to provide evidence to support the determination of whether or not the impact is significant.

7.2 Analysis of Project Effects

Using the guidelines in Section 6.1, discuss how the project will comply with local policies, ordinances, and plans. Guidelines that do not apply to the proposed action shall be listed with a brief explanation of why the guideline does not apply.

7.3 Cumulative Impact Analysis

Format and discussion shall follow the instructions in Section 3.3.

7.4 Mitigation Measures and Design Considerations

Format and discussion shall follow the instructions in Section 3.4.

7.5 Conclusions

Format and discussion shall follow the instructions in Section 3.5.

8.0 SUMMARY OF PROJECT IMPACTS AND MITIGATION

This section shall provide a brief text summary of project impacts and mitigation. The report shall include a numbered table with habitat acreages, generally following the example below. The table shall include all habitats/vegetation communities on site, including those that are not impacted or do not require mitigation. Use the sample table provided below.

Table X.X.
Habitat/Vegetation Communities, Impacts, Mitigation

Habitat / Vegetation Community	Existing (acres)[1]	Impacts (acres)[1]	Offsite Impacts (acres)[2]	Mitigation Ratio	Mitigation Required (acres)	Preserved On-Site (acres)[1]	Impact Neutral (acres)[3]	Off-Site Mitigation (acres)
Total								

[1] An estimate of the on-site acreage, generally rounded to the nearest tenth of an acre. However, for wetlands and vernal pools, the acreage may be presented in square footage or hundredths/thousandths of an acre.

[2] Include a column for offsite column if the project will impact offsite resources.

[3] Include a column for impact neutral acreage if applicable. For example, all wetlands and wetland buffers are counted as "impact neutral."

This section shall also provide a mitigation table that summarizes all mitigation measures and refers to the Guideline(s) that require each measure. Use the sample table provided below.

Table X.X.
Summary of Mitigation Measures

Proposed Mitigation	**Level of Significance after Mitigation**	**Guideline Number(s)**

9.0 REFERENCES

10.0 LIST OF PREPARERS AND PERSONS AND ORGANIZATIONS CONTACTED

Provide a list of preparers, noting each person included on the County list of approved consultants. The principal author must be on the list or the report will not be accepted.

TECHNICAL APPENDICES / ATTACHMENTS

The Table of Contents shall list each document attached to the report in the order in which they are referenced in the report. The following documents must be included in the report, either in the text (if size is appropriate) or as an Attachment:

A. Observed Species Lists, Flora and Fauna. A list of all species identified on the site, including the common name, scientific name and the vegetation community in which the species was identified.
B. Potential Sensitive Species List, Flora and Fauna (format follows) to contain all sensitive species with the potential to reside, forage or otherwise use the site. The table will include the conservation status, preferred habitat (i.e. vegetation, soil, elevation range, etc.) and whether the species was detected on the site. For species not detected, the table will include a determination of the potential for the species to be present currently or in the future and factual basis for that determination (the probable reason why the species was not detected during the survey).
C. A California Natural Diversity Database Form (CNDDB) must be attached to the final report for each sensitive species that was identified on the site. A copy of the CNDDB form shall also be sent to the CDFG.
D. Biological Resource Map and project plot plan/map (if not clearly shown on the biological resource map), unless these are included as clear reduced figures elsewhere in the document (clear 11x17-inch maximum figures are preferred).
E. Open Space Map and reduced copy of the Open Space Map to be included within the document (11x17 inch max), showing location of fencing and signage, if open space easements are proposed.
F. Signed survey reports for all directed or focused surveys. When applicable, a copy of the survey results letter sent to USFWS should be included. Signed survey reports may be bound separately from the main report to eliminate the need to resubmit the signed survey report if further revisions to the Biological Resource Report are necessary.
G. Vicinity and USGS topographic maps if not included elsewhere in the document.
H. Any other documents necessary to supplement the information provided within the biological report.

Sensitive Species Table Format. The County will provide a list of sensitive plant and animal species with the potential to exist on the project site. The report shall include each sensitive species on the list in table form documenting its sensitivity status (County, State and Federal, as appropriate), its preferred habitat and whether it was detected on-site by direct or indirect evidence. If the species was not detected, the table shall address its potential for occurrence (habitat assessment) with facts to support each conclusion. The following table shows the headings for the table that can be prepared in portrait or landscape format.

Scientific Name and Common Name	Sensitivity Code & Status (Federal, State, County, other)	Habitat Preference/ Requirements	Verified On Site Yes/No (direct / indirect evidence)	Potential to Occur On Site (Observed or L/M/H/U)	Factual basis for determination of occurrence potential

Sensitivity codes shall be defined at the end of the table.

2.3 Biological Resource Letter Report

A letter report may be adequate to document biological resources if the project site is small and/or the site has limited biological resources. Based on the information provided in the biological letter report, DPLU may require additional focused surveys and/or a Full Biological Resource Report.

2.3.1 Outline

The following outline should be followed when preparing a Biological Resources Letter Report.

Biological Resource Letter Report Outline

Summary

Introduction, Project Description, Location, Setting

Regional Context

Habitats / Vegetation Communities

Special Status Species

Jurisdictional Wetlands and Waterways

Other Unique Features / Resources

Significance of Project Impacts and Proposed Mitigation

Cumulative Impacts

References

Preparer and Persons/Organizations Contacted

Attachments

2.3.2 Content

Although a cover page is not required for a letter report, the first page of the report shall contain the following information:

- Project common name;
- Project numbers (i.e. TM, ZAP, etc.) including the environmental log number (ER);
- Date (original letter report date plus all revisions;
- Name of County Approved CEQA Consultant preparing document, firm name (if applicable) and address;
- Signature of County Approved CEQA Consultant;
- Project proponent's name and address;
- The following statement: "Prepared for The County of San Diego."

Summary

Provide a brief summary of the project, the biological resources present on the site, potential impacts and proposed mitigation. No new information should be provided in the summary that is not further explained elsewhere in the document. The purpose of the summary is to provide a quick reference for the public and decision-makers. Therefore, the language should be less technical than that used in the remainder of the document.

Introduction, Project Description, Location, Setting

Completely describe the proposed project, including all off-site impacts and fire fuel modification and vegetation management requirements. Provide a brief summary of the project location, survey dates and times, and biological resources present on the site.

Regional Context

Provide a general overview of the following, as applicable:

- Location relative to approved or proposed conservation plans
- Adopted or proposed NCCP subareas
- NCCP designations (such as PAMA, BRCA, Take Authorized, etc.)
- Adjacent to preserved lands, national forests, BLM lands
- Jurisdictional waterways and watersheds
- The section should reference aerial photos as numbered figure(s) showing the relationship of the project site with surrounding lands.

Habitats / Vegetation Communities

- Estimate acres present for each habitat type / vegetation community, rounded to the nearest tenth of an acre. However, for sensitive habitats (such as wetlands, jurisdictional waters, and vernal pools), the acreage may be presented in square footage or hundredths/thousandths of an acre.
- List dominant (indicator) species present.
- Describe habitat quality, including the level of previous disturbance.
- Discuss species abundance, composition and diversity in terms of vegetative structure and wildlife present.
- Discuss whether the habitat type is considered RPO Sensitive Habitat Lands, discuss the habitat tier (if MSCP), and discuss whether it is considered sensitive by state or federal agencies, as defined by these requirements.
- Discuss the conservation value of each habitat type in terms of regional and local importance relative to other areas of similar habitat off-site.

Special Status Species

- Address all sensitive species with potential to occur on the site or on land immediately adjacent to the site.
- Discuss large mammal use
- Discuss migratory bird and raptor foraging and/or nesting.
- If the results of the survey include high-level sensitive species (A- and B-listed plants, Group I animals), staff will generally require preparation of a Full Biological Report. When a sensitive species is identified on a property, provide the number and density of individuals. It may also be necessary to provide these measurements for off-site areas in order to fully determine the true size and extent of the local population. When feasible, the actual number of individuals should be counted in the field. When a plant species covers several acres (3 acres or more), the approximate number and density may be estimated using a reasonable

sampling method. Describe the method in the report. When the plant species is too small or numerous to count individually or individuals are not easily discernable from one another, the quadrat sampling method may be used to determine the density and cover per unit. These methods rely on accurate mapping and area calculation of the population. For annual plant species, in addition to accurate mapping, provide and map the "likely limits of occurrence" (LLO) onsite based upon suitable habitat and physical conditions. This is required because the population size and location will vary from year to year. For animal species, the number of individuals should be approximated based on actual sightings and other available signs, such as fecal deposits, tracks and nests or burrows. The method by which the number of individuals and density of a species is determined must be described in the biological report.

- Generally, if protocol or focused surveys are required a Full Biological Report is required. However, if Protocol Surveys are required with a Letter Report, summarize the report conclusions and attach the Protocol Survey report. If focused surveys (non-protocol surveys) are required, the Letter Report shall present the field methods and results. Focused surveys must be done by biologist(s) with demonstrable knowledge in field detection of the subject species. Protocol surveys for federally listed species must follow USFWS protocol. Permit numbers for biologists performing these focused surveys must be provided and field notes for each survey must be attached to the biological report. All point locations and inferred territories of these species must be included on the Biological Resources Map. For species too numerous to map or where exact locations are not known, a notation on the map will suffice.

Jurisdictional Wetlands and Waterways

- Describe all wetland and water resources found on the site.
- Estimate acres classified as County, State and/or Federal wetlands along with an explanation as to how the boundaries were delineated.
- Include a brief list of the dominant plant and wildlife species present that were either detected or likely using the site.
- Describe wetland habitat quality including disturbance, canopy cover, species diversity and connectivity to off-site habitat.
- Discuss the wetland in terms of local and regional importance.
- Wetlands must be accurately plotted on the Biological Resources Map.

Other Unique Features/Resources

Provide a brief description of unique features/resources including but not limited to:

- Wildlife Corridors and Linkages
- Topography/Connectivity
- Regional or Local Setting

- Other biological functions such as foraging, hill-topping, roosting, rock outcroppings
- Sensitive soils

Significance of Project Impacts and Proposed Mitigation

The letter report shall discuss all significant impacts to biological resources, and shall propose applicable and feasible mitigation measures that will reduce impacts to less than significant. Include a table with habitat acreages, generally following the example below. The table shall include all habitats/vegetation communities on site, including those that are not impacted or do not require mitigation.

Table X.X. Sample
Habitat/Vegetation Communities, Impacts, Mitigation

Habitat / Vegetation Community	Existing (acres)[1]	Impacts (acres)[1]	Offsite Impacts (acres)[2]	Mitigation Ratio	Mitigation Required (acres)	Preserved On-Site (acres)[1]	Impact Neutral (acres)[3]	Off-Site Mitigation (acres)
Total								

[1] An estimate of the on-site acreage, generally rounded to the nearest tenth of an acre. However, for wetlands and vernal pools, the acreage may be presented in square footage or hundredths/thousandths of an acre.

[2] Include a column for offsite impacts if the project will impact offsite resources.

[3] Include a column for impact neutral acreage if applicable. For example, all wetlands and wetland buffers are counted as "impact neutral."

Cumulative Impacts

A reasonable list of cumulative projects should be compiled based on past, present, and future projects that could also cumulatively contribute to the project's significant biological impacts. Analyze the significance of the cumulative impact. Determine whether the project makes a cumulatively considerable contribution to the impact. The report should address each resource in terms of potential cumulative impacts. When the project's contribution to the cumulative impact is significant, the analysis should include a discussion of mitigating effects of existing regional conservation plans if applicable. Mitigation may also include a reduction in the project's contribution, or a specific on- or off-site mitigation plan.

For smaller-scale projects and those covered by an approved multi-species conservation plan, other formats for cumulative impact analysis may be appropriate. However, a project may have significant cumulative effects notwithstanding the project's conformance with a regulatory program or existing mitigation plan such as a Habitat Conservation Plan (HCP) or Natural

Communities Conservation Plan (NCCP). For more details regarding cumulative impact analyses, refer to section 3.3 of the content guidelines for Full Biological Resource Reports.

References

Preparer and Persons/Organizations Contacted

Biological Resource Letter Reports must be prepared by a County-approved consultant.

Attachments

The following documents should be included in the report, either in the text (if size is appropriate) or as an Attachment:

- Observed Species Lists, Flora and Fauna. A list of all species identified on the site, including the common name, scientific name and the vegetation community in which the species was identified.
- Potential Sensitive Species List, Flora and Fauna (format follows) to contain all sensitive species with the potential to reside, forage or otherwise use the site. The County will provide a list of sensitive plant and animal species with the potential to exist on the project site. The report shall include each sensitive species on the list in table form documenting its sensitivity status (County, State and Federal, as appropriate), its preferred habitat and whether it was detected on-site by direct or indirect evidence. If the species was not detected, the table shall address its potential for occurrence (habitat assessment) with facts to support each conclusion. Sensitivity codes shall be defined at the end of the table.
- California Natural Diversity Database Form(s) (CNDDB) must be attached to the final report for each sensitive species identified on site. A copy of the CNDDB Form shall also be sent to the CDFG.
- Biological Resources Map including a reduced copy within the letter report.
- Open Space Map including a reduced copy of the Open Space Map in the report, if Open Space is proposed.
- Signed survey reports for all directed or focused surveys. When applicable, a copy of the survey results letter sent to USFWS should be included. Signed survey reports may be bound separately from the letter report to eliminate the need to resubmit the signed survey report if further revisions to the Biological Letter Report are necessary.
- Vicinity and USGS topographic maps and aerial photograph if not included elsewhere in the document.
- Any other documents necessary to supplement the information provided within the biological letter report.

3.0 BIOLOGICAL RESOURCE MAPPING GUIDELINES

3.1 SanBIOS

Biological Resources mapping must follow the SanBIOS formats. Created in 2009, the SanBIOS database serves as a single repository of species observations collected by various departments within the County of San Diego's Land Use and Environment Group. Coordination of biological species tracking between departments ensures a complete dataset, meeting a specific data standard, and will provide the best available information to environmental scientists, advocacy groups, all County departments, and various agencies. By adhering to common standards, organizations are more able to share data and determine the value of a dataset.

In accordance with County of San Diego's GIS Policy #4, all species observations are to be collected and submitted to the County using the SanBIOS standards and template. SanBIOS GIS Data Standard User Manual, Version 1 is included in these Report Format and Content Requirements as Appendix F.

3.2 Extent of Mapping Required

3.2.1 Project Boundary

Biological Resource mapping must include the entire project parcel(s) plus 100 feet onto adjoining properties. 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 County Project Manager.

3.2.2 Off-site Improvement Areas

Any required off-site improvements (e.g., road improvements, fire fuel modification and vegetation management requirements, utility extensions, stormwater Best Management Practices, etc.) must be mapped in accordance with these requirements. Mapping should include maximum area necessary to complete the improvement

3.2.3 Off-site Biological Mitigation Areas

If off-site biological mitigation is proposed and the off-site area is not part of a formally adopted mitigation bank, the proposed areas must be mapped in accordance with these requirements.

3.3 Map Layout

3.3.1 Base Map

The Biological Resource Map must be completed using a base map that includes:

- The most recent project plot plan including all existing and proposed easements for utilities, roads, drainage, etc.
- The proposed maximum limits of disturbance for the project (on and off site); including grading, fire fuel modification and vegetation management requirements, septic systems, wells, construction staging areas, road improvements, drainage improvements, etc.
- Fire fuel modification and vegetation management requirements including fuel modification adjacent to roads.
- Proposed Biological Open Space/Conservation Easements.
- Limited Building Zone Easements. These easements must be located adjacent to all biological open space easements to prevent fire fuel modification and vegetation management within biological open space areas. They should be a minimum of 100 feet in width unless an extended or reduced width is approved by the appropriate fire authorities and supported by the Fire Protection Plan for the project (where applicable). See Attachment G of these guidelines for a visual depiction of Limited Building Zone Easements.
- Existing Easements. All existing easements must be shown and labeled. This includes previously dedicated biological open space easements, steep slope easements, road easements, utility easements, etc.
- 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
- Bar Scale

NOTE: 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.

3.3.2 Scale

Acceptable scales are 1” = 20’ through 1” = 200’. The maximum allowable size of the map sheet is 48” x 36”. Each map shall include a bar and number scale. Regardless of the scale used, the map must be legible. Note: Scale should be appropriate to fit entire project on one sheet and to clearly view the resources and legend. For extremely large project sites that would not fit on one sheet at

the above scales, coordinate with the County Staff Biologist to determine appropriate scale.

3.3.3 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 size prohibits the use of a single sheet map using the acceptable scale (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 and be of a consistent scale.

3.3.4 Submittal Requirements

For initial and other draft submittals, three to five copies of the Biological Resource Map shall be submitted. The number of maps necessary at submittal will depend on whether consultation/meetings with the resource agencies will be required. Upon finalization, additional copies will be required based upon public review and/or public hearing requirements. With the final document, a digital version of the Biological Resource Map shall be submitted in accordance with DPLU Electronic Document Guidelines.

3.4 Habitat Identification

3.4.1 Required Habitat Classification System

All Biological Resource Maps and studies shall incorporate the modified Holland code classification system for vegetation communities. A Holland Classification must cover all areas on the project site and surrounding area. The map legend must reference both the Holland numeric code as well as the Holland vegetation community name.

Habitat areas shall be clearly delineated on the Biological Resource Maps using either varying patterns or varying colors.

The following references shall be used for vegetation:

- 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*, 6 p.

3.4.2 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 appear with the greatest vegetation coverage shall be used to identify the vegetation community.

3.4.3 Burned Habitat

Areas recovering from fire shall be mapped using the resurgent vegetation as indicators of the probable resultant habitat. When the fire is so recent that no new vegetation has emerged, historical evidence such as aerial photos and the County's vegetation mapping information shall be used to map the habitat that was burned.

3.4.4 Previously Graded or Cleared Lands:

- Unauthorized Grading/Clearing – Areas graded or cleared without a legal permit or authority shall be mapped as the vegetation type present prior to the unauthorized activity (forensic mapping) based on County records and regardless of the time that has lapsed. Historical evidence, such as aerial photography or the County's vegetation mapping information, shall be used to determine the habitat that once existed.

- Legal Clearing Related to Preparation of 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 California Environmental Quality Act requires assessment of the "whole of the proposed project" which includes activities completed in preparation for the project. Examples include geotechnical testing, septic 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 shall be used to determine the habitat that once existed.

- Legal Clearing – Areas graded or cleared with legal authority (i.e. upon issuance of a County permit) that are not related to preparing the land for development may be mapped as the existing disturbed land, developed land, agriculture or other appropriate habitat type.

3.4.5 Additional Habitat Identification Information

While Holland gives information regarding habitat attributes, the following additional guidance shall be followed in determining the proper code for disturbed land, non-native grassland, agriculture, coastal sage-chaparral scrub, and native grassland classifications:

- Developed (Holland 12000) – Land that has been constructed upon or otherwise covered with a permanent unnatural surface shall be considered Developed. Areas where no natural land is evident due to a large amount of debris or other materials being placed upon it may also be considered Developed (e.g. car recycling plant, active quarry, etc.).

- Disturbed Land (Holland 11300) – Disturbed land includes areas in which the vegetative cover comprises less than 10 percent of the surface area (disregarding natural rock outcrops) and where there is evidence of soil surface disturbance and compaction from previously legal human activity; or where the vegetative cover is greater than 10 percent, there is soil surface disturbance and compaction, and the presence of building foundations and debris (e.g., irrigation piping, fencing, old wells, abandoned farming or mining equipment) resulting from legal activities (as opposed to illegal dumping). Vegetation on disturbed land (if present) will have a high predominance of non-native and/or weedy species that are indicators of surface disturbance and soil compaction, such as Russian thistle (*Salsola tragus*), telegraph weed (*Heterotheca grandiflora*), horehound (*Marrubium vulgare*), and sow-thistle (*Sonchus oleraceus*). Although non-native grasses may be present on disturbed land, they do not dominate the vegetative cover. Examples of disturbed land include the following activities, if preformed under legal means: recently graded firebreaks, graded construction pads, construction staging areas, off-road vehicle trails, and old homesites.

- Non-native grassland (Holland 42200) – Non-native grassland is a mixture of annual grasses and broad-leaved, herbaceous species. Annual species comprise from 50 percent to more than 90 percent of the vegetative cover, and most annuals are non-native species. Non-native grasses typically comprise at least 30 percent of the vegetation, although this number can be much higher in some years and lower in others, depending on land use and climatic conditions. Usually, the annual grasses are less than 1 m (3 ft) in height, and form a continuous or open cover. Emergent shrubs and trees may be present, but do not comprise more than 15 percent of the total vegetative cover. Characteristic non-native grassland species include foxtail chess (*Bromus madritensis* ssp. *rubens*), ripgut grass (*Bromus diandrus*), wild oats (*Avena* spp.), fescues (*Vulpia* spp.), red-stem filaree (*Erodium cicutarium*), mustards (*Brassica* spp.), lupines (*Lupinus* spp.) and goldfields (*Lasthenia* spp.), among others. This definition is consistent with non-native grassland definitions in conservation plans adopted by other jurisdictions

within San Diego County.

- Agriculture (Holland 18000-18320) – Agriculture refers to lands subject to routine and ongoing commercial operations associated with farm, grove, dairy or other agricultural businesses. Agriculture shall include: (1) The cultivation and tillage of the soil; crop rotation; fallowing for agricultural purposes; the production, cultivation, growing, replanting and harvesting of any agricultural commodity including viticulture, vermiculture, apiculture, or horticulture; (2) The raising of livestock, fur bearing animals, fish, or poultry, and dairying; (3) Any practices performed by a farmer on a farm as incident to or in conjunction with those farming or grove operations, including the preparation for market, delivery to storage or to market, or delivery to carriers for transportation to market; and (4) Ordinary pasture maintenance and renovation and dry land farming operations consistent with rangeland management and soil disturbance activities. All such activities must be consistent with the economics of commercial agricultural operations and other similar agricultural activities. Irrigation or disking alone does not indicate an improved pasture. Grazing land ("unimproved pastureland") continues to retain the biological value of grassland and may not meet the Agriculture vegetation classification. Agricultural land left fallow may revert to non-native grassland habitat or other native/naturalized habitat. An assessment shall be made as to whether the land now supports native or naturalized habitat after an absence of active agricultural activity, such as seeding or harvesting for four or more years.

- 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 – 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 (Holland 42100) should be identified when *Nassella* species and other native herbs including those in the genera *Sanicula*, *Sidalcea*, *Sisyrinchium*, *Eschscholzia* or *Lasthenia* are present. The percentage cover of Native species at any one time may be quite low. An area will qualify as Native Grassland if more than a 20% cover of native perennial species is present using a 1 x 1 meter quadrat.

3.5 Sensitive Species, Other Habitat Features and Wetland Mapping Requirements

3.5.1 Sensitive Species

Locations/areas of observed sensitive plant and animal species shall be identified on the biological resources map. Sensitive species locations/areas should be shown on the same map as the habitat classifications. It may also be necessary to provide these measurements (through additional field work and/or historical/available data) for off-site areas in order to fully determine the true size and extent of the local population. For species too numerous to map the limits of the population shall be delineated. Where the species is distributed across the entire site or where exact locations are not known, a notation on the map will suffice. For annual plant species and geophytes, in addition to accurate mapping of where the species were observed, provide and map the "likely limits of occurrence" (LLO) onsite based upon suitable habitat and physical conditions. Mapping of the LLO is required because the population size and location will vary from year to year.

3.5.2 Significant Habitat Features

Habitat features such as caves, rock outcroppings or cliff faces, shall 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).

3.5.3 Jurisdictional Wetlands and Waterways

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.

The following is the County Resource Protection Ordinance (RPO) wetland definition:

(1) Lands having one or more of the following attributes are “wetlands”:
   (aa). At least periodically, the land supports a predominance of hydrophytes (plants whose habitat is water or very wet places);
   (bb). The substratum is predominantly undrained hydric soil; or
   (cc). An ephemeral or perennial stream is present, whose substratum is predominately non-soil and such lands contribute substantially to the biological functions or values of wetlands in the drainage system.

(2) Notwithstanding paragraph (1) above, the following shall not be considered “Wetlands”:
   (aa) Lands which have attribute(s) specified in paragraph (1) solely due to man-made structures (e.g., culverts, ditches, road crossings, or agricultural ponds), provided that the Director (of Planning and Land Use, Public Works, or Parks and Recreation) determines that they:
      (i) Have negligible biological function or value as wetlands;
      (ii) Are small and geographically isolated from other wetland systems;
      (iii) Are not Vernal Pools; and,
      (iv) Do not have substantial or locally important populations of wetland dependent sensitive species.
   (bb) Lands that have been degraded by past legal land disturbance activities, to the point that they meet the following criteria as determined by the Director (of Planning and Land Use, Public Works, or Parks and Recreation):
      (i) Have negligible biological function or value as wetlands even if restored to the extent feasible; and,
      (ii) Do not have substantial or locally important populations of wetland dependent sensitive species.
      (Note: Activities on lands not constituting "Wetlands" because of this paragraph (2) may still be subject to mitigation, avoidance and permitting requirements pursuant to the California Environmental Quality Act or other applicable County, state and federal regulations.)

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, and hydrology) as those of the California Department of Fish and Game (CDFG) and the U.S. Army Corps of Engineers, although those agencies 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 with 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 County, State and/or Federal wetlands and waters of the U.S., 2) the project applicant believes that using the simplified method of wetlands mapping results in an overly 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 differs from the federal and state 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 Map. Data sheets or other information that was used to complete the delineation should be provided in addition to the mapping.

3.5.4 Wetland Buffer

The boundary 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. The following is the wetland buffer definition from the Resource Protection Ordinance:

> *"Lands that provide a buffer area of an appropriate size to protect the environmental and functional habitat values of the wetland, or which are integrally important in supporting the full range of the wetland and adjacent upland biological community. Buffer widths shall be 50 to 200 feet from the edge of the wetland as appropriate based on the above factors. Where oak woodland occurs adjacent to the wetland, the wetland buffer shall include the entirety of the oak habitat (not to exceed 200 feet in width)."*

The factors considered in determining the appropriate width of the buffer are the

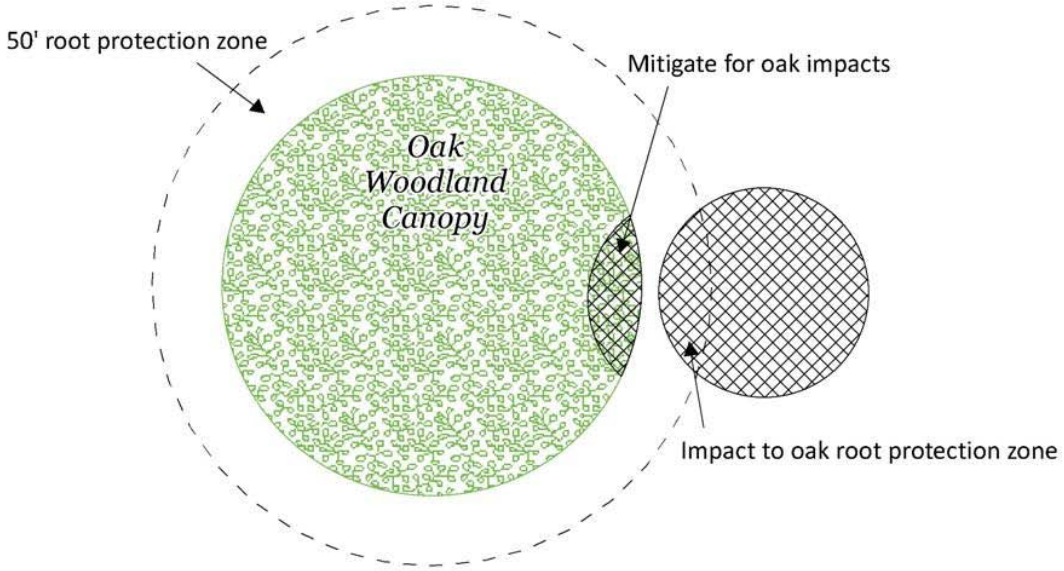
current setting of the project site (natural v. disturbed), the quality of the vegetation communities on site, the presence/absence of wildlife, and the size of the wetland.

3.5.5 Oak Woodlands

For oak woodland habitats, the edge of the canopy defines the woodland boundary. All mature oak trees (measuring 6" dbh or greater), identified within 100 feet of established oak woodland shall be mapped as part of the woodland.

To protect the sensitive root systems of this habitat, a 50-foot oak root protection zone, measured outward from the outside edge of the canopy, must be included on the map. This oak root protection zone typically consists of other habitat and is not part of the oak woodland. Generally, when planning the boundaries of open space easements, the oak woodland and the oak root protection zone should be included within the easement, or impacts must be addressed. Impacts from ground disturbance and compaction in the oak root protection zone will result in proportional impacts to the oak woodland (Figure 1). For example, one acre of impact to the oak root protection zone equals one acre of impact to the oak woodland. Therefore, where a project results in ground disturbance or compaction within the mapped oak woodland or oak root protection zone, the impact must be mitigated at a 3:1 ratio with oak woodland habitat.

FIGURE 1
Example of Oak Woodland Impacts and Mitigation Resulting from
Oak Root Zone Impacts



An exception will be made for utility trenching within the oak root protection zone but outside of the oak woodland canopy as long as the trench is routed half way between the canopies of the oak woodland and the other tree, where the roots are generally thinner. In this case, the digging of a utility trench through part of the oak root zone is considered a temporal, less than significant impact on the oak woodland since the utility lines within the trench would not form a substantial barrier and the roots could reestablish. Impacts to the habitat type disturbed by the trenching must still be mitigated.

[Attachment A]

STRATEGY FOR MITIGATING IMPACTS TO BURROWING OWLS IN THE UNINCORPORATED COUNTY

LIST OF TABLES

LIST OF FIGURES

1.0 INTRODUCTION

1.1 Purpose and Need

Impacts to burrowing owls must be avoided to the maximum extent practicable, as required by the County of San Diego's Biological Mitigation Ordinance (BMO). Occasionally, impacts are unavoidable. The purpose of this strategy is to identify a standard approach to mitigating those unavoidable impacts to burrowing owls in unincorporated San Diego County, particularly those impacts in East Otay Mesa (EOM), so that burrowing owls will continue to exist in San Diego County.

In the late 1970s, San Diego County supported 250-300 pairs of burrowing owls. In 2007, the maximum number of burrowing owl pairs in San Diego County was estimated to be at the most 46 (Lincer and Bloom, 2007). About 25 of these pairs were in Grasslands or sparse Coastal Sage Scrub with Grasslands in EOM; the others were at various locations in the county (including a few in the desert), generally in groups of fewer than three pairs. This strategy focuses on impacts and mitigation in EOM because most of the burrowing owls are currently there, but impacts and mitigation at other locations in the County are also addressed.

Up to about 445 acres of mostly Non-native Grassland within the East Otay Mesa Specific Plan are either planned for development or are approved for development in EOM and the developers will need to purchase land for mitigation. No project applications have been submitted to the County for approximately 172 acres in EOM. Mitigation land will also likely be needed for those properties. The developers with projects in EOM have been encouraged to find mitigation lands in EOM so that the burrowing owls on the mesa are not extirpated; however, as projects and their associated mitigation (purchased land) are approved, less acreage is available for sale as mitigation in EOM. This strategy is needed to direct mitigation to appropriate lands.

All projects in the unincorporated County that require discretionary permits and that would impact burrowing owls, or would impact grasslands in EOM (all of which are considered by this strategy to be occupied burrowing owl habitat), are subject to this strategy. In EOM, the burrowing owl strategy applies to all development sites that have not received written concurrence on their minor or major amendments from the Wildlife Agencies, except Otay Crossings Commerce Park and Otay Business Park. The applicants for those two projects have negotiated their mitigation for burrowing owls with the Wildlife Agencies and the burrowing owl strategy is based on that mitigation.

1.2 Background

1.2.1 Inside the MSCP

When the Multiple Species Conservation Program (MSCP) County Subarea Plan was prepared, the EOM landowners requested that their lands not be included; therefore, the County designated their lands as minor or major amendment areas, depending on the biological resources thought to be present at the time. Within major or minor amendment areas, take of covered species may be authorized only after such areas have become part of the Plan through the appropriate amendment process. The amendment process includes an evaluation of the proposed development and mitigation

and whether it is consistent with the goals and objectives of MSCP, and requires approval by both the County and the Wildlife Agencies (U.S. Fish and Wildlife Service [USFWS] and California Department of Fish and Game [CDFG]). Table 3-5 of the MSCP identified Otay Mesa as being important for burrowing owls and states that "eight known burrowing owl locations occur within major amendment areas of the South County Subarea Plan, and the conservation of occupied burrowing owl habitat must be one of the primary factors in preserve design during the permit amendment process."

The Biological Mitigation Ordinance (BMO), which implements the MSCP, requires that impacts to burrowing owl habitat be avoided to the maximum extent practicable. All proposed projects that would impact burrowing owls should be evaluated to determine if the impacts can be avoided or minimized. If impacts are unavoidable, the BMO requires mitigation to be through the conservation of occupied burrowing owl habitat or lands appropriate for restoration, management and enhancement of burrowing owl nesting and foraging requirements at a ratio of no less than 1:1. In the past, mitigation for unavoidable impacts to burrowing owls in EOM was approached project-by-project with various measures, such as paying into a Grassland fund, buying property for preservation, and translocating burrowing owls, to mitigate for loss of burrowing owls, their burrows, and their Native and Non-Native Grassland habitat. In the early 2000's, the only mitigation required for Grassland impacts was to purchase Tier 3 or higher credits in a mitigation bank, but Grasslands were scarce in the mitigation banks. For unoccupied habitat, the BMO allowed applicants to up-tier and mitigate with a different habitat, such as Coastal Sage Scrub rather than grasslands.

Consistent with Table 3-5's findings, the burrowing owl population on EOM is still critical to maintaining burrowing owls in the County. In 2006 several project applicants began to assemble mitigation packages for their projects on EOM. To facilitate these projects, the County set up an Otay Mesa Grassland Mitigation Fund for projects proposing to impact Non-native Grassland habitat that was not occupied by burrowing owls in EOM. Monies from this fund are intended to be used to support enhancement, management, monitoring and acquisition associated with mitigation for Grassland and burrowing owl impacts. Impacts to Non-native Grasslands were mitigated at $10,000 per acre. A portion of these funds were used to install artificial burrows within a conserved site in EOM and to actively translocate burrowing owls in association with one development project. Some of the owls did not survive the translocation period and the others did not remain at the site once they were released; however, subsequent other enhancements for burrowing owls at the relocation site have led to the property becoming occupied by other owls. Therefore, there is some reason to be optimistic that burrowing owl colonies can be established and expanded in Otay Mesa/East Otay Mesa. Due to the increased awareness of the importance of the EOM burrowing owl population, contribution to the Fund as a form of mitigation is no longer an option without the assurance that an adequate amount of suitable habitat will also be conserved to support long-term persistence of burrowing owls in EOM.

Since 2006, the County and Wildlife Agencies have been working with several project applicants to assemble mitigation packages for impacts to the burrowing owl and other sensitive species on EOM. Several projects and their mitigation have been approved in EOM, the environmental review process is being conducted for others, and for a few parcels no projects are, as of June 2010, being processed by the County. The landfill that was approved by voters on June 8, 2010 may affect burrowing owl habitat in the

southeastern corner of EOM; however, no analyses for the project have been submitted to the County.

The County and the Wildlife Agencies have required that, to the extent practicable, mitigation for impacts to grasslands and burrowing owls in EOM occur in EOM. Those projects that have impacted grasslands and burrowing owls have purchased and preserved grasslands in EOM at either a 1:1 ratio, with the exception of a few projects which were allowed to secure land off EOM for mitigation, when at least half the mitigation was on Otay Mesa, either in the City of San Diego or the County of San Diego. In addition to buying and preserving land, mitigation has included various types of enhancements for burrowing owls on the mitigation lands, such as installation of artificial burrows, increasing native grasses and/or other suitable low-growing native plant cover, and the active or passive translocation or eviction of owls from burrows in approved development project footprints.

The existing grassland habitat and burrowing owls occur in EOM, for the most part, on lands that are zoned for business park or industrial development. Mitigation is still being designed project by project. The Wildlife Agencies must approve the mitigation as part of the process to amend the individual projects into the MSCP. Future projects will need mitigation. Therefore, a conservation strategy is needed to prevent the extirpation of burrowing owls from EOM and from the County, and to contribute to the recovery of burrowing owls in the MSCP and the County. This document defines the strategy and mitigation parameters for projects in the unincorporated County.

1.2.2 Outside the South County MSCP

Outside the MSCP, impacts and mitigation for burrowing owls and grasslands have been consistent with the Guidelines for Determining Significance for Biological Resources, with impacts to burrowing owls being mitigated at 1:1, impacts to Native Grasslands (with or without burrowing owls) being mitigated at 3:1, to Non-native Grasslands in Ramona at 1:1; and to Non-native Grasslands without burrowing owls outside of Ramona being mitigated at 0.5:1.

1.3 Regulations and Standards

1.3.1 Federal

The burrowing owl is a migratory bird that is protected by international treaty under the Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703-711). The MBTA makes it unlawful to take, possess, buy, sell, or barter any migratory bird listed in 50 C.F.F. Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 C.F.R. 21).

1.3.2 State

Burrowing owls and their nests are protected by Sections 2000, 3503, 3503.5 and 3800 of the California Fish and Game Code:

> 2000. It is unlawful to take any bird, mammal, fish, reptile, or amphibian except as provided in this code or regulations made pursuant thereto. Possession of a bird,

mammal, fish, or reptile or parts thereof in or on the fields, forests, or waters of this state, or while returning therefrom with fishing or hunting equipment is prima facie evidence the possessor took the bird, mammal, fish or reptile or parts thereof.

3503. It is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto.

3503.5. It is unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto.

3513. It is unlawful to take or possess any migratory nongame bird as designated in the Migratory Bird Treaty Act or any part of such migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the Migratory Treaty Act.

3800. (a) All birds occurring naturally in California that are not resident game birds, migratory game birds, or fully protected birds are nongame birds. It is unlawful to take any nongame bird except as provided in this code or in accordance with regulations of the commission or, when relating to mining operations, a mitigation plan approved by the department.

According to the California Fish and Game Code, "take" means hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill. Project-related disturbance at active nesting territories that causes nest abandonment and/or loss of reproductive effort (e.g., killing or abandonment of eggs or young) may be considered "take" and is potentially punishable by fines. However, burrowing owls on EOM are covered by the Subarea Plan and the permit issued by the Wildlife Agencies for the plan area allows the incidental take of burrowing owls if mitigation consistent with the plan is provided.

1.3.3 County of San Diego

1.3.3.1 Multiple Species Conservation Program

The western burrowing owl is a covered species under the South County MSCP plan that was approved in October 1997 and for which the Federal Permit was issued in March of 1998. The MSCP also lists the burrowing owl as a species subject to incidental take, and the County Subarea Plan lists it as a "narrow endemic." The Implementing Agreement between the County and the Wildlife Agencies states that the County is to avoid impacts to narrow endemic species. The Implementing Agreement further states, "Impacts that cannot be avoided shall be minimized and mitigated in accordance with the MSCP, the Subarea Plan, and the Biological Mitigation Ordinance consistent with this Agreement."

According to Table 3-5 of the MSCP, the rationale for covering the burrowing owl was: "This species will be covered by the MSCP because 5,770± acres of potential and 4,000+ acres of known suitable habitat (grassland vegetation community) will be conserved, including portions of Spring Canyon, San Pasqual Valley, Lake Hodges, Otay Mesa northeast of Brown Field, Otay Ranch, Otay River Valley and Future

Urbanizing Area 4." However, with the exception of Otay Mesa, burrowing owls no longer thrive in any of these locations.

The County Subarea Plan notes that habitat enhancement opportunities for the species occur in the Spring Canyon, San Pasqual Valley, Lake Hodges, Otay Mesa northeast of Brown Field, Otay Ranch, Otay River Valley and Future Urbanizing Area 4. The Wildlife Agencies and the County will attempt to achieve additional conservation of occupied burrowing owl habitat or habitat suitable for restoration using local (Transnet), state and federal acquisition resources, as well as the money remaining in the Otay Mesa Grassland Mitigation Fund. Table 3-5 of the MSCP acknowledges that the persistence of the species in San Diego County is also dependent on adequate conservation of suitable habitat and known concentrations of burrowing owls in the Ramona Grasslands of Santa Maria Valley, a portion of which is now the Ramona Grasslands Preserve.

The County Subarea Plan includes the following conditions: During the environmental analysis of proposed projects, burrowing owl surveys (using appropriate protocols) must be conducted in suitable habitat to determine if this species is present and the location of active burrows. If burrowing owls are detected, the following mitigation measures must be implemented: within the Multiple Habitat Planning Area (MHPA), impacts must be avoided; outside of the MHPA, impacts to the species must be avoided to the maximum extent practicable; any impacted individuals must be relocated out of the impact area using passive or active methodologies approved by the Wildlife Agencies; mitigation for impacts to occupied habitat (at the subarea plan specified ratio) must be through conservation of occupied burrowing owl habitat or conservation of land appropriate for restoration, management and enhancement of burrowing owl nesting and foraging requirements.

Management plans/directives must include: enhancement of known, historical and potential burrowing owl habitat; and management for ground squirrels (the primary excavator of burrowing owl burrows). Enhancement measures may include creation of artificial burrows and vegetation management to enhance foraging habitat. Management plans must also include monitoring of burrowing owl nest sites to determine use and nesting success, and predator control.

Most of EOM is designated as either major or minor amendment areas, whereby incidental take coverage was not provided by the County's Subarea Plan. In order for land development projects within the EOM to receive incidental take for covered species, a major or minor amendment to the MSCP must be processed in accordance with the County's Subarea Plan that includes the requirement for concurrence by the Wildlife Agencies.

1.3.3.2 Biological Mitigation Ordinance

The Biological Mitigation Ordinance (BMO) implements the MSCP. The following sections of the BMO are pertinent to the discussion of mitigating impacts to burrowing owls on EOM. The BMO requires that projects be consistent with the MSCP Plan, impacts to vegetation communities within the Subarea be mitigated within the Subarea or within another subarea in the MSCP that is covered by an approved subarea plan, burrowing owls be relocated out of the impact area, and impacts to burrowing owls be

mitigated by the conservation of habitat at a ratio of no less than 1:1 for the territory of the burrowing owl.

Sec. 86.502. No project requiring a discretionary permit shall be approved unless a finding is made that the project is consistent with the MSCP Plan, the County Subarea Plan and the provisions of this Chapter (BMO).[1]

Sec. 86.506 (a)(3). County Code section 86.506 (a)(3) was recently amended to allow impacts in the Subarea to be mitigated in another MSCP subarea under certain conditions. The section now states:

> Mitigation for impacts to vegetation communities within the MSCP Subarea…shall occur in vegetation communities within the MSCP Subarea; however, if mitigation is not feasible (capable of being accomplished with a reasonable amount of effort and cost) within the MSCP Subarea, mitigation may occur on land covered by another approved MSCP subarea plan. Mitigation outside the Subarea will only be allowed when an applicant has demonstrated a good faith effort to mitigate within the Subarea and has shown that such mitigation is not feasible to the satisfaction of the Director of the Department of Planning and Land Use.

Sec. 86.507(a)(2)(b). Impacts to burrowing owl habitat shall be avoided to the maximum extent practicable. Where impacts are unavoidable, the following mitigation measures shall be required: (1) any impacted individuals must be relocated out of the impact area using passive or active methodologies approved by the Wildlife Agencies; (2) mitigation for impacts to occupied habitat, must be through the conservation of occupied burrowing owl habitat or lands appropriate for restoration, management and enhancement of burrowing owl nesting and foraging requirements at a ratio of no less than 1:1 for the territory of the burrowing owl.

1.3.3.3 Resource Protection Ordinance

Though not state or federally listed, the burrowing owl is protected by the Resource Protection Ordinance which protect sensitive habitat lands, which are lands that support unique vegetation communities or the habitats or rare or endangered species or subspecies of animals or plants as defined by CEQA Section 15380 that states; a species is endangered if its "survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors."

1.3.4 City of San Diego

Since mitigation for impacts to burrowing owls in EOM may occur in EOM or in the City of San Diego's jurisdiction in Otay Mesa, pertinent City of San Diego regulations are

[1] When mitigation is allowed in the City of San Diego's jurisdiction, the mitigation must be consistent with the City's MSCP subarea plan.

described below. Mitigation must comply with applicable City regulations. A Right of Entry permit is required if mitigation occurs on land owned by the City of San Diego.

1.3.4.1 Environmentally Sensitive Lands Regulations

The City of San Diego's Environmentally Sensitive Lands Regulations protect, preserve and, where damaged, restore the environmentally sensitive lands of San Diego and the viability of the species supported by those lands. Along with the City's Biology Guidelines, these regulations implement the MSCP by placing priority on the preservation of biological resources within the Multiple Habitat Planning Area (MHPA), as identified in the City's Subarea Plan.

1.3.4.2 Biology Guidelines

The City of San Diego's Biology Guidelines aid in the implementation and interpretation of the City's Environmentally Sensitive Lands Regulations, San Diego Land Development Code, and Open Space Residential Zone. In addition they serve as standards for the determination of impacts and mitigation under CEQA.

1.4 Burrowing Owl Distribution

The breeding range of the burrowing owl stretches from southern Canada south to central Mexico. Burrowing owls are declining in abundance throughout their range (Commission for Environmental Cooperation 2005). The burrowing owl was once a common species, but in recent years has been declining throughout California, their entire range in the U.S., and also in Canada and Mexico.

The international decline led to a tri-national workshop in Calgary, Canada, in July 2004. The workshop resulted in the Western Burrowing Owl North American Conservation Action Plan (WBONACAP), a continental approach to conservation of the species. Many of the actions identified in the WBONACAP are incorporated in this strategy for mitigating impacts to burrowing owls on EOM.

In 2006-2007, the Institute for Bird Populations (IBP) conducted statewide surveys for the burrowing owl (IBP 2008). Volunteers surveyed 860 blocks of habitat in 13 sampling regions at various locations throughout California and detected 1,756 pairs of Burrowing Owls. The survey found that the highest concentrations of burrowing owls occurred in the Imperial Valley and in the middle and southern Central Valley regions. The IBP is using statistical techniques to obtain regional and statewide estimates, which they will compare to the estimates they found in their 1991-1993 statewide survey. Unfortunately, San Diego County and the rest of the southern California coast were not included in the statewide survey. However, populations have been estimated for San Diego County (Lincer and Bloom 2007; Kidd et al. 2007) and are discussed in the next section.

1.4.1 San Diego County Distribution

In the late 1970s/early 1980s the County had 250-300 pair of burrowing owls (Lincer and Bloom 2007). As of 2007, surveys indicated that, at most, 46 breeding pairs were in the County (Lincer and Bloom 2007). Most of these, about 25 pair, were on EOM. Unitt

(2004) reported that only eight of the 28 locales known to have burrowing owls prior to 1997 still had owls when the San Diego Bird Atlas was published in 2004, and identified five breeding locations: EOM, North Island Naval Air Station (NAS), Imperial Beach Naval Auxiliary Landing Field, Warner Valley and Borrego Valley. The number of pairs has been reduced at each of these locations. Only a couple of pairs now inhabit North Island NAS. One area not accessible to the public, the Navy property at Brown Field, has also been known to have burrowing owls. Figure A-1 shows the locations of burrowing owls based on data received by the County between 1989 and 2009. The locations are roughly the same as reported by the San Diego County Bird Atlas (Unitt 2004).

As late as the 1970s and 1980s, burrowing owls were found at the lower San Luis Rey River Valley, San Marcos, near Palomar Airport, Mission Bay, Sweetwater Reservoir, Lower Otay Lake, and the Tijuana River Valley, but have since been extirpated from those areas. Historic locations (pre-1970) for burrowing owls include Pauma Valley, Escondido, San Pasqual Valley, Poway, Rancho Santa Fe, Point Loma and La Presa (Unitt 2004). A few burrowing owls were breeding in artificial burrows established at Sweetwater Reservoir, Otay Lakes, Otay Mesa (Arnie's point and SR 125 mitigation site) and the Ramona Grasslands in 2009.

SANDAG is conducting systematic surveys to delineate the current distribution and abundance of burrowing owls on approximately 10,000 acres across the County that have never been systematically surveyed for the species. Surveys are expected to be completed by July 2010. The survey could identify lands where management actions could be used efficiently to support burrowing owl populations.

1.4.2 East Otay Mesa Distribution

Burrowing owls are found throughout EOM, with the highest concentrations along the international border and at the north end of EOM. During the late 1970's and the early 1980's, up to 72 pairs were known to occur in the Otay Mesa/EOM vicinity (Lincer and Bloom 2007). As of 2007, about 25 pairs occurred in EOM.

1.5 Causes of Decline

The primary cause of the decline throughout the range of the burrowing owl appears to be loss of habitat, both for nesting and foraging. In various parts of the burrowing owl's range, low productivity, high mortality, adverse effects of pesticides, decreased food supply, and reduction of the mammals that supply the owl with burrows have all be documented as contributing to the burrowing owl's decline (Haug et al. 1993; Wellicome and Holroyd 2001, as referenced in Unitt 2004). They are often killed by vehicles when crossing or hunting on roads, and have many natural enemies, including larger owls, hawks, falcons, coyotes, badgers, skunks, foxes, and snakes, and are often preyed upon by domestic and feral cats and dogs.

1.6 Burrowing Owl Definitions

Active Translocation: Capturing burrowing owls and moving them to another location.

Burrowing Owl Breeding Season: February 1 through August 31.

Burrowing Owl Node: Generalized areas identified by the Wildlife Agencies, the County, and the City of San Diego as areas in which to concentrate preservation and restoration/enhancement of burrowing owl habitat.

Eviction: Forcing burrowing owls to permanently leave a burrow, but not capturing and moving the owls. (See Section 4.9.4 for the process.)

Occupied Habitat: In EOM all grassland habitats are considered occupied. Within the rest of the County, any land that is used by burrowing owls for any reason, including foraging, or that is known to have been used at any time during the past three years. If burrowing owls are using the habitat, it is considered Occupied Habitat for the calendar year of the observation or survey and the following three years. Except in EOM, if grassland habitat is present and no burrowing owls have previously been known to use the habitat, a burrowing owl survey conducted according to the protocols described in this document is required. If no burrowing owls are found, the property is not considered Occupied Habitat, and will continue to not be Occupied Habitat for as long as annual surveys conducted according to the protocols verify that burrowing owls are not using the habitat.

Passive Translocation: Encouraging burrowing owls to move to alternative natural or artificial burrows on conserved and managed habitat by evicting/excluding them from occupied burrows but not capturing and moving the owls.

Qualified Burrowing Owl Biologist: A biologist with (a) a minimum of a bachelor's degree in biology, natural resources, wildlife science, environmental studies or an equivalent field of study; (b) experience in field identification, knowledge of survey protocols/techniques, and experience in conducting burrowing owl surveys; and (c), familiarity with burrowing owl autecology.

2.0 GOALS AND OBJECTIVES FOR BURROWING OWLS IN EAST OTAY MESA

The EOM/Otay Mesa area is currently the primary location of burrowing owls in San Diego County. Therefore, the County has established goals and objectives for developing a standard approach to mitigating impacts that occur to burrowing owls in EOM. The goals and objectives emphasize long-term habitat conservation, habitat improvement, and creation and maintenance of as much native and naturalized habitat as possible for burrowing owls to colonize through natural dispersal and passive relocation.

Goal: Conserve and maintain a healthy, persistent population of burrowing owls on EOM/Otay Mesa.

Goal: Comply with or improve upon the MSCP Plan and the Subarea Plan treatment for Burrowing Owls.

Objective 1: Preserve grasslands.

Action: Require impacts to grasslands and burrowing owls in EOM be avoided to the maximum extent practicable.

Action: Require impacts to grasslands in EOM to be mitigated in-kind by preservation of Non-native or Native grasslands (i.e., no up-tiering), or suitable disturbed or agricultural lands (active or fallow) in EOM or in an area with an approved MSCP subarea plan in Otay Mesa, which would be in the City of San Diego or the City of Chula Vista.

Action: Pursue funding for acquisition of key grassland areas or suitable disturbed or agricultural lands (active or fallow) in EOM or in an area covered by an approved MSCP subarea plan in Otay Mesa, which would be in the City of San Diego or the City of Chula Vista.

Objective 2: Maintain a database of burrowing owl habitat and locations in the County's jurisdiction.

Action: Require a habitat assessment and burrowing owl survey on project sites in EOM, and on projects with grasslands in other parts of the County's jurisdiction. Require that the results of the assessments and surveys be integrated into the biological technical report for the proposed project.

As required by CEQA, biological technical reports are submitted to CDFG and USFWS. These habitat assessments and surveys will provide information on the distribution of burrowing owls in the County's jurisdiction and assist in identifying appropriate mitigation sites.

Objective 3: Establish two burrowing owl nodes of at least 150 acres each in EOM with at least five burrowing owl pairs at each node.

Action: Recommend to Applicants of discretionary permits that they acquire lands in the identified nodes as mitigation for impacts to burrowing owls.

Action: Ensure that two nodes continue to exist in EOM by establishing new nodes or adjusting the boundaries of nodes if impacts interfere with the two proposed in this strategy.

Action: Require at least half of the mitigation for impacts to burrowing owl habitat in EOM to be in EOM, preferably in one of the two burrowing owl nodes identified on Figure A-2[2] or adjacent to preserved land. However, if appropriate mitigation land is unobtainable in EOM, land in Otay Mesa (within the City of San Diego or City of Chula Vista) may be used as mitigation, as long as the lack of mitigation land in EOM is justified to the satisfaction of the Director of Planning and Land Use and the Wildlife Agencies. Mitigation beyond the amount in EOM or Otay Mesa must be within an area covered by an approved MSCP subarea plan, and must provide benefits to the Burrowing Owl.

[2] The voter-approved landfill is within the potential burrowing owl node in southeastern EOM. Figure A-3 illustrates the relationship of burrowing owl observations, the potential node, and the landfill. How much land within the landfill boundary will be impacted is not currently known.

Action: Require each project that impacts burrowing owl habitat to implement burrowing owl enhancements appropriate to the mitigation site, and to fund the long-term maintenance of these enhancements.

Action: Pursue funding to enhance existing preserved lands within the identified nodes on EOM for the benefit of the burrowing owl.

Objective 4: Coordinate with other jurisdictions in establishing three burrowing owl nodes in other approved MSCP subareas.

Action: Coordinate with the City of San Diego regarding the strategy of establishing three burrowing owl nodes of at least 150 acres each on Otay Mesa with at least five burrowing owl pairs at each node. Potential node locations are shown on Figure A-2. In particular:

- Work with the City of San Diego on the development of the draft Master Plan for Brown Field so that Brown Field can accommodate a larger population of burrowing owls.

- Coordinate with the City of San Diego to identify areas in Dennery Canyon that can be enhanced for burrowing owls, either by habitat restoration or installation of artificial burrows.

- Ensure that MHPA lands that are owned and managed by the City for consistency with the City's Subarea Plan and the City's Cornerstone Lands Conservation Bank Agreement are evaluated.

Objective 5: Expand the populations of burrowing owls at other locations so that if a catastrophe were to affect the owls on EOM, owls from other locations would be available in the County to recolonize EOM.

Action: Enhance habitat on existing preserve lands for the benefit of the burrowing owl.

Action: Consider the Otay Mesa area in the City of San Diego to be the first priority for the remaining mitigation to total 1:1.[3]

Action: Consider other MSCP areas that are known to support, or historically supported burrowing owl colonies, to be the second priority for the remaining mitigation to total 1:1.

Action: Work with the Wildlife Agencies and/or other jurisdictions to establish new burrowing owl colonies on existing conserved lands (e.g. San Diego National Wildlife Refuge or Rancho Jamul Ecological Reserve).

[3] Mitigation in the City of San Diego's jurisdiction in Otay Mesa needs to address the Specific Management Policies and Directives outlined in the City's Subarea Plan.

3.0 BURROWING OWL SURVEYS AND ASSESSMENTS

3.1 Survey Guidelines

Burrowing owl surveys shall be conducted on all proposed development sites on EOM and on project sites with potentially suitable habitat (e.g., grasslands, fallow agricultural fields, etc.) at other locations in the unincorporated County. The CDFG Staff Report on Burrowing Owl Mitigation (CDFG 1995) recommends that burrowing owl and burrow surveys be conducted during both the wintering and nesting seasons. If possible, the winter survey should be conducted between December 1 and January 31 (when wintering owls are most likely to be present) and the nesting season survey should be conducted between April 15 and July 15 (the peak of the breeding season). Surveys conducted from two hours before sunset to one hour after sunset, and from one hour before sunrise to two hours after sunrise, are preferable. Four surveys (two surveys in the morning and two surveys in the evening) must be conducted, approximately seven days apart. Surveys should be conducted when burrowing owls are most likely to be out of their burrows, and should not be conducted during heavy rain, high winds of over 20 miles per hour, or dense fog.

Surveys should be conducted by walking suitable habitat on the entire project site and, where possible, in areas within 150 meters (approximately 500 feet) of the project impact zone. The 150-meter buffer zone is surveyed to identify burrows and owls that may be impacted by factors such as noise and vibration (e.g., from use of heavy equipment, etc.) outside of the project area during project construction. Pedestrian survey transects should be spaced to allow 100 percent visual coverage of the ground surface. The distance between transect center lines should be no more than 100 feet and should be reduced to account for differences in terrain, vegetation density, and ground surface visibility. To effectively survey large areas of 100 acres or larger, two or more surveyors should walk adjacent transects. To avoid impacts to owls from surveyors, owls and/or occupied burrows should be avoided by a minimum of 160 feet wherever practical. Disturbance to occupied burrows should be avoided during all seasons.

Any other specifications for surveys shall follow Section 1 Burrowing Owl Survey Protocol (Survey Protocol) prepared by the Burrowing Owl Consortium (1993). New CDFG guidelines or protocols shall take precedence over the Burrowing Owl Consortium Survey Protocol.

The survey shall include:

Phase I:	Habitat Assessment
Phase II:	Burrow Survey
Phase III:	Burrowing Owl Surveys, Census and Mapping
Phase IV:	Written Report

The report should include the following information:

- Behavior of owls during the surveys;

- If available, a summary of both winter and nesting season surveys including any productivity information and a map showing territorial boundaries and home ranges;
- Date and time of visit(s) including name of the qualified biologist conducting surveys, weather and visibility conditions, and survey methodology;
- Description of the site including location, size, topography, vegetation communities, and animals observed during visit(s);
- Assessment of habitat suitability for burrowing owls;
- Map and photographs of the site;
- Results of transect surveys including a map showing the location of all burrow(s) (natural or artificial) and owl(s), including the numbers at each burrow, if present, and tracks, feathers, pellets, or other items (prey remains, animal scat); and
- Any historical information (Natural Diversity Database, Breeding Bird Survey data, American Birds records, Audubon Society, local bird club, other biologists, etc.) regarding the presence of burrowing owls on the site.

3.2 Survey Report Life

For purposes of analyzing impacts, surveys older than one year shall be updated. Young owls can disperse from August through October and may occupy a site that was unoccupied during the previous breeding season survey. All burrowing owl survey reports must be incorporated into the biological technical report for the project site.

3.3 Impact Assessment

The following effects are examples of significant impacts to burrowing owls:

- Direct loss of one or more burrowing owls;
- Loss of natural burrows that have been occupied or appear to have been occupied by burrowing owls at any time during the past three consecutive years;
- Loss of artificial burrows, including culverts, concrete slabs, and debris piles that provide shelter to burrowing owls; or
- Loss, disturbance, destruction and/or degradation of foraging habitat.

3.4 Protection of Burrowing Owls during Grading

This section describes ways to protect burrowing owls during grading. Pre-grading surveys, what to do if burrowing owls are or are not found during the pre-grading surveys, what to do if burrowing owls begin using the site during grading, and ways to ensure that burrowing owls are not enticed to the project site are discussed. **No grading within 300 feet of an active burrowing owl burrow is allowed.**

3.4.1 Pre-grading Survey

Pre-grading surveys are needed to determine whether burrowing owls are still using burrows on a site or have colonized a site since the full surveys were completed. For purposes of the pre-grading survey, grading is defined as any disturbance to the land, including brushing, clearing, grubbing, removing rubbish, and moving earth.

In EOM, pre-grading surveys will be conducted in all grasslands, open sage scrub, and in disturbed habitat that is on berms, slopes or other locations where burrowing owls could roost or burrow. At other locations in the County, pre-grading surveys for burrowing owls will be conducted if grasslands are to be impacted and burrowing owls are known to occur within one mile of the project site. Pre-grading surveys must be completed no more than 30 days before initial brushing, clearing, grubbing, or grading of the project site, regardless of the time of the year. The pre-grading survey should follow the survey method described in section 3.1.

If no burrowing owls are detected during the pre-grading surveys, section 3.4.1.1 shall be followed. If burrowing owls are found during the pre-grading surveys, section 3.4.1.2 below shall be followed.

3.4.1.1 If Burrowing Owls Are Not Found during the Pre-grading Survey

- Following the initial pre-grading survey, the site must be monitored for new burrows each week until grading is complete.
- If burrowing owls were not found on the site during the pre-grading survey but are found to be using the site occasionally for roosting or foraging, they should be allowed to do so with no changes in the grading or grading schedule.
- If burrowing owls were not found on the site during the pre-grading survey but are found to be using the site repeatedly for roosting or foraging, the County's mitigation monitor should be notified and the portion of the site that has not been graded should be searched for burrows. If no burrow is found, only notification of the County's mitigation monitor is needed. If an active burrow is found, the procedures in section 3.4.1.2 must be followed.
- If a burrowing owl begins using a burrow on the site at any time after the initial pre-grading survey grading begins, procedures described in section 3.4.1.2 must be followed.
- Any actions other than these require the approval of the County, USFWS and CDFG.
- **BURROWING OWLS MAY NOT BE INJURED OR KILLED**.

3.4.1.2 If Burrowing Owls Are Found during the Pre-grading Survey

<u>Burrowing Owls Using Burrows on Site</u>

- If one or more burrowing owls are using burrows on or within 300 feet of the proposed grading, the County Mitigation Monitoring Coordinator should be contacted. The County Mitigation Monitoring Coordinator will contact the USFWS, CDFG regarding evicting the owls and collapsing the burrows and will enlist the help of a County staff biologist to continue with the coordination with

the wildlife agencies and a qualified burrowing owl biologist regarding the burrowing owls. **No grading shall occur within 300 feet of an active burrow.**

- If the owl is using a burrow on the site and it is not the breeding season, the owl may be evicted as described in section 4.5.4 after a qualified burrowing owl biologist has ensured, by using a fiber optic camera or other appropriate device, that no eggs or young are in the burrow. Eviction requires written concurrence from the USFWS and CDFG prior to implementation.
- If a burrow is being used and it is the breeding season, grading shall not occur within 300 feet of the burrow until the young have fledged and are no longer dependent on the burrow, at which time the burrowing owls can be evicted. Eviction requires written concurrence from the USFWS and CDFG prior to implementation.
- Grading closer than 300 feet may occur with concurrence from the USFWS, CDFG and County Mitigation Monitoring Coordinator. This distance will depend on the burrow's location in relation to the site's topography and other physical and biological characteristics.
- **BURROWING OWLS MAY NOT BE INJURED OR KILLED**.

3.4.1.3 Pre-grading Survey Report

The results of the pre-grading survey must be immediately reported to the County Mitigation Monitoring Coordinator, CDFG and USFWS prior to grading and must be provided in writing (as by e-mail). The written and signed pre-grading survey report must follow within 14 days of the survey or burrowing owl eviction and include maps of the project site and burrowing owl locations on aerial photos and in the format described in the mapping guidelines of the County's Report Format and Content Requirements – Biological Resources.

3.4.2 Pre-construction Meeting

The project biologist or qualified burrowing owl biologist must attend the pre-construction meeting to inform construction personnel about these burrowing owl requirements.

3.4.3 Best Management Practices During Construction

Burrowing owls are known to use open pipes, culverts, excavated holes, and other burrow-like structures at construction sites. Therefore, for construction sites in EOM or in other areas occupied by burrowing owls, or if owls are in the vicinity of the project site, measures should be taken to discourage colonization or recolonization at the construction site by burrowing owls. Such measures include, but are not limited to, ensuring that the ends of all pipes and culverts are covered when they are not being worked on, and covering rubble piles, dirt piles, ditches, and berms.

4.0 MITIGATION

4.1 Mitigation Ratios

Mitigation ratios are summarized in Table 1. All impacts to non-native grasslands/burrowing owl habitat on EOM must be mitigated by in-kind preservation of

habitat at a ratio of at least 1:1. For impacts in EOM, at least half of the mitigation must occur in EOM or in Otay Mesa; the rest of the mitigation may be in another jurisdiction's MSCP subarea that is covered by an approved subarea plan. Impacts to burrowing owl habitat at other locations in the Subarea must be mitigated in the Subarea or in an area covered by another adopted MSCP subarea plan. Impacts to burrowing owls in the unincorporated County outside the Subarea may be mitigated in the Subarea, in another MSCP subarea that is covered by an approved subarea plan, or at another location within the unincorporated County. This section will be updated following approval of the North and East County Plans. In addition, results of the on-going surveys being funded by SANDAG may also change the conservation strategy.

Table 1
Summary of Mitigation Ratios
for Impacts to Burrowing Owls

	Mitigation Location				
Impact Location	**In EOM**	**In Otay Mesa (City of San Diego or Chula Vista)**	**In the South County Subarea but not on EOM**	**In the Unincorporated County outside the South County Subarea**	**In Another Jurisdiction's Subarea not in Otay Mesa**
Impacts to Non-native Grasslands/Burrowing Owl Habitat at East Otay Mesa[1]	1:1	1:1	1:1	N/A	1.5:1
Impacts to Occupied Burrowing Owl Habitat at Another Location (not EOM) in the Subarea	1:1	1:1	1:1	N/A	1.5:1
Impacts to Occupied Burrowing Owl Habitat in the Unincorporated County outside the South County Subarea	1:1	1:1	1:1	1:1	1:1

[1] All of the Non-native Grasslands in EOM are considered occupied burrowing owl habitat. At least one-half of the mitigation must be in EOM or Otay Mesa, preferably in the burrowing owl nodes. If mitigation is split between EOM/Otay Mesa and another jurisdiction's subarea, the amount of impact mitigated in EOM/Otay Mesa will be at 1:1 ratio and the amount of mitigation in another jurisdiction's subarea will be at 1.5:1.[4]

[4] Mitigation in another jurisdiction's subarea is higher (except for mitigation in Otay Mesa) to encourage mitigation in the subarea. Preservation of land in the County subarea adds to the County's goals for preservation identified in the MSCP. Preservation of land in another jurisdiction adds to that jurisdiction's goals, even though the impacts were sustained in the County's subarea.

4.2 Mitigation Locations

4.2.1 Mitigation in East Otay Mesa

In EOM burrowing owls are known to occur almost exclusively in native and non-native grasslands and less frequently in open coastal sage scrub with widely spaced shrubs. They also occur in fallow agricultural areas and in association with disked fields where undisked edges supporting burrows have persisted. Therefore, impacts to burrowing owls that inhabit grasslands must be mitigated by preserving grasslands. Preservation of active or fallow agricultural areas suitable for enhancement or restoration may also be acceptable for mitigation if approved by the County and Wildlife Agencies on a case by case basis.

Many of the parcels in EOM are within the Minor or Major Amendment Area of the MSCP. As described above, for land development projects within the EOM to receive incidental take for covered species, an amendment must be processed in accordance with the goals and objectives of the County's Subarea Plan. An amendment requires concurrence by the Wildlife Agencies.

Burrowing owl impacts have been mitigated in EOM, but grasslands on the mesa are becoming less available for purchase either because they have been or are planned to be developed, or because they have already been acquired and preserved as mitigation. Now, fewer grassland parcels exist, and many of those are zoned for business park or industrial development.

The County and the Wildlife Agencies have identified two burrowing owl nodes on EOM (Figure 2). These nodes have grassland habitat where burrowing owls currently occur or historically occurred. One node is at the northern end of the mesa and west of the Donovan State Prison. The second node is at the southeastern corner of EOM. Preserving lands within or adjacent to these nodes would help create preserves that are large enough to provide foraging habitat and nesting sites for burrowing owls and other grassland species. Preservation of two 150-acre nodes does not mean that no more mitigation will be required for projects in East Otay Mesa. Impacts to non-native grasslands in East Otay Mesa must be mitigated at 1:1, with at least half in East Otay Mesa or Otay Mesa, and the rest somewhere else.

Several parcels of land in and around the northern node have been preserved by the County, Caltrans and private developers. Most of the parcels are in the unincorporated County; however, the southwestern corner of this preserve area is in the City of San Diego. The unincorporated parcels in this node are designated by the County's Subarea Plan as Hardline Preserve. Some projects at EOM have proposed mitigating their impacts in this area. Some of these northern parcels are part of a formerly used defense site (FUDS) and cannot be used for mitigation unless they have been cleared of ordnance by the U.S. Army Corps of Engineers.

The other potential preserve area is at the southeastern corner of EOM where several burrowing owls have been sighted. None of this land has been preserved through mitigation and part of it is the proposed East Otay Mesa landfill. Many of these parcels are in the Major Amendment area of the MSCP and adjoin the Hardline Preserve designated by the MSCP. The general area of the southern node (Figure A-3) is

approximately 900 acres, with approximately 450 acres of it within the boundary of the proposed landfill, which leaves 450 acres from which to preserve 150. Mitigation for the proposed landfill has the potential to be part of the 150 acres. Figure A-3 has been included to indicate that even though the landfill has been proposed in a burrowing owl node, the landfill would not preclude the use of entire node as burrowing owl mitigation. As the nodes are only generalized areas, mitigation may occur in areas outside this node, as long as at least 150 connected acres of burrowing owl habitat are preserved.

Other lands on EOM and Otay Mesa in the City of San Diego may also be suitable for establishment of a burrowing owl node.

4.2.2 Mitigation inside the County's Subarea

Areas within the Subarea that may provide appropriate land for mitigating impacts to burrowing owls include privately owned lands in EOM, Rancho Jamul, and Proctor Valley.

East Otay Mesa. Private property supporting habitat for burrowing owls remains on EOM and may be suitable for mitigating impacts to burrowing owls; however, not all of the EOM land owners are willing to sell their property.

Rancho Jamul. Numerous public ownerships in the vicinity of CDFG's Rancho Jamul Ecological Reserve (RJER) connect to provide a large core area of conserved land, including the Bureau of Land Management's (BLMs) Otay Mountain Wilderness Area, the U.S. Fish and Wildlife Service's San Diego-Sweetwater National Wildlife Refuge, Sweetwater Authority land, CDFG's adjacent Hollenbeck Canyon Wildlife Area and various City and County of San Diego ownerships. Privately owned grasslands in the Rancho Jamul vicinity, if adjacent or close to the RJER or one of these other preserves, could be acquired, preserved, and enhanced for burrowing owls to complement this reserve system. The CDFG has initiated a program for establishing burrowing owls in that location by creating artificial burrows, mowing, and enhancing conditions for ground squirrels. Any proposal to use land in this area for mitigation must consider the ecology and life history of the burrowing owl (e.g., cannot be in the shadow of tall trees that would serve as perch sites for raptors that prey on burrowing owls).

Proctor Valley. Much of Proctor Valley has already been preserved or is designated as open space under the Otay Ranch General Development Plan; however, some privately-owned lands that are not conserved may be appropriate for mitigation..

4.2.3 Mitigation in Otay Mesa (City of San Diego MSCP Subarea)

Several burrowing owl nodes in Otay Mesa have been discussed (Figure 2). The nodes do not have any specific acreage, and not all of the property within the nodes may be available for acquisition; however, these are areas within which burrowing owl habitat exists or could be restored. Evaluation of mitigation sites within the City of San Diego's jurisdiction shall be coordinated with the affiliated City of San Diego asset department (e.g. Public Utilities, Park and Recreation, E&CP). In addition, such mitigation shall comply with the City's Environmentally Sensitive Lands Regulations and Biology

Guidelines and comply with the Specific Management Policies and Directives outlined in the City's Subarea Plan.

Corporate Center South. Caltrans owns land within this proposed node. Preservation of lands in this node should be adjacent to or near the Caltrans property, if possible. This node is south of SR 905 and just east of SR 805 and includes the J13S vernal pools.

Spring Canyon/Arnie's Point. This node includes more than 20 acres of vernal pool habitat directly adjacent to the border, including the J12, J16-18 vernal pools and other unnumbered vernal pools. Burrowing owls have been observed near the border, as well. The site includes the Spring Canyon area, much of which is already preserved; however, an internal segment may be proposed for a housing development. Spring Canyon drains to the Tijuana River.

Brown Field. This node extends from Heritage Road on the west to La Media Road on the east, and from the proposed SR 905 on the south to the edge of the mesa on the north.

Dennery Canyon. Dennery Canyon is north of Otay Mesa Road and north of the Spring Canyon / Arnie's Point node, and lies between Ocean View Hills Parkway and Brown Field. The canyon drains northward into the Otay River. All of the undeveloped land in Dennery Canyon has been preserved; however, some parcels could be enhanced for burrowing owls, if the vegetation is not too dense. Enhancement activities that would benefit burrowing owls include installation of artificial burrows, habitat enhancement, and/or invasive exotic species control.

Drainage Area. The area bounded by the new SR 905 on the north, Siempre Viva Road to the west, La Media Road to the east, and the international border on the south is another potential burrowing owl node. This node includes the J21, J27, and J28E vernal pools.

4.2.4 Mitigation in the Unincorporated County outside the South County Subarea

Impacts to burrowing owls outside the County Subarea may be mitigated inside the MSCP subareas or at a location outside the MSCP subareas in the unincorporated County. Mitigation must occur on the same side of the mountains as the impacts (i.e., impacts in Ramona cannot be mitigated in the desert, and vice versa). Several locations could provide burrowing owl habitat in the unincorporated County outside the Subarea:

Ramona Grasslands and Adjacent Properties. Burrowing owls are known to have inhabited the Ramona Grasslands (part of which is now the Ramona Grasslands Preserve) historically (Lincer 2007) and a few pairs currently reside there. The Wildlife Research Institute (WRI 2009) reports that of seven burrowing owls actively translocated to artificial burrows at the WRI property overlooking the Ramona Grasslands in 2003/2004, three pairs fledged a total of nine owls. In 2005 a wild pair established a territory nearby. Since then at least two active pairs have produced seven to nine young annually.

Warner Valley. A few burrowing owls may persist in Warner Valley (Unitt 2004). The County will coordinate with the Vista Irrigation District to learn if they have observed owls on their properties and whether they would allow installation of burrows on their property as a way to entice birds to the Warner Valley area.

Rice Canyon. The area of Rice Canyon, which runs northward from SR-76 and the San Luis Rey River east of I-15, is agriculture and low density development. Restoration of grasslands and coastal sage scrub habitats currently disturbed or in agriculture on the flatter portions of the canyon could provide habitat for burrowing owls.

Pauma Valley. This valley is an agricultural center located in North San Diego County off I-15 and SR-76, between Valley Center and Palomar Mountain. Collections and observations during the early 20th century indicate that burrowing owls nested in Pauma Valley historically (Unitt 2004), although they are not currently known to breed there.

Gueijito. This valley supports extensive grasslands, and owls have been observed there in the past.

4.2.5 Mitigation Inside Another Jurisdiction's MSCP Subarea

For mitigation in the City of San Diego, the City's policies and ordinances for protecting biological resources must be met.

Pamo Valley. Grasslands in Pamo Valley may provide appropriate habitat for burrowing owls. Specific parcels within Pamo Valley are owned and managed by the City of San Diego and the Public Utilities Department of the City of San Diego. Some privately-owned parcels also are within this valley.

San Pasqual Valley. This area historically supported burrowing owls. It is located within the City of San Diego's MHPA and may have the potential to be managed and enhanced for the benefit of burrowing owls. The City of San Diego Public Utilities and Park and Recreation Departments own and manage the incorporated lands within this valley.

Marron Valley. The City of San Diego Public Utilities Department owns and manages 2,500 acres in Marron Valley. Currently this area is unavailable for mitigation of occupied burrowing owl habitat. With some restoration, the grassland habitat may be available at a future date.

4.3 Resource Management

A Resource Management Plan will be prepared for the mitigation site. Preparation of the plan can begin with the format in Attachment E (Conceptual Biological Resources Management Plan) of the County's Report Format and Content Requirements – Biological Resources, with the addition of burrowing owl management requirements.

An appropriate resource management entity as described in section 1.2.1 of the Conceptual Biological Resources Management Plan must also have proven experience

and success in managing burrowing owl habitat, and must be approved by the County, the land-owning City department (City of San Diego), or other agency, as appropriate.

4.4 Funding Mechanism

The entity causing the impacts to burrowing owls or their habitat will provide funding to maintain and manage the mitigation site in perpetuity, except for County projects to construct essential public facilities. If the mitigation site occurs on land owned by the City of San Diego, early coordination with the appropriate city department and Wildlife Agencies is required since applicable development permits may be needed.

Funding options are described in section 1.2.2 of Attachment E (Conceptual Biological Resources Management Plan) of the County's Report Format and Content Requirements – Biological Resources.

4.5 Burrowing Owl Enhancements

The requirement for burrowing owl enhancements on mitigation land will be decided by the Wildlife Agencies, the County, and, if applicable, the land-owning City department (City of San Diego), during negotiation of mitigation measures. Sites that are used to mitigate impacts to burrowing owls must have burrows that suitable for burrowing owls, preferably natural burrows made by ground squirrels. Enhancements for burrowing owls that may be required as part of the mitigation are discussed below.

4.5.1 Natural Burrows and Introduction of Ground Squirrels

In San Diego County, burrowing owls have a symbiotic relationship with ground squirrels. The burrowing owls take over vacated squirrel burrows and live in the same colonies as the ground squirrels, but not in the same burrows. Burrowing owls normally have satellite burrows near the main burrow which are used to escape from predators. If the mitigation site does not have California ground squirrels and their burrows, enhancements such as the construction of rubble piles or low berms, and the introduction of California ground squirrels, if they are not on the site already, may be required. Installation of artificial burrows to provide a baseline of potential nest sites and refuges until burrowing owls begin to use the natural burrows provided by ground squirrels may also be required.

4.5.2 Artificial Burrows

Though natural burrows are best, artificial burrows can provide immediate benefit to burrowing owls. The installation of burrows in various grassland areas has resulted in burrowing owls occupying the site, such as at Arnie's Point, the SR-125 mitigation site, and on the south side of Sweetwater Reservoir. Five burrows shall be constructed for each one impacted, and be arranged appropriately to support owls, avoid their predation, and maximize occupation of the site. Artificial burrows must be placed far from paved roads. Owls often hunt on or near roads, and many owls are killed by cars. The artificial burrow locations must have good drainage and limited interference from road and

pedestrian traffic. Few or no trees should be nearby where predators of burrowing owls could roost or nest.

Artificial burrows must be constructed using a state of the art design and should be considered temporary habitations until ground squirrels or other appropriate fossorial mammals become established at the mitigation site. Management plans must include provisions to maintain artificial burrows until the Wildlife Agencies and County conclude the mitigation measure has been successfully completed. That issue would be evaluated in annual reports and proposed work plans.

4.5.3 Prey Base

Burrowing owls are primarily active at dusk and dawn, but will hunt throughout a 24-hour period, especially when they have young to feed. Burrowing owls feed on a wide variety of prey, changing food habits as location and time of year determine availability. They catch small mammals such as mice, rats, gophers, and ground squirrels during late spring and early summer. Later in the year, they switch to insects, especially grasshoppers and beetles (Defenders of Wildlife 2009). Other prey animals include reptiles and amphibians, scorpions, young cottontail rabbits, bats, and birds, such as sparrows and horned larks. Mitigation sites must provide habitat for these types of prey species.

Burrowing owls are quite versatile in the ways they capture prey. They chase down grasshoppers and beetles on the ground, use their talons to catch large insects in the air, or hover in mid-air before swooping down on unsuspecting prey. They also watch from perches and when prey is sighted, glide silently toward their target. Mitigation sites should include low perches (not trees) from which burrowing owls can survey their surroundings.

4.5.4 Burrowing Owl Active and Passive Relocation

Generally, only passive relocation, not active, will be accepted as a means to induce burrowing owls to relocate. Active relocation has not been proven to be consistently successful in establishing burrowing owls at relocation sites over the longer term. However, there may be exceptional circumstances where actively removing burrowing owls from a development site is necessary to protect them from being killed by construction operations. In such a case, approval from the Wildlife Agencies would be required to actively remove burrowing owls and release them at a location with appropriate habitat and artificial burrows. In addition, active relocation might be a preferred technique to get breeding owls established on outlying, unoccupied lands. Each request must be accompanied by a plan that thoroughly describes the schedule, the techniques to be used, and the experience of the biologists that will be employed to actively relocate the birds.

Passive relocation requires that burrowing owls be evicted from burrows and that suitable habitat and burrows be available close to the eviction site. Both passive translocation and eviction require approval from the Wildlife Agencies. Steps to evict burrowing owls from burrows on-site are described below:

- Evictions and passive relocation shall be carried out only during the non-breeding season, from September 1 to January 31.
- Burrowing owl evictions shall be supervised or conducted by a qualified burrowing owl biologist who is experienced with the eviction and passive relocation procedures using one-way door devices.
- The eviction procedure shall be initiated no less than two weeks before initial ground disturbance is scheduled to begin.
- The site shall be surveyed by a qualified burrowing owl biologist experienced at conducting owl surveys to determine all burrow locations.
- Following the survey, owls shall be evicted from burrows using one-way devices in place for a minimum of 48 hours after which all burrow entrances shall be destroyed. For known occupied burrows, scopes will be used to verify that the burrow is empty prior to destruction.
- Grading shall take place within one week of burrow closure. After the burrow has been closed, the site should be monitored each day to ensure that the burrowing owls do not return to the site before it is graded. If they do return to the site, the protocols of section 3.4.2 should be followed. Other time limits may be allowed upon concurrence by the County and the Wildlife Agencies that sufficient monitoring and evaluation indicates that no burrowing owls would be impacted by the grading/construction. The site shall be monitored twice per week for owl use and open burrows until grading takes place. Owls shall be evicted and open burrow entrances destroyed until ground clearing takes place. Additional monitoring may be needed during construction to ensure that owls do not return to the site. Monitoring shall be conducted by a County-approved biologist.
- The construction site needs to be kept clear of potential burrows, such as open pipes.
- If owls reoccupy the site, the exclusion procedure shall be repeated.
- A biologist on or under the supervision of a Biologist on the County's approved consultant list shall be present during initial ground clearing.
- A report summarizing owl exclusions and burrow closures shall be submitted to the County and Wildlife Agencies within seven days of completing exclusions and burrow closures.

Artificial burrows shall be built no less than three weeks before owls are to be excluded from the project site. Artificial burrows shall be monitored for owl use once every two weeks for two months after they are constructed. Long-term monitoring requirements will be included in the resource management plan for the mitigation site. Monitoring shall be conducted by a County-approved biologist or a biologist under the supervision of a Biologist on the County's approved consultant list.

4.6 Mitigation Site Maintenance

The mitigation site shall be maintained according to a resource management plan approved by the County, the Wildlife Agencies, and the land-owning City department (City of San Diego), if applicable. For mitigation sites in the City of San Diego's Cornerstone Lands, the County will coordinate with the City's Public Utilities Department (Water). For mitigation sites in the City's jurisdiction in the southern part of Otay Mesa, the County and/or applicant will coordinate with the border patrol to aid in the

identification and prevention of vandalism, off-road vehicle use, dumping, and other disturbances to habitat.

4.7 Monitoring

4.7.1 Methods

Monitoring of mitigation sites shall be conducted during the breeding season (February 1 through August 31) of each monitoring year by biologists hired by the project applicant. Burrowing owl monitoring reports shall be submitted by August 31 of each year to the County, Wildlife Agencies, and, if applicable, the land-owning City department (City of San Diego) for approval.

Annual monitoring at each mitigation site will include the following information:

- A characterization of the vegetation on the mitigation site.
- The presence or absence of ground squirrels and the proportion of the mitigation site that has ground squirrel burrows suitable for burrowing owls.
- The number of burrowing owls observed and the locations where they were observed.
- An estimate of the number of breeding pairs and juvenile owls produced on the mitigation site.
- Photographs of the vegetation, burrowing owls, owl burrows, ground squirrels, and ground squirrel burrows on the mitigation site.
- Recommended management actions for the up-coming year.
- Follow up analysis of previous management actions.

The County will compile the data from the reports into an overall report describing the number of burrowing owls that have been established through the mitigation process at the various locations identified in this strategy. The report will include a statement as to whether the goals of this strategy have been met. If the mitigation occurs on land owned and managed by the City of San Diego, applicable information will be forwarded to the appropriate land-owning City department for inclusion in the annual report to the Wildlife Agencies. The County will present the results to the Planning Commission and Wildlife Agencies by December 15 of each year.

4.7.2 Success Criteria

This strategy will be considered successful for a burrowing owl node when it supports at least five pairs of reproducing burrowing owls for at least three consecutive years. Success does not imply that monitoring and maintenance of the habitat may cease. As part of the mitigation, monitoring and management will need to continue in perpetuity.

5.0 EDUCATION AND STEWARDSHIP

Much of the habitat for burrowing owls is on private lands, and voluntary stewardship programs can help preserve these areas. Burrowing owls do not pose a threat to livestock, crops, pets or people. On the contrary, they prey on insects and small

mammals that can be detrimental to agriculture. Conversion of habitat to irrigated croplands may increase potential prey for burrowing owls, but removal of fossorial mammals reduces their potential breeding sites and habitat.

Suitable habitat can be managed to enhance productivity and survival of burrowing owls in concert with agricultural activities. Land management policies should contain BMPs to enhance or maintain suitable breeding conditions for burrowing owls.

Tasks:

- Enhance occupancy of fossorial mammals and preserve ground squirrels.
- Develop and conduct an outreach program for landowners.
- Educate landowners on how to improve fossorial mammal protection and increase the number of potential nesting sites for burrowing owls.
- Encourage the livestock industry to promote sustainable rangeland practices such as grass-fed cattle.
- Evaluate and reduce the use of pesticides that affect the owls' food supply through integrated pest management.
- Identify alternatives for providing water to livestock without degrading surficial hydrology and owl habitat.

6.0 REGULATORY PROTECTIONS FOR BURROWING OWL HABITAT

Burrowing owls often use grazed lands for foraging and may use burrows on grazed lands for nesting, making grazed lands important habitat. Per the County's Grading Ordinance Section 87.202(d)(2)(cc), a landowner cannot convert land previously used solely for grazing or beekeeping to other types of agricultural operations that involve a greater intensity of land disturbance, such as planted crops. Planting crops on land previously used for grazing is a prohibited conversion, unless the land to be tilled or cultivated has been in agricultural production for at least one of the preceding five years.

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Figure A-1
Burrowing Owl Observations and Predicted Habitat
in the County of San Diego

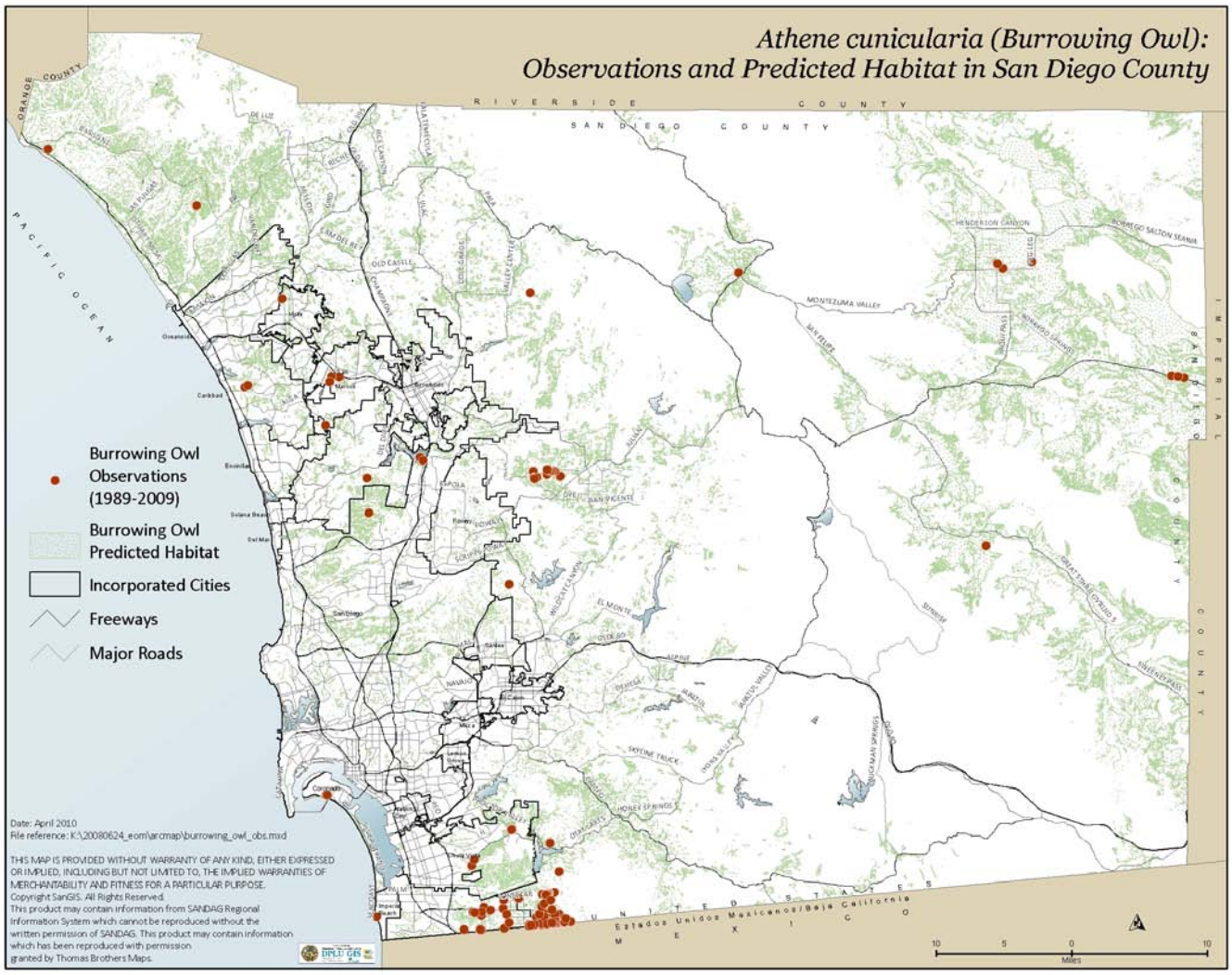


Figure A-2
Potential Burrowing Owl Nodes in Otay Mesa/East Otay Mesa

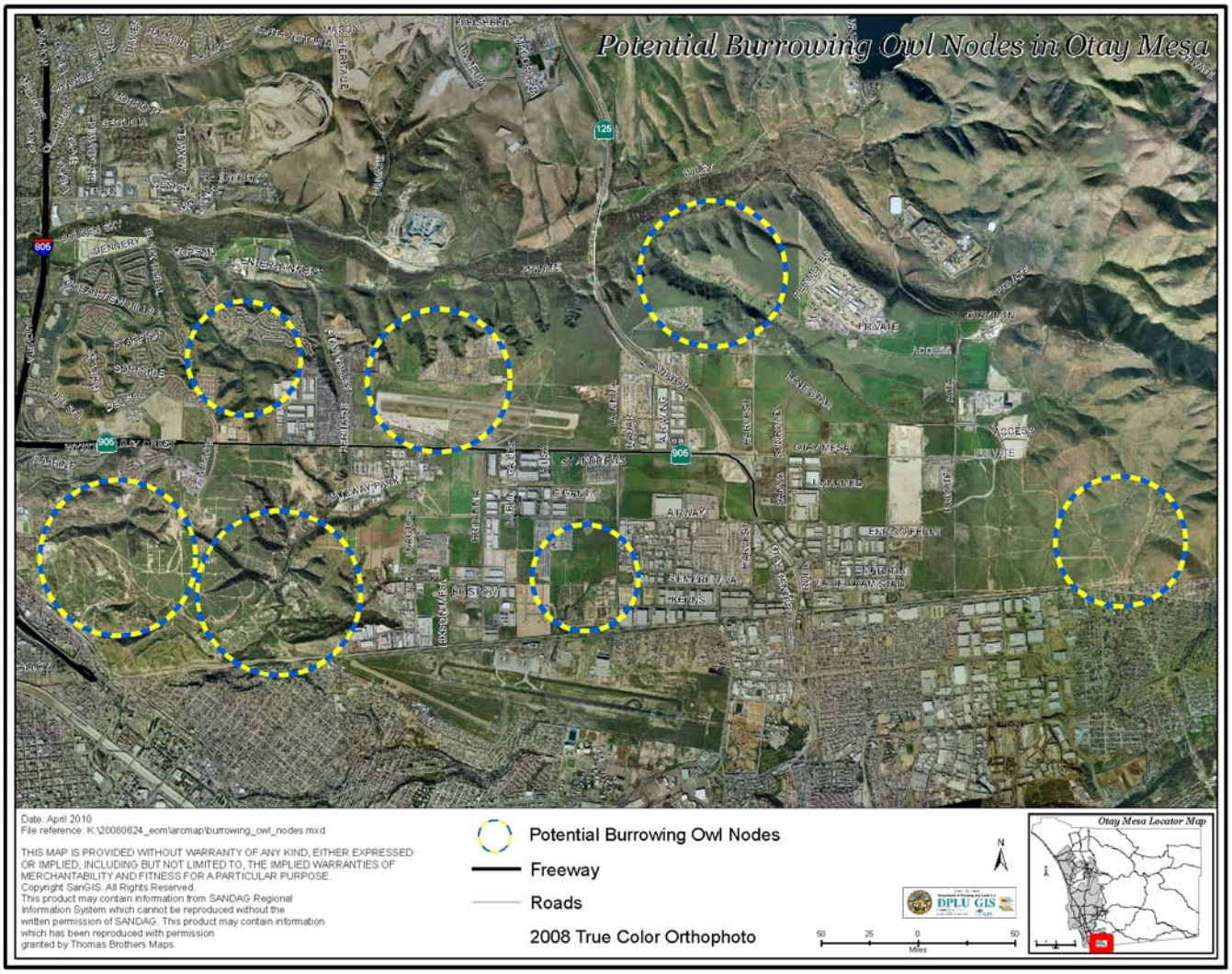
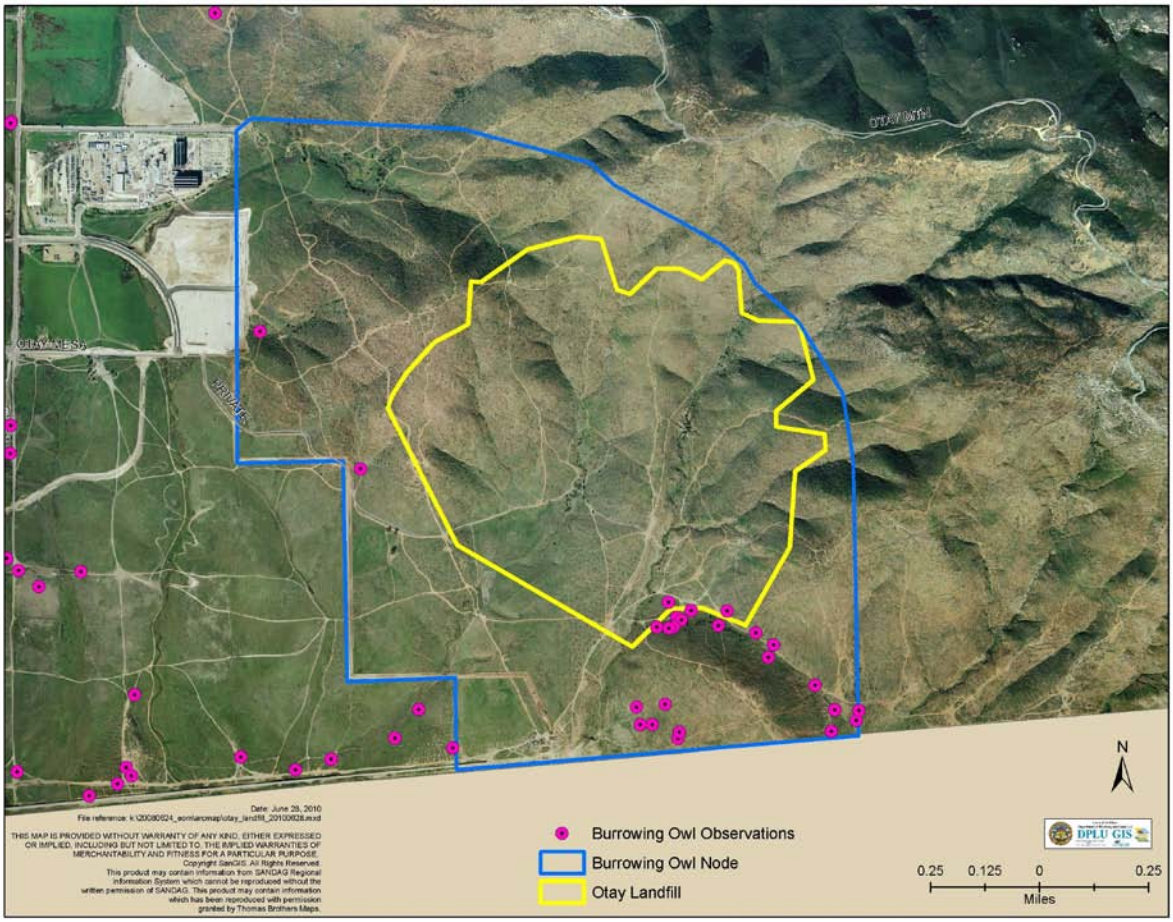


Figure A-3
Potential Burrowing Owl Node in Relation to the Voter-Approved Otay Landfill at the Southeast End of East Otay Mesa



[Attachment B]

County of San Diego Guidelines for Hermes Copper (*Lycaena hermes*)

The Hermes copper (*Lycaena hermes*) is an extremely rare narrow endemic butterfly species. No regional protocols for Hermes copper currently exist, though the U.S. Fish and Wildlife Service (USFWS) may prepare protocols if the species is listed. Several projects are currently being processed by the County that have the potential to impact Hermes copper and its habitat, and other such projects may be proposed. The impacts of these projects on Hermes copper need to be assessed consistently under the California Environmental Quality Act (CEQA).

The County has prepared these Guidelines for Hermes copper to provide guidance for surveying for the butterfly, mapping habitat, assessing impacts, and mitigating for projects within the County's jurisdiction. In preparing these Guidelines the County reviewed available literature published by field surveyors and researchers, in particular, Michael Klein, Daniel Marschalek, and Douglas Deutschman, and notes from personal communications between these researchers and County staff biologists, to gain an understanding of the Hermes copper's life history and habitat requirements.

The Guidelines for Hermes Copper shall be used for proposed project sites with both the butterfly's larval host plant, spiny redberry (*Rhamnus crocea*), and the preferred primary adult nectaring plant, California buckwheat (*Eriogonum fasciculatum*), occurring on or near the site. In Hermes copper habitat, the California buckwheat is generally within 10 feet (approximately three meters) of the spiny redberry. The spiny redberry occurs in coastal sage scrub or southern mixed chaparral.

The County will revise these Guidelines for Hermes Copper as needed and using the best available scientific information. The USFWS has published 90-day findings on a petition to list the Hermes copper butterfly as threatened or endangered (USFWS 2006; USFWS 2010) and the species may or may not be listed following further review. The guidelines will be superseded by USFWS Hermes copper protocols if the species becomes federally listed and survey protocols are issued.

Life History

The Hermes copper is an extremely rare narrow endemic species with a range restricted to San Diego County and northern Baja California. Its genus is monotypic (a genus with only one species) and its closest relative is in Asia. The species is dependent on patches of spiny redberry that grow in southern mixed chaparral and coastal sage scrub. The larvae (caterpillars) eat the new growth of mature spiny redberry shrubs. Marschalek and Klein (2010) found that most open areas with spiny redberry plants adjacent to California buckwheat were occupied by Hermes copper. Their marking study indicated that even though Hermes copper is generally a sedentary species that remains close to spiny redberry plants, they are able to travel distances greater than 3,500 feet, but that long movement transversing vegetation communities other than coastal sage scrub are rare. Hermes coppers are more abundant near host plant patch edges than in the interior (Marschalek and Deutschman 2008). The are usually found on

the east and south sides of large spiny redberry shrubs often adjacent to openings in dense vegetation (Marschalek and Klein 2010), and on the north and west sides of trails or roads (Marschalek and Deutschman 2008).

Hermes copper butterflies seem to remain close to their host plant, which results in sedentary behavior and the creation of independent colonies (Thorne 1963; Faulkner and Klein 2004; Marshalek and Deutschman 2008). Females lay eggs singularly either at the splitting of a branch or at the base of a leaf. The winter diapause is in this egg stage. Larvae hatch and mature through five instars over approximately 14 days, with larvae feeding on the new growth leaves of its host plant. Pupation occurs over approximately 10 to 14 days. Pupation is very cryptic at the base of the spiny redberry.

The adult flight period is from mid-May through early July, depending on elevation (a few days later at higher elevations) as well as winter and early spring rains. Adults nectar primarily on California buckwheat within about 10 feet (three meters) of spiny redberry. They have been observed nectaring on chamise (*Adenostoma fasciculatum*), California sunflower (*Encelia californica*), slender sunflower (*Helianthus gracilentus*), poison oak (*Toxicodendron diversilobum*), and short-podded mustard (*Hirshfeldia incana*), but based on historical records and recently published papers, these nectar sources had California buckwheat nearby if they were being used by Hermes.

Range

The historical known range of Hermes copper is from near Fallbrook and Pala in the north to about 100 miles south of the U.S.-Mexico border, and from near the coast inland to Pine Valley (Thorne 1963) and Guatay (Marschalek and Klein 2010). Recent observations note sightings from Lopez Canyon and east along the southern section of the County at Potrero (pers. comm. M. Klein; SDG&E 2008). The range of Hermes copper is smaller than that of its larval host plant, which extends into the outer North Coast Ranges of California (Thorne 1963). Though the Hermes copper's range seems not to have changed, the number of Hermes copper colonies has been reduced from historical numbers by the loss of habitat to development and the extirpation of colonies by extensive wildfires in San Diego County during the past decade, particularly in 2003 (Klein and Williams 2003) and 2007.

Habitat Where Surveys Should Be Conducted

No data are available regarding a minimum or optimum size of spiny redberry patches that support Hermes copper. Intuitively, because the species' behavior is relatively sedentary, there must be a variable distribution of spiny redberry patches to maintain its normal flight habitat. Therefore, until research studies have been completed, but only where spiny redberry patches comprise at least a small component of the vegetation community, biologists should consider any woody (mature) spiny redberry shrub with California buckwheat within 15 feet as potential Hermes copper habitat to be surveyed.

Marschalek and Klein (2010) found that within their study area Hermes copper were never observed in the understory of oak woodlands, even when California buckwheat and spiny redberry were present. Spiny redberry grows in discrete patches within coastal sage scrub and chaparral, but California buckwheat is common and occurs in several native vegetation communities as well as disturbed areas. California buckwheat without spiny redberry nearby is not considered habitat for Hermes copper.

For purposes of surveying for Hermes copper habitat on project sites in the County's jurisdiction the vegetation should be considered potential habitat for Hermes copper if California buckwheat is within 15 feet of a mature spiny redberry shrub. Fifteen feet is a conservative distance to ensure that enough plants for sustaining the Hermes copper are included in the mapped polygon.

If flight season surveys show that Hermes copper is not present in such habitat, the habitat will be considered potential habitat for Hermes copper.

Habitat Mapping

Habitat within 150 meters [approximately 500 feet] of a Hermes copper sighting should be mapped as occupied Hermes copper habitat. Habitat extending out from the mapped Hermes copper population/observation location to spiny redberry and California buckwheat that are three meters or less from each other should be mapped as one polygon and will be considered one population. Occupied spiny redberry with California buckwheat nearby that occur more than three meters away from each other should be mapped as a separate polygon and considered a separate population/colony. Spiny redberry with California buckwheat nearby but beyond 150 meters of a Hermes copper sighting should be mapped as potential habitat.

The number of individual spiny redberry or California buckwheat plants of any size or age within each polygon should be counted, or estimated by a subsample count if the number is high. Native and nonnative plant species diversity and cover should be noted for each polygon. The acreage of the habitat includes the spiny redberry, California buckwheat, and any other plant species growing between those species or within three feet of either of those species.

Habitats to be excluded from mapping beyond the 150 meter radius from the spiny redberry patches include habitats other than coastal sage scrub and chaparral that do not have spiny redberry or habitats that are barriers to dispersal, such as dense tall trees, grasslands, or other habitats without spiny redberry or California buckwheat, or the habitat beyond these barriers.

Flight Season Surveys

The dates of the flight season vary and can begin between mid-May and early-June, depending on elevation and rainfall, and can last until mid-July. The peak flight time has been reported as around June 10 for males and June 20 for females (Faulkner and Klein 2008); Marschalek and Klein (2010) reported peak abundance of adults ranging from May 25 to June 22 over four years. The flight season at lower elevations begins a few days earlier than the flight season at higher elevations. The elevation range for Hermes copper is from about 200 feet in the western part of the County to about 4,000 feet at Guatay in the eastern portion of the County.

Four surveys from eight to 14 days apart beginning during the third full week of May and with the last survey being during the first full week of July should be conducted. Additional surveys should be conducted if necessary for accurate mapping of occupied habitat. Any observation of Hermes copper should be considered an existing population or colony rather than a migrant.

Surveys should be conducted when temperatures are between 70 and 95 degrees Fahrenheit, which is the range of temperature during which Hermes coppers generally fly. Surveys should not be conducted during adverse weather conditions, such as fog, drizzle, rain, or cloud cover greater than 25 percent, or during sustained winds greater than 15 miles (24 kilometers) per hour measured 4-6 feet (1.2-1.8 meters) above ground level. Surveys should be conducted at an average walking rate of 10-15 acres per hour.

Flight season surveys should not be conducted concurrently with surveys for other species by the same person. The surveyor's attention must be on searching for the Hermes copper throughout the survey.

Impact Assessment

Lands supporting occupied Hermes copper habitat are sensitive habitat lands under the Resource Protection Ordinance and are regulated by section 86.604(f), which states that development, grading, grubbing, clearing or any other activity or use damaging to sensitive habitat lands shall be prohibited but that the authority considering an application may allow development when all feasible measures necessary to protect and preserve the sensitive habitat lands are required as a condition of permit approval and where mitigation provides an equal or greater benefit to the affected species.

The habitat mapping procedures described above should be used to determine the acreage of impacts to occupied Hermes copper habitat, which includes spiny redberry with California buckwheat and any other species within 150 meters of a Hermes copper sighting. Any impact to occupied or potential Hermes copper habitat is significant and requires mitigation.

Mitigation Measures

Any impact to occupied habitat requires mitigation by preservation of occupied habitat at a ratio of 2:1 or 3:1, depending on the quality of the habitat at the impact site and the mitigation site, and the importance of the habitat. Impacts to potential habitat requires mitigation at a ratio of 1:1, or higher if the impacted habitat is of high quality, was formerly occupied, or has continuity with occupied habitat.

Reporting

The results of the habitat assessment and the Hermes copper surveys shall be incorporated into the biological technical report for the project. Any impacts to the species must be analyzed, and appropriate mitigation proposed. The report must also demonstrate that the surveyor(s) has the knowledge and field skills to conduct the surveys by providing a description of their experience and/or training in surveying for Lepidoptera.

For purposes of assessing impacts of a project, a negative survey will be valid for one year if the site is within one mile of a known Hermes copper location and for three years if the site is more than one mile from a known Hermes copper location.

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2010. Endangered and Threatened Wildlife and Plants; 90-Day Finding on a Petition to List the Hermes Copper Butterfly as Threatened or Endangered. 50 CFR Part 17.

[ATTACHMENT C]

Guidelines for Cactus Salvage

Salvage of native cactus from the impact area of a project may be required if the project site is occupied by the coastal cactus wren or is potential cactus wren nesting habitat. The salvage of cactus species is in addition to the acreage of habitat required for mitigation. The salvage must be overseen by a biologist listed in the category of Biological Resources or Habitat Restoration on the County's list of approved consultants. Directions for salvaging and propagating cactus species are provided in Attachment C-1.

Requirements if Coastal Cactus Wren Habitat is Impacted

The project will be conditioned so that prior to the issuance of the grading permit, the species listed in Table 1 and present on-site will be salvaged for planting at the project's restoration site, if restoration is required. If restoration is not required for mitigation (i.e. because the mitigation site already has cactus wren habitat), the applicant must make a good faith effort to donate the plants. The applicant should contact one of the organizations listed in Table 2 to determine if they are capable of receiving the cactus, caring for it properly, and replanting it at a restoration site within the same region (north or south San Diego County) as where the cactus were salvaged. If the organizations are not able to accept the cactus, the applicant must provide written documentation from each organization in the region (either north or south county) stating that it cannot accept the cactus. If such documentation is provided, the cactus need not be salvaged.

Table 1. Native Cactus to Salvage for Coastal Cactus Wren Habitat Restoration

Scientific Name	Common Name	Notes*
Cylindropuntia prolifera	Coast cholla	Reproduces easily asexually (segments will grow when detached).
Opuntia littoralis	Coastal prickly-pear	Do not use existing *Opuntia* surplus from San Pasqual for transplanting to Otay or other areas as the San Pasqual population (and populations further north into Los Angeles) has hybrids of mixed and/or unknown origins and moving them around the region will make identification more difficult.
Opuntia oricola	Chaparral prickly-pear	

* Notes provided by Jon Rebman, Botany Curator at the San Diego Natural History Museum.

Table 2. Receptor Organizations*

Site Location	Site Name	Organization	Contact Person
North County	San Diego Wild Animal Park	Institute for Conservation Research	Bryan Endress (760) 291-5427
North County	San Pasqual Valley	City of San Diego Water Department, Watershed and Resource Protection	Niki McGinnis (619) 685-1314 NMcGinnis@sandiego.gov
South County	San Diego National Wildlife Refuge	USFWS	Jill Terp (619) 468-9245 ex. 226 Jill_Terp@fws.gov
South County	Rancho Jamul Ecological Reserve	CDFG	(858) 467-4201

* The receptor sites and operators are current as of spring 2010 but are subject to change.

The plants should be delivered to the receptor site that is closest to the impact site, or at least in the same region (north or south San Diego County).

Salvaged plants must be delivered to the receptor site within seven days of being removed from the soil.

Recommendations

The County encourages applicants to salvage other cactus and succulent species for use at their own restoration sites or for donation to the above organizations. Salvaging and replanting cactus and other succulents can help a restoration or revegetation site meet success criteria sooner. A complete list of cactus and succulent species that are recommended to be salvaged is provided in Table 3.

Table 3. Native Cactus and Succulent Species Recommended to be Salvaged*

Scientific Name	Common Name	Notes
Cylindropuntia californica var. *californica*	Snake cholla	Only survives in a coastal setting. Likely to survive in the Otay area, but not likely at Rancho Jamul or San Pasqual Valley. Be careful about mixing individuals from separate populations. Some topsoil collected with the plant may enhance translocation.**
Cylindropuntia prolifera	Coast cholla	Reproduces easily asexually (segments will grow when detached).**
Dudleya spp.	Live-forever	Be careful about mixing species as they hybridize. Do not replant rarer/endemic species, such as *D. attenuata*, outside of their natural range. Use the Plant Atlas mapping to determine the proper range.**
Ferocactus viridescens	Coast barrel cactus	Mark the north side of each cactus salvaged so it can be planted in the same orientation in which it was growing at the salvage site.

Mammillaria dioica	Fish-hook cactus	Do not mix any of the desert population with the coastal population to prevent hybridization. Female and bisexual (having flowers with both male and female parts) plants make up the population and a good ratio of each is needed for sustaining a population. Determine sexes during flowering in March through May). Bisexual flowers have larger petals and visible pollen; the females have shorter petals and no visible pollen.**
Opuntia littoralis	Coastal prickly-pear	Do not use existing *Opuntia* surplus from San Pasqual for translocation to Otay or other areas as the San Pasqual population (and populations further north into Los Angeles) has hybrids of mixed and/or unknown origins, and moving them around the region will make identification more difficult.**
Opuntia oricola	Chaparral prickly-pear	
Yucca whipplei	Our Lord's candle	The plant flowers when it is several years old. The species is monocarpic, meaning that the plant dies after it flowers. Only younger clones or specimens should be salvaged.**
Yucca schidigera	Mojave yucca	Flowers each year and does not die afterwards.** Only young plants are recommended to be salvaged, since a large effort is required to salvage large plants.

* This list is subject to future refinements at the discretion of the County of San Diego.

** Notes provided by Jon Rebman, San Diego Natural History Museum.

The above plant list was developed by the Cactus Wren Working Group sponsored through The Nature Conservancy. The process of salvaging cactus is described in Attachment C-1. Salvage should be implemented by individuals who have knowledge of the species that are needed at receptor sites, and of the plants at the impact sites, including genetics and location characteristics.

Biologists should use the San Diego Natural History Museum Plant Atlas mapping program to determine the proper range for replanting, especially for snake cholla and the live-forever species. The Plant Atlas link is:
http://www.sdplantatlas.org/(S(rijxknmf204myr55450o3mym))/Map_Call_2DB_2Plnt.aspx

[ATTACHMENT C-1]

Guidelines for Cactus Salvage and Propagation
by Mark Dodero, RECON Environmental Inc.

Introduction

This paper was prepared with the intent to provide general guidelines for cactus salvage and propagation specifically for restoration and enhancement of habitat for coastal cactus wrens (*Campylorhynchus brunneicapillus*). The guidelines presented here focus on salvage and propagation of coast cholla (*Cylindropuntia prolifera*) and chaparral prickly-pear (*Opuntia oricola*) that cactus wrens are known to use for nesting in coastal San Diego County.

The common coast prickly-pear (*O. littoralis*) is generally too short in stature (less than three feet) to be used by coastal cactus wrens for nesting, but this cactus can be salvaged and planted in areas where it co-occurs with coast cholla, as the wrens may eat the fruits of this species. The methods for salvage and propagation of coast prickly-pear are identical to the methods described below for chaparral prickly-pear.

During salvage efforts for prickly-pear, care should be taken to avoid collecting the non-native and often cultivated mission prickly-pear (*Opuntia ficus-indica*). This non-native species is found throughout coastal southern California and is often associated with old ranch houses and urban areas. This species is spineless, or nearly so, and can hybridize with native prickly-pear cactus. Although the mission prickly-pear can reach a tall size, the spineless nature of the plant may not provide the same level of protection from predators for cactus wrens that the native cactus species afford.

Another potential issue to consider when salvaging and establishing new populations of cactus is local genetics. Since we have relatively little information about local cactus population genetics, to be as conservative as possible in this regard, salvaged cactus should be planted as close as possible to the salvage site, at a similar elevation and proximity to the coast. Moving plants into habitats or areas where they did not naturally occur or are occupied by different *Opuntia* species may cause genetic mixing of locally adapted populations with unintended consequences, such as hybridization.

Timing of Salvage

Cactus can be salvaged any time of year. Survivorship of salvaged cactus is likely to be higher if the plants are collected when they are not drought stressed. The plants are typically most drought stressed in the fall before the seasonal rains start. During that time of year the plants are often wrinkled or shriveled, which is an indication that they contain less stored water. After significant winter rains begin, the plants quickly take up water and lose their wrinkled appearance.

Generally, coast cholla and prickly-pear put on new growth in spring as temperatures increase after the winter rains. Collecting stem segments that are fully grown gives the best results. Removing and attempting to root newly emerging shoots that haven't finished elongating will likely cause them to die.

Salvage Methods

When salvaging cholla or prickly-pear, it is best not to handle them directly. Using pitch forks, tongs or other tools to collect and move the plants reduces the chance of being injured by spines. For propagation purposes, coast cholla segments located near the tips of the plant are easily detached from the parent plant using tongs or a similar tool. Stem segments located closer to the main stem usually have a woody core and may be more difficult to dislodge. Stem segments that have a woody internal structure may need to be cut using a saw.

Prickly-pear pads generally have a stronger attachment to the main stem than coast cholla and may also require a cutting tool to separate the pad from the lower stems. Cutting the stem at or just below the node or connection point where the cactus pad attaches to the next lower stem segment is a good method of collection.

In situations where the coast cholla or prickly-pear populations will be impacted, the entire plant can be excavated using hand tools or heavy equipment, such as backhoe. Removing portions of the lower and outer stems prior to excavation will reduce the overall weight of the plant and will facilitate transport.

After cuttings or the entire plant are collected, the broken ends of the stems and roots should be allowed to dry and callus. This callusing process reduces the chance of stem rot after planting. Callusing of the stems can take a week or two if the weather is warm and dry or possibly up to a several weeks under cool moist conditions. After the cuttings are callused, they can be propagated using different methods, depending on the project goals and budget. Below are some methods that have been used and are known to be successful.

Propagation in the Field

Plants may be taken directly to the restoration/enhancement site after collection, and the stems can be callused in place by laying cholla cuttings on the ground directly where they are intended to grow. If planting budgets are very limited, the cuttings can be placed directly on the soil to get the stem to root because roots can form from any spine cluster that is in contact with the ground. This method mimics the natural way that the cholla plants root and form new individuals near the base of the parent plant. If time and budget allow for it, making a small hole in the ground and placing the lower end of the cholla cutting into the soil may speed up the rooting process. Also, placing the stem in an upright position may also make the rate of upward growth faster compared to just laying the stem on the ground.

For prickly pear, it is best to plant the thinner, lateral edge of the pad into the soil. To reduce the chance of rot, leave the lower cut portion of the stem exposed to the air. Prickly-pear cactus can root if the cutting is just placed on the soil surface, but the stem is more likely to sunburn if the broad surface of the pad is facing the sun directly. The labor expended to plant the prickly-pear stems is worthwhile and will likely increase rooting success over just laying the pad on the ground.

If the restoration site will not be watered, then placing the cuttings out in the fall-winter is best since the natural rainfall will help them root. It is most cost efficient to take stem cuttings and disperse them directly at the intended site in the fall-winter and let them go on their own. If watering the site is feasible, planting the cactus at anytime of the year will work. With supplemental water, the plants will grow faster.

Propagation in a Nursery

Two methods can be used in a nursery setting to increase the rate of stem growth by providing supplemental water during dry periods. Plants can be grown directly in the ground or in containers. Planting the stems in the ground or in containers requires more labor for getting the plants started and transporting them than just dispersing them directly on the ground surface at the restoration site. The labor involved with planting and transporting containers can be worth the effort if you are trying to encourage longer stem growth in a shorter amount of time.

At a nursery, stem cuttings can be planted directly in the ground (after callusing) and supplemental water can be given so that the stems grow faster than under natural conditions. After the plants have reached the desired size, they can be excavated from the soil and the larger stems can be transported to the restoration/enhancement site for planting. Breaking off the side branches, particularly on coast cholla, prior to moving the plants is helpful for safer transport and the new cuttings generated can be used for propagating additional plants.

Growing cuttings in containers at a nursery will also reduce the time it takes for the stems to reach the 3-foot minimum height needed for coastal cactus wren nesting habitat. For container propagation, use soil that is well drained for best results, as soil with high clay content will hold water and can increase the chance that the cuttings will rot.

One caution for this container method is that trying to move the plants around when they are in pots can be difficult to do without getting injured by the spines, particularly once the plants get larger. Using one-gallon pots to grow the cuttings is a reasonable compromise if you are trying to grow the stems up to a larger nesting size prior to planting them in the field. The weight of a one-gallon pot with soil is light enough to transport with relative ease.

Larger containers can be used for propagation, but they will be more difficult to transport due to their greater weight. As mentioned above, breaking off some of the side branches and leaving the main stem intact helps with transporting them, since the branches are less likely to fall on your hand while moving them.

Temporary Storage

Plants that are taken to a storage facility can be kept callused and unrooted for up to two months, or possibly longer depending on site conditions and the time of year. While waiting to be transported to the restoration site, the cut stems can survive for long periods during the cooler winter months without being rooted. During the warm summer months, the storage time would generally be more limited due to the higher temperatures and greater need for water. Providing partial shade for the cuttings and occasional supplemental water will extend the length of time the cuttings can be stored without being planted. Even though the cuttings are not in contact with the soil, after a couple of months, they will often begin to form roots into the air since the plant is trying to make contact with the soil. If the storage period is anticipated to be longer than 2-3 months it would be best to plant the cuttings in the ground or containers as described above.

Watering "Schedule"

Cactus should only be watered the after the soil has dried out from the last watering rather than on a regular schedule. If the soil is not allowed to dry between watering events, the plants will have a much higher chance of rotting, especially during initial rooting. Once the plants have an

established root system, they are more tolerant of extra water, but letting the soil dry between watering is the best method to reduce the chance of rot.

Summary

Our local cholla and prickly-pear cactus are generally easy to grow, but reducing the amount of handling and not putting them in pots makes salvage budgets go much further. Dispersing cuttings in the fall after the rainy season has begun is the most cost efficient way to get good results. Stem cuttings can take about 7-8 years to grow to around three feet without supplemental water, but the growth rate will be dependent on the amount of natural rainfall and the soil conditions at the site. If you do direct planting of cuttings and water them at the restoration site, they will grow faster.

If nesting-sized cactus are in limited numbers or not present at the restoration site, a portion of the salvaged stems can be grown larger at a nursery to decrease the time it will take to produce nesting-sized plants.

Following is a summary of the techniques described above:

- Allow stems to callus prior to planting stems in soil. This may take up to a few weeks depending on weather conditions.

- Dispersing salvaged cholla cuttings directly at the restoration site by laying them on the ground and letting them root on their own with no supplemental water is the most cost and labor efficient method of propagation. But using this method will take the longest time for the plants to grow to nesting size.

- If budgets allow for excavating a hole and planting the cholla cutting in an upright position, the stems will likely root and grow upwards faster than just laying the stems on the ground.

- Prickly-pear cuttings will survive and root best if the thinner, lateral edge of the pad is planted into the soil.

- Planting cuttings in containers or in the ground at a nursery, where supplemental water can be provided, will help produce larger plants in a shorter time. This nursery propagation method can significantly reduce the amount of time to produce nesting-sized cholla or prickly-pear, but keep in mind that there are greater labor costs associated with this method and transporting the plants is more challenging.

- Do not water the plants when the soil is still moist. Allow the soil to dry between watering to reduce the chance of stem rot.

[Attachment D]

Typical Mitigation Measures

When it has been established that a significant impact will potentially occur, the project must propose mitigation to lessen or compensate for the impact. As defined by CEQA (Section 15370), mitigation includes either measures to avoid, minimize or rectify impacts, or measures that compensate for impacts by replacing or providing substitute resources. The following is a list of typical mitigation measures that may be included as conditions on a project that has significant impacts:

Monitoring

Clearing, grading, and/or construction monitoring may be required to ensure that habitats and sensitive species outside the approved impact area are not adversely affected. Monitoring must be conducted or supervised by a biologist on the County's Approved Biological Consultant List. Specialized monitoring for endangered species shall be done by persons permitted by the USFWS, as appropriate. Following are monitoring tasks that would likely be required.

Before construction: Based on the particular project, the Biologist may be responsible for the following tasks, or others as described in the project conditions, in the field before construction begins:

- With the DPLU Permit Compliance representative, attend the preconstruction meetings and other meetings, as necessary, to discuss biological resource issues of the project;
- Conduct training for contractors and construction personnel, including explaining the purpose for protecting biological resources and conservation measures that should be implemented during project construction; and
- Verify the installation and maintenance of temporary fencing of open space easements.

During construction: Based on the particular project, the Biologist may be responsible for one or more of the following tasks, or others as described in the project conditions, in the field during construction:

- Attend construction meetings, as necessary;
- Monitor all grading, clearing, grubbing, trenching, and construction activities to ensure against damage to biological resources that are intended to be protected and preserved;
- Photograph the site after the grading and clearing activities have been completed but before construction begins (depending on the type of project).
- Inspect fencing and erosion control measures weekly (daily during rain events) in the vicinity of the proposed preservation areas and report deficiencies immediately to the DPW Construction Inspector;
- Periodically monitor the work area for excessive dust generation and report deficiencies immediately to the DPW Construction Inspector.
- Monitor construction lighting periodically to ensure lighting is shielded and directed away from preserved habitat;
- Monitor equipment maintenance, staging, and fuel dispensing areas to ensure runoff from these areas is not entering drainages, wetlands, or waters of the U.S.;
- Stop or divert work when deficiencies require mediation and notify the DPW Construction Inspector and the DPLU Permit Compliance Coordinator immediately;
- During grading, clearing, grubbing, and trenching or other construction activities, report the results of monitoring to the County via e-mail weekly. Any change in this notification requirement must be approved by the County in writing; and

- Confer with the Wildlife Agencies and the DPLU Permit Compliance Coordinator within 24 hours any time protected habitat or sensitive species are being affected by construction;

After construction: The Biologist will prepare a letter report when the monitoring is completed and submit it to the County and Wildlife Agencies. The letter report must include, but not be limited to the following:

- Photographs of the temporary/permanent fencing that was installed before grading, clearing, grubbing or trenching activities began.
- Monitoring logs showing the dates and times the Biologist was at the site.

Biological Open Space/Conservation Easement/City of San Diego Covenant of Easement[5]

Preserving land on-site in a Biological Open Space or Conservation Easement is a means to avoid impacts to a particular resource or to mitigate for impacts elsewhere on the site. (See Table 5 of the Guidelines for Determining Significance – Biological Resources for habitat mitigation ratios.) If the preservation is to be considered for credit towards mitigation requirements, the easement must be designed in accordance with the Project Design Guidelines. All restrictions and any possible exceptions to the open space easement must be included in the easement language. For example, if trails are planned, they will be listed as an exception with a detailed description of allowable uses and location (preferably referencing a map). Open space easements that protect wetlands require an exception for vector control by the Department of Environmental Health (DEH) and may require an exception to allow future flood control prevention activities by the Department of Public Works. In all cases where revegetation and/or resource management plans are required, easements will be written to allow implementation of these plans, including allowing access by the appropriate habitat managers.

Open Space or Conservation Easement language will require the landowner to perform basic stewardship measures to ensure the preservation of the land, such as trash and litter removal, maintenance of fencing and signs in the location shown on fencing and signage map; compliance with stormwater management regulations; compliance with vector control regulations; and coordination with the County Sheriff for compliance with regulations governing trespass and illegal activities.

A Resource Management Plan (RMP) is generally required for easements when the open space easement is 50 acres or more. RMPs may also be required when open space less than 50 acres is proposed if a particularly sensitive resource is present that would benefit from active management and/or monitoring.

For mitigation sites within the City of San Diego jurisdiction, the City requires a Covenant of Easement.

Vacation of Existing Open Space Easements

If existing dedicated Biological Open Space Easements are being vacated, the loss of preserved habitat would be mitigated at twice the required ratios because: 1) the original mitigation must be replaced; and 2) the current loss of habitat must be mitigated. In some cases, mitigation may be at a 1:1 ratio if land previously identified as being impacted is switched for previously designated open space. If this is proposed, the switching must provide an equal

[5] Any land proposed for mitigation must be current on property taxes.

or greater benefit as open space based on habitat type, quality, species present and biological function (i.e., connectivity, corridor, etc.).

Areas Labeled as "Not A Part" on Plot Plans

This is not an easement, but rather a designation on the plot plan for either a Major or Minor Use Permit. These areas are protected just as areas within an open space easement. A Use Permit Modification and subsequent environmental review would be required before these areas could be graded, cleared, developed or otherwise disturbed. In addition to designating the area on the plot plan, a condition will be placed on the Use Permit stating these areas are to remain protected for the life of the Use Permit. Any use exceptions (i.e., trails, etc.) would be included in the Use Permit conditions.

Limited Building Zone Easement

This easement is required adjacent to any on- or off-site biological open space or conservation easement. The easement prohibits the building of structures that would require vegetation clearing within the protected open space for fuel management purposes. The Limited Building Zone would extend at least 100 feet from the open space boundary. This distance may be extended or reduced if approved by the appropriate fire authorities and supported by the Fire Protection Plan for the project. The easement would include the provision to allow structures that do not require fire fuel modification/vegetation management. See Attachment G of these guidelines for a graphic depicting the Limited Building Zone Easement.

Oak Root Protection Zone

In order to protect the shallow root systems of oak trees within existing or proposed open space easements, the project must include a minimum 50-foot oak root protection zone between the dripline and the nearest ground disturbance (i.e., grading or trenching). This oak root protection zone typically consists of other habitat and is not part of the oak woodland. This zone permits above-ground fire fuel management activities where necessary, but prohibits any ground disturbance. However, fire fuel management done in the oak root protection zone is a direct impact to the oak and must be mitigated as required.

Oak root protection zone(s) would be placed into a dedicated biological open space easement, but the easement language will allow fire-clearing within the 50-foot zone. Signs and fences (when required) would be located at the edge of the Biological Open Space Easement, and permanent markers placed at the outer edge of the fuel management area.

When oak root protection zones are used, the required Limited Building Zone Easement width can be reduced by 50 feet, as long as long as the open space easement language allows the necessary fuel modification.

Off-site Purchase or Preservation of Habitat[6]

Habitat mitigation may include the purchase of habitat credits within a County approved mitigation bank. Prior to accepting the purchase to fulfill mitigation requirements, the County may request accounting of habitat credits from the bank and evidence that the bank is managing the land appropriately. If the required habitat cannot be found within a bank, the preservation of habitat within open space easements on privately-owned land may be allowed. In these cases, a biological survey of the proposed mitigation land will be required to verify mitigation requirements have been met. An open space or conservation easement must be dedicated over the land. In addition, the County will require a Resource Management Plan for

[6] Any land proposed for mitigation must be current on property taxes.

the long-term maintenance of the habitat and will require an endowment sufficient to pay the maintenance costs of the property in perpetuity.

Offsite mitigation to be purchased for biological impacts to non-Multiple Species Conservation Program (MSCP) lands must meet the following criteria: (1) Habitat to be acquired off site must be the same habitat type and/or comparable in biological function, (2) to the maximum extent feasible, the land must be located in the unincorporated area in the same ecoregion as the proposed project, and (3) the land must have equal or greater habitat value as the impacted resource, high or very high habitat value, and long-term viability. See Table 5 of the Significance Guidelines for habitat mitigation ratios.

For offsite mitigation purchase inside the boundaries of the MSCP, the mitigation land may be located in any ecoregion within the MSCP boundary, as long as the mitigation land open space is considered a Biological Resource Core Area. See the Biological Mitigation Ordinance for habitat mitigation ratios.

"Maximum extent feasible" means that if two or more mitigation banks or properties for acquisition under different ownerships have the same habitat type and comparable biological function and value to the habitat being impacted, and they are within the same ecoregion, the mitigation must be acquired in one of said banks or properties.

If it is not possible to locate at least two banks or properties for acquisition under different ownerships that meet all of the biological and geographic criteria, staff would determine feasibility using the following measures, in the order listed, until two banks or properties for acquisition under different ownerships qualify:

- The requirement that the habitat acquired be located within the same ecoregion may be waived. Habitat in the immediately adjacent ecoregions within the unincorporated area, with the appropriate habitat type and comparable biological function and value may be considered.
- If two banks or properties for acquisition under different ownerships still do not qualify, the requirement that the habitat acquired be located within the unincorporated area may be waived. Habitat in adjacent cities (with a preference to be located within the same ecoregion) with the appropriate habitat type and comparable biological function and value may be considered.

If, after exhausting these measures, there still are not two banks or properties for acquisition under different ownerships that qualify, the following procedure applies:

- If only one bank or property qualifies, the applicant is encouraged to enter into an agreement with that bank before tentative or conditional approval of the entitlement. This will avoid the situation where applicants may be asked to pay substantially above-market rates after the entitlement is granted. Staff will then recommend to the decision-maker that the applicant be required to acquire the off-site biological mitigation in that bank or property.
- If no banks or properties qualify, off-site mitigation would be considered infeasible and alternative mitigation/ordinance compliance mechanisms will need to be pursued. These alternatives may include, but not be limited to, project redesign, habitat creation, or other methods to achieve mitigation requirements on-site. If alternatives or other mechanisms cannot achieve acceptable mitigation for project impacts, the project may have a significant effect on the environment and, therefore, would require an Environmental Impact Report.

For mitigation lands within the City of San Diego, such as for impacts to burrowing owls in EOM, coordination with the City and the Wildlife Agencies will be early in the land entitlement process to assure permit conditions and other issues are addressed in a timely manner prior to project approval.

Revegetation Plans

To satisfy the County's no-net-loss policy for wetlands, any impacts to wetlands require the creation of wetlands either on or off-site. A Revegetation Plan would be prepared for all wetland creation and restoration efforts. Although revegetation is not typically allowed as mitigation for upland habitat impacts, a Revegetation Plan may be required to enhance or repair upland areas as well.

A conceptual Revegetation Plan outlining the draft revegetation plans will be required during the processing of a discretionary project, and will be distributed during the CEQA public review period. The project will then be conditioned to submit for approval a final Revegetation Plan completed in accordance with the County's Revegetation Requirements.

The actual revegetation condition placed on the project would outline any specific requirements for the revegetation project (i.e., acreages, types of vegetation, specific species, location, etc.). In all cases, whether explicitly stated or not, only native species should be used. When possible, the seed or plant stock used should be harvested from the vicinity of the revegetation site. A condition to dedicate an open space easement over the area to be revegetated would be included as a separate project condition.

Salvage of Root Stock, Seeds or Plant Specimens for Revegetation

Root stock, seed and/or plant specimen collection for mitigation may be accepted by the County as partial mitigation for impacts to sensitive species, except where other regulations, such as avoidance required by the BMO, take precedence. Translocation of plants may be accepted as partial mitigation for certain species when scientific research indicates it is likely to succeed. Preservation in place will always be the preferred mitigation, but where preservation is not feasible projects may be required to collect specimens or genetic material from the area being impacted, either in conjunction with a revegetation plan or as a separate species-based mitigation requirement. Revegetation or translocation of a sensitive species would require preparation of a revegetation plan by a person on the County's Approved Consultant List for preparing such plans. Any collection of federally or state listed species requires appropriate federal and state permits from the Wildlife Agencies. Collection or propagation of other sensitive species requires a state Scientific Collecting Permit.

Enhancement of Open Space

This may be required when the open space would benefit from enhancement activities, such as removal of exotic species, hydroseeding or cowbird trapping. Enhancement may be required when edge effects from the proposed project are expected to be fairly high or when the project requests mitigation credit for on-site open space over disturbed areas. The exact enhancement activities required would be outlined in the condition placed on the project.

Resource Management Plans (RMP)

A Resource Management Plan would be required when a project proposes open space that would significantly benefit from active management and monitoring. RMPs are also required when a project proposes purchase of off-site habitat that is not within a formal mitigation bank. The intent of an RMP is to ensure that the viability and value of the open space is maintained in

perpetuity. RMPs must be prepared based on the County's RMP guidelines, when a project proposes open space totaling 50 acres or more. RMPs may also be required when open space less than 50 acres is proposed if a particularly sensitive resource is present that would benefit from active management and/or monitoring.

Projects would be conditioned to submit the RMP for approval prior to any grading, clearing or other development of the site. The RMP would outline the timeline for any additional submittals that may be required, including monitoring reports, annual statements that all fencing/signs are present, etc.

Transfer Fee Title of Open Space to the County or Other Entity

Transferring fee title would generally be required whenever open space is on a separate lot on a parcel map. The open space may be deeded to an established conservancy group upon the approval of the Director of DPLU or deeded to the County (Department of Parks and Recreation [DPR]) or another government agency, such as the CDFG, USFWS, or BLM. The applicant or the developer is responsible for providing evidence that an established conservancy group, DPR, or other government agency will take ownership of the open space lot before the project will be approved. If deeded to a conservancy group, dedication of an open space or conservation easement over the land will also be required.

Breeding Season Avoidance

Grading, clearing and improvement plans will be conditioned such that land disturbance would occur outside of the relevant breeding season for any species of concern on a particular site.

Permanent Signs

Signs may be required where needed along open space boundaries or within open space (i.e., along trails) to prevent encroachment into the sensitive areas. The number and location of the signs will be based on a number of project and site specific factors, such as lot shapes and sizes, biological resources present, topography and intensity of expected encroachment.

Permanent Fencing or Walls

Fencing or walls will be required where needed along open space easement boundaries to limit encroachment into the open space. Similar to signs, the location of permanent fencing or walls will be based on project and site-specific factors, such as lot shapes and sizes, biological resources present, topography and intensity of expected encroachment. Permanent fencing or walls would generally be required when open space is proposed within 300 feet of development or when open space is included within residential lots less than 5 acres in size. Fencing and walls need only be installed between development and open space and should not be placed between on and off-site contiguous open space. The design and materials of fencing and walls will generally be restricted when there is a biological reason to do so, such as needing a solid wall to act as a noise barrier or requiring something impermeable to limit amphibian or small mammal movement.

Temporary Fencing

Temporary fencing will be required along all open space boundaries where clearing or grading is proposed within 100 feet of on- or off-site preserved habitat and permanent fencing has not yet been constructed. Temporary fencing is intended to prevent encroachment into biologically sensitive areas during grading, clearing and construction. Temporary fences are not necessary if permanent ones have already been installed (however, for many projects, permanent fencing would ~~is~~ not be installed until after grading is complete.)

Evidence That Federal and State Permits Have Been Obtained

Evidence that all required permits have been obtained will be required when a project may potentially require a Federal or State permit for the take of one or more endangered species (Section 7 or 10(a) permits), for impacts to wetlands (1600 permits from CDFG or 404 permits from US Army Corps of Engineers), or for discharges (401 certification from Regional Water Quality Control Board). The applicant may show evidence that no permit is necessary by submitting a letter from the responsible Federal or State agency.

Restrictions on Lighting and Noise

Certain restrictions may be required when the project proposes lighting or significant noise within close proximity to existing or proposed open space. This condition is not enforceable on subdivisions or similar projects, which involve private residential lots adjacent to the open space. Therefore, lighting and noise must be limited in those circumstances by designing the project in compliance with the San Diego County Light Pollution Code (Sections 59.101-59.115), San Diego County Noise Ordinance (Sections 36.401 et seq.) and the San Diego County Noise Element. However, use permits can be conditioned to control noise and lighting, including timing and acceptable levels. The condition would extend for the life of the permit, and non-compliance would allow the County to revoke the permit.

Other Measures

Additional measures beyond those listed above may also be necessary based on the circumstances of a particular project and the biological resources present. Mitigation measures must be enforceable through project conditions or agreements. Most, if not all, biological mitigation measures should be completed before any grading, clearing or other disturbance to the site. The only exception is mitigation measures that can only be completed during the development process. An example would be installation of permanent fencing, which could occur on after temporary fencing required during grading has been removed. In this case, permanent fencing would be required prior to finalizing the map. Be aware that inside MSCP, Third Party Beneficiary Status is conveyed only after all biological mitigation measures have been satisfied. Therefore, if the timing for implementing conditions on these projects is not correct, an applicant may not have coverage under the Endangered Species Act for impacts to listed species.

[ATTACHMENT E]

Conceptual Biological Resources Management Plan

PROJECT NAME

Preparer must be on the County Biology Consultant List

Bold indicates text that must be included *verbatim*.

1.0 INTRODUCTION

1.1 Purpose of Biological Resources Management Plan

Briefly describe the purpose of the Resource Management Plan (RMP). The RMP purpose should be based upon the project mitigation requirements. Summarize the proposed mitigation measures that make the RMP necessary.

RMP Objectives *(Choose from below)*:

- *The plan guides management of vegetation communities/habitats, plant and animal species, cultural resources, and programs described herein to protect and, where appropriate, enhance biological and cultural values.*
- *The plan serves as a guide for appropriate public uses of the property* (if public uses are included).
- *The plan serves as a descriptive inventory of vegetation communities, habitats and plant and animal species that occur on or use this property.*
- *The plan serves as a descriptive inventory of archaeological and/or historic resources that occur on this property.*
- *The plan establishes the baseline conditions from which adaptive management will be determined and success will be measured.*
- *The plan provides an overview of the operation, maintenance, administrative and personnel requirements to implement management goals, and serves as a budget planning aid.*

The details of this conceptual plan may be modified when the Final RMP is prepared and submitted to the County for approval. The County will review the Final RMP to ensure that it meets the specified Purpose and Objectives.

1.2 Implementation

1.2.1 Resource Manager Qualifications and Responsible Parties

Proposed Resource Manager:
The resource manager shall be one of the following:

- **Conservancy group**

- **Natural resources land manager**
- **Natural resources consultant**
- **County Department of Parks and Recreation**
- **County Department of Public Works**
- **Federal or State Wildlife Agency (U.S. Fish and Wildlife Service, California Department of Fish and Game)**
- **Federal Land Manager such as Bureau of Land Management**
- **City Land Managers, including but not limited to Departments of Public Utilities, Park and Recreation, and Environmental Services.**

If the developer desires DPR to manage the land, the following criteria must be met:

a. **The land must be located inside a Pre-Approved Mitigation Area (PAMA) or proposed PAMA, or otherwise deemed acceptable by DPR.**
b. **The land must allow for public access.**
c. **The land must allow for passive recreational opportunities such as a trails system.**

The resource manager shall be approved in writing by the Director of Planning and Land Use (DPLU), the Director of Public Works (DPW), or the Director of Parks and Recreation (DPR). Any change in the designated resource manager shall also be approved in writing by the director of the County department that originally approved the resource manager. Appropriate qualifications for resource managers include, but are not limited to:

- **Ability to carry out habitat monitoring or mitigation activities.**
- **Fiscal stability including preparation of an operational budget (using an appropriate analysis technique) for the management of this RMP.**
- **Have at least one staff member with a biology, ecology, or wildlife management degree from an accredited college or university, or have a Memorandum of Understanding (MOU) with a qualified person with such a degree.**
- **If cultural sites are present, have a cultural resource professional on staff or an MOU with cultural consultant.**
- **Experience with habitat and cultural resource management in southern California.**

The person or consultant firm of the biological and cultural resource professionals should be named in this section, if they are known at the conceptual stage.

Proposed Land Owner:
Fee title of separate open space lots may be held by the HOA, a land/resource manager, or another appropriate landowner (e.g., land trust, conservancy, or public agency), depending on the particular circumstances.

A variety of options are available for fee title, depending on the particular circumstances. For example, if the open space is an integral part of the project and there is an HOA, the HOA may hold title to the open space. The HOA should grant an easement to the County, and the HOA should contract with a land/resource manager to maintain the open space. The easement would allow the County or another entity to step in if the HOA fails to maintain the open space properly. If the open space is not included as an integral part of the project, the HOA may have no incentive to properly maintain the open space, and the HOA should not hold title. Another option would be to transfer title to the County along with an endowment fund sufficient to pay the County's costs to maintain the open space area in perpetuity.

Proposed Easement Holder:
If the land is transferred in fee title to a non-governmental entity, a Biological Open Space Easement or Conservation Easement must be recorded. This easement should be dedicated to the County, but may also include other appropriate agencies as a grantee or third-party beneficiary. If title to the land is transferred to the County or other public conservation entity, no easement is necessary.

Restoration Entity:
If revegetation/restoration activities are required, management responsibility for the revegetation/restoration area shall remain with the restoration entity until restoration/revegetation has been completed. Upon County/Agency acceptance of the revegetated/restored area, management responsibility for the revegetation/restoration area will be transferred to the resource manager.

1.2.2 Financial Mechanism

Acceptable financial mechanisms include the following:

- **Special District. Formation of a Lighting and Landscape District or Zone, or Community Facility District as determined appropriate by the Director of DPLU, DPW or DPR.**
- **Endowment. A one-time non-wasting endowment, which is tied to the property, to be used by the resource manager to implement the RMP.**
- **Other acceptable types of mechanisms including annual fees, to be approved by the Director of DPLU, DPW or DPR.**
- **Transfer of ownership to existing entity (e.g. Borrego Foundation, Cleveland National Forest, City of San Diego) for management.**

1.2.3 Conceptual Cost Estimate
See Table 1.

1.2.4 Reporting Requirements

An RMP Annual Report will be submitted to the County (and resource agencies, as applicable), along with the submittal fee to cover County staff review time. The Annual Report shall discuss the previous year's management and monitoring activities, as well as management/monitoring activities anticipated in the upcoming year.

The Annual Report shall provide a concise but complete summary of management and monitoring methods, identify any new management issues, and address the success or failure of management approaches (based on monitoring). The report shall include a summary of changes from baseline or previous year conditions for species and habitats, and address any monitoring and management limitations, including weather (e.g., drought). The report shall also address any adaptive management (changes) resulting from previous monitoring results and provide a methodology for measuring the success of adaptive management.

For new sensitive species observations or significant changes to previously reported species, the annual report shall include copies of completed California Natural Diversity Database (CNDDB) forms with evidence that they have been submitted to the State. The report shall also include copies of invasive plant species forms submitted to the State or County.

A fee for staff's review time will be collected by DPLU upon submittal of the Annual Report. The RMP may also be subject to an ongoing deposit account for staff to address management challenges as they arise. Deposit accounts, if applicable, must be replenished to a defined level as necessary.

1.2.5 RMP Agreement

The County will require an Agreement with the applicant when an RMP is required. The agreement will be executed when the County accepts the final RMP. The Agreement will obligate the applicant to implement the RMP and provide a source of funding to pay the cost to implement the RMP in perpetuity. The Agreement shall also provide a mechanism for the funds to be transferred to the County if the resource manager fails to meet the goals of the RMP.

The Agreement will specify that RMP funding or funding mechanism be established prior to the following milestones:

- **For subdivisions, prior to the approval of grading or improvement plans, or prior to approval of the Parcel/Final Map, whichever is first;**
- **For permits, prior to construction or use of the property in reliance on the permit.**

4.4 Limitations and Constraints

This section shall briefly describe any internal or external management constraints that may affect meeting the RMP goals.

(Examples)

- *Environmental factors such as the influence of local water availability (either surface or subsurface waters), introduction or spread of non-native species, presence of threatened and endangered species, fire, flood, drought, erosion, air pollution and hazardous waste materials.*
- *Legal, political or social factors which influence or mandate certain types of management; special permitting requirements (i.e., U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, archaeological sites, etc.), County Ordinances (e.g., nuisance abatement), MOUs or other special agreements with private or public entities, water, timber, or mineral rights for the area.*
- *Financial factors such as the source of funding to be used for operation and maintenance, personnel requirements, and overall management of the area (fund source may dictate management direction).*

2.0 PROPERTY DESCRIPTION

2.1 Legal Description

Describe the property.
(Refer to Biological Resources Report dated_____by _____).

2.2 Environmental Setting *(Describe as requested)*

- *Site access;*
- *Pertinent geological, soil, climatic, topographic, fire and hydrologic factors; and*
- *MSCP context*

2.3 Land Use *(Describe as requested)*

- *Current land uses on the property;*
- *Land uses on adjacent properties;*
- *Locations of trails, approximate widths, and acceptable or existing users (i.e., hiking, mountain biking, equestrian, off-road users);*
- *Easements issued to others within or across the property, and any easements over adjacent properties for ingress/egress to the property; and*
- *Fuel management activities that are to be done in the plan area as required by the project's Fire Protection Plan.*

3.0 BIOLOGICAL RESOURCES DESCRIPTION

(Refer to Biological Resources Report dated _____by _____.
Describe the functions and values of biological resources on the site.

4.0 BIOLOGICAL RESOURCE MANAGEMENT

4.1 Management Goals

(Choose from below)

- *Preserve and manage lands to the benefit of the flora, fauna, and native ecosystem functions reflected in the natural communities occurring within the RMP land.*
- *Manage the land for the benefit of sensitive species, MSCP covered species, and existing natural communities, without substantive efforts to alter or restrict the natural course of habitat development and dynamics.*
- *Reduce, control, and where feasible eradicate non-native, invasive flora and/or fauna known to be detrimental to native species and/or the local ecosystem.*
- *Others related to site-specific biological resources.*

4.2 Biological Management Tasks

See Table 1.

4.3 Adaptive Management

The Resource Manager is responsible for interpreting the results of site monitoring to determine the ongoing success of the RMP. If it is necessary to modify the plan between regularly scheduled updates, plan changes shall be submitted to the County and agencies for approval as required.

4.4 Operations, Maintenance and Administration Tasks

See Table 1.

4.5 Public Use Tasks

See Table 1.

4.6 Fire Management Tasks

See Table 1.

5.0 REFERENCES

Use standard scientific reference format to cite authors and their published research.

Table 1: Biological Resources Management Tasks

Check if applies	Tasks	Frequency (times per year)	Hours required per year
BIOLOGICAL TASKS			
	Baseline inventory of resources (if original inventory is over 5 years old)*	One time	___ hours
	Update biological mapping*	Once every ___ yrs	___ hours
	Update aerial photography	Once every ___ yrs	___ hours
	Removal of invasive species*	*Monthly/ Quarterly/ Annually*	___ hours
	Predator control	*Monthly/ Quarterly/ Annually*	___ hours
	Habitat Restoration / Installation	Installation	___ hours
	Habitat Restoration / Monitoring and Management	*Monthly/ Quarterly*	___ hours
	Poaching control	*Monthly/ Quarterly*	___ hours
	Species Surveys (include a separate line for each species)	Once every ___ yrs	___ hours
	Species management (include a separate line for each specific task)	*(add frequency)*	___ hours
	Noise management, if required	*(add frequency)*	___ hours
	For lands within the MSCP and outside PAMA, consult Table 3-5 of the MSCP Plan for required biological resource monitoring	*(add frequency)*	___ hours
	Other		___ hours
OPERATIONS, MAINTENANCE AND ADMINISTRATION TASKS			
	Establish and maintain database and analysis of data	Annually	___ hours
	Write and submit annual report to County*	Annually	___ hours
	Submit review fees for County review of annual report*	Annually	Dollars
	Review and if necessary, update management plan*	Every 5 years	___ hours
	Construct permanent signs	One time	___ signs
	Replace signs	___ signs/yr	___ signs
	Construct permanent fencing/gates	One time	___ feet
	Maintain permanent fencing/gates	*(add frequency)*	___ feet/yr
	Remove trash and debris*	Monthly/ Quarterly	___ hrs/yr

Check if applies	Tasks	Frequency (times per year)	Hours required per year
	Coordinate with DEH and Sheriff*	*(add frequency)*	___ hours
	Maintain access road	*(add frequency)*	___ miles/yr
	Install stormwater BMPs	One time	___ hours
	Maintain stormwater BMPs	*(add frequency)*	___ hours
	Restore Built Structure	One time	___ hours
	Maintain Built Structure	*(add frequency)*	___ Hrs/yr
	Maintain regular office hours	*(add frequency)*	___ hours
	Inspect and service heavy equipment and vehicles	*(add frequency)*	___ hours
	Inspect and repair buildings, residences and structures	*(add frequency)*	___ hours
	Inspect and maintain fuel tanks	*(add frequency)*	___ hours
	Coordinate with utility providers and easement holders	*(add frequency)*	___ hours
	Manage hydrology (as required)	*(add frequency)*	___ hours
	Coordinate with law enforcement and emergency services (e.g., fire)	*(add frequency)*	___ hours
	Coordinate with adjacent land managers	*(add frequency)*	___ hours
	Remove graffiti and repair vandalism	*(add frequency)*	___ hours
	Other		
PUBLIC USE TASKS			
	Construct trail(s)		___ miles
	Monitor, maintain/repair trails (unless a trail easement has been granted to the County)	*(add frequency)*	___ miles/yr
	Control public access	*(add frequency)*	___ hours
	Provide Ranger patrol	*(add frequency)*	___ hours
	Provide visitor/interpretive services	*(add frequency)*	___ hours
	Manage fishing and/or hunting program (if one is allowed)	*(add frequency)*	___ hours
	Provide Neighbor Education - Community Partnership	*(add frequency)*	___ hours
	Prepare and reproduce trail maps and interpretative materials.	*(add frequency)*	___ hours
	If HOA is funding management, provide annual presentation to HOA	Annually	___ hours
	Coordinate volunteer services	*(add frequency)*	___ hours
	Provide emergency services access/ response planning	*(add frequency)*	___ hours
	Other	*(add frequency)*	
FIRE MANAGEMENT TASKS			
	Coordinate with applicable fire agencies and access (gate keys, etc.) for these agencies	*(add frequency)*	___ hours
	Plan fire evacuation for public use areas	One time	___ hours

Check if applies	Tasks	Frequency (times per year)	Hours required per year
	Protect areas with high biological importance	*(add frequency)*	___ hours
	Hand-clear vegetation	*(add frequency)*	___ hours
	Mow vegetation	*(add frequency)*	___ hours
POST-FIRE TASKS			
	Control post-fire erosion	*(add frequency)*	___ hours
	Remove post-fire sediment	*(add frequency)*	___ hours
	Reseed after fire	*(add frequency)*	___ hours
	Replant after fire	*(add frequency)*	___ hours
	(Continue until all tasks are summarized)		
	TOTAL		

[Attachment F]

County of San Diego
SanBIOS GIS Data Standard User Manual, Version 1

Quick Start

The SanBIOS database template is at SanGIS, the County of San Diego's data warehouse. To download both an empty geodatabase and empty shapefiles for easy data collection, navigate to http://www.sangis.org/Download_GIS_Data.htm. After creating a free account, the template_v1.zip can be found under the "ecology" category. The template file consists of an empty geodatabase, empty shapefiles (for use if geodatabase technology is not supported), associated look up tables, complete metadata, and this manual. The sections below outline the purpose of using the SanBIOS data standard, the required fields, and how to fill them out. Questions can be directed to those listed in the contact section of this document.

Abstract

Created in 2009, the SanBIOS database serves as a single repository of species observations collected by various departments within the County of San Diego's Land Use and Environment Group. Coordination of biological species tracking between departments ensures a complete dataset, meeting a specific data standard, and will provide the best available information to environmental scientists, advocacy groups, all County departments, and various agencies.

Purpose

This catalog of species observations has been recorded by professional biologists from the County of San Diego as well as from various other agencies and private firms. These data serve many functions: they serve as a baseline catalog of species records in the adopted South County MSCP and the draft North and East County preserve systems (including invasive species) in the incorporated and unincorporated areas of San Diego County. They are used to direct the location of future permanent plot surveys and for various monitoring projects. They are used in the testing and validation of predictive species niche models and to comply with CEQA regulations, and they are used to identify and monitor invasive species. It is important to note that these observations are an indication of confirmed species presence at the time of the survey, but provide no indication of species absence. The types of surveys performed to collect these data were variable, ranging from highly organized and standardized surveys to random observations based on chance. SanBIOS was constructed to be interchangeable with the State of California's Biological Information and Observation System (BIOS) database (http://bios.dfg.ca.gov/).

The following County departments contribute species observation information to SanBIOS:

- Ag. Weights and Measures
- Environmental Health
- Parks and Recreation
- Public Works, Environmental Services
- Planning and Land Use

By adhering to common standards, organizations are more able to share data and determine the value of a dataset. In accordance with County of San Diego's GIS Policy #4, all species observations are to be collected using the SanBIOS standards and template.

SanBIOS Data Standard and Template Metadata

The SanBIOS database template contains a geodatabase consisting of two empty feature classes (one for point locations and one for polygon features) and associated look up tables to ensure data consistency. In the instance where a geodatabase cannot be utilized, shapefiles are provided and accepted as a substitute. The attributes featured in this dataset meet the basic requirements of each department, although more information may be collected and tracked outside of this database. The following information must be recorded for each observation:

SpID: This is a numeric field. The SpID, or the species code, can be found in the associated "Species" table. The table lists the species code as well as the Latin and common names. The final SanBIOS dataset will include the Latin and common names for querying purposes so it is critical to record the correct species code. For any species observed that is not included in the species table, a SpID of -99 should be assigned, with the Latin name of the species provided in the "Notes" field for County staff to update the final species table.

Observer: This is a text field. The observer field lists the individual name, the department name or the company name associated with the person recording the species observation. It is important to know who to contact if there is a question regarding an observation. The name of a department, an agency or consulting firm is the most important, as people and roles change with time. If there is no information to be recorded, or if the value is unknown, a value of "No Data" is required to be entered.

SourceID: This is a numeric field. The SourceID, or the source code, can be found in the associated "Source" table. It refers to the source of the observation, such as a historical document or a field observation. If there is no information to be recorded, or if the value is unknown, a value of "-99" is required to be entered.

VoucherID: This is a numeric field. The VoucherID, or voucher identification number, is the voucher number assigned by an institution confirming the identification of an individual specimen. If there is no information to be recorded, or if the value is unknown, a value of "-99" is required to be entered.

SiteName: This is a text field. This field is used to indicate the name of an area where the survey is conducted. This can include park names, preserve names, or a name of a general area. Due to the nature of this field, variations of a single name can often be found. For example, "Palomar Mountain", "Palomar Mtn", and Mt Palomar" can all be listed to represent the same area. Acronyms and abbreviations are discouraged in order to provide useful information. If there is no information to be recorded, a value of "No Data" is required to be entered.

SiteNotes: This is a text field. While site names are recorded, sometimes there are more detailed site descriptions that may need to be recorded. A measured distance, an address, or a more specific description of where within the site the species occurred are all good examples of information collected in this field. If there is no information to be recorded, a value of "No Data" is required to be entered.

LifeID: This is a numeric field. The LifeID, or life form code, differentiates the observations into plant or animal categories. The codes can be found in the associated "LifeForm" table. If there is no information to be recorded, or if the value is unknown, a value of "-99" is required to be entered.

DeptID: This is a numeric field. The DeptID, or department code, lists the departments that are responsible for surveys or observations or are contracting a survey. If there is no information to be recorded, a value of "-99" is required to be entered.

ObsDate: This is a date field. In this field, the date of the observation is recorded. Due to seasonal variation in species occurrence and range, as well as the importance (in animal species) of discerning breeding individuals from non-breeding, it is important to have a precise understanding when an observation was made. The date must be expressed as a two digit month, day, and four digit year. Example: mm/dd/yyyy. If the specific day of the month is missing or not recorded, the month and year will suffice, but records with anything less than a month and year will be excluded from the database.

CountofID: This is a numeric field. The CountofID, or count of individuals, indicates the number of individuals present or occurring at the time of the observation. For example, while observing Bufo californicus, a CountofID of 2 would indicate that two species were observed in one location. Some observations have a large quantity of individuals or an extent and should be captured as a polygon instead of a point location. In cases where the number is known as a range, the minimum number of individuals will be used to populate the field. This field requires a value of 1 or greater.

OriginID: This is a numeric field. The OriginID, or the origin code, can be found in the associated "Origin" table. It refers to the origin of the spatial data, such as a GPS unit or digitized points from a field map. If there is no information to be recorded, or if the value is unknown, a value of "-99" is required to be entered.

PCode: This is a numeric field. The PCode, or precision code, can be found in the associate "Precision" table. The value can represent either an accuracy associated with an individual point location, the extent of specific polygons representing an individual's range or habitat, or the extent of groups of individuals or trapping grids. If there is no information to be recorded, or if the value is unknown, a value of "-99" is required to be entered.

ProtocolNa: This is a text field. Values consist of names referring to specific protocols followed during a survey. For more information, see the CDFG website http://www.dfg.ca.gov/wildlife/species/survey_monitor.html. If there is no information to be recorded, or if the value is unknown, a value of "No Data" is required to be entered.

ProtocolDe: This is a text field. Values consist of brief descriptions of protocol followed or titles of published references for the specific protocol named. If there is no information to be recorded, or if the value is unknown, a value of "No Data" is required to be entered.

DBEditDate: This is a date field. This is the recorded date when the spatial data is created or modified.

SiteQualID: This is a numeric field. The SiteQualID, or site quality code can be found in the associated "Quality" table. Descriptions in this table provide the observer with a subjective ranking of population viability at the observation site and specific to the species observed. The ranking levels are based on the health and viability (size and demographics) of the population, condition and quality of the general habitat that supports the species, past and existing disturbance, and the potential for possible threats. If there is no information to be recorded, or if the value is unknown, a value of "99" is required to be entered.

SrcDocName: This is a text field. If an observation is linked to a report, or comes from a historic document, the title or reference is documented here. If there is no information to be recorded, a value of "No Data" is required to be entered.

DBSteward: This is a text field. The database steward is the name of the individual who is assembling and editing the spatial data.

Point_X and Point_Y: These are numeric fields. Due to the nature of place names, and the fact that they vary, the only way to truly name an observation's location is to record the X,Y location of the feature. This does not have to be recorded in the field, however. It can simply be added by running "Add X,Y Coordinates" tool in ArcGIS. If this is not an available option, the field can be left empty and will be populated before being entered into the final SanBIOS database by the department steward. For the polygon feature class, the coordinate of the polygon centroid is preferred. The coordinate system for the geodatabase and all datasets is State Plane California Zone 6, Nad83.

Notes: This is a text field. This field contains any ancillary information not captured in any other field that is pertinent to the observation. If there is no information to be recorded, or if the value is unknown, a value of "No Data" is required to be entered.

Contact Information

As this dataset is available to the public, it is expected that inconsistencies or errors in the data will be found. Questions or concerns regarding the SanBIOS dataset or the County's standard and templates, as well as information regarding specific errors in the database can be directed to one of the following:

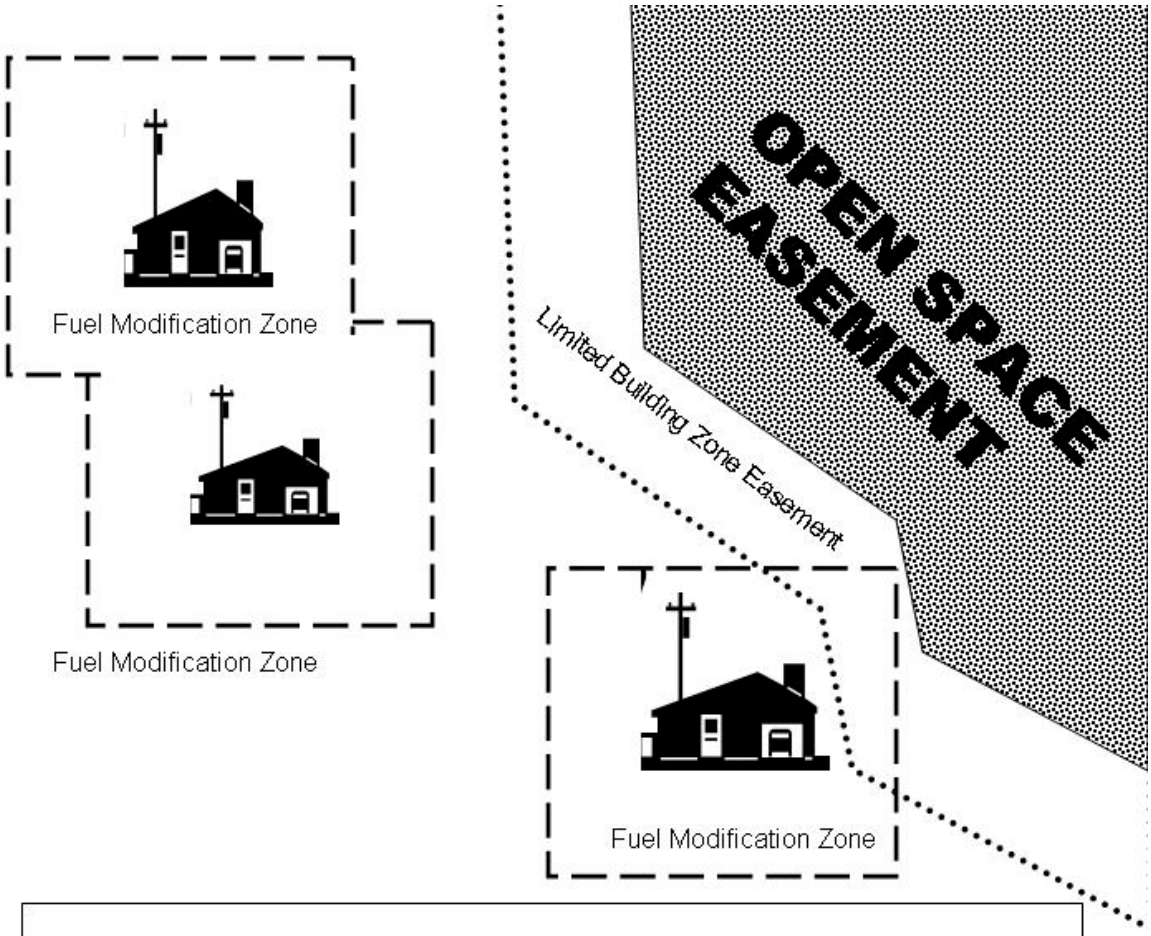
Emily Kochert, GIS Analyst
County of San Diego, Dept of Parks and Recreation
Emily.Kochert@sdcounty.ca.gov

Jason Batchelor, GIS Coordinator
County of San Diego, Dept of Planning and Land Use
Jason.Batchelor@sdcounty.ca.gov

Ross Martin, GIS Manager
County of San Diego, Land Use and Environment Group
Ross.Martin@sdcounty.ca.gov

[Attachment G]

Limited Building Zone Easements



The Difference Between Fuel Modification Zone and Limited Building Zone Easement

- - - - - - - - Fuel Modification Zone
(also known as Fire Clearing Area)
Protects Structure

..... Limited Building Zone Easement
Protects Open Space

These Zones may or may not overlap

[Attachment H]

Staff Biological Review Checklist

This checklist will be used by County staff to ensure that submitted Biological Reports address all requirements of the Report Format and Content Requirements.

	XIS1	XIS2	XIS3	Project Name and Numbers:
Document Submitted				Biological Resource Map
				Biological Resource Letter Report
				Full Biological Resource Report
Biological Resource Map				Was an appropriate scale used?
				Does map include the latest project plot plan?
				Signed by an approved County consultant?
				All locations of sensitive species and habitats shown or appropriately noted?
				Include proposed Open Space Easements and Limited Building Zone Easements?
				Show all off-site project impacts?
				Show resources within 100 feet of project boundary?
Report Preparer				Prepared by a County Approved Consultant?
				Signed by a County Approved Consultant?
Project Description				Does project description include all off-site project impacts, (fire fuel modification/vegetation management, access roads, utility lines, construction staging, drainage structures, etc.)?
				Does report discuss all on-site project impacts, including location of leach fields, fire fuel modification/vegetation management areas and specifications, graded areas, access, noise producers (pump stations), stormwater BMPs, landscaping, and lighting, as applicable?
Survey Methods				Was survey time and season appropriate?
Habitats				Do all habitats on site have a site-specific description and acreage?
				Do the acreages add up to the total project site size?
Sensitive Species				Check scoping letter: were all requested focused surveys done?
				If Protocol surveys done, does report include permit number of surveyor?
				Check sensitive species list provided with the scoping letter: Does the report address all sensitive species?
				Check report's species list and focused surveys for additional sensitive species that should be discussed.
				Does the report adequately discuss potential raptor foraging and nesting?
				Does the report adequately discuss large mammal use of the site?

	XIS1	XIS2	XIS3	PROJECT NAME AND NUMBERS
Sensitive Species (continued)				Does the report adequately discuss local and/or regional wildlife corridors and/or linkages?
				Does the report adequately discuss native wildlife nursery sites?
				For Final Reports, does report include a copy of NDDB form?
Wetlands				Are there RPO wetlands on site? Federal or state wetlands/waters?
				Are appropriate wetland buffer(s) proposed for all RPO wetlands? Is appropriate mitigation proposed for federal and/or state wetlands/waters?
				Are all wetlands and wetland buffers included in Open Space Easements?
Open Space				Does the project propose Open Space? Is the design appropriate for protection of specific resources? Are biological buffers included where necessary?
				Are all Open Space Easements surrounded by a Limited Building Zone Easement (check Fire Service letter and Fire Protection Plan)?
				Do you suspect that fire modeling is required to identify a larger Limited Building Zone Easement?
MSCP				If the project is within an approved MSCP subarea plan, does the report discuss project conformance with the MSCP? Does it include enough information to prepare Conformance Findings?
Impact Analysis				Does the report adequately discuss direct project impacts?
				Does the report adequately discuss indirect Project Impacts?
				Does the report adequately discuss cumulative Project Impacts?
Proposed Mitigation				Are Mitigation Ratios correct?
				Is On-Site Preservation Proposed?
				Is Off-Site Mitigation Proposed?
				Are proposed mitigation measures adequate? Are other measures necessary? (breeding season avoidance, biological monitoring, fencing, signage, BMPs, etc.)
CEQA Conclusion				Has project mitigated all biological impacts to less than significant?
				Does the project have significant unmitigated biological impacts?

Staff Completing Checklist: _____

Date: _____