HAMILTON BIOLOGICAL

December 8, 2017

Dan Silver, Executive Director
Endangered Habitats League
8424 Santa Monica Blvd., Suite A 592
Los Angeles, CA 90069-4267

SUBJECT: REVIEW OF BIOLOGICAL RESOURCE ISSUES
DRAFT EIR FOR THE SAFARI HIGHLANDS RANCH PROJECT
CITY OF ESCONDIDO, SAN DIEGO COUNTY, CALIFORNIA

Dear Mr. Silver,

On behalf of the Endangered Habitats League, Hamilton Biological, Inc., has reviewed the DEIR for the Safari Highlands Ranch and Citywide SOI Update project. The EIR preparer is Michael Baker International. The 1,098-acre project is located in unincorporated San Diego County (County) just north of the San Diego Zoo Safari Park. Current zoning of the site, per County General Plan designation, allows development of up to 27 homes. The proposed project would annex the site into the City of Escondido (City) and approve a Specific Plan to develop 550 single-family residences, a "Village Core," trails, and associated amenities. Annexation of the project site into the City would require preparation of an acceptable multiparty agreement between the County, U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), the City, and the project applicant, as well as approval by the San Diego Local Agency Formation Commission (LAFCO).

Hamilton Biological, Inc., is a consultancy specializing in field reconnaissance, regulatory compliance, preparing CEQA documentation, and providing third-party review of CEQA documentation. Please refer to the attached curriculum vitae.

METHODS

My review included relevant portions of the following documents:

- DEIR Section 1.2, Project Objectives.
- DEIR Section 2.3, Biological Resources.
- DEIR Section 2.14, Wildfire Hazards.
- DEIR Section 3.0, Sphere of Influence Update and Cumulative Impacts.
- DEIR Section 5.0, Alternatives.
- DEIR Appendix 2.03, Biological Technical Report.
- DEIR Appendix 2.03A, Potential Special Status Plant Species.
- DEIR Appendix 2.03B, Potential Special Status Animal Species.

316 Monrovia Avenue — Long Beach, CA 90803 — 562-477-2181 — robb@hamiltonbiological.com

- DEIR Appendix 2.03C, Floral Compendium.
- DEIR Appendix 2.03D, Faunal List.
- DEIR Appendix 2.03E, California Gnatcatcher Reports to USFWS.
- DEIR Appendix 2.03G, MSCP Consistency Analysis Report.

In addition, I reviewed the following correspondence submitted to the City:

- California Department of Fish and Wildlife. 2014. Comments on the Notice of Preparation of a Draft Environmental Report for the Safari Highlands Ranch Project, City of Escondido, California. Letter from Gail K. Sevrens, South Coast Region Environmental Project Manager, to Mr. John Helmer, Planning Consultant, dated October 16, 2014. Includes 12-page attachment: "Recommendations: NOP for the Safari Highlands Ranch Project DEIR."
- County of San Diego. 2014. Comments on the Safari Highlands Ranch Project and Request for Annexation Initiation Hearing. Letter from Todd Snyder, Chief of Advance Planning Division, to Jay Petrek, Assistant Planning Director, City of Escondido, dated April 22, 2014.

ANNEXATION ISSUES

Under the existing County of San Diego General Plan Rural Lands (RL-40) Land Use Designation, the project site would accommodate approximately 27 single family units. The County General Plan states that rural areas are not appropriate for intensive residential or commercial uses due to significant topographical or environmental constraints, limited access, and the lack of public services or facilities. The rural lands designation is intended to:

- Preserve the County's rural atmosphere.
- Protect land with significant physical or environmental constraints or hazards.
- Preserve open space, farmland, and natural resources.
- Provide open space buffers and a visual separation between communities.
- Preserve and provide land for agricultural opportunities.
- Prevent sprawl development, thereby reducing vehicle miles traveled and greenhouse gas emissions.

These goals remain valid regardless of proposed annexation of the project site into the City of Escondido. The County's above-cited letter states that, despite the proposed annexation, the County will review the Safari Ranch Highlands project in relation to its ability to meet the above-stated goals for Rural Lands. Comment No. 1 of the CDFW on the Notice of Preparation for the DEIR expressed serious concerns about annexing the project site into a non-active NCCP jurisdiction:

> The analysis for consistency with the MSCP should acknowledge that the entire conserved open space would now be moving from an active NCCP jurisdiction (County of San Diego) to a non-active NCCP jurisdiction (City of Escondido), so many of the assurances to ensure

> long-term viability of the conserved open space for biological purposes would not be as enforceable from the Wildlife Agencies' perspective. The DEIR should clearly demonstrate how the conserved areas on-site would be managed once annexed into the City of Escondido.

As discussed herein, the DEIR fails to adequately describe how the conserved areas would be managed following proposed annexation to the City.

PROJECT OBJECTIVE NO. 4 FALSELY ASSERTS MSCP CONSISTENCY

As noted in Section 1.2 of the DEIR, Section 15124(b) of the CEQA Guidelines requires the project description to contain a statement of objectives that includes the underlying purpose of the proposed project. Objective No. 4 in the DEIR states:

> 4. Cluster residential lots and provide a development that is consistent with the goals of the MSCP as expressed in the County of San Diego's Multiple Species Conservation Plan (SC - MSCP) by limiting the development footprint to minimize environmental impacts, and mitigating environmental impacts in accordance with MSCP ratios.

It is this asserted consistency with the MSCP, stated as an explicit purpose of the project, that provides the DEIR's rationale for a bare-bones impact analysis and minimal mitigation program. As discussed at length in these comments, however, the DEIR provides no substantial evidence that the project design achieves MSCP consistency, and this undercuts the document's rationale for "mitigating environmental impacts in accordance with MSCP ratios."

REVIEW OF MSCP JURISDICTIONS

The DEIR raises complicated issues involving multiple jurisdictions and regional open space conservation plans, some of which are in draft form or inactive, and all of which fall under the umbrella of the Natural Communities Conservation Plan (NCCP).

County of San Diego MSCP

The County is actively working with the USFWS and CDFW to establish and implement a South County Multi-Species Conservation Plan (SC-MSCP). The southern portion of the Safari Highlands Ranch project site lies within the Metro-Lakeside Jamul Segment of the adopted SC-MSCP. The remainder of the site lies within the Daley Ranch-Lake Wohlford Core Area (Planning Unit 8) of the draft North County MSCP (NC-MSCP).

The County administers the adopted SC-MSCP through its Biological Mitigation Ordinance (BMO), part of the San Diego County Code of Regulatory Ordinances.

City of Escondido Draft MHCP Subarea Plan

Escondido is one of seven cities in northwestern San Diego County that comprise an NCCP subregion. Planning of these areas has taken place under the subregional Multiple Habitat Conservation Program (MHCP). The City of Escondido Draft MHCP Subarea Plan represents the city's contribution to the MHCP and to regional NCCP conserva-

tion goals. Page 2.3-11 of the Safari Highlands Ranch DEIR describes the City of Escondido Draft MHCP Subarea Plan:

> The City of Escondido has an unadopted draft MHCP Subarea Plan dated June 2001 and does not have an Implementing Agreement or incidental take permit. Therefore, this draft Subarea Plan is not specifically applicable to any potential projects under discretionary review, although it may be referred to as a guideline. Further, based on the 2007 USFWS letter regarding non-concurrence of NCCP 4(d) rule Habitat Loss Permits, the City of Escondido has not progressed on actively developing their draft Subarea Plan and therefore, the USFWS will not concur on interim incidental take of coastal California gnatcatcher through the Habitat Loss Permit process, thus rendering the Subarea Plan ineffective to address gnatcatcher and coastal sage scrub impacts. Notwithstanding, the regulatory function of the unadopted draft City of Escondido MHCP Subarea Plan has been used as one tool for assessment of conservation design in this document.

Given that the City stopped actively participating in NCCP planning 16 years ago, and has no Implementing Agreement or incidental take permit, the 2001 draft MHCP Subarea Plan should not be granted undue relevance in this project's CEQA review process.

PROPOSED ACTIONS VIOLATE THE MSCP FINDINGS OF CONFORMANCE

As discussed previously, the DEIR's analyses are explicitly predicated upon the proposed actions being consistent with "the goals of the MSCP as expressed in the County of San Diego's Multiple Species Conservation Plan (SC-MSCP)." Determination of consistency is made by completing BMO Appendix G: "Findings of Conformance, Multiple Species Conservation Program" (see attached). The DEIR's MSCP consistency analysis (Appendix G to the DEIR) concludes that the proposed project would comply with the Findings of Conformance, but (1) the consistency analysis does not address each Finding, and (2) for those Findings that are addressed, in nearly every case the proposed project's compliance is simply asserted, rather than demonstrated (numerous examples are provided later in this letter). CEQA requires that findings of potentially significant impacts (e.g., a project design that fails to conform to MSCP requirements) be based upon "substantial evidence." Section 15064(f)(5) of the CEQA Guidelines:

> Argument, speculation, unsubstantiated opinion or narrative, or evidence that is clearly inaccurate or erroneous, or evidence that is not credible, shall not constitute substantial evidence. Substantial evidence shall include facts, reasonable assumptions predicated upon facts, and expert opinion support by facts.

This letter independently evaluates whether the proposed project satisfies all of the requirements of the MSCP Findings of Conformance. In cases where conformance is found to be lacking, this letter provides detailed analyses based upon the **substantial evidence** mandated under CEQA.

Biological Resource Core Area Determination

Page 7 of the DEIR's consistency analysis states that the project site is "entirely considered a Biological Resource Core Area (BRCA) due to the PAMA [Pre-Approved Mitigation Area] mapping over the majority of the site." In fact, per the MSCP Findings of Conformance, the project site qualifies as a BRCA for each of the following reasons:

- The land is shown as Pre-Approved Mitigation Area on the wildlife agencies' Pre-Approved Mitigation Area map.
- The land is located within an area of habitat that contains biological resources that support or contribute to the long-term survival of sensitive species and is adjacent or contiguous to preserved habitat that is within the Pre-Approved Mitigation Area on the wildlife agencies' Pre-Approved Mitigation Area map.
- The land is shown on the Habitat Evaluation Map (Attachment J to the BMO) as very high or high and links significant blocks of habitat.
- The land consists of or is within a block of habitat greater than 500 acres in area of diverse and undisturbed habitat that contributes to the conservation of sensitive species.
- The land contains a high number of sensitive species and is adjacent or contiguous to surrounding undisturbed habitats.

MSCP Subarea Plan Findings

For purposes of MSCP conformity, a proposed project is required to demonstrate conformance with *each and every one* of the 11 MSCP Findings of Conformance listed in Appendix G to the BMO. Yet, the DEIR fails to enumerate all 11 Findings or attempt to explain the basis for its conclusion that conformance has been achieved. Below is a summary discussion explaining the ways in which the project **would not comply** with nearly all of these Findings. The following evaluations of project conformance are also expanded upon elsewhere in this letter.

1. **The project will not conflict with the no-net-loss-of-wetlands standard in satisfying State and Federal wetland goals and policies.**

   Project implementation would impact 4.33 acres of wetlands and other jurisdictional resources. Mitigation Measure MM BIO-4 calls for no net loss of wetlands "consistent with wetland regulatory permits and/or agreement conditions of approval" and Mitigation Measure MM BIO-5 calls for preparation of a "conceptual wetland mitigation plan" at some time in the future. As such, the proposed project may or may not comply with Finding of Conformance No. 1. The DEIR provides no information regarding the location of the mitigation site(s) or the actions that would be taken, making it impossible to determine whether or not it will conform. The DEIR should have identified on-site mitigation sites and provided a conceptual mitigation, including performance standards, for the public's consideration.

2. **The project includes measures to maximize the habitat structural diversity of conserved habitat areas including conservation of unique habitats and habitat features.**

   The proposed project design would build upon virtually all of the gently sloped portions of the project site, which support hundreds of oak trees and some of the highest-value Diegan coastal sage scrub on the site. The largest block of habitat proposed

for conservation would consist of dry, relatively steep slopes. Because steepness of slope affects the structural diversity of habitat, a development plan that removes all of the site's gentle slopes and preserves only the steeper slopes will not "maximize the habitat structural diversity of conserved habitat areas."

3. The project provides for conservation of spatially representative examples of extensive patches of coastal sage scrub and other habitat types that were ranked as having high and very high biological values by the MSCP habitat evaluation model.

As discussed later in this letter, developing virtually all of the site's gentle slopes would preclude conservation of "spatially representative examples" of sensitive coastal sage scrub and oak-containing habitats. In an effort to demonstrate compliance with this MSCP requirement, the DEIR ignores the "conservation of spatially representative examples" criterion and instead focuses on attempting to demonstrate that the proposed project achieves certain MSCP numerical metrics for conservation of "high value" and "very high value" coastal sage scrub. But the MSCP's conservation metrics *are predicated upon a project demonstrating compliance with the Findings of Conformance.* If a project does not get beyond the basic threshold of plan conformance, there is no reason to assess secondary metrics and no rationale for applying low MSCP mitigation ratios. Such ratios are predicated on a jurisdiction achieving and contributing to all the benefits of a comprehensive preserve network. Since the project site would be annexed into a jurisdiction that does not actively participate in the MSCP (or MHCP), and since the proposed project would violate nearly all of the MSCP Findings of Conformance, the DEIR has no valid rationale for basing any aspect of its impact analysis and mitigation scheme upon MSCP mitigation ratios or other MSCP conservation metrics.

4. The project provides for the creation of significant blocks of habitat to reduce edge effects and maximize the ratio of surface area to the perimeter of conserved habitats.

Project implementation would result in 19.4 miles of development edge around building pads and roads. All of the development edges and roadway edges would be subject to fuel modification impacts in perpetuity. This is the opposite of "maximizing the ratio of surface area to the perimeter of conserved habitats."

5. The project provides for the development of the least sensitive habitat areas.

The proposed project provides for developing virtually all of the site's gentle slopes, which support some of the most ecologically sensitive habitat areas on the project site, including 417 oak trees and 236 acres of Diegan coastal sage scrub. The main streambed on the site would be crossed by roads in five locations, and 4.33 acres of wetlands and other jurisdictional resources would be impacted. Other sensitive communities proposed for impacts include ragweed mesic meadow, mulefat scrub, oak riparian woodland, and oak woodland. In no substantial way does the project design attempt to limit impacts to "the least sensitive habitat areas."

6. The project provides for the conservation of key regional populations of covered species, and representations of sensitive habitats and their geographic sub-associations in biologically functioning units.

The project design would remove virtually all of the site's gentle slopes, which support the coastal sage scrub habitat of greatest value to the federally threatened California Gnatcatcher. The largest block of habitat proposed for conservation would consist of dry, relatively steep slopes hemmed in by existing and proposed residential neighborhoods, and would be subject to extensive edge and fragmentation effects. Roads would cross the site's main streambed in five locations. In these important ways, the biological functionality of the conserved habitat would be seriously compromised.

7. Conserves large interconnecting blocks of habitat that contribute to the preservation of wide-ranging species such as Mule deer, Golden eagle, and predators as appropriate. Special emphasis will be placed on conserving adequate foraging habitat near Golden eagle nest sites.

Project implementation would establish intensive development deep into a backcountry area where the ecological sensitivity of all the native habitats is relatively high due to the area's intact/unfragmented nature. The project design would remove virtually all of the site's gentle slopes, which support hundreds of oaks and the coastal sage scrub habitat of greatest value to the federally threatened California Gnatcatcher. The largest block of habitat proposed for conservation would consist of dry, relatively steep slopes hemmed in by existing and proposed residential neighborhoods, and would be subject to extensive edge and fragmentation effects. Roads would cross the site's main streambed in five locations. In these important ways, the biological functionality of the conserved habitat would be seriously compromised for many types of wildlife, including wide-ranging species, such as the mule deer, and edge-sensitive predators, such as the mountain lion and Golden Eagle.

8. All projects within the San Diego County Subarea Plan shall conserve identified critical populations and narrow endemics to the levels specified in the Subarea Plan. These levels are generally no impact to the critical populations and no more than 20 percent loss of narrow endemics and specified rare and endangered plants.

The DEIR does not identify any narrow endemics within proposed impact areas.

9. No project shall be approved which will jeopardize the possible or probable assembly of a preserve system within the Subarea Plan.

The project site lies at the northern edge of the SC-MSCP and spills over into the NC-MSCP planning area. Because these northerly plan areas have already suffered extensive depletion by past development, few large, intact blocks of habitat — termed BRCAs in the SC-MSCP and PAMAs in the NC-MSCP planning area — remain. For this reason, the fragmentation and loss of ecological value of a BRCA or

PAMA — as exemplified by this project site — would jeopardize the possible or probable assembly of a preserve system. There are no intact core areas to spare.

In addition, if the City and the applicant are allowed to claim the benefits of the MSCP without participating in the program and without satisfying the Findings of Conformance, this will effectively remove the incentive of any other land owner to participate in the MSCP. Greater returns on investment can be achieved by annexing property into a non-participating jurisdiction, proposing a non-conforming project, and simply declaring the project's consistency with MSCP guidelines. Thus, certification of the EIR for this large, non-conforming project would potentially undermine the ability of MSCP planners to assemble and effectively manage the large areas of PAMA required to implement a functional MSCP reserve system.

Furthermore, establishing infrastructure and a roadway connection to the northern part of the project site would facilitate development of designated PAMA to the east of the project site, or at minimum increase its development potential and therefore its market price. These project effects would thereby further jeopardize the possible or probable assembly of a preserve system within the Subarea Plan.

10. All projects that propose to count on-site preservation toward their mitigation responsibility must include provisions to reduce edge.

Project implementation would establish 19.4 miles of development edge in this backcountry area, yet the DEIR fails to adequately describe or analyze the project's potential edge effects. The DEIR identifies proposed FMZ II fuel modification impacts as a form of mitigation for such vague effects as "elevated noise, artificial lighting, invasive weeds," but fails to demonstrate that FMZ II treatments would lessen the severity of any potentially significant edge effects (in all likelihood, they would contribute to those effects). The DEIR acknowledges that any habitat functions associated with FMZ II represent "a secondary goal to fire protection," and so the DEIR cannot characterize vague plans for revegetation or other planned activities in FMZ II as a valid form of biological mitigation under CEQA.

11. Every effort has been made to avoid impacts to BRCAs, to sensitive resources, and to specific sensitive species as defined in the BMO.

For the reasons discussed herein, the DEIR cannot claim that "every effort has been made" to avoid potentially significant impacts to this Biological Resource Core Area. County zoning of the project site is "RL-40" because, as stated in the County's above-cited letter, "rural areas are not appropriate for intensive residential or commercial uses due to significant topographical or environmental constraints, limited access, and the lack of public services or facilities." Intensive residential development of this steep, backcountry BRCA is likely infeasible without incurring significant, unmitigable impacts to a variety of sensitive resources. The DEIR provides no substantial evidence in support of its overall conclusion, stated in Project Objective No. 4, that the proposed project would be consistent with the goals and require-

ments of the MSCP, and that the project's potentially significant impacts can therefore be mitigated to less than significant "in accordance with MSCP ratios."

Project Does Not Meet MSCP Planning Goals for PAMA

Nearly the entire project site is mapped as Pre-Approved Mitigation Area (PAMA), either adopted (SC-MSCP) or proposed (NC-MSCP). The MSCP planning goal is to conserve approximately 75 percent of PAMA, with 25 percent utilized for development via projects *that comply with all MSCP preserve design guidelines*, and that are limited so as not to conflict with the overall goal of establishing adequate and viable MSCP preserves. The DEIR identifies proposed impacts to 502.7 acres, out of 1,131.8 acres total (project site plus off-site impact areas), and thus would impact 44 percent of the PAMA (on-site plus off-site). Conservation of 56 percent of PAMA, in a non-conforming project design, falls far short of the MSCP's 75-percent conservation goal for PAMA. The DEIR fails to acknowledge that the proposed Sierra Highlands Ranch project would not achieve either (a) the numeric metric of 75 percent conservation, or (b) conformance with all MSCP preserve design guidelines.

Project Would Significantly Degrade BRCA

Section 4.3.2.1 of the SC-MSCP Subarea Plan states:

> A project would result in significant degradation of the biological value of a biological resource core area, "core linkage" or "constrained linkage" as defined in the Biological Mitigation Ordinance. The habitat value of a biological resource core area is significantly degraded if 25 percent of the biological core area (500 acres or more in size) is impacted.

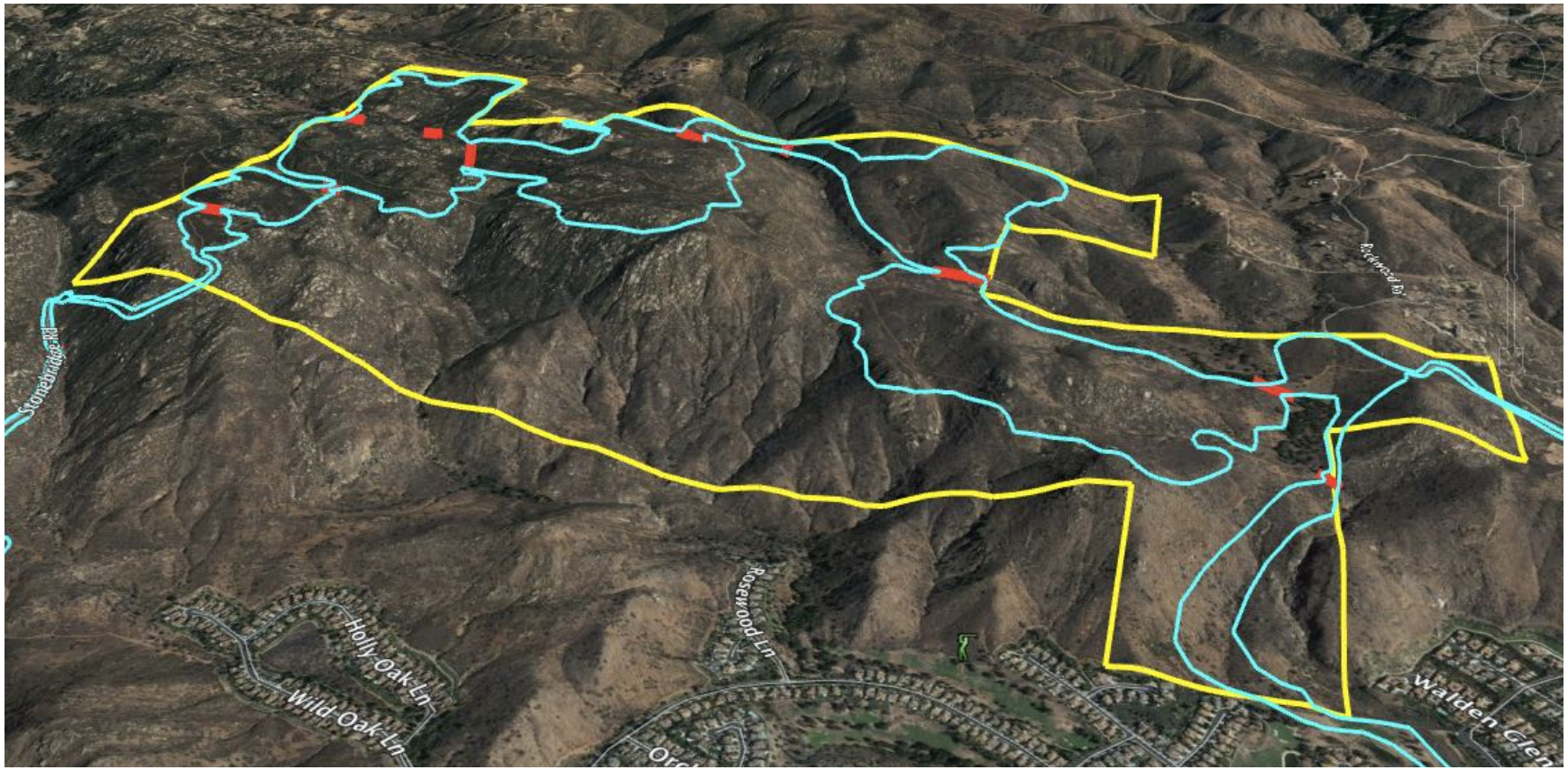
As discussed in the previous section, the DEIR proposes impacts 44 percent of the BRCA (on-site plus off-site). Thus, as defined in the SC-MSCP, project implementation would significantly degrade the biological value of this Biological Resources Core Area.

EVALUATION OF DEIR'S SPECIFIC CLAIMS OF MSCP CONSISTENCY

The DEIR contains various assertions of project design features and mitigation measures that contribute toward an overall conclusion that project implementation would comply with all MSCP preserve design requirements. The remainder of this letter investigates these claims and whether they are supported by substantial evidence.

IS PROPOSED DEVELOPMENT SITED IN AREAS WHICH MINIMIZE IMPACTS TO HABITAT?

In support of its claim that the proposed development meets the MSCP requirement that "development shall be sited in areas which minimize impact to habitat," Page 7 of the DEIR's MSCP consistency analysis states that the project design "retains wildlife movement connectivity and maintains large contiguous blocks of native habitat over smaller blocks of habitat." As the following oblique aerial shows, however, conservation of a large block of habitat in the west-central part of the site would be achieved by preserving only those areas that would be the most challenging and costly to build upon, not through any concerted effort to minimize impacts to sensitive habitat areas.



Oblique aerial image showing the project site, as viewed facing northeast. Proposed limits of impact are shown in cyan and ten proposed wildlife movement undercrossings are shown in red. Source: Google Earth Pro.

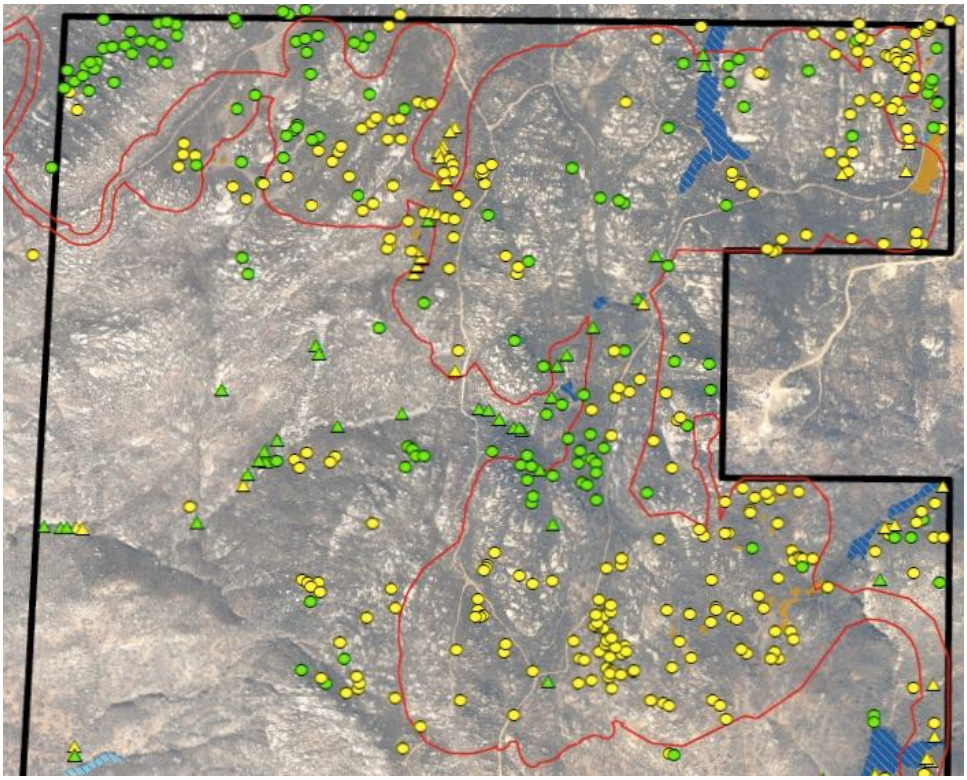
As shown above, the largest block of habitat proposed for conservation would consist of dry, relatively steep slopes hemmed in by existing and proposed residential neighborhoods, and would be subject to extensive edge and fragmentation effects. Roads would cross the site's main streambed in five locations.

Page 7 of the DEIR's MSCP consistency analysis states:

> Further the design considers the conservation designations and values of surrounding lands in the context of onsite conservation configuration to ensure that resource value is optimized on the site with respect to landscape ecology considerations.

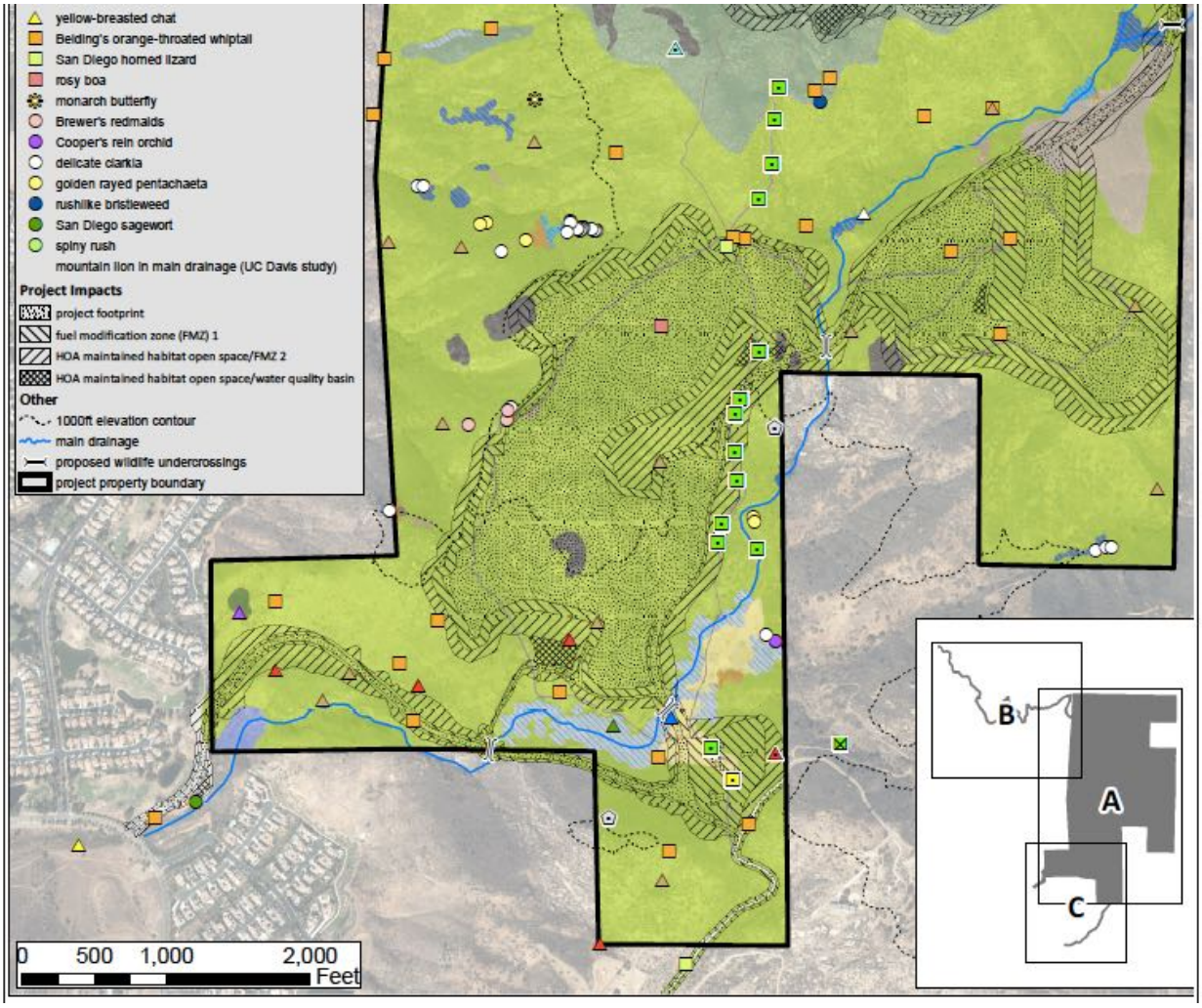
Whatever this vague statement is supposed to mean, the DEIR provides no substantial evidence that the project design would accomplish any meaningful conservation goals or achieve consistency with the MSCP preserve design guidelines. As the aerial image on the previous page shows, the project design builds upon all of the relatively flat areas, regardless of the ecological communities that occur in those areas or any consideration for how wildlife might preferentially utilize flatter areas versus steeply sloped areas. Because steepness of slope affects the structural diversity of habitat, a development plan that removes all of the site's gentle slopes and preserves only the steeper slopes will not "maximize the habitat structural diversity of conserved habitat areas." This would be in direct contrast to MSCP preserve design criteria.

Furthermore, development of virtually all gently sloped areas would impact large numbers of both Engelmann Oaks (yellow icons; 305 trees impacted) and Coast Live Oaks (green icons; 112 trees impacted). The following excerpt from DEIR Figure 2.3-3 (Oak Distribution Within Project Limits) shows the relationship between the proposed impact area, shown in red, and the distribution of oak trees in the northern part of the site.



Examination DEIR Figure 2.3-3 (northern half excerpted here) shows that project planners made no serious effort to avoid biologically valuable oaks growing on gentle slopes outside of jurisdictional areas.

The following excerpt from Figure 2.3-4a (Biological Impacts Map) shows the relationship between proposed impact areas and another ecologically sensitive community, Diegan coastal sage scrub, in the southern half of the project site.



Examination DEIR Figure 2.3-4a (southern half excerpted here) shows that project planners made no serious effort to limit impacts to Diegan coastal sage scrub or other sensitive ecological communities growing on gentle slopes outside of jurisdictional areas.

Diegan coastal sage scrub is the required habitat of the federally threatened California Gnatcatcher. The project design calls for building upon virtually all of the Diegan coastal sage scrub growing on the site's gentler slopes — 236 acres of impact. Preserved scrub occurs almost entirely on moderate-to-steep slopes. As reviewed in detail later in these comments, California Gnatcatchers show a marked preference for gentle slopes, and avoid nesting in steep areas (> 40 percent slope) altogether.

Thus, not only does the proposed project design call for decimation of the oaks growing in the northern half of the site, it would also remove nearly all of the sage scrub habitat of greatest value to the California Gnatcatcher in the southern half of the site. Thus, substantial evidence demonstrates that the proposed development clearly has not been

"sited in areas which minimize impact to habitat." Rather, the project design would (a) develop nearly all of the site's gentle topography; (b) preserve the steep slopes that pose the greatest challenge to develop; (c) fail to "maximize the habitat structural diversity of conserved habitat areas;" and (d) as discussed subsequently, create 19.4 miles of development edge in largely undisturbed PAMA.

Is Proposed Development Clustered to Maximize Open Space?

The project design establishes four large and two small "development bubbles" corresponding to the most buildable portions of the site. Page 7 of the DEIR's MSCP consistency analysis erroneously characterizes this aspect of the project design as a form of "clustering" that helps the project to achieve MSCP consistency. In the same vein, Page 2.3-16 of the DEIR asserts:

> Clustering of neighborhoods where topography and drainages allow maximizing open space blocks and minimizing edge effects.

This characterization of the project design is not supported by substantial evidence. The oblique aerial on Page 10 of this letter shows that any suggestion of "clustering" simply reflects the discontinuous distribution of buildable topography on the project site.

Would the Proposed Development Minimize Edge Effects?

Two of the MSCP Findings of Conformance address the importance of minimizing development and its potential adverse effects on nearby preserved areas:

4. The project provides for the creation of significant blocks of habitat to reduce edge effects and maximize the ratio of surface area to the perimeter of conserved habitats.

10. All projects that propose to count on-site preservation toward their mitigation responsibility must include provisions to reduce edge.

Please refer to the aerial exhibit on the following page. Measuring the perimeter of the proposed impact area shows that project implementation would result in **19.4 miles of development edge** around building pads and roads. All of the development edges and roadway edges would be subject to fuel modification impacts in perpetuity. As reviewed at length later in these comments, the effects of development edge extend up to 250 meters (820 feet) into preserved open space areas. The DEIR provides no substantial evidence showing that project planners attempted to "maximize the ratio of surface area to the perimeter of conserved habitats" or included "provisions to reduce edge" as required for MSCP conformance.

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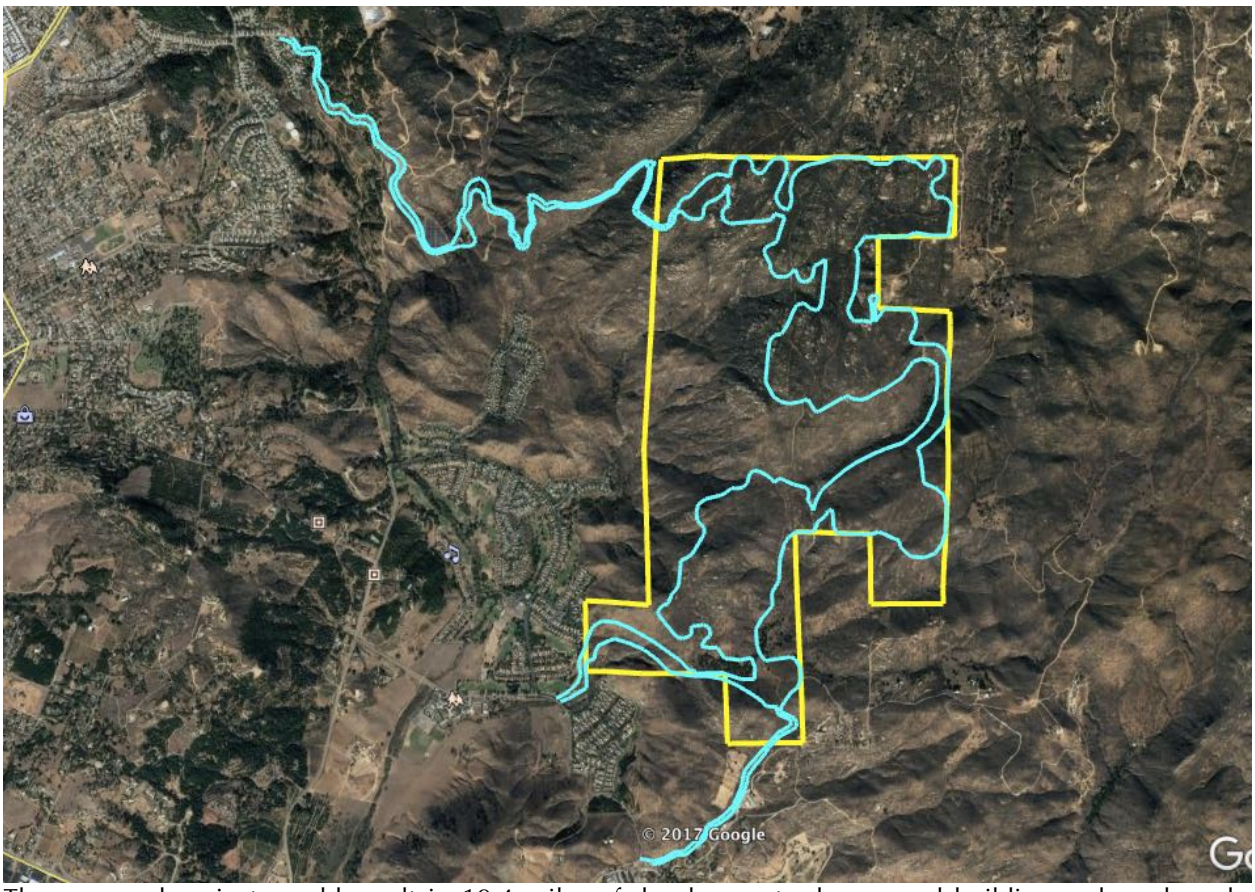


The proposed project would result in 19.4 miles of development edge around building pads and roads, shown above in cyan. Natural communities along development edges and roadway edges would be subject to fuel modification impacts in perpetuity. Source: Google Earth Pro.

The DEIR fails to adequately describe or analyze the project's potential edge effects, but suggests that an unspecified and unenforceable "extensive revegetation program within the HOA maintained habitat open space" (i.e., the FMZ II fuel modification zone) would bring the project into compliance with the MSCP. Not only is this conclusion completely speculative but, as discussed subsequently, activities within FMZ II would, in all likelihood, actually contribute to the project's adverse edge effects. The topic of edge effects, and the DEIR's failure to engage with the scientific literature concerning this important topic, is discussed at length later in this comment letter.

Page 10 of the DEIR's MSCP consistency analysis report asserts the following:

> Of the 629.09 acres, only 2 percent (15.56 acres) is considered to be constrained by potential edge effects of adjacent development, considering habitat size and configuration (Figure 2).

The 15.56 acres in question consist of a few locations where the proposed project design would create pockets of preserved open space bordered closely on three sides by graded areas. To suggest that, in a project that proposes to create 19.4 miles of urban-wildland interface, only two percent of the preserved area would be "constrained by potential edge effects of adjacent development" is highly misleading. The topic of potential edge and fragmentation effects is addressed in detail later in this letter.

The inclusion of ten wildlife undercrossings in the project design would preserve some potential for wildlife to move through the site, but this assumes (a) that edge-sensitive wildlife species would have adequate incentive to move through those undercrossings, and (b) that the on-site open space preserve would provide adequate resources for the wildlife that reaches this area. Under a development plan that conforms to MSCP guidelines, perhaps these two assumptions would be reasonable. In this case, however, nearly all of the conserved habitat would consist of dry, relatively steep slopes fragmented by development and subject to extensive edge effects. Thus, many species of wildlife would have little incentive to negotiate wildlife undercrossings to move into and out of the on-site conservation area.

Furthermore, some wildlife species present or potentially present in the on-site habitat preserve could experience elevated levels of mortality due to pervasive edge and fragmentation effects. Species at risk range from the coast horned lizard (*Phrynosoma coronatum*), which could suffer from a combination (a) replacement of its native ant prey base with exotic ants that do not meet their nutritional requirements; (b) motor vehicle mortality on roads; (c) mountain bike mortality on trails; (d) increased predation by cats and other companion animals, and (e) increased collection, to large mammals such as the mountain lion (*Puma concolor*), which could be killed if observed within or near peoples' yards. See also the subsequent discussion of potential impacts to the western spadefoot (*Spea hammondii*). The preserved area could therefore represent an "ecological sink" for some wildlife species; that is, an area where the rate of mortality exceeds the rate of productivity (Pulliam and Danielson 1991).

Thus, not only does it appear likely that numerous species would avoid the proposed 629-acre on-site conservation area for various reasons discussed in this letter, but many species probably *should* avoid the area because it would represent a potential "ecological sink." It is, in part, to prevent such ecologically disastrous possible outcomes that the MSCP requires projects proposing to count on-site preservation toward their mitigation responsibility include provisions to reduce edge.

DEIR Lacks Evidence for Asserted MSCP Consistency

Conservation planning under the MSCP framework is predicated on development being designed and implemented in a manner designed to maintain the ecological integrity of the regional open space preserve system. As demonstrated herein, the design of the proposed Safari Highlands Ranch project would not minimize habitat impacts through clustering, and would result in 19.4 miles of development edge within PAMA. Review of the available evidence leads to a clear conclusion that the proposed project is grossly inconsistent with the preserve design tenets of the MSCP, as codified in the MSCP Findings of Conformance (attached). Therefore, as discussed previously, the DEIR has no valid rationale under which to adopt the favorable impact/mitigation standards established to accommodate development projects that do comply with all MSCP preserve design guidelines.

MITIGATION MEASURE MM BIO-2 LACKS VALID RATIONALE

To address the project's impacts to Diegan coastal sage scrub and associated special-status species, including the federally threatened California Gnatcatcher, Mitigation Measure MM BIO-2 proposes the following:

> To meet the mitigation ratio requirement for Diegan coastal sage scrub, 14.18 acres of off-site Diegan coastal sage scrub habitat shall be conserved in perpetuity at an appropriate mitigation site or approved mitigation bank, in addition to the 629.09 acres of on-site habitat conservation.
>
> Further, an additional 17.23 acres of coastal sage scrub off-site conservation would be required to meet the MSCP coastal sage scrub habitat conservation goal of 64% for the Metro-Lakeside-Jamul Segment, as assessed in the project MSCP Consistency Analysis Report. A total of 31.41 acres of coastal sage scrub habitat shall be conserved off-site in perpetuity.

For reasons discussed at length herein, the DEIR has no valid rationale for appropriating the favorable mitigation conditions available to participating landowners proposing projects that conform to MSCP preserve design guidelines. Whether the proposed actions, including the proposed off-site mitigation, would "meet the MSCP coastal sage scrub habitat conservation goal of 64% for the Metro-Lakeside-Jamul Segment" is irrelevant, since the project itself would be grossly inconsistent with the MSCP's approach to regional open space planning. The City and the EIR consultant should be evaluating this grossly non-conforming project on its own merits, acknowledging that the proposed actions are inconsistent with MSCP planning for the project site, rather than blindly asserting the project's consistency with the MSCP Findings of Conformance. Since the DEIR's impact analyses and mitigation measures do not reflect the project's manifest lack of MSCP consistency, the DEIR is an inadequate CEQA document that lacks substantial evidence for its findings.

DEIR IGNORES STUDIES OF EDGE AND FRAGMENTATION EFFECTS

An extensive body of published, peer-reviewed research exists concerning the impacts of development edges and habitat fragmentation upon native plants and wildlife. Remarkably, the DEIR fails to acknowledge this research, and almost completely ignores numerous potential adverse project effects associated with development edges and habitat fragmentation in wildland areas. Within the DEIR, edge effects are mentioned only briefly, in passing, and any mitigation measures lack a clear nexus to the identified impact or any mechanism under which the City, the County, the Wildlife Agencies, or members of the public might possibly ensure successful mitigation. As discussed previously, the DEIR's MSCP consistency analysis goes so far as to assert that "only 2 percent [of the proposed 629-acre on-site conservation area] is considered to be constrained by potential edge effects of adjacent development." What follows is a summary of relevant published research on the effects of development edge and habitat fragmentation upon ecological communities, including citations from the scientific literature.

Urbanization typically includes residential, commercial, industrial, and road-related development (i.e., the "built" environment). At the perimeter of the built environment

is an area known as the urban/wildland interface, or "development edge." In ecology, "edges" are places where natural communities interface, vegetation or ecological conditions within natural communities interact (Noss 1983), or patches with differing qualities abut one another (Ries and Sisk 2004). "Edge effects" are spillover effects from the adjacent human-modified matrix that cause physical gradients in light, moisture, noise, etc. (Camargo and Kapos 1995; Murcia 1995, Sisk et al. 1997) and/or changes in biotic factors such as predator communities, density of human-adapted species, and food availability (Soulé et al. 1988; Matlack 1994; Murcia 1995; Ries and Sisk 2004). Edge effects and habitat fragmentation are among the principal threats to persistence of biological diversity (Soulé 1991). Edge-related impacts may include:

- Introduction/expansion of invasive exotic vegetation carried in from vehicles, people, animals or spread from backyards or fuel modification zones adjacent to wildlands.
- Higher frequency and/or severity of fire as compared to natural fire cycles or intensities.
- Companion animals (pets) that often act as predators of, and/or competitors with, native wildlife.
- Creation and use of undesignated trails that often significantly degrade the reserve ecosystems through such changes as increases in vegetation damage and noise.
- Introduction of or increased use by exotic animals which compete with or prey on native animals.
- Influence on earth systems and ecosystem processes, such as solar radiation, soil richness and erosion, wind damage, hydrologic cycle, and water pollution that can affect the natural environment.

Any of these impacts, individually or in combination, can result in the effective loss or degradation of habitats used for foraging, breeding or resting, with concomitant effects on population demographic rates of sensitive species.

Harrison and Bruna (1999) completed a review of a suite of studies dealing with fragmentation and edge effects and concluded that there is a general pattern of reduction of biological diversity in fragmented habitats compared with more intact ones, particularly in regards to habitat specialists. While physical effects associated with edges were predominant among species impacts, they found evidence for indirect effects including altered ecological interactions. Fletcher et al. (2007) found that distance from edge had a stronger effect on species than did habitat patch size, but they acknowledged the difficulty in separating those effects empirically. Many southern California plant and animal species are known to be sensitive to fragmentation and edge effects; that is, their abundance declines with fragment size and proximity to an edge (Wilcove 1985; Soulé et al. 1992; Bolger et al. 1997a,b; Suarez et al. 1998; Burke and Nol 2000; Henle et al. 2004). These considerations are of particular relevance for the Safari Highlands Ranch project,

which proposes 19.4 miles of development edge in what is now an essentially intact natural area.

Wildlife populations are typically changed in proximity to edges, either by changes in their demographic rates (survival and fecundity), or through behavioral avoidance of or attraction to the edge (Donovan et al. 1997; Sisk et al. 1997; Ries and Sisk 2004). For example, coastal sage scrub areas within 250 meters of urban edges consistently contain significantly less bare ground and more coarse vegetative litter than do more "intermediate" or "interior" areas, presumably due increased human activity/disturbance of the vegetation structure near edges (Kristan et al. 2003). Increases in vegetative litter often facilitate growth of non-native plants (particularly grasses), resulting in a positive feedback loop likely to enhance plant invasion success (Wolkovich et al. 2009). In another coastal southern California example, the abundance of native bird species sensitive to disturbance is typically depressed within 200 to 500 meters of an urban edge, and the abundance of the disturbance-tolerant species is elevated up to 1000 meters from an urban edge, depending on the species (Bolger et al. 1997a).

Habitat fragmentation is usually defined as a landscape scale process involving habitat loss and breaking apart of habitats (Fahrig 2003). Habitat fragmentation is among the most important of all threats to global biodiversity; edge effects (particularly the diverse physical and biotic alterations associated with the artificial boundaries of fragments) are dominant drivers of change in many fragmented landscapes (Laurance and Bierregaard 1997; Laurance et al. 2007).

Fragmentation decreases the connectivity of the landscape while increasing both edge and remnant habitats. Urban and agricultural development often fragments wildland ecosystems and creates sharp edges between the natural and human-altered habitats. Edge effects for many species indirectly reduce available habitat use or utility in surrounding remaining areas; these species experience fine-scale functional habitat losses (e.g., see Bolger et al. 2000; Kristan et al. 2003; Drolet et al. 2016). Losses of coastal sage scrub in southern California have resulted in the increased isolation of the remaining habitat fragments (O'Leary 1990). Fragmentation has a greater relative negative impact on specialist species (e.g., the Coastal Cactus Wren, *Campylorhynchus brunneicapillus*) that have strict vegetation structure and area habitat requirements (Soulé et al. 1992).

Specialist species have an increased risk of extirpation in isolated habitat remnants because the specialized vegetative structures and/or interspecific relationships on which they depend are more vulnerable to disruption in these areas (Vaughan 2010). In studies of the coastal sage scrub and chaparral systems of coastal southern California, fragment area and age (time since isolation) were the most important landscape predictors of the distribution and abundance of native plants (Soulé et al. 1993), scrub-breeding birds (Soulé et al. 1988; Crooks et al. 2001), native rodents (Bolger et al. 1997b), and invertebrates (Suarez et al. 1998; Bolger et al. 2000).

Edge effects that emanate from the human-dominated matrix can increase the extinction probability of isolated populations (Murcia 1995; Woodroffe and Ginsberg 1998). In studies of coastal sage scrub urban fragments, exotic cover and distance to the urban edge were the strongest local predictors of native and exotic carnivore distribution and abundance (Crooks 2002). These two variables were correlated, with more exotic cover and less native shrub cover closer to the urban edge (Crooks 2002).

The increased presence of human-tolerant "mesopredators" in southern California represents an edge effect of development; they occur within the developed matrix and are thus more abundant along the edges of habitat fragments, and they are effective predators on birds, bird nests, and other vertebrates in coastal sage scrub and chaparral systems and elsewhere (Crooks and Soulé 1999). The mammalian carnivores more typically detected in coastal southern California habitat fragments are resource generalists that likely benefit from the supplemental food resources (e.g., garden fruits and vegetables, garbage, direct feeding by humans) associated with residential developments. As a result, the overall mesopredator abundance, of such species as raccoons (*Procyon lotor*), opossums (*Didelphis virginiana*), and domestic cats (*Felis catus*), increases at sites with more exotic plant cover and closer to the urban edge (Crooks 2002). Although some carnivores within coastal sage scrub natural community fragments seem tolerant of disturbance, these fragments have (either actually or effectively) already lost an entire suite of predator species, including mountain lion, bobcats (*Lynx rufus*), spotted skunks (*Spilogale gracilis*), long-tailed weasels (*Mustela frenata*), and badgers (*Taxidea taxus*) (Crooks 2002). Most "interior" sites within such fragments are still relatively near (within 250 meters of) urban edges (Crooks 2002).

Fragmentation generally increases the amount of edge per unit land area, and species that are adversely affected by edges can experience reduced effective area of suitable habitat (Temple and Cary 1988), which can lead to increased probability of extirpation/extinction in fragmented landscapes (Woodroffe and Ginsberg 1998). For example, diversity of native bees (Hung et al. 2015) and native rodents (Bolger et al. 1997b) is lower, and decomposition and nutrient cycling are significantly reduced (Treseder and McGuire 2009), within fragmented coastal sage scrub ecosystems as compared to larger core reserves. Similarly, habitat fragmentation and alterations of sage scrub habitats likely have reduced both the genetic connectivity and diversity of coastal-slope populations of the Cactus Wren in southern California (Barr et al. 2015). Both Bell's Sparrows (*Artemisiospiza belli)* and California Thrashers (*Toxostoma redivivum*) show strong evidence of direct, negative behavioral responses to edges in coastal sage scrub; that is, they are edge-averse (Kristan et al. 2003), and California Thrashers and California Quail (*Callipepla californica)* were found to be more vulnerable to extirpation with smaller fragment size of the habitat patch (Bolger et al. 1991), demonstrating that both behavioral and demographic parameters can be involved. Other species in coastal sage scrub ecosystems, particularly the Cactus Wren and likely the California Gnatcatcher and San Diego pocket mouse, are likely vulnerable to fragmentation, but for these species the mechanism is likely to be associated only with extirpation vulnerability from habitat degradation and isolation rather than aversion to the habitat edge (Kristan et al. 2003).

Bolger (et al. 1997b) found that San Diego coastal sage scrub and chaparral canyon fragments under 60 acres that had been isolated for at least 30 years support very few populations of native rodents, and they suggested that fragments larger than 200 acres in size are needed to sustain native rodent species populations.

The penetration of exotic species into natural areas can reduce the effective size of a reserve in proportion to the distance they penetrate within the reserve: Argentine ants serve as an in-depth example of edge effects and fragmentation. Spatial patterns of Argentine ant abundance in scrub communities of southern California indicate that they are likely invading native habitats from adjacent developed areas, as most areas sampled greater than 200 to 250 meters from an urban edge contained relatively few or no Argentine ants (Bolger 2007). The extent of Argentine ant invasions in natural environments is determined in part by inputs of urban and agricultural water run off (Holway and Suarez 2006). Native ant species were more abundant away from edges and in areas with predominately native vegetation. Post-fragmentation edge effects likely reduce the ability of fragments to retain native ant species; fragments had fewer native ant species than similar-sized plots within large unfragmented areas, and fragments with Argentine ant-free refugia had more native ant species than those without refugia (Suarez et al. 1998). They displace nearly all surface-foraging native ant species (Holway and Suarez 2006) and strongly affect all native ant communities within about 150 to 200 meters from fragment edges (Suarez et al. 1998; Holway 2005; Fisher et al. 2002; Bolger 2007). Argentine ants are widespread in fragmented that coastal scrub habitats in southern California, and much of the remaining potential habitat for coastal horned lizards is effectively unsuitable due to the penetration of Argentine ants and the subsequent displacement of the native ant species coastal horned lizards need as prey (Fisher et al. 2002). Invasion of Argentine ants into coastal sage scrub has also shown a strong negative effect on the abundance of the gray shrew (*Notiosorex crawfordi*) (Laakkonen et al. 2001).

The proposed Safari Highlands Ranch project has a very high ratio of perimeter to development area, due to the unconsolidated/multiple development polygons and miles of road edges, all of which would be subject to fuel modification disturbances in perpetuity. The 19.4 miles of development edges and related effects associated with the current proposal would impact preserved natural communities in PAMA east of the project site, and would be especially severe within the 629-acre on-site habitat conservation open space area, which would be completely bounded by roads and intensive residential development. With the most ecologically valuable parts of the site largely graded or subject to fuel modification activities, and with the preserved areas fragmented and subject to edge effects, the on-site habitat conservation open space would provide diminished habitat value for edge-sensitive native wildlife species compared with the same 629-acre habitat block in its existing, pre-project condition.

As discussed previously in this letter, the MSCP *requires* that projects proposing to count on-site preservation toward their mitigation responsibility include provisions to reduce edge. In part, this requirement is to prevent on-site habitat preserves from be-

coming "ecological sinks" for certain wildlife species (this can occur when wildlife migrates into an area that lacks adequate resources to support a stable population).

Implementation of the proposed project would balloon the allowable number of residential units on the project site from the County's current limit of 27 to 550. This **twenty-fold increase** in the local human population would compound the problems with preserve design discussed herein, dramatically increasing human-caused disturbances from unauthorized uses in the proposed reserve areas, such as off-trail use, trespass, and the presence of uncontrolled domestic pets.

The DEIR fails to adequately describe or analyze any of these effects within the context of relevant published research. Apparently, the project biologists expect all of the project's edge effects to be mitigated to below the level of significance through the vehicle of a Biological Resource Management Plan (BRMP) that would be prepared under Mitigation Measure MM BIO-1. Rather than specifying the contents of the BRMP, its funding, and an evaluation of how the BRMP would address specific fragmentation/edge effects, MM BIO-1 simply provides a BRMP outline with placeholders for such topics as Biological Management Goals, Adaptive Management, Operations, Maintenance, Administration, Public Use, and Fire Management. Also unspecified are such topics as Easement Holder, Restoration Entity, Financial Mechanism, Management Cost Estimate, Reporting Requirements, and Limitations and Constraints. The DEIR does not specify the level of funding that would be provided to implement the BRMP in perpetuity, or provide a biological analysis of how the BRMP would reduce various potentially significant impacts related to fragmentation and development edge. As such, there is no way for decision makers and the public to have any idea of what, exactly, implementation of the BRMP can be expected to accomplish once it is prepared, and once the budget for its implementation is specified. For all of these reasons, MM BIO-1 is a classic example of deferral of mitigation, which is impermissible under CEQA.

In summary, the project design does not minimize development edge, and the DEIR fails to describe or analyze potentially significant effects attendant to development edge or habitat fragmentation. The EIR preparers have ignored extensive scientific research leading to a well-substantiated conclusion that a sprawling project with 19.4 acres of development edge introduced into a backcountry area will result in a variety of potentially significant impacts upon biological resources, both on-site and off-site. These effects may extend as far as 250 meters (820 feet) into preserved habitat areas. Regardless of the ultimate disposition of the BRMP identified in MM BIO-1, or the other measures identified in the DEIR, the magnitude of the proposed edge is so great that potentially significant edge/fragmentation effects would remain significant after the proposed mitigation.

FLAWED ANALYSIS OF SIGNIFICANCE THRESHOLD NO. 6

In conformance with Appendix G of the CEQA Guidelines, Threshold No. 6 of the City's Environmental Quality Regulations (Zoning Code Article 47) states that a project would result in a significant impact if it would "conflict with the provisions of an

adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan."

The DEIR analyzes this potential impact by referring back to the MSCP Consistency Analysis Report prepared by Merkel & Associates, Inc. Page 2.3-49 of the DEIR states:

> In summary, the proposed project habitat mitigation is consistent with mitigation ratios of the adopted South County MSCP as well as planned conservation levels of habitat and species-specific conditions. In addition, the project is consistent with the project design criteria, preserve design criteria, and corridor design criteria specified in the South County MSCP Findings, North County MSCP Planning Agreement, and City of San Diego MSCP Findings and Adjacency Guidelines. As provided in Section 1.4.3 of the biological technical report (refer to **Appendix 2.3),** although the proposed project generally applies the criteria/standards and mitigation ratios from the adopted South County MSCP and analyzes consistency with the South County MSCP, North County MSCP Planning Agreement, and adopted City of San Diego MSCP, the project is also consistent with the unadopted draft City of Escondido Subarea Plan as well as the adopted subregional MHCP.
>
> As such, the project would not conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or any other applicable conservation plan. Impacts would be **less than significant**.

As discussed at length throughout these comments, the proposed Safari Highlands Ranch project manifestly fails to satisfy nearly all of the MSCP Findings of Conformance. Thus, the DEIR's assertions of MSCP consistency are not supported with the substantial evidence required for CEQA compliance.

Not only would certification of the Safari Highlands Ranch EIR violate the basic requirements of CEQA in this one instance, but if the City and the applicant are allowed to claim the benefits of the MSCP without participating in the program, and while flouting its fundamental tenets and requirements, this will set a precedent and effectively remove the incentive of any other land owner to participate in the MSCP. Developers can realize greater profits by annexing property into a non-participating jurisdiction, proposing a non-conforming project, and declaring MSCP consistency. Thus, certification of the EIR for this large, non-conforming project would potentially undermine the ability of MSCP planners to assemble and effectively manage the large areas of PAMA required to implement a functional MSCP reserve system.

FUEL MODIFICATION IS AN IMPACT, NOT MITIGATION

Page 2.3-19 of the DEIR analyzes potential impacts to special-status plant species preserved around the project perimeter:

> Potential indirect effects from the proposed residential development to sensitive plant species located within the proposed conservation open space may include typical edge effects such as invasive species and human intrusion into conserved habitat. The proposed project design feature to establish 128.6 acres of HOA maintained habitat open space [i.e., FMZ II] would lessen adverse indirect impacts and edge effects from the development to the proposed on-site conservation open space that supports sensitive plant species to **less than significant**.

This misleading conclusion is not supported by substantial evidence. After mentioning "typical edge effects such as invasive species and human intrusion into conserved habitat," the analysis later refers to "adverse indirect impacts and edge effects from the development to the proposed on-site conservation open space that supports sensitive plant species." The analysis concludes that, in some vague and unspecified manner, the provisions for FMZ II would address all of the "typical edge effects" and render them less than significant.

An adequate CEQA analysis would (a) identify and adequately describe all of the potentially significant edge and fragmentation effects upon biological resources resulting from specific activities associated with project implementation; (b) prescribe specific mitigation actions that would have to be completed to avoid or minimize any effects judged to be potentially significant; and (c) include a mitigation mechanism that the City can monitor and enforce implementation. Any residual significant impacts that would remain after mitigation would be identified.

As discussed previously, the above-quoted analysis found on Page 2.3-19 of the DEIR mentions potential impacts to special-status plant species known or potentially occurring around the project perimeter. A CEQA-compliant mitigation measure addressing this aspect of the project's potential edge effects could be written as follows:

> Repeated disturbance along development edges associated with FMZ II actions could result in the spread of invasive plants, which could displace sensitive native plant species. Additionally, workers could inadvertently impact sensitive plant species while conducting habitat restoration (e.g., spraying weeds, digging holes for new plants, or applying hydroseed) or while conducting periodic habitat maintenance activities (e.g., thinning plants, removing weeds). To avoid or lessen the severity of these potentially significant impacts, the applicant shall implement the following measures: (a) targeted biological surveys to find and flag any special-status plants immediately prior to any work in FMZ II; (b) all personnel, prior to working in FMZ II, shall complete a Worker Environmental Awareness Program (WEAP) designed to avoid impacts to sensitive resources; and (c) all work within FMZ II shall be monitored by a qualified biological monitor, to ensure that workers avoid special-status plants and other sensitive resources. The WEAP shall be implemented by the applicant annually, prior to the start of maintenance activities (typically in September or October, after the bird nesting season is complete), for the life of the project.
>
> *Timing/Implementation: WEAP training materials shall be approved prior to the issuance of a grading permit; renewed at least annually, prior to start of maintenance activities in FMZ II.*
>
> *Enforcement/Monitoring: City of Escondido Engineering and Planning Divisions.*

This type of approach would be consistent with CEQA and its Guidelines, because (a) it accurately describes the nature of the potentially significant impact; (b) it identifies feasible actions that would lessen the severity of the identified impact; and (c) the mitigation measure could be monitored and enforced by the City. By contrast, the analysis on Page 2.3-19 of the DEIR must be recognized as misleading, grossly deficient, and not backed by substantial evidence.

As discussed previously in this letter, the magnitude of the proposed edge is so great that potentially significant edge/fragmentation effects would remain even if the DEIR were to somehow identify all practical forms of mitigation.

FUEL MODIFICATION IS A PERMANENT IMPACT

The DEIR erroneously characterizes FMZ II treatments as an environmentally beneficial Project Design Feature that would help to ameliorate a range of edge effects. As stated on Page 2.3-17:

> The establishment of 128.6 acres of HOA maintained habitat open space (consisting primarily of Fuel Modification Zone (FMZ) II but also includes graded areas to be revegetated, and vegetated water quality basins) reduces potential significant indirect impacts and edge effects (e.g., elevated noise, artificial lighting, invasive weeds) from the development to the proposed on-site conservation open space. This HOA maintained habitat open space provides a non-irrigated, intermittently thinned native habitat area that is expected to support habitat function as a secondary goal to fire protection within FMZ II. An extensive revegetation program within the HOA maintained habitat open space would be implemented with the SHR project.

The DEIR fails to explain how FMZ II treatments would lessen the severity of any potentially significant edge effects, including those identified in the above-quoted passage ("elevated noise, artificial lighting, invasive weeds"). The claim that fuel modification treatments might somehow address the project's *noise* and *lighting* impacts illustrates the general incoherence of the DEIR's analyses. Specifically, the DEIR does not provide any details about what the "extensive revegetation program" would entail, nor provide benchmarks against which the success or failure of the revegetation might be measured. There is no requirement that any revegetated habitat be conserved and maintained to any certain standard, either initially or in perpetuity, and no assurance of any necessary level of funding of revegetation in perpetuity (as would be required to provide assurance that mitigation benefits would continue for the life of the project).

Of course, none of the requirements of a biological mitigation measure can be included, because once the City approves a project the fire department becomes the ultimate authority responsible for dictating fuel modification actions required to meet fire safety criteria. Those criteria, and the methods used to achieve them, are subject to change at any time depending upon results of fire department risk assessments, without subsequent CEQA analysis. This is why the above-quoted passage from the DEIR acknowledges that any habitat functions associated with FMZ II represent "a secondary goal to fire protection." Thus, the DEIR cannot characterize vague plans for revegetation or other planned activities in FMZ II as a legitimate, allowable form of biological mitigation under CEQA.

Given the lack of specificity about what would actually be required in FMZ II, either initially or over time, and given the high costs of maintaining large areas of natural open space, it is highly likely that treatment of the FMZ II area would quickly move to the lowest-cost method of satisfying fire department requirements. Repeated disturbance associated with vegetation thinning across the 128.6 acres designated as FMZ II would,

in all likelihood, result in the eventual degradation of the existing natural habitat, thereby contributing to the project's adverse edge effects, not lessening them.

Elsewhere in the DEIR, FMZ II treatments are treated as a form of "temporary impact" (unlike the irrigated FMZ I treatments, which would be "permanent impacts"). Since FMZ II treatments involve repeatedly manipulating native plant communities in FMZ II, in perpetuity, there is nothing "temporary" about FMZ II impacts.

For the above-stated reasons, both (a) the DEIR's framing of FMZ II as a vehicle for reducing "potential significant indirect impacts and edge effects (e.g., elevated noise, artificial lighting, invasive weeds)," and (b) the DEIR's characterization of FMZ II impacts as "temporary," violate CEQA's requirement that impact analyses be supported with substantial evidence. The DEIR must identify the FMZ II treatments as a permanent impact, evaluate the potential significance of the impact, and provide appropriate mitigation for any effects found to be potentially significant, per CEQA requirements.

DEFICIENT CALIFORNIA GNATCATCHER IMPACT ANALYSIS

The DEIR relies upon surveys for the federally threatened California Gnatcatcher conducted in 2014, following two years of drought. Drought conditions are known to reduce populations of California Gnatcatchers and other passerine birds associated with coastal sage scrub habitat (Erickson and Miner 1998, Bolger et al. 2005). In order for the DEIR to evaluate current, complete information on the distribution of this federally threatened species on the site, updated surveys, **covering all coastal sage scrub habitat on the site**, should have been conducted in 2017.

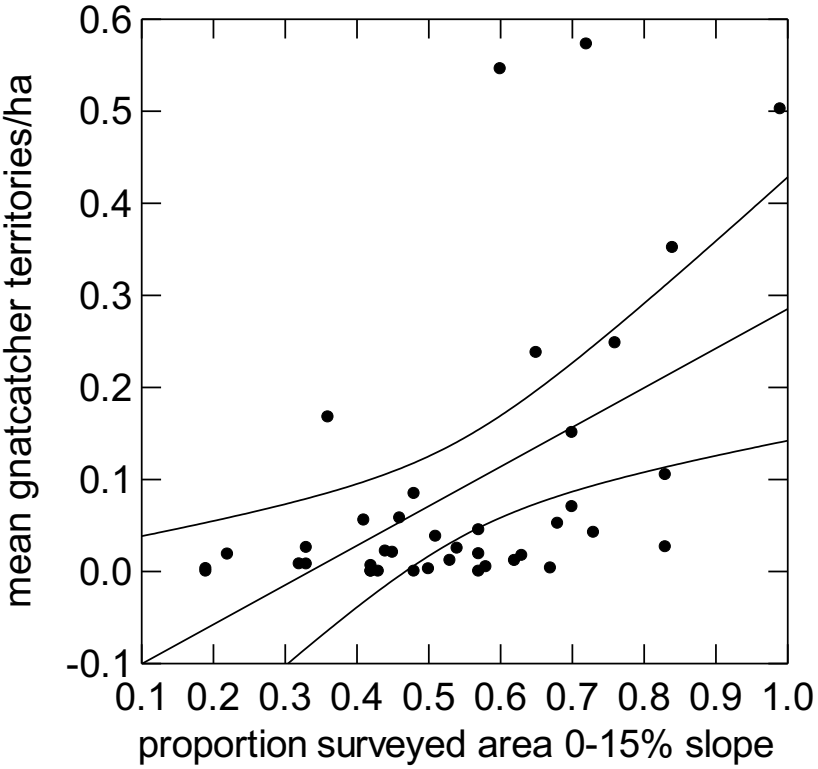
The impact analysis on Page 2.3-27 of the DEIR states:

> Based on 2014 gnatcatcher protocol surveys and field surveys conducted by Merkel & Associates in 2017, up to five gnatcatcher territories within suitable Diegan coastal sage scrub habitat predominately occurring within the southern portion of the project site. Additional suitable gnatcatcher habitat presumed to be occupied is located in the western half of the project site and along the off-site southern emergency access (e.g., Zoo Road, Rockwood Road) alignment below 1,000 feet in elevation within Diegan coastal sage scrub. Protocol gnatcatcher surveys in 2015 for the northern emergency access road were negative; however, in late September 2017 an individual California gnatcatcher was observed by Merkel & Associates adjacent to this off-site northern access road located at approximately 520 feet in elevation within open riparian habitat adjacent to Diegan coastal sage scrub (Merkel & Associates, Inc. and Althouse and Meade, Inc. 2017).

The USFWS (2007) discussed the preference of California Gnatcatchers for shallow slopes:

> Studies suggest that coastal California gnatcatchers avoid nesting on very steep slopes (greater than 40 percent) (e.g., Bontrager 1991). AMEC (2001) found that approximately 93 percent of the documented coastal California gnatcatcher sightings in the MSCP study areas occur on slopes less than 40 percent. However, Grishaver et al. (1998, p. 314) found that coastal California gnatcatchers showed no significant preference for nesting on steeper or shallower slopes but that slope had a significant influence on nesting success. They report that nests on shallow slopes (less than about 20 percent) were more likely to be successful than those on steeper slopes.

My six-year study in the Nature Reserve of Orange County (NROC) (Hamilton 2004) demonstrated that, across that 37,000-acre reserve system, the NROC's high-density populations of the California Gnatcatcher almost always coincide with slopes that are 15% or shallower. Using GIS information from the County of Orange, Dr. Milan Mitrovich and I identified a strong positive relationship between gentle slopes (0-15%) and density of California Gnatcatchers throughout the NROC. The figure below plots the six-year average density of gnatcatcher territories at the NROC's 40 long-term monitoring sites against the amount of gentle slope at each site.



As the proportion of gentle slopes (0-15%) on a given site increases, so does the likelihood that the site supports California Gnatcatchers at high density. The line represents a linear regression with 95% confidence intervals.

Equation for the linear regression: CAGN = 0.428*S -0.143; R^2adj = 0.254; n = 40; $p<0.001$

As the graph above shows, nearly all sites within the NROC that support high densities of gnatcatchers have a high proportion of gentle slopes (0-15% grade). To put it another way, as the proportion of gentle slopes increases so does the likelihood that the site will support a high-density gnatcatcher population.

As discussed at length in these comments, the proposed Safari Highlands Ranch project would impact nearly all of the site's gentle slopes, including those toward the southern project boundary, where most of the California Gnatcatcher occurrences have been documented. That this pattern of development would clearly reduce the value of the project site for the gnatcatcher — one of the "target species" of the MSCP — further demonstrates the proposed project's fundamental inconsistency with the basic tenets of the MSCP.

DEFICIENT WESTERN SPADEFOOT IMPACT ANALYSIS

The DEIR reports that 14 western spadefoot toad metamorphs were observed on or near the site, nearly all within areas proposed for project impacts. The DEIR, including its technical appendices, provides no useful information about the ecology of the western spadefoot, a California Species of Special Concern. The DEIR's biological technical appendix reports the following:

> M&A [Merkel & Associates] incidentally observed spadefoot metamorph toadlets on the access road and along the main drainage generally within the southern portion of the site. No breeding habitat was identified onsite; however, calling adults were detected directly offsite on a property that supports a pond where spadefoots likely breed. No CNDDB records of this species within the Rodriquez quad (USFWS 2012). USFWS is currently doing a 12-month review for potential listing of this species.

Spadefoots spend most of the year in underground burrows, not in aquatic environments. For breeding, they require ponds that lack such exotic predators as bullfrogs, various fish, or crayfish. The DEIR reports that the nearest apparent breeding pond for western spadefoots is located 750 feet east of the southeastern project boundary. This pond is identified as the likely source of the numerous small spadefoots detected during biological surveys. Nearly all of the observed toad metamorphs were found along a dirt road that extends north through the center of the project site. Most of the observations were within 5,000 feet of the presumed breeding pond, but one was recorded more than 10,000 feet north of the pond. My experience with this species is that they regularly breed in ephemeral ponds, including those that form on dirt roads during wet winters; thus I expect that the species does, in fact, breed on the project site, at least during non-drought years.

The DEIR's most in-depth "analysis" of the status of the western spadefoot on the project site is presented on Page 2.3-27, in a footnote to Table 2.3-4:

> The locations of the observed spadefoot toad metamorphs during the 2017 field survey were due to these juveniles dispersing from an off-site breeding pond. These locations are not necessarily where these observed spadefoot would remain for the rest of their terrestrial lives.

The project biologists apparently conclude that, if the one presumed spadefoot breeding pond identified in the DEIR would not be directly impacted by project grading, then project implementation (including specified mitigation measures) would have no potentially significant impacts to this species. This "analysis" is deficient and not based upon substantial evidence. First, the project biologists apparently made no effort to determine whether western spadefoots breed in any ephemeral ponds that almost certainly exist on the project site, such as ponds that routinely form on the compacted soils of dirt roads. Next, the DEIR must recognize that impacts to western spadefoots can take various forms, including:

- Mortality of upland-aestivating toads.
- Blockage of movement pathways by roads or other forms of development.

- Motor vehicle strikes on roads.
- Mountain bike strikes on trails.
- Exposure to toxic chemicals.
- Human introduction of exotic predators into breeding pools.

The DEIR fails to discuss or evaluate any of these potentially significant project impacts, fails to provide any form of mitigation likely to reduce the severity of any of these adverse effects, and fails to produce any substantial evidence in support of its conclusion that project implementation would have no significant impacts upon this species after mitigation.

Given the relative abundance of spadefoot metamorphs well into the center of the project site, the site appears to serve as an important upland aestivation area for the toads that breed on or near the site, and dirt roads on the project site may also serve as movement pathways and/or breeding sites for western spadefoots. Thus, substantial evidence indicates that project implementation would have significant impacts to the western spadefoot, the severity of which would not be reduced by any of the mitigation measures identified in the DEIR.

CUMULATIVE IMPACT ANALYSIS CONTRADICTS THE EVIDENCE

CEQA requires that an EIR first analyze cumulative impacts to a given resource, and then determine whether a project's impacts are cumulatively considerable (*i.e.*, significant when considered in conjunction with other past, present and reasonably foreseeable projects). In Section 3.2.3, the DEIR evaluates the project's cumulative impacts upon biological resources in the geographic and regulatory contexts of the SC-MSCP and the draft NC-MSCP. DEIR Page 3.0-18 states:

> The goal of the MSCP is to maintain and enhance biological diversity in the region and maintain viable populations of endangered, threatened, and key sensitive species and their habitats while promoting regional economic viability by streamlining the land use permit process.

The DEIR's strategy for attempting to demonstrate that the proposed project would not contribute to cumulatively considerable impacts to biological resources within the SC-MSCP and NC-MSCP planning areas falls back upon the same unsupported claims of MSCP conformance discussed throughout these comments. As discussed on the following pages, Section 3.2.3 of the DEIR misrepresents the biological impacts of the proposed project, and asserts MSCP conformance where none exists.

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Misrepresentation of Project Impacts

Page 3.0-18 of the DEIR states:

> As discussed in **Section 2.3, Biological Resources**, the project proposes to preserve approximately 760 acres of the site as undeveloped open space for the protection of natural resources.

Table 2.3-5 of the DEIR identifies proposed impacts to 502.7 acres, meaning that **629.1 acres of conserved natural open space would remain, not 760 acres**. Nearly all of the discrepancy arises from the DEIR erroneously and misleadingly counting 128.6 acres of permanent FMZ II fuel modification impacts as natural open space, or even as a form of mitigation for the project's edge effects upon biological resources.

Page 3.0-19 of the DEIR states:

> The project would permanently impact habitats and vegetation communities on approximately 31 percent of the project area and portions of the linear off-site improvement areas affected by the primary access road and two emergency access roads.

Project implementation would permanently impact 44 percent of the project site, not 31 percent. As discussed on Page 9 of these comments, (a) MSCP planners have established a goal of impacting no more than 25 percent of PAMA, and (b) the SC-MSCP Subarea Plan states, "The habitat value of a biological resource core area is significantly degraded if 25 percent of the biological core area (500 acres or more in size) is impacted." Proposed impacts to 44 percent of the project site substantially exceed both of these important MSCP planning goals.

When attempting to portray the FMZ II impact area as natural open space, or as a form of mitigation, the DEIR refers to the FMZ II impact area as the "HOA maintained habitat open space." As acknowledged on Page 2.3-17 of the DEIR, however:

> This HOA maintained habitat open space provides a non-irrigated, intermittently thinned native habitat area that is expected to support habitat function **as a secondary goal to fire protection within FMZ II**. [emphasis added]

As discussed on Pages 22-25 of this letter, the DEIR contains no requirement that FMZ II be conserved and maintained to any certain standard, initially or in perpetuity, and cannot contain any such requirement because fuel modification requirements take precedence over habitat considerations. For this reason, the DEIR cannot simply claim permanent fuel modification impacts as habitat preservation, or as "temporary impacts".

Unsupported Assertions of MSCP Conformance

As discussed in detail in these comments, substantial evidence shows that the proposed project would violate nearly all of the MSCP Findings of Conformance, and this undercuts the DEIR's contrary assertions. For example, Page 3.0-18 states, "impacts would be minimized through sensitive project design," but (a) the proposed project provides for developing virtually all of the site's gentle slopes, which support some of the site's most ecologically sensitive habitat areas, including 417 oak trees and 236 acres of Diegan

coastal sage scrub; (b) the main streambed on the site would be crossed by roads in five locations; (c) 4.33 acres of wetlands and other jurisdictional resources would be impacted; and (d) project implementation would result in 19.4 miles of development edge.

Page 3.0-19 lists various edge effects of the proposed project, "similar to those anticipated with other development projects in the area," but (a) the project design shows no evidence of having minimized development edge; (b) the DEIR ignores or downplays the biological ramifications of creating 19.4 miles of edge; and (c) the DEIR provides no effective mitigation measures to reduce the extent or severity of edge effects.

Page 3.0-19 refers to proposed impacts to hundreds of acres of sensitive habitat areas, and states, "mitigation is required in compliance with County MSCP and non-MSCP mitigation ratios, as shown in **Table 2.3-8**." Seven of the nine mitigation ratios listed in Table 2.3-8 — excepting those for oak riparian woodland and oak woodland — derive from the SC-MSCP. As discussed in these comments, the MSCP's conservation metrics are predicated upon a project demonstrating compliance with the Findings of Conformance. Since the proposed project cannot demonstrate MSCP conformance, no rationale exists for applying low MSCP mitigation ratios. Such ratios are predicated on a jurisdiction achieving and contributing to all the benefits of a comprehensive preserve network. Since the project site would be annexed into a jurisdiction that does not actively participate in the MSCP (or MHCP), and since the proposed project would violate nearly all of the MSCP Findings of Conformance, the DEIR has no valid rationale for basing any aspect of its impact analysis and mitigation scheme upon MSCP mitigation ratios or other MSCP conservation metrics.

Page 3.0-19 further states:

> To minimize the potential for the project to contribute to a significant cumulative impact on sensitive biological resources in the study area, implementation of mitigation measures **MM BIO-1** through **MM BIO-13** would reduce project impacts on sensitive habitat and wildlife species to less than significant.

This is simply a restatement of the DEIR's fallacious and unsupported conclusion that its impact and mitigation scheme is adequate, despite the project's manifest inconsistency with nearly all of the MSCP's Findings of Conformance.

Finally, Page 3.0-20 states:

> It is anticipated that other development projects located within the adopted and draft MSCP boundaries would similarly mitigate for impacts on sensitive biological resources as a result of future development on each respective site, as appropriate.

If the Safari Highlands Ranch DEIR is certified despite the project violating nearly all of the MSCP Findings of Conformance, it should be "anticipated that other proposed projects located within the adopted and draft MSCP boundaries" would similarly ignore the MSCP's requirements.

For all of these reasons, substantial evidence indicates that, when considered in conjunction with other past, present and reasonably foreseeable projects, the adverse effects of the Safari Highlands Ranch project would be **cumulatively considerable**.

SUMMARY AND CONCLUSION

The DEIR employs false and unsupported claims to justify impact analyses and mitigation approaches intended to be used only for projects that conform to the requirements of the MSCP. The DEIR's analyses of biological resource issues, and its assertions of consistency with all of the MSCP Findings of Conformance, employ argument, speculation, and unsubstantiated opinion and narrative that is clearly inaccurate or erroneous. What is lacking is the substantial evidence mandated under Section 15064(f)(5) of the CEQA Guidelines. The proposed project would result in significant, unmitigated impacts to a variety of native plant and wildlife species, including the federally threatened California Gnatcatcher as well as numerous California Species of Special Concern and other special-status species, each of which requires conservation of an ecologically sound open space preserve system that satisfies all 11 MSCP Findings of Conformance.

Apart from the implications for the Safari Ranch Highlands project site and nearby surroundings, the proposed actions would contribute to cumulatively considerable adverse effects on biological resources in the region. In fact, certification of this EIR would have tremendous potential to effectively undermine all MSCP planning efforts in San Diego County. If non-participating jurisdictions are allowed to successfully (a) annex areas of BRCA and/or PAMA, (b) permit far more intensive development than zoning currently allows, and that has been used as the baseline assumption during MSCP planning, and (c) assert MSCP conformance without substantial evidence, what profit-minded landowner would choose to legitimately comply with the rigorous requirements of the MSCP?

I appreciate the opportunity to provide these comments on the DEIR and I look forward to the City's responses. If you have questions, please call me at (562) 477-2181 or send e-mail to robb@hamiltonbiological.com.

Sincerely,

Robert A. Hamilton
President, Hamilton Biological, Inc.

Attached:

- Literature Cited
- Appendix G to the County of San Diego Biological Mitigation Ordinance, "Findings of Conformance, Multiple Species Conservation Program"
- Curriculum Vitae

LITERATURE CITED

AMEC Earth & Environmental. 2001. North County Subarea Plan. County of San Diego Multiple Species Conservation Program. Species Distribution Model. Reported Dated May 2001, Prepared for County of San Diego Dept. of Planning and Land Use.

Barr, K. R., B. E. Kus, K. L. Preston, S. Howell, E. Perkins, and A. G. Vandergast. 2015. Habitat fragmentation in coastal southern California disrupts genetic connectivity in the cactus wren (*Campylorhynchus brunneicapillus*). Molecular Ecology 24: 2349–2363.

Bolger, D. T. 2007. Spatial and temporal variation in the Argentine ant edge effect: Implications for the mechanism of edge limitation. Biological Conservation 136: 295-305.

Bolger, D. T., A. C. Alberts, and M. E. Soulé. 1991. Occurrence patterns of bird species in habitat fragments: sampling, extinction, and nested species subsets. The American Naturalist 137(2): 155-166.

Bolger, D. T., T. A., Scott, J. T. Rotenberry. 1997a. Breeding bird abundance in an urbanizing landscape in coastal southern California. Conservation Biology 11(2): 406–421.

Bolger, D. T., A. C. Alberts, R. M. Sauvajot, P. Potenza, C. McCalvin, D. Tran, S. Mazzoni, and M. E. Soulé. 1997b. Response of rodents to habitat fragmentation in coastal southern California. Ecological Applications 7(2): 552-563.

Bolger, D. T., A. V. Suarez, K. R. Crooks, S. A. Morrison, and T. J. Case. 2000. Arthropods in urban habitat fragments in southern California: area, age, and edge effects. Ecological Applications 10(4): 1230-1248.

Bolger, D. T., Patten M. A., and Bostock D. C. 2005. Avian reproductive failure in response to an extreme climatic event. Oecologia 142:398-406.

Bontrager, D. R. 1991. Habitat requirements, home range and breeding biology of the California Gnatcatcher (*Polioptila californica*) in south Orange County, California. Rancho Santa Margarita, CA: Prepared for Santa Margarita Co.

Burke, D. M. and E. Nol. 2000. Landscape and fragment size effects on reproductive success of forest-breeding birds in Ontario. Ecological Applications 10(6): 1749–1761.

Camargo, J. L. C., and V. Kapos 1995. Complex edge effects on soil moisture and microclimate in central Amazonian forest. Journal of Tropical Ecology 11(2): 205-221.

Crooks, K. R. 2002. Relative sensitivities of mammalian carnivores to habitat fragmentation. Conservation Biology 16(2): 488-502.

Crooks, K. R. and M. E. Soulé. 1999. Mesopredator release and avian extinctions in a fragmented system. Nature 400: 563-566.

Crooks, K. R., A. V. Suarez, D. T. Bolger, and M. E. Soulé. 2001. Extinction and colonization of birds on habitat islands. Conservation Biology 15(1):159-172.

Drolet, A., C. Dussault and S.D. Côté. 2016. Simulated drilling noise affects the space use of a large terrestrial mammal. Wildlife Biology 22(6): 284-293.

Erickson, R. A. and Miner, S. L. 1998. Six years of synchronous California Gnatcatcher population fluctuations at two locations in coastal Orange County, California. Western Birds 29:333-339.

Fahrig, L. 2003. Effects of habitat fragmentation on biodiversity. Annual Review of Ecology, Evolution, and Systematics 34: 487-515.

Fisher, R. N., and H. B. Shaffer. 1996. The decline of amphibians in California's Great Central Valley. Conservation Biology 10(5):1387-1397.

Fisher, R. N., A. V. Suarez, and T. J. Case. 2002. Spatial patterns in the abundance of the coastal horned lizard. Conservation Biology 16(1): 205-215.

Fletcher, Jr., R. J., L. Ries, J. Battin, and A. D. Chalfoun. 2007. The role of habitat area and edge in fragmented landscapes: definitively distinct or inevitably intertwined? Canadian Journal of Zoology 85: 1017-1030.

Grishaver, M. A., P. J. Mock and Preston K. L. 1998. Breeding behavior of the California Gnatcatcher in southwestern San Diego County, California. Western Birds 29:299-322.

Hamilton, R. A. 2004. Target Bird Monitoring Study, Nature Reserve of Orange County, 2004. Report dated November 3, 2004, prepared for the Nature Reserve of Orange County, Santa Ana, CA.

Harrison, S. and E. Bruna. 1999. Habitat fragmentation and large-scale conservation: what do we know for sure? Ecography 22(3): 225-232.

Holway, D. A. 2005. Edge effects of an invasive species across a natural ecological boundary. Biological Conservation 121: 561-567.

Holway, D. A. and A. V. Suarez. 2006. Homogenization of ant communities in Mediterranean California: The effects of urbanization and invasion. Biological Conservation 127: 319-326.

Hung, K. J., J. S. Ascher, J. Gibbs, R. E. Irwin, and D. T. Bolger. 2015. Effects of fragmentation on a distinctive coastal sage scrub bee fauna revealed through incidental captures by pitfall traps. Journal of Insect Conservation DOI 10.1007.

Kristan, W. B. III, A. J. Lynam, M. V. Price, and J. T. Rotenberry. 2003. Alternative causes of edge-abundance relationships in birds and small mammals of California coastal sage scrub. Ecography 26: 29-44.

Laakkonen, J., R. N. Fisher, and T. J. Case. 2001. Effect of land cover, habitat fragmentation and ant colonies on the distribution and abundance of shrews in southern California. Journal of Animal Ecology 70(5): 776-788.

Laurance, W. F., and R.O. Bierregaard Jr., eds. 1997. Tropical forest remnants: ecology, management, and conservation of fragmented communities. University of Chicago Press, Chicago.

Laurance, W. F., H. E. M. Nascimento, S. G. Laurance, A. Andrade, R. M. Ewers, K. E. Harms, R. C. C. Luizão, and J. E. Ribeiro. 2007. Habitat fragmentation, variable edge effects, and the landscape-divergence hypothesis. PLoS ONE 2(10): e1017.

MacArthur, R. H., and E. O. Wilson. 1967. The theory of island biogeography. Monographs in Population Biology, Princeton University Press, Princeton, New Jersey.

Matlack, G. R. 1994. Vegetation dynamics of the forest edge--trends in space and successional time. Journal of Ecology 82(1): 113-123.

Murcia, C. 1995. Edge effects in fragmented forests: implications for conservation. Trends in Ecology & Evolution 10(2): 58-62.

Noss, R. F. 1983. A regional landscape approach to maintain diversity. BioScience 33(11): 700-706.

O'Leary, J. F. 1990. California coastal sage scrub: general characteristics and considerations for biological conservation. *In*: A. A. Schoenherr (ed.). Endangered Plant Communities of Southern California, Southern California Botanists Special Publication No. 3.

Pulliam, H. R., and B. J. Danielson. 1991. Sources, sinks, and habitat selection, a landscape perspective on population-dynamics. American Naturalist 137:550-566.

Quammen, D., and K. Ellingsen. 1996. The Song of the Dodo: Island Biogeography in an Age of Extinctions. Scribner, New York, New York. 704pp.

Ries, L., and T. D. Sisk. 2004. A predictive model of edge effects. Ecology 85(11): 2917- 2926.

Sisk, T. D., N. M. Haddad, and P. R. Ehrlich. 1997. Bird assemblages in patchy woodlands: modeling the effects of edge and matrix habitats. Ecological Applications 7(4): 1170-1180.

Soulé, M. E. 1991. Theory and strategy. *In*: W.E. Hudson (ed.). Landscape Linkages and Biodiversity. Island Press, Covello, CA.

Soulé, M. E., A. C. Alberts, and D. T. Bolger. 1992. The effects of habitat fragmentation on chaparral plants and vertebrates. Oikos 63(1): 39-47.

Soulé, M. E., D. T. Bolger, A. C. Alberts, J. Wright, M. Sorice, and S. Hill. 1988. Reconstructed dynamics of rapid extinctions of chaparral-requiring birds in urban habitat islands. Conservation Biology 2(1): 75-92.

Suarez, A. V., D. T. Bolger and T. J. Case. 1998. Effects of fragmentation and invasion on native ant communities in coastal southern California. Ecology 79(6): 2041-2056.

Temple, S. A., and J. R. Cary. 1988. Modeling dynamics of habitat-interior bird populations in fragmented landscapes. Conservation Biology 2(4):340-347.

Treseder, K. K., and K. L. McGuire. 2009. Links Between Plant and Fungal Diversity in Habitat Fragments of Coastal Sage Scrub. The 94th ESA Annual Meeting, 2009.

Vaughan, J. R. 2010. Local Geographies of the Coastal Cactus Wren and the Coastal California Gnatcatcher on Marine Corps Base Camp Pendleton. Master of Science thesis, San Diego State University, San Diego, California. 97 pp.

US Fish & Wildlife Service. 2007. 50 CFR Part 17 Endangered and Threatened Wildlife and Plants; Revised Designation of Critical Habitat for the Coastal California Gnatcatcher (*Polioptila californica californica*); Final Rule.

Wilcove, D. S. 1985. Nest predation in forest tracks and the decline of migratory songbirds. Ecology 66(4): 1211-1214.

Wolkovich, E. M., D. T. Bolger, and K. L. Cottingham. 2009. Invasive grass litter facilitates native shrubs through abiotic effects. Journal of Vegetation Science 20: 1121–1132.

Woodroffe, R., and J. R. Ginsberg. 1998. Edge effects and the extinction of populations inside protected areas. Science 280:2126-2128.

FINDINGS OF CONFORMANCE
MULTIPLE SPECIES CONSERVATION PROGRAM

I. Biological Resource Core Area Determination

The impact area and the mitigation site shall be evaluated to determine if either or both sites qualify as a Biological Resource Core Area (BRCA) pursuant to the BMO, Section 86.506(a)(1).

Report the factual determination as to whether the proposed Impact Area qualifies as a BRCA. The Impact Area shall refer only to that area within which project-related disturbance is proposed, including any on and/or off-

The Impact Area does not qualify as a BRCA since it does not meet any of the following BRCA criteria:

i. The land is shown as Pre-Approved Mitigation Area on the wildlife agencies' Pre-Approved Mitigation Area map.

ii. The land is located within an area of habitat that contains biological resources that support or contribute to the long-term survival of sensitive species and is adjacent or contiguous to preserved habitat that is within the Pre-Approved Mitigation Area on the wildlife agencies' Pre-Approved Mitigation Area map.

iii. The land is part of a regional linkage/corridor. A regional linkage/corridor is either:
- **a. Land that contains topography that serves to allow for the movement of all sizes of wildlife, including large animals on a regional scale; and contains adequate vegetation cover providing visual continuity so as to encourage the use of the corridor by wildlife; or**
- **b. Land that has been identified as the primary linkage/corridor between the northern and southern regional populations of the California gnatcatcher in the population viability analysis for the California gnatcatcher, MSCP Resource Document Volume II, Appendix A-7 (Attachment I of the BMO.)**

iv. The land is shown on the Habitat Evaluation Map (Attachment J to the BMO) as very high or high and links significant blocks of habitat, except that land which is isolated or links small, isolated patches of habitat and land that has been affected by existing development to create adverse edge effects shall not qualify as BRCA.

v. The land consists of or is within a block of habitat greater than 500 acres in area of diverse and undisturbed habitat that contributes to the conservation of sensitive species.

vi. The land contains a high number of sensitive species and is adjacent or contiguous to surrounding undisturbed habitats, or contains soil derived

from the following geologic formations which are known to support sensitive species:

a. Gabbroic rock;
b. Metavolcanic rock;
c. Clay;
d. Coastal sandstone

A. Report the factual determination as to whether the Mitigation Site qualifies as a BRCA.

II. Biological Mitigation Ordinance Findings

A. Project Design Criteria (Section 86.505(a))

The following findings in support of Project Design Criteria, including Attachments G and H (if applicable), must be completed for all projects that propose impacts to Critical Populations of Sensitive Plant Species (Attachment C), Significant Populations of Narrow Endemic Animal Species (Attachment D), Narrow Endemic Plant Species (Attachment E) or Sensitive Plants (San Diego County Rare Plant List) or proposes impacts within a Biological Resource Core Area.

1. **Project development shall be sited in areas to minimize impact to habitat.**

2. **Clustering to the maximum extent permitted by County regulations shall be considered where necessary as a means of achieving avoidance.**

3. **Notwithstanding the requirements of the slope encroachment regulations contained within the Resource Protection Ordinance, effective October 10, 1991, projects shall be allowed to utilize design that may encroach into steep slopes to avoid impacts to habitat.**

4. **The County shall consider reduction in road standards to the maximum extent consistent with public safety considerations.**

5. **Projects shall be required to comply with applicable design criteria in the County MSCP Subarea Plan, attached hereto as Attachment G (Preserve Design Criteria) and Attachment H (Design Criteria for Linkages and Corridors).**

B. Preserve Design Criteria (Attachment G)

In order to ensure the overall goals for the conservation of critical core and linkage areas are met, the findings contained within Attachment G shall be required for all projects located within Pre-Approved Mitigation Areas or areas designated as Preserved as identified on the Subarea Plan Map.

Acknowledge the “no net loss” of wetlands standard that individual projects must meet to satisfy State and Federal wetland goals, policies, and standards, and implement applicable County ordinances with regard to wetland mitigation.

1. **Include measures to maximize the habitat structural diversity of conserved habitat areas, including conservation of unique habitats and habitat features.**

2. **Provide for the conservation of spatially representative examples of extensive patches of Coastal sage scrub and other habitat types that were ranked as having high and very high biological value by the MSCP habitat evaluation model.**

3. **Create significant blocks of habitat to reduce edge effects and maximize the ratio of surface area to the perimeter of conserved habitats. Subsequently, using criteria set out in Chapter 6, Section 6.2.3 of the MSCP Plan, potential impacts from new development on biological resources within the preserve that should be considered in the design of any project include access, non-native predators, non-native species, illumination, drain water (point source), urban runoff (non-point source) and noise.**

4. **Provide incentives for development in the least sensitive habitat areas.**

5. **Minimize impacts to narrow endemic species and avoid impacts to core populations of narrow endemic species.**

6. **Preserve the biological integrity of linkages between BRCAs.**

7. **Achieve the conservation goals for covered species and habitats (refer to Table 3-5 of the MSCP Plan).**

C. Design Criteria for Linkages and Corridors (Attachment H)

For project sites located within a regional linkage and/or that support one or more potential local corridors, the following findings shall be required to protect the biological value of these resources:

Habitat linkages as defined by the BMO, rather than just corridors, will be maintained.

1. **Existing movement corridors within linkages will be identified and maintained.**

2. **Corridors with good vegetative and/or topographic cover will be protected.**

3. **Regional linkages that accommodate travel for a wide range of wildlife species, especially those linkages that support resident populations of wildlife, will be selected.**

4. **The width of a linkage will be based on the biological information for the target species, the quality of the habitat within and adjacent to the corridor, topography, and adjacent land uses. Where there is limited**

topographic relief, the corridor must be well vegetated and adequately buffered from adjacent development.

5. **If a corridor is relatively long, it must be wide enough for animals to hide in during the day. Generally, wide linkages are better than narrow ones. If narrow corridors are unavoidable, they should be relatively short. If the minimum width of a corridor is 400 feet, it should be no longer than 500 feet. A width of greater than 1,000 feet is recommended for large mammals and birds. Corridors for bobcats, deer, and other large animals should reach rim-to-rim along drainages, especially if the topography is steep.**

6. **Visual continuity (i.e., long lines-of-site) will be provided within movement corridors. This makes it more likely that animals will keep moving through it. Developments along the rim of a canyon used as a corridor should be set back from the canyon rim and screened to minimize their visual impact.**

7. **Corridors with low levels of human disturbance, especially at night, will be selected. This includes maintaining low noise levels and limiting artificial lighting.**

8. **Barriers, such as roads, will be minimized. Roads that cross corridors should have ten foot high fencing that channels wildlife to underpasses located away from interchanges. The length-to-width ratio for wildlife underpasses is less than 2, although this restriction can be relaxed for underpasses with a height of greater than 30 feet.**

9. **Where possible at wildlife crossings, road bridges for vehicular traffic rather than tunnels for wildlife use will be employed. Box culverts will only be used when they can achieve the wildlife crossing/movement goals for a specific location. Crossings will be designed as follows: sound insulation materials will be provided; the substrate will be left in a natural condition, and vegetated with native vegetation if possible; a line-of-site to the other end will be provided; and if necessary, low-level illumination will be installed in the tunnel.**

10. **If continuous corridors do not exist, archipelago (or stepping-stone) corridors may be used for short distances. For example, the gnatcatcher may use disjunct patches of sage scrub for dispersal if the distance involved is less than 1-2 miles.**

III. Subarea Plan Findings

Conformance with the objectives of the County Subarea Plan is demonstrated by the following findings:

1. **The project will not conflict with the no-net-loss-of-wetlands standard in satisfying State and Federal wetland goals and policies.**

2. **The project includes measures to maximize the habitat structural diversity of conserved habitat areas including conservation of unique habitats and habitat features.**

3. **The project provides for conservation of spatially representative examples of extensive patches of Coastal sage scrub and other habitat types that were ranked as having high and very high biological values by the MSCP habitat evaluation model.**

4. **The project provides for the creation of significant blocks of habitat to reduce edge effects and maximize the ratio of surface area to the perimeter of conserved habitats.**

5. **The project provides for the development of the least sensitive habitat areas.**

6. **The project provides for the conservation of key regional populations of covered species, and representations of sensitive habitats and their geographic sub-associations in biologically functioning units.**

7. **Conserves large interconnecting blocks of habitat that contribute to the preservation of wide-ranging species such as Mule deer, Golden eagle, and predators as appropriate. Special emphasis will be placed on conserving adequate foraging habitat near Golden eagle nest sites.**

8. **All projects within the San Diego County Subarea Plan shall conserve identified critical populations and narrow endemics to the levels specified in the Subarea Plan. These levels are generally no impact to the critical populations and no more than 20 percent loss of narrow endemics and specified rare and endangered plants.**

9. **No project shall be approved which will jeopardize the possible or probable assembly of a preserve system within the Subarea Plan.**

10. **All projects that propose to count on-site preservation toward their mitigation responsibility must include provisions to reduce edge effects.**

11. **Every effort has been made to avoid impacts to BRCAs, to sensitive resources, and to specific sensitive species as defined in the BMO.**

Robert A. Hamilton

President, Hamilton Biological, Inc.

Expertise

Endangered Species Surveys
General Biological Surveys
CEQA Analysis
Population Monitoring
Vegetation Mapping
Construction Monitoring
Noise Monitoring
Open Space Planning
Natural Lands Management

Education

1988. Bachelor of Science degree in Biological Sciences, University of California, Irvine

Professional Experience

1994 to Present. Independent Biological Consultant, Hamilton Biological, Inc.

1988 to 1994. Biologist, LSA Associates, Inc.

Permits

Federal Permit No. TE-799557 to survey for the Coastal California Gnatcatcher and Southwestern Willow Flycatcher

MOUs with the California Dept. of Fish and Game to survey for Coastal California Gnatcatcher and Southwestern Willow Flycatcher

California Scientific Collecting Permit No. SC-001107

Robert A. Hamilton has been providing biological consulting services in southern California since 1988. He spent the formative years of his career at the firm of LSA Associates in Irvine, where he was a staff biologist and project manager. He has worked as an independent and on-call consultant since 1994, incorporating his business as Hamilton Biological, Inc., in 2009. The consultancy specializes in the practical application of environmental policies and regulations to land management and land use decisions in southern California.

A recognized authority on the status, distribution, and identification of birds in California, Mr. Hamilton is the lead author of two standard references describing aspects of the state's avifauna: *The Birds of Orange County: Status & Distribution* and *Rare Birds of California.* Mr. Hamilton has also conducted extensive studies in Baja California, and for seven years edited the Baja California Peninsula regional reports for the journal *North American Birds*. He served ten years on the editorial board of *Western Birds* and regularly publishes in peer-reviewed journals. He is a founding member of the Coastal Cactus Wren Working Group and in 2011 updated the Cactus Wren species account for *The Birds of North America Online*. Mr. Hamilton's expertise includes vegetation mapping. From 2007 to 2010 he worked as an on-call biological analyst for the County of Los Angeles Department of Regional Planning. From 2010 to present he has conducted construction monitoring and focused surveys for special-status bird species on the Tehachapi Renewable Transmission Project (TRTP). He is a former member of the Los Angeles County Significant Ecological Areas Technical Advisory Committee (SEATAC).

Mr. Hamilton conducts general and focused biological surveys of small and large properties as necessary to obtain various local, state, and federal permits, agreements, and clearances. He also conducts landscape-level surveys needed by land managers to monitor songbird populations. Mr. Hamilton holds the federal and state permits and MOUs listed to the left, and he is recognized by federal and state resource agencies as being highly qualified to survey for the Least Bell's Vireo. He also provides nest-monitoring services in compliance with the federal Migratory Bird Treaty Act and California Fish & Game Code Sections 3503, 3503.5 and 3513.

Board Memberships, Advisory Positions, Etc.

Coastal Cactus Wren Working Group (2008–present)

Los Angeles County Significant Ecological Areas Technical Advisory Committee (SEATAC) (2010–2014)

American Birding Association: Baja Calif. Peninsula Regional Editor, North American Birds (2000–2006)

Western Field Ornithologists: Associate Editor of Western Birds (1999–2008)

California Bird Records Committee (1998–2001)

Nature Reserve of Orange County: Technical Advisory Committee (1996–2001)

California Native Plant Society, Orange County Chapter: Conservation Chair (1992–2003)

Professional Affiliations

American Ornithologists' Union

Cooper Ornithological Society

Institute for Bird Populations

California Native Plant Society

Southern California Academy of Sciences

Western Foundation of Vertebrate Zoology

Mr. Hamilton is an expert photographer, and typically provides photo-documentation and/or video documentation as part of his services.

Drawing upon a robust, multi-disciplinary understanding of the natural history and ecology of his home region, Mr. Hamilton works with private and public land owners, as well as governmental agencies and interested third parties, to apply the local, state, and federal land use policies and regulations applicable to each particular situation. Mr. Hamilton has amassed extensive experience in the preparation and critical review of CEQA documents, from relatively simple Negative Declarations to complex supplemental and recirculated Environmental Impact Reports. In addition to his knowledge of CEQA and its Guidelines, Mr. Hamilton understands how each Lead Agency brings its own interpretive variations to the CEQA review process.

Representative Project Experience

From 2008 to present, Mr. Hamilton has served as the main biological consultant for the Banning Ranch Conservancy, a local citizens' group opposed to a large proposed residential and commercial project on the 400-acre Banning Ranch property in Newport Beach. Mr. Hamilton reviewed, analyzed, and responded to numerous biological reports prepared by the project proponent, and testified at multiple public hearings of the California Coastal Commission. In September 2016, the Commission denied the application for a Coastal Development Permit for the project, citing, in part, Mr. Hamilton's analysis of biological issues. In March 2017, the California Supreme Court issued a unanimous opinion (*Banning Ranch Conservancy v. City of Newport Beach*) holding that the EIR prepared by the City of Newport Beach improperly failed to identify areas of the site that might qualify as "environmentally sensitive habitat areas" under the California Coastal Act. In nullifying the certification of the EIR, the Court found that the City "ignored its obligation to integrate CEQA review with the requirements of the Coastal Act."

In 2014/2015, on behalf of Audubon California, Mr. Hamilton collaborated with Dan Cooper on *A Conservation Vision for the Los Cerritos Wetlands, Los Angeles County/Orange County, California*. The goals of this

Insurance

$3,000,000 professional liability policy (Hanover Insurance Group)

$2,000,000 general liability policy (The Hartford)

$1,000,000 auto liability policy (State Farm)

Other Relevant Experience

Field Ornithologist, San Diego Natural History Museum Scientific Collecting Expedition to Central and Southern Baja California, October/November 1997 and November 2003.

Field Ornithologist, Island Conservation and Ecology Group Expedition to the Tres Marías Islands, Nayarit, Mexico, 23 January to 8 February 2002.

Field Ornithologist, Algalita Marine Research Foundation neustonic plastic research voyages in the Pacific Ocean, 15 August to 4 September 1999 and 14 to 28 July 2000.

Field Assistant, Bird Banding Study, Río Ñambí Reserve, Colombia, January to March 1997.

References

Provided upon request.

comprehensive review of ongoing conceptual restoration planning by the Los Cerritos Wetlands Authority were (a) to review the conceptual planning and the restoration work that had been completed to date, and (b) to set forth additional conservation priorities for the more intensive phases of restoration that were being contemplated.

From 2012 to 2014, Mr. Hamilton collaborated with Dan Cooper on *A Conservation Analysis for the Santa Monica Mountains "Coastal Zone" in Los Angeles County*, and worked with Mr. Cooper and the County of Los Angeles to secure a certified Local Coastal Program (LCP) for 52,000 acres of unincorporated County lands in the Santa Monica Mountains coastal zone. The work involved synthesizing large volumes of existing baseline information on the biological resources of the study area, evaluating existing land use policies, and developing new policies and guidelines for future development within this large, ecologically sensitive area. A coalition of environmental organizations headed by the Surfrider Foundation selected this project as the "Best 2014 California Coastal Commission Vote" (http://www.surfrider.org/images/uploads/2014CCC_Vote_Chart_FINAL.pdf).

In 2010, under contract to CAA Planning, served as principal author of the *Conservation & Management Plan for Marina del Rey, Los Angeles County, California*. This comprehensive planning document has two overarching goals: (1) to promote the long-term conservation of all native species that exist in, or that may be expected to return to, Marina del Rey, and (2) to diminish the potential for conflicts between wildlife populations and both existing and planned human uses of Marina del Rey (to the benefit of humans and wildlife alike). After peer-review, the Plan was accepted by the Coastal Commission as an appropriate response to the varied challenges posed by colonial waterbirds and other biologically sensitive resources colonizing urban areas once thought to have little resource conservation value.

Contact Information

Robert A. Hamilton
President, Hamilton Biological, Inc.

316 Monrovia Avenue
Long Beach, CA 90803

562-477-2181 (office, mobile)

robb@hamiltonbiological.com
http://hamiltonbiological.com

Third Party Review of CEQA Documents

Under contract to cities, conservation groups, homeowners' associations, and other interested parties, Mr. Hamilton has reviewed EIRs and other project documentation for the following projects:

- Newport Banning Ranch (residential/commercial, City of Newport Beach)
- Davidon/Scott Ranch (residential, City of Petaluma)
- Mission Trails Regional Park Master Plan Update (open space planning, City of San Diego)
- Esperanza Hills (residential, County of Orange)
- Warner Ranch (residential, County of San Diego)
- Dog Beach at the Santa Ana River Mouth (open space planning, County of Orange)
- Gordon Mull subdivision (residential, City of Glendora)
- The Ranch at Laguna Beach (resort, City of Laguna Beach)
- Sunset Ridge Park (city park, City of Newport Beach)
- The Ranch Plan (residential/commercial, County of Orange)
- Southern Orange County Transportation Infrastructure Improvement Project (Foothill South Toll Road, County of Orange)
- Gregory Canyon Landfill Restoration Plan (proposed mitigation, County of San Diego)
- Montebello Hills Specific Plan EIR (residential, City of Montebello; 2009 and 2014 circulations)
- Cabrillo Mobile Home Park Violations (illegal wetland filling, City of Huntington Beach)
- Newport Hyatt Regency (timeshare conversion project, City of Newport Beach)
- Lower San Diego Creek "Emergency Repair Project" (flood control, County of Orange)
- Tonner Hills (residential, City of Brea)
- The Bridges at Santa Fe Units 6 and 7 (residential, County of San Diego)
- Villages of La Costa Master Plan (residential/commercial, City of Carlsbad)
- Whispering Hills (residential, City of San Juan Capistrano)
- Santiago Hills II (residential/commercial, City of Orange)
- Rancho Potrero Leadership Academy (youth detention facility/road, County of Orange)
- Saddle Creek/Saddle Crest (residential, County of Orange)
- Frank G. Bonelli Regional County Park Master Plan (County of Los Angeles)

Selected Presentations

Hamilton, R. A. Six Legs Good. 2012-2017. 90-minute multimedia presentation on the identification and photography of dragonflies, damselflies, butterflies, and other invertebrates, given at Audubon Society chapter meetings, Irvine Ranch Conservancy, etc.

Hamilton, R. A., and Cooper, D. S. 2016. Nesting Bird Policies: We Can Do Better. Twenty-minute multimedia presentation at The Wildlife Society Western Section Annual Meeting, February 23, 2016.

Hamilton, R. A. 2012. Identification of Focal Wildlife Species for Restoration, Coyote Creek Watershed Master Plan. Twenty-minute multimedia presentation given at the Southern California Academy of Sciences annual meeting at Occidental College, Eagle Rock, 4 May. Abstract published in the Bulletin of the Southern California Academy of Sciences No. 111(1):39.

Hamilton, R. A., and Cooper, D. S. 2009-2010. Conservation & Management Plan for Marina del Rey. Twenty-minute multimedia presentation given to different governmental agencies and interest groups.

Hamilton, R. A. 2008. Cactus Wren Conservation Issues, Nature Reserve of Orange County. One-hour multimedia presentation for Sea & Sage Audubon Society, Irvine, California, 25 November.

Hamilton, R. A., Miller, W. B., Mitrovich, M. J. 2008. Cactus Wren Study, Nature Reserve of Orange County. Twenty-minute multimedia presentation given at the Nature Reserve of Orange County's Cactus Wren Symposium, Irvine, California, 30 April 2008.

Hamilton, R. A. and K. Messer. 2006. 1999-2004 Results of Annual California Gnatcatcher and Cactus Wren Monitoring in the Nature Reserve of Orange County. Twenty-minute multimedia presentation given at the Partners In Flight meeting: Conservation and Management of Coastal Scrub and Chaparral Birds and Habitats, Starr Ranch Audubon Sanctuary, 21 August 2004; and at the Nature Reserve of Orange County 10th Anniversary Symposium, Irvine, California, 21 November.

Publications

Gómez de Silva, H., Villafaña, M. G. P., Nieto, J. C., Cruzado, J., Cortés, J. C., Hamilton, R. A., Vásquez, S. V., and Nieto, M. A. C. 2017. Review of the avifauna of The Tres Marías Islands, Mexico, including new and noteworthy records. *Western Birds* 47:2–25.

Hamilton, R. A. 2014. Book review: The Sibley Guide to Birds, Second Edition. *Western Birds* 45:154–157.

Cooper, D. S., R. A. Hamilton, and S. D. Lucas. 2012. A population census of the Cactus Wren in coastal Los Angeles County. *Western Birds* 43:151–163.

Hamilton, R. A., J. C. Burger, and S. H. Anon. 2012. Use of artificial nesting structures by Cactus Wrens in Orange County, California. *Western Birds* 43:37–46.

Hamilton, R. A., Proudfoot, G. A., Sherry, D. A., and Johnson, S. 2011. Cactus Wren (*Campylorhynchus brunneicapillus*), *in* The Birds of North America Online (A. Poole, ed.). Cornell Lab of Ornithology, Ithaca, NY.

Hamilton, R. A. 2008. Cactus Wrens in central & coastal Orange County: How will a worst-case scenario play out under the NCCP? *Western Tanager* 75:2–7.

Erickson, R. A., R. A. Hamilton, R. Carmona, G. Ruiz-Campos, and Z. A. Henderson. 2008. Value of perennial archiving of data received through the North American Birds regional reporting system: Examples from the Baja California Peninsula. *North American Birds* 62:2–9.

Erickson, R. A., R. A. Hamilton, and S. G. Mlodinow. 2008. Status review of Belding's Yellowthroat *Geothlypis beldingi*, and implications for its conservation. Bird Conservation International 18:219–228.

Hamilton, R. A. 2008. Fulvous Whistling-Duck (*Dendrocygna bicolor*). Pp. 68-73 *in* California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California (Shuford, W. D. and T. Gardali, eds.). Studies of Western Birds 1. Western Field Ornithologists, Camarillo, CA, and California Department of Fish and Game, Sacramento, CA.

California Bird Records Committee (R. A. Hamilton, M. A. Patten, and R. A. Erickson, editors.). 2007. Rare Birds of California. Western Field Ornithologists, Camarillo, CA.

Hamilton, R. A., R. A. Erickson, E. Palacios, and R. Carmona. 2001–2007. *North American Birds* quarterly reports for the Baja California Peninsula Region, Fall 2000 through Winter 2006/2007.

Hamilton, R. A. and P. A. Gaede. 2005. Pink-sided × Gray-headed Juncos. *Western Birds* 36:150–152.

Mlodinow, S. G. and R. A. Hamilton. 2005. Vagrancy of Painted Bunting (*Passerina ciris*) in the United States, Canada, and Bermuda. *North American Birds* 59:172–183.

Erickson, R. A., R. A. Hamilton, S. González-Guzmán, G. Ruiz-Campos. 2002. Primeros registros de anidación del Pato Friso (*Anas strepera*) en México. Anales del Instituto de Biología, Universidad Nacional Autónoma de México, Serie Zoología 73(1):67–71.

Hamilton, R. A. and J. L. Dunn. 2002. Red-naped and Red-breasted sapsuckers. *Western Birds* 33:128–130.

Hamilton, R. A. and S. N. G. Howell. 2002. Gnatcatcher sympatry near San Felipe, Baja California, with notes on other species. *Western Birds* 33:123–124.

Hamilton, R. A. 2001. Book review: The Sibley Guide to Birds. *Western Birds* 32:95–96.

Hamilton, R. A. and R. A. Erickson. 2001. Noteworthy breeding bird records from the Vizcaíno Desert, Baja California Peninsula. Pp. 102-105 *in* Monographs in Field Ornithology No. 3. American Birding Association, Colorado Springs, CO.

Hamilton, R. A. 2001. Log of bird record documentation from the Baja California Peninsula archived at the San Diego Natural History Museum. Pp. 242–253 *in* Monographs in Field Ornithology No. 3. American Birding Association, Colorado Springs, CO.

Hamilton, R. A. 2001. Records of caged birds in Baja California. Pp. 254–257 *in* Monographs in Field Ornithology No. 3. American Birding Association, Colorado Springs, CO.

Erickson, R. A., R. A. Hamilton, and S. N. G. Howell. 2001. New information on migrant birds in northern and central portions of the Baja California Peninsula, including species new to Mexico. Pp. 112–170 *in* Monographs in Field Ornithology No. 3. American Birding Association, Colorado Springs, CO.

Howell, S. N. G., R. A. Erickson, R. A. Hamilton, and M. A. Patten. 2001. An annotated checklist of the birds of Baja California and Baja California Sur. Pp. 171–203 *in* Monographs in Field Ornithology No. 3. American Birding Association, Colorado Springs, CO.

Ruiz-Campos, G., González-Guzmán, S., Erickson, R. A., and Hamilton, R. A. 2001. Notable bird specimen records from the Baja California Peninsula. Pp. 238–241 *in* Monographs in Field Ornithology No. 3. American Birding Association, Colorado Springs, CO.

Wurster, T. E., R. A. Erickson, R. A. Hamilton, and S. N. G. Howell. 2001. Database of selected observations: an augment to new information on migrant birds in northern and central portions of the Baja California Peninsula. Pp. 204–237 *in* Monographs in Field Ornithology No. 3. American Birding Association, Colorado Springs, CO.

Erickson, R. A. and R. A. Hamilton, 2001. Report of the California Bird Records Committee: 1998 records. *Western Birds* 32:13–49.

Hamilton, R. A., J. E. Pike, T. E. Wurster, and K. Radamaker. 2000. First record of an Olive-backed Pipit in Mexico. *Western Birds* 31:117–119.

Hamilton, R. A. and N. J. Schmitt. 2000. Identification of Taiga and Black Merlins. *Western Birds* 31:65–67.

Hamilton, R. A. 1998. Book review: Atlas of Breeding Birds, Orange County, California. *Western Birds* 29:129–130.

Hamilton, R. A. and D. R. Willick. 1996. The Birds of Orange County, California: Status and Distribution. Sea & Sage Press, Sea & Sage Audubon Society, Irvine.

Hamilton, R. A. 1996–98. Photo Quizzes. *Birding* 27(4):298-301, 28(1):46-50, 28(4):309-313, 29(1): 59-64, 30(1):55–59.

Erickson, R. A., and Hamilton, R. A. 1995. Geographic distribution: *Lampropeltis getula californiae* (California Kingsnake) in Baja California Sur. *Herpetological Review* 26(4):210.

Bontrager, D. R., R. A. Erickson, and R. A. Hamilton. 1995. Impacts of the October 1993 Laguna fire on California Gnatcatchers and Cactus Wrens. *in* J. E. Keeley and T. A. Scott (editors). Wildfires in California Brushlands: Ecology and Resource Management. International Association of Wildland Fire, Fairfield, Washington.

Erickson, R. A., R. A. Hamilton, S. N. G. Howell, M. A. Patten, and P. Pyle. 1995. First record of Marbled Murrelet and third record of Ancient Murrelet for Mexico. *Western Birds* 26: 39–45.

Erickson, R. A., and R. A. Hamilton. 1993. Additional summer bird records for southern Mexico. *Euphonia* 2(4): 81–91.

Erickson, R. A., A. D. Barron, and R. A. Hamilton. 1992. A recent Black Rail record for Baja California. *Euphonia* 1(1): 19–21.