Land Protection Partners
P.O. Box 24020, Los Angeles, CA 90024-0020
Telephone: (310) 247-9719

Comments on Mount Saint Mary's University Chalon Campus Wellness Pavilion Project Final EIR

Travis Longcore, Ph.D.
Catherine Rich, J.D., M.A.

July 13, 2021

1 Introduction

Mount Saint Mary's University (MSMU) proposes to construct either a 38,000 square foot (Proposed Project) or 35,500 square foot (Alternative 5) "Wellness Pavilion" at its Chalon Campus in the Brentwood neighborhood of Los Angeles (the "Project"). The City of Los Angeles ("City") circulated a Draft Environmental Impact Report (DEIR) and has now issued a Final Environmental Impact Report (FEIR). At the request of Chatten-Brown, Carstens & Minteer, we have reviewed the DEIR and FEIR to assess the accuracy and adequacy of the biological impacts analysis. As detailed at the end of this report, we have 23 years of experience in providing third-party review of technical biological reports. We have identified a series of deficiencies in the biological impacts analysis and provide this information in advance of further action on the part of the City toward approval of the Project.

2 Documents Reviewed

We have reviewed the following documents that describe the project:

- Mount St. Mary's University Chalon Campus Wellness Pavilion Project Final Environmental Impact Report, dated June 2021. Prepared by ESA for the City of Los Angeles Department of City Planning.

- Mount St. Mary's University Chalon Campus Wellness Pavilion Project Draft Environmental Impact Report, dated April 2018. Prepared by ESA for the City of Los Angeles Department of City Planning.

- Mount Saint Mary's University Chalon Campus Wellness Pavilion Project: Protected and Non-Protected Significant Tree Report, dated October 20, 2017. Prepared by ESA for Mount Saint Mary [*sic*] University.

We then consulted the published scientific literature as appropriate, which is cited in this report. We also reviewed guidelines from the California Department of Fish and Wildlife, which are available on the Department's website.

3 Impacts from Light Pollution Not Described or Mitigated

The analysis of the impacts of light pollution from the proposed Project is split between the Aesthetics and Biological Resource sections. Neither section contains sufficient details on the design features to draw conclusions about potential impacts to aesthetics or to biological resources.

All of the light pollution avoidance features (e.g., lights directed downward, poles away from canyon edges) apply only to outdoor lighting, while indoor lighting that will be visible through the walls of glass of the Wellness Pavilion itself is not considered, analyzed, or depicted in a nighttime view, nor is the extensive use of glass considered as a collision hazard for birds. The reference to "dark-sky compliant fixtures" is appropriate (e.g., DEIR, p. IV.A-37, IV.C-26), but it does not make up for a building design that has at least three walls made largely of glass (see Figure 1, and DEIR Figures II-9, II-10, II-11). When this indoor space is illuminated to indoor standards after dusk, it will become a large glowing light source that is visible from the surrounding areas and will become a source of luminance that impacts wildlife in the surrounding area and increase the hazard of glass to birds (Parkins et al. 2015, Van Doren et al. 2021).

If the Wellness Pavilion is to be designed with huge walls of windows and is to be used at night (Figure 2), mitigation of indoor light that will be visible outdoors is needed. Indoor lighting can cause adverse impacts on aesthetics, cause sky glow, and result in light trespass and glare, just like outdoor lighting (Parkins et al. 2015, Du et al. 2018). The FEIR does not consider these impacts, which can be significant.

For example, as seen in the photo rendering of the project from a nearby ridgeline (Figure 3), the glass walls of the new building would be prominent, and after dark they would be a large light pollution source. The new glare caused by the building itself would be far more extensive than the existing buildings on the MSMU campus, which all have smaller windows and, presumably, window coverings, unlike the glass walls of the proposed building.

Figure 1. Rendering of proposed building in the FEIR (Figure II-12). Note the walls of glass that will be visible from the surrounding natural habitat.

Figure 2. Rendering of the proposed Wellness Pavilion in the FEIR (Figure II-13). Note the large walls of windows that will allow unimpeded views into the illuminated interior of the building.

Figure 3. Simulated view of the proposed Wellness Pavilion from off site (FEIR, Figure IV.A-5). The entire area outlined in red is glass, and absent design or operational mitigations, would constitute a significant new glare source that would be a significant adverse impact to the nighttime aesthetics, adversely impact the nocturnal habitat for sensitive species, and create a significant hazard for migratory birds.

3.1 Structure Design Poses Significant Hazard to Birds

Expanses of glass and building designs where a bird can see through glass to habitat on the other side present a large risk of collision mortality (Sheppard and Phillips 2015). Furthermore, illumination at night is associated with higher avian mortality (Sheppard and Phillips 2015, Van Doren et al. 2021). Birds simply do not perceive glass as a barrier (Klem 1990, Sheppard and Phillips 2015). The combination of nighttime lights followed by daytime glass exposure is a significant threat to songbirds during the already strenuous migratory period (Cabrera-Cruz et al. 2018). Mitigation by turning lights off within a building reduces attraction and mortality (Van Doren et al. 2021).

The Wellness Pavilion could not be more poorly designed in terms of harms to birds. Standards and tools are available to assist architects in designing bird-friendly buildings that will minimize mortality (Kensek et al. 2016). None of these approaches is described as a mitigation for this potentially significant impact in the FEIR. Killing migratory birds is a violation of the Migratory Bird Treaty Act. Violating the MBTA is a CEQA issue. Birds in the vicinity include species of conservation concern as defined by the federal government (Birds of Conservation Concern; U.S. Fish and Wildlife Service 2021). This list includes species that are likely to become candidates for listing under the Endangered Species Act if conservation actions are not taken. The FEIR does not contain the results of any bird surveys, so it cannot conclude that sensitive species will not be affected through collisions. Rather, it is likely that the lighted building combined with its large expanses of glass will result in direct mortality of resident bird species and migrants. Similarly, the glass railing around the pool presents a direct hazard for bird collision (Figure 4). Guidelines to reduce the impacts of structures on birds are readily available and feasible (e.g., Sheppard and Phillips 2015).

Figure 4. Examples of the large expanses of glass that will make up the proposed Wellness Pavilion. Source: DEIR, Figures II-14, II-15.

3.2 Additional Lighting Contributes to Landscape Fragmentation

The presence of permanent outdoor lighting can sever landscape connectivity for wildlife species (Stone et al. 2009). The existence of the lights themselves, shielded or not, is sufficient to influence wildlife movement (Beier 1995, 2006). This phenomenon was illustrated by a radio telemetry study of young mountain lions in Orange County, California:

> All travel in corridors and habitat peninsulas occurred at night. During overnight monitoring, the disperser usually avoided artificial lights when in the corridor or peninsula. For example, M12 [a juvenile mountain lion] consistently used dark areas as he rapidly (<4 hr) traveled the grassy ridge (6.0 X 1.5 km) separating San Juan Capistrano from San Clemente (Fig. 1). Also M12 seemed to use light cues when he negotiated the tightest part of the Pechanga Corridor; his consistent movements in the direction of the darkest horizon caused him to miss the only bridged undercrossing of I-15.
>
> Overnight monitoring showed that dispersers especially avoided night-lights in conjunction with open terrain. On M12's initial encounter with a well-lit sand factory and adjacent sand pits, he took 2 hours and 4 attempts to select a route that skirted the facility, after which he rested on a ridgetop for 2 hours. During 2 nights in the Arroyo Trabuco, M8 explored several small side canyons lacking woody vegetation. He followed each canyon to the ridgetop, where city lights were visible 300–800 m west. He stopped at each canyon ridgetop for 15–60 minutes before returning to the arroyo, without moving >100 m into the grasslands west of the ridgeline in view of the city lights (Beier 1995).

Further data on the use of underpasses and the influence of lighting on landscape connectivity have been reported. An experimental evaluation of underpass use by wildlife found that for mule deer, nearby lights affected movement compared with a reference period (Bliss-Ketchum et al. 2016). The FEIR does not consider the potential impacts of the interior light from the Wellness Pavilion or the exterior lighting on wildlife wayfinding and habitat use.

3.3 Feasible Mitigations for Impacts of Lighting on Insects

The FEIR does not consider the effects of lighting on wildlife with any degree of specificity. All of the design features intended to reduce impacts of lighting are focused on the intensity and directionality of lights. Spectrum of lighting has been completely overlooked and it requires consideration. This applies to both outdoor lighting and indoor lighting that will be visible through the glass walls of the Wellness Pavilion at night. Existing evidence suggests that outdoor lighting should be the lowest possible correlated color temperature (e.g., yellow/red), rather than full-spectrum white. Lower color temperature lights attract fewer insects (Longcore et al. 2015, Donners et al. 2018, Longcore et al. 2018, Deichmann et al. 2021), which would reduce overall wildlife impacts.

4 Vegetation Mapping Is Out of Date and Inaccurate

The FEIR does not contain a proper map of the natural communities on the project site. The State of California has adopted science-based mapping protocols to inform habitat assessments. Mapping must assign vegetation into categories defined in Manual of California Vegetation, which is available online at vegetation.cnps.org. The FEIR relies on maps that describe hillside vegetation only as "disturbed vegetation," which is not a recognized vegetation classification. Those areas should be classified based on the dominant species and following appropriate protocols. These areas include native species such as laurel sumac (*Malosma laurina*), coast live oak (*Quercus agrifolia*), purple needlegrass (*Stipa pulchra*), sugar bush (*Rhus ovata*), California poppy (*Eschscholzia californica*), chaparral yucca (*Hesperoyucca whipplei*), and toyon (*Heteromeles arbutifolia*) (DEIR, p. IV.C-14). If any of these species is dominant in the shrub or tree layer, a native vegetation community may be the appropriate classification.

Furthermore, the hillsides adjacent to the Project site were burned in the Getty Fire in October 2019, after the site assessment for the FEIR. The map is therefore out of date and should be updated based on actual site conditions as the native chaparral plant species recover from that event. For some sensitive species (e.g., coastal whiptail), habitat values may have increased after the fire (Lillywhite 1977).

For reference, the Department of Fish and Wildlife provides the following instructions for "Addressing Sensitive Natural Communities in Environmental Review" [1]:

- Identify all Natural Communities within the project footprint using the best means possible, for example, keying them out in the Manual of California [Vegetation], Second Edition (Sawyer et al. 2009) or in classification or mapping reports from the region, available on VegCAMP's Reports and Maps page.
- Refer to the current standard list of Natural Communities to determine if any of these types are ranked Sensitive (S1-S3 rank); if so, see CEQA Guidelines checklist at IVb.
- Other considerations when assessing potential impacts to Sensitive Natural Communities from a project include:
    1. Compliance with state and federal wetland and riparian policies and codes, as certain Natural Communities are restricted to wetlands or riparian settings.
    2. Compliance with the Native Plant Protection Act and the state and federal Endangered Species Acts, as some Natural Communities either support rare species or are defined by the dominance or presence of such species.
    3. Compliance with CEQA Guidelines Section 15065(a), which mandates completion of an EIR if a project would threaten to eliminate a plant community.
    4. Compliance with local regional plans, regulations, or ordinances that call for consideration of impacts to Natural Communities.
    5. Vegetation types that are not on the state's sensitive list but that may be considered rare or unique to the region under CEQA Guidelines Section 15125(c).
- If a Natural Community in the project area has not previously been described, it may be a rare type. In this case, please contact VegCAMP (Todd Keeler-Wolf or Diana Hickson) about documenting the Natural Community.
- If there are Sensitive Natural Communities on your project site and you need guidance, contact the appropriate regional staff person through the local CDFW Regional Office to discuss potential project impacts; these staff have local knowledge and context.
- The Department's document Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (PDF) provides information on reporting.

1. https://wildlife.ca.gov/Data/VegCAMP/Natural-Communities#environmental%20review

5 Impacts to Sensitive Species Are Not Described or Mitigated

5.1 Coastal Whiptail Must Be Assumed Present

The DEIR and its biological appendices draw the conclusion that coastal whiptail (*Aspidoscelis tigris stejnegeri*) has only a "moderate" probability of being found on site because the nearest occurrence in the California Natural Diversity Database (CNDDB) was 0.7 miles northwest of the project site in 2007. This conclusion represents a misuse of the CNDDB and ignores other available sources of information. CNDDB records are opportunistically reported and do not represent exhaustive surveys. They are meant to aid consultants in deciding what species or natural communities might be in the vicinity as a means to guide surveys for project-level analysis. They do not, and cannot, replace surveys when a species might be present. In this instance, community science records in the form of a geotagged photograph and observation on the iNaturalist platform (https://www.inaturalist.org/observations/7936615) is evidence of the potential presence of coastal whiptail on the MSMU property immediately north of the Project area. Furthermore, iNaturalist contains many observations identified as coastal whiptail within the natural open space contiguous with the Project site. The applicant therefore must undertake appropriate surveys to determine presence, or assume that existing habitat is in fact occupied.

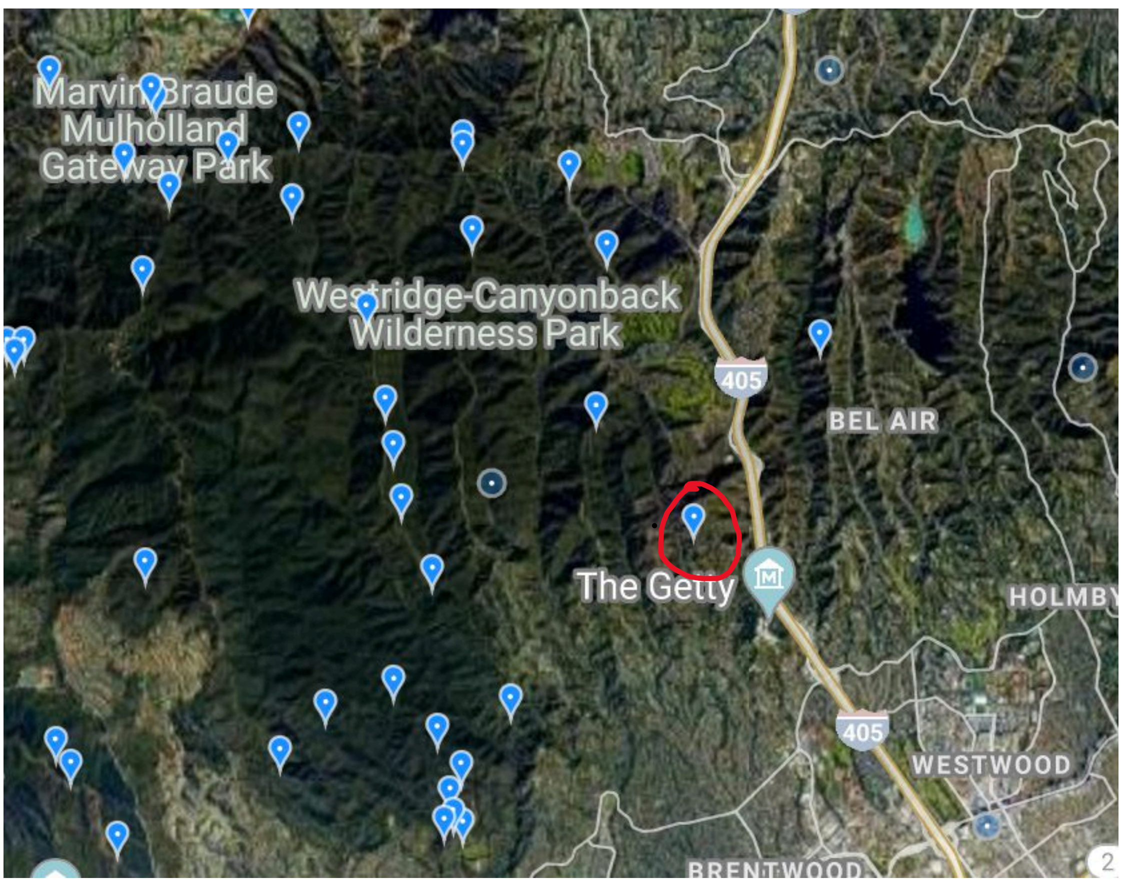

Figure 5. Map of observations of coastal whiptail in the vicinity of the Project site (circled) as reported on the iNaturalist website.

The impact analysis for coastal whiptail is similarly flawed. The FEIR describes the potential loss of 0.9 acres of habitat, but assumes this impact is not significant because individuals would "flee" fuel modification activities and so there would be no direct impacts. Habitat loss is a direct impact, regardless of whether individuals escape with their lives, albeit temporarily. The conclusion in the FEIR is sort of like arguing that it would not be a significant impact to burn a person's house down so long as the person had been able to evacuate without being injured. And unlike people, who can be rehoused, wildlife that are displaced by habitat destruction do not usually survive because the resources in the areas where they end up are already in use by other individuals. It is for this reason that relocation of wildlife into areas already occupied by the species is not considered to be an effective mitigation measure (Bradley et al. 2020).

Coastal whiptail is a Species of Special Concern in the State of California (Thomson et al. 2016) and any impacts to its habitat would be considered significant if not mitigated.

5.2 Coast Horned Lizard Must Be Assumed to Be Present

The FEIR improperly relies on the CNDDB to assert that coast horned lizard (*Phrynosoma blainvillii*) is not present because the most recent CNDDB record was in 1918 and was 3.3 miles from the Project site. The vicinity of the project has many recent observations of coast horned lizard with photographs on iNaturalist. Their exact locations are obscured because of the sensitivity of the species but it is entirely possible that the species is found within the natural habitats surrounding the Project site. In the absence of surveys (none were done by the applicant), it must be assumed that the chaparral and disturbed areas are potential habitat for coast horned lizard. The species is vulnerable to extirpation through displacement of its native ant food items by invasive Argentine ants, which is facilitated by irrigation from development (Suarez et al. 2000). This potential impact of changed irrigation patterns on the site, and the direct impacts of additional fuel modification of existing post-fire chaparral, both could have a significant adverse impact on coast horned lizard, which is a California Species of Special Concern (Thomson et al. 2016).

5.3 Bat Species of Concern Highly Likely to Use Project Site

Western red bat (*Lasiurus blossevillii*) and Yuma myotis (*Myotis yumanensis*) are both California Mammal Species of Special Concern. They meet the definition of rare species under Section 15380 of the California Environmental Quality Act Guidelines. Both of these species are modestly urban tolerant and have been found in recent studies of the bat fauna in Los Angeles, including surveys of the Baldwin Hills (Remington 2016), Griffith Park (Remington and Cooper 2014), and the Santa Monica Mountains (M. Ordeñana, pers. comm.). Given the contiguity of the Project site with a large, intact open space that includes considerable resources for bat roosting, the use of street lights for foraging by *Lasiurus* (Hickey et al. 1996) and *Myotis* species (Cole et al. 2019), it is highly likely that sensitive bat species forage at the project site. Other species may be present as well, but the FEIR is not based on any survey data that would inform such an assessment. Appropriate surveys would be based on analysis of acoustic recordings (O'Farrell et al. 1999). Alternatively, it would be appropriate to assume that the site is used for foraging by sensitive bat species and incorporate design features to minimize impacts on bats.

The responses of different bat species to lighting are complex (Rydell 2006). Some faster-flying and more maneuverable species will be attracted to lights, where they forage on insects also attracted to the lights. Slower and less maneuverable species will avoid lights, essentially being repulsed by their presence (Stone et al. 2009, Stone et al. 2012, Stone et al. 2015). Part-night lighting, where lights are shut off after a curfew, is an improvement over whole-night lighting for bats, but not adequate to reduce all impacts (Azam et al. 2015, Day et al. 2015). Best practices for reducing impacts to bats (Voigt et al. 2018) include a limit on light at the edge of habitat of 0.1 lux, avoiding direct glare into habitats, and seeking to avoid light <540 nm. Red lights are being used in Europe to minimize impacts to bats (Spoelstra et al. 2017).

5.4 Additional Fuel Modification Represents a Significant Impact Unless Mitigated

The Project would result in the loss of an additional acre of canyon-side habitat as a result of an increase in the size of the fuel modification zone. Fuel modification represents a significant disruption of natural habitat and substantially degrades habitat quality for sensitive species (Longcore 2003). Native California lizards, including whiptails, are more abundant in chaparral than in grasslands created by converting chaparral through removal (Lillywhite 1977), as through fuel modification. Coastal whiptail is sensitive to disturbance (Thomson et al. 2016) and any impacts to habitat should be considered significant unless mitigated. The FEIR concludes, contrary to this evidence, that removal of an additional acre of native chaparral habitat would not constitute a significant impact and that no mitigation would be required. The FEIR reaches this conclusion by assuming that no sensitive animal species would be present, which is contradicted by the available evidence regarding coastal whiptail and coast horned lizard. Absent surveys from the applicant capable of detecting these species, the appropriate assumption is that these two sensitive species would be impacted by fuel modification activities, constituting a significant impact unless mitigated.

6 About the Authors

Dr. Travis Longcore and Catherine Rich are principals of Land Protection Partners. Dr. Longcore is Associate Adjunct Professor in the Institute of the Environment and Sustainability at UCLA. He has taught, among other courses, Bioresource Management, Environmental Impact Analysis, Field Ecology, and Ecological Factors in Design. He was graduated *summa cum laude* from the University of Delaware with an Honors B.A. in Geography, holds an M.A. and a Ph.D. in Geography from UCLA, and is professionally certified as a Senior Ecologist by the Ecological Society of America and as a GIS Professional by the Geographic Information System Certification Institute. He is a 24-year member of the Los Angeles County Environmental Review Board. Catherine Rich is Executive Officer of The Urban Wildlands Group. She holds an A.B. with honors from the University of California, Berkeley, a J.D. from the UCLA School of Law, and an M.A. in Geography from UCLA. She is lead editor of *Ecological Consequences of Artificial Night Lighting* (Island Press, 2006) with Dr. Longcore. Longcore and Rich have authored or co-authored over 50 scientific papers in top peer-reviewed journals such as *Auk, Biological Conservation*, *Conservation Biology*, *Environmental Management*, *Frontiers in Ecology and the Environment*, *Trends in Evolution and Ecology*, and *Urban Forestry and Urban Greening*. Longcore and Rich have provided scientific review of environmental compliance documents and analysis of complex environmental issues for local, regional, and national clients for 23 years.

7 Literature Cited

Azam, C., C. Kerbiriou, A. Vernet, J.-F. Julien, Y. Bas, L. Plichard, J. Maratrat, and I. Le Viol. 2015. Is part-night lighting an effective measure to limit the impacts of artificial lighting on bats? Global Change Biology **21**:4333–4341.

Beier, P. 1995. Dispersal of juvenile cougars in fragmented habitat. Journal of Wildlife Management **59**:228–237.

Beier, P. 2006. Effects of artificial night lighting on terrestrial mammals. Pages 19–42 *in* C. Rich and T. Longcore, editors. Ecological Consequences of Artificial Night Lighting. Island Press, Washington, D.C.

Bliss-Ketchum, L. L., C. E. de Rivera, B. C. Turner, and D. M. Weisbaum. 2016. The effect of artificial light on wildlife use of a passage structure. Biological Conservation **199**:25–28.

Bradley, H. S., S. Tomlinson, M. D. Craig, A. T. Cross, and P. W. Bateman. 2020. Mitigation translocation as a management tool. Conservation Biology **early view** (doi: doi.org/10.1111/cobi.13667).

Cabrera-Cruz, S. A., J. A. Smolinsky, and J. J. Buler. 2018. Light pollution is greatest within migration passage areas for nocturnally-migrating birds around the world. Scientific Reports **8**:3261.

Cole, H., C. A. Toth, and J. R. Barber. 2019. Lights, bats, and buildings: investigating the factors influencing roosting sites and habitat use by bats in Grand Teton National Park. University of Wyoming–National Park Service Research Station Annual Report **42**:20–25.

Day, J., J. Baker, H. Schofield, F. Mathews, and K. J. Gaston. 2015. Part-night lighting: implications for bat conservation. Animal Conservation **18**:512–516.

Deichmann, J. L., C. Ampudia Gatty, J. M. Andía Navarro, A. Alonso, R. Linares-Palomino, and T. Longcore. 2021. Reducing the blue spectrum of artificial light at night minimises insect attraction in a tropical lowland forest. Insect Conservation and Diversity **14**:247–259.

Donners, M., R. H. A. van Grunsven, D. Groenendijk, F. van Langevelde, J. W. Bikker, T. Longcore, and E. Veenendaal. 2018. Colors of attraction: modeling insect flight to light behavior. Journal of Experimental Zoology Part A: Ecological and Integrative Physiology **329**:434–440.

Du, J., X. Zhang, and D. King. 2018. An investigation into the risk of night light pollution in a glazed office building: the effect of shading solutions. Building and Environment **145**:243–259.

Hickey, M. B. C., L. Acharya, and S. Pennington. 1996. Resource partitioning by two species of vespertilionid bats (*Lasiurus cinereus* and *Lasiurus borealis*) feeding around street lights. Journal of Mammalogy **77**:325–334.

Kensek, K., Y. Ding, and T. Longcore. 2016. Green building and biodiversity: facilitating bird friendly design with building information models. Journal of Green Building **11**:116–130.

Klem, D., Jr. 1990. Collisions between birds and windows: mortality and prevention. Journal of Field Ornithology **61**:120–128.

Lillywhite, H. B. 1977. Effects of chaparral conversion on small vertebrates in southern California. Biological Conservation **11**:171–184.

Longcore, T. 2003. Ecological effects of fuel modification on arthropods and other wildlife in an urbanizing wildland. Pages 111–117 *in* K. E. M. Galley, R. C. Klinger, and N. G. Suguihara, editors. Proceedings of Fire Conference 2000: The First National Congress on Fire Ecology, Prevention and Management. Tall Timbers Research Station, Tallahassee, Florida.

Longcore, T., H. L. Aldern, J. F. Eggers, S. Flores, L. Franco, E. Hirshfield-Yamanishi, L. N. Petrinec, W. A. Yan, and A. M. Barroso. 2015. Tuning the white light spectrum of light emitting diode lamps to reduce attraction of nocturnal arthropods. Philosophical Transactions of the Royal Society B: Biological Sciences **370**:20140125.

Longcore, T., A. Rodríguez, B. Witherington, J. F. Penniman, L. Herf, and M. Herf. 2018. Rapid assessment of lamp spectrum to quantify ecological effects of light at night. Journal of Experimental Zoology Part A: Ecological and Integrative Physiology **329**:511–521.

O'Farrell, M. J., B. W. Miller, and W. L. Gannon. 1999. Qualitative identification of free-flying bats using the Anabat detector. Journal of Mammalogy **80**:11–23.

Parkins, K. L., S. B. Elbin, and E. Barnes. 2015. Light, glass, and bird–building collisions in an urban park. Northeastern Naturalist **22**:84–94.

Remington, S. 2016. Bat surveys of the Baldwin Hills, Los Angeles County, California, 2014–2015. Pages 72–101 *in* T. Longcore, editor. Urban Biodiversity Assessment: Baldwin Hills Biota Update. University of Southern California for Baldwin Hills Conservancy (Proposition 84) and Baldwin Hills Regional Conservation Authority (Proposition A), Los Angeles.

Remington, S., and D. S. Cooper. 2014. Bat survey of Griffith Park, Los Angeles, California. The Southwestern Naturalist **59**:473–479.

Rydell, J. 2006. Bats and their insect prey at streetlights. Pages 43–60 *in* C. Rich and T. Longcore, editors. Ecological Consequences of Artificial Night Lighting. Island Press, Washington, D.C.

Sheppard, C., and G. Phillips. 2015. Bird-Friendly Building Design, 2nd Ed., American Bird Conservancy, The Plains, Virginia.

Spoelstra, K., R. H. A. van Grunsven, J. J. C. Ramakers, K. B. Ferguson, T. Raap, M. Donners, E. M. Veenendaal, and M. E. Visser. 2017. Response of bats to light with different spectra: light-shy and agile bat presence is affected by white and green, but not red light. Proceedings of the Royal Society B: Biological Sciences **284**:20170075.

Stone, E. L., S. Harris, and G. Jones. 2015. Impacts of artificial lighting on bats: a review of challenges and solutions. Mammalian Biology **80**:213–219.

Stone, E. L., G. Jones, and S. Harris. 2009. Street lighting disturbs commuting bats. Current Biology **19**:1123–1127.

Stone, E. L., G. Jones, and S. Harris. 2012. Conserving energy at a cost to biodiversity? Impacts of LED lighting on bats. Global Change Biology **18**:2458–2465.

Suarez, A. V., J. Q. Richmond, and T. J. Case. 2000. Prey selection in horned lizards following the invasion of Argentine ants in southern California. Ecological Applications **10**:711–725.

Thomson, R. C., A. N. Wright, and H. B. Shaffer. 2016. California amphibian and reptile species of special concern. California Department of Fish and Wildlife / University of California Press, Oakland, California.

U.S. Fish and Wildlife Service. 2021. Birds of Conservation Concern 2021. Division of Migratory Bird Management, Arlington, Virginia.

Van Doren, B. M., D. E. Willard, M. Hennen, K. G. Horton, E. F. Stuber, D. Sheldon, A. H. Sivakumar, J. Wang, A. Farnsworth, and B. M. Winger. 2021. Drivers of fatal bird collisions in an urban center. Proceedings of the National Academy of Sciences **118**:e2101666118.

Voigt, C. C., C. Azam, J. Dekker, J. Ferguson, M. Fritze, S. Gazaryan, F. Hölker, G. Jones, N. Leader, D. Lewanzik, H. J. G. A. Limpens, F. Mathews, J. Rydell, H. Schofield, K. Spoelstra, and M. Zagmajster. 2018. Guidelines for Consideration of Bats in Lighting Projects. EUROBATS Publication Series No. 8. UNEP/EUROBATS Secretariat, Bonn, Germany.