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BIOLOGICAL ASSESSMENT
OF
46199 CLEAR RIDGE ROAD, BIG SUR, CA 93920
APN 419-221-004-000

Prepared For:

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I. INTRODUCTION

This 16-page report has been authorized by Patrick Johansson, Architect (property representative from Studio Carver Architects) and Chadd Konig (property owner) on October 12, 2018.

This Biological Assessment has been prepared to evaluate potential impacts to plants, habitats, and wildlife that would be generated from a proposed development construction project on parcel APN 419-221-004-000 located at 46199 Clear Ridge Road in Big Sur, CA. The report also contains recommendations and/or mitigations needed to reduce potential impacts, maps native plant communities and identifies sensitive biotic resources near the proposed development location.

Field surveys of the parcel in the locations of the proposed development area were conducted during one site visit on November 9, 2018. A Spring Survey and Nesting Survey were not conducted due to the off season timing of the field survey.

The project includes a proposed new residence with a 7,947 SF site coverage within a 5.0 acre lot. New development impacts will occur predominately within areas devoid of natural communities as the site has experienced past impacts from terracing and vegetation fuel management.

Grading net export is estimated at 1,158 cubic yards. Two trees (one 8" coast live oak and one 34" California bay) are proposed for removal.

II. SUMMARY

The proposed develop areas lie nearly exclusively within past terraced and fuel management areas lacking native natural communities in the development zone. Current ground cover plant material is dominated by imported native grass and wildflower seed utilized on site for erosion control after fuel loads were reduced to comply with local fire clearance mandates. There were no observed occurrences of listed native sensitive habitat or individual special status species within the proposed development area. It is unlikely any sensitive spring flowering taxa occur within the proposed development area due to the past terracing of the site, lack of topsoils and vegetation clearance within the development zone. Impacts to native habitat constituents found outside the proposed development area is expected to be less than significant.

Comprehensive findings are included in Section V below describing natural communities in the development zone and the parcel. Impact assessments and recommendations are included below in Section VII for the development.

Portions of the project occur within 300-feet of Environmentally Sensitive Habitat Areas (redwood forest community and grassland) and will be mitigated to the degree necessary to allow for the long-term improvement and maintenance of those elements and habitats (see Big Sur Coast LUP, Ref. Policies 3.3.2.4 and 3.3.2.7) through the use of erosion control measures during development and invasive species eradication. In accordance with the Big Sur Coast LUP, the proposed residential project is sited and designed to minimize further site disturbance within the development area. Invasive Italian thistle was identified along the east slope surrounding the existing residential structure proposed for demolition and removal. Italian thistle is a species classified by the California Invasive Plant Council (Cal-IPC) as having adverse impacts to native habitats and should be managed to prevent migration to offsite natural communities that are found beyond the development area. The Big Sur LUP Policy 3.3.3.10 encourages Big Sur residents to undertake restoration of natural environments by removal of exotic, invasive plants.

If the recommendations contained in this report are implemented, the impacts of the proposed project will be reduced to levels that sustain the biotic resources supported at the subject property and to natural communities and sensitive elements adjacent to the parcel. In addition when the recommendations in this report are applied, no development activities associated with the

proposed project will have long-term adverse impacts on the sensitive biological resources that occur on site or on adjacent areas.

III. REGIONAL SETTING

The subject parcel is located within the boundaries of the Big Sur coastal planning area, 0.5 miles west of Highway 1 upslope of the River Inn, in the southwest portion of the Big Sur USGS 7.5' quadrangle. The parcel is accessed through a pre-existing dirt, shared easement driveway off Clear Ridge Road with the subject property sited northeast of Clear Ridge. The proposed development area is located at approximately 800-foot elevation along a north-facing slope within a watershed that leads to the Big Sur River approximately 0.5 miles to the north. The native natural communities found in mixed ecotones within the parcel and extending beyond the boundaries of parcel support *Coastal Scrub* (California sagebrush series) habitat, *Coast Live Oak Woodland*, *Redwood Forest* and mixed *Grassland* along the sloped topography. To the south the mixed woodland and scrub habitats continue upslope transitioning to a grassland at the south property line and upslope to the ridge. To the north, the habitat transitions from mixed oak woodland and fades to the redwood canyon approximately 100-feet below the proposed development area. West along the access road and east, the scrub habitat is mixed with dense oak woodland constituents.

IV. METHODS

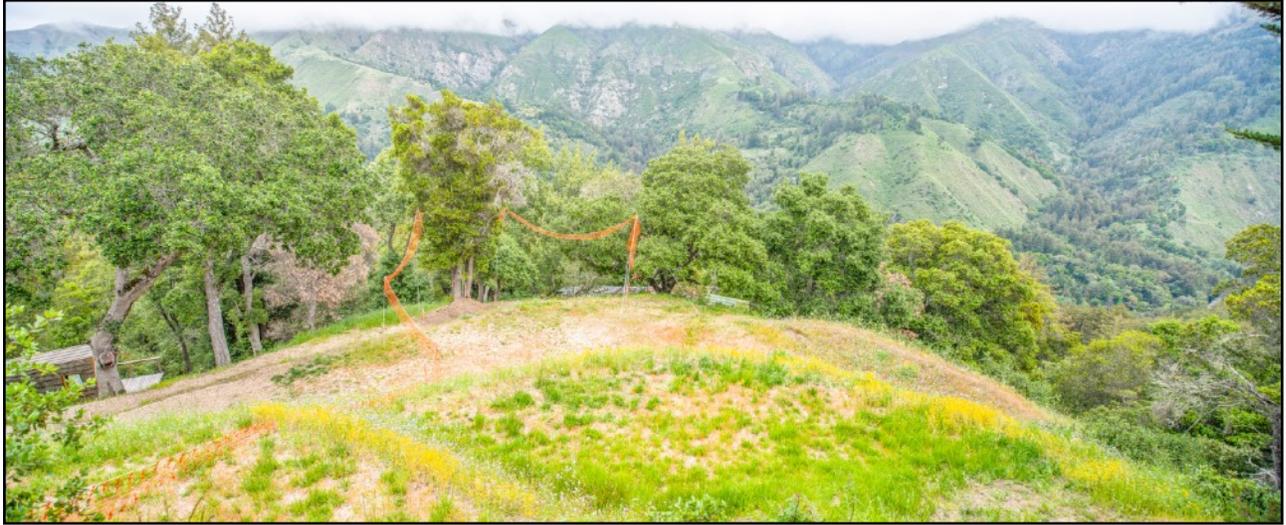
Field methods included walking the entire proposed development area and a 100-foot perimeter observations while surveying for sensitive elements, inventorying observed plant and animal species, and photographing existing conditions. One reconnaissance site visit was conducted on November 9, 2018. Weather conditions were clear and full access to the site allowed for careful site and resource observations. The proposed construction development area was accessible and identified on a site plan supplied by the project architect (Studio Carver Architects).

Local maps and consultations with personnel familiar with the project were utilized during the preparation of this Biological Assessment. The California Natural Diversity Data Base (CNDDB) maintained by the State of California Department of Fish and Wildlife (DFW) and the California Native Plant Society [Inventory of Rare and Endangered Plants](#) (website, 2010), were consulted for the identification of known populations of Federal and State listed rare, threatened and endangered plant species on or in the vicinity of the Konig project site. Survey methods included utilizing [The Jepson Manual](#) (Hickman 1993), [Invasive Plants of California's Wildlands](#) (Bossard, Randall, and Hoshovsky 2000), [A Manual of California Vegetation](#) (Sawyer, Keeler-Wolf, and Evens 2009), [An Illustrated Field Key to the Flowering Plants of Monterey County](#) (Matthews and Mitchell 2015), [Big Sur Land Use Plan](#) (Monterey County and certified by the CA Coastal Commission 1986), [The Natural History of Big Sur](#) (Henson and Usner 1993), and [Coastal Implementation Plan, Part 3](#) (Monterey County – Regulations for Development in the Big Sur Coast Land Use Plan 1988).

V. NATURAL COMMUNITIES

The proposed development area lies in a oak woodland natural community dominated by coast live oak (*Quercus agrifolia*), Shreve's oak (*Quercus parvula* var. *shrevei*), and California bay (*Umbellularia californica*). Understory constituents in this community vary with site exposure and slope aspect, though there are no significant native understory elements within the proposed development zone as the site has been managed for fire clearance and reseeded with a native grass and wildflower erosion seed mix. Understory native vegetation along the easement road leading to the property and adjacent areas surrounding the development zone include shrub constituents comprised of toyon (*Hetermoles arbutifolia*), coffee berry, (*Frangula californica*), coyote brush (*Baccharis pilularis* ssp. *consanguinea*), hairy honeysuckle (*Lonicera hispidula*), poison oak, (*Toxicodendron diversilobum*), California blackberry (*Rubus ursinus*), and common snowberry (*Symphoricarpos albus* var. *laevigatus*). Herbaceous species include Western

brackenfern (*Pteridium aquilinum*), round fruit sedge (*Carex globosa*), maidenhair fern (*Adiantum jordanii*), leafy bentgrass (*Agrostis pallens*), Douglas iris (*Iris douglasiana*), blue wildrye (*Elymus glaucus*), hedgenettle (*Stachys bullata*), and others. Several coast live oak stumps are resprouting in the cleared areas.



Development area (photo facing east).

Remnant grassland components are found at the highest point of the property southwest of the existing water tanks along the fenced property line. This habitat community seems to be the northern terminus of a native perennial grassland that extends south over the ridgeline toward Middle Road. Purple needle grass (*Stipa pulchra*), blue wildrye, leafy bentgrass, and round fruit sedge are found in this area. Spring constituents were also identified from desiccated stalks (due to the off-timing for a Spring Survey), with observations confirming the presence of soap plant (*Chlorogalum pomeridianum*), harvest brodiaea (*Brodiaea elegans*), and California poppy (*Eschscholzia californica*). Other spring elements are likely to occur in this small grassland zone that is located adjacent to, but outside the proposed construction envelope.



Remnant patch of native perennial grassland along south fence line at the crest of the knoll.

Previous ornamental landscape elements have been integrated in this natural grassland area with the addition of earthen landscape steps, vegetation clearance, stockpiled rock, and a few landscape plantings (lavender) that were identified along the grassland knoll. As a natural

grassland community, this small patch of habitat is considered environmentally sensitive habitat under the provisions of the Big Sur Coast Land Use Plan (Ref. Policy 3.3.3.A.7.), though construction development is sited to avoid this habitat.

Redwood Forest natural community habitat is found north and east, approximately 300+ feet downslope of the proposed development, dominated by coast redwood (*Sequoia sempervirens*). Other trees which are present here are big-leaf maple (*Acer macrophyllum*), tan-oak (*Notholithocarpus densiflora*), and California bay. Understory plants include common sword fern (*Polystichum munitum*), Dudley sword fern (*Polystichum dudleyi*), California wood fern (*Dryopteris californica*), false Solomon's seal (*Smilacina racemosa*), pink star-flower (*Trientalis latifolia*), western wake-robin (*Trillium ovatum*), fairy bells (*Disporum hookeri*), sweet-scented bedstraw (*Galium triflorum*), white-flowered hawkweed (*Hieracium albiflorum*), and Douglas' iris (*Iris douglasiana*). This community is considered rare by DFG, and environmentally sensitive habitat under the provisions of the Big Sur Coast LUP (Ref. Policy 3.3.3.A.8.), though construction development is sited to avoid this habitat.

North of the proposed development, the slope falls northward, descending into an oak woodland that transitions to redwood forest approximately 300-feet north of the development envelope. On this slope, native shrub vegetation has been cleared and trail systems have been cut into the hillside. A trailer clad in shingles and decking improvements sits on a terrace cut into the slope with mostly weedy, invasive grasses including Italian rye grass (*Festuca perennis*), veldt grass (*Ehrharta erecta*), and several exotic annual grasses growing along the north slope below the trailer. Native common sword ferns, California sword fern (*Polystichum californicum*), licorice ferns (*Polypodium glycyrrhiza*), hedgenettle, and other scattered shady constituents are resprouting after fire clearance activities. At the toe of the steep slope the grades soften and the vegetation transitions back to thick mixed oak woodland and redwood forest habitat.



North facing slope below proposed development area.

To the east of the proposed development, the topography slopes down eastward where an existing dilapidated residential structure is slated for demolition and removal. The vegetation in this zone is dominated by California bay trees and associated native woodland understory habitat that is overrun with exotic Italian thistle (*Carduus pycnocephalus*) with exotic veldt grass also growing in

this location. These invasive plants are classified by the California Invasive Plant Council (Cal-IPC) as having moderate impacts to native ecosystems and should be managed to prevent migration to offsite natural communities that are found beyond the development area. The Big Sur LUP Policy 3.3.3.10 encourages Big Sur residents to undertake restoration of natural environments by removal of exotic, invasive plants.



Existing structure proposed for demolition.

After the removal of the existing residential structure, the site is proposed to be restored with site specific native oak woodland understory habitat. Long-term exotic species control planning and eradication should be incorporated into the revegetation strategy.

Within the proposed development zone, previously graded terraces have manipulated the native grades and the area vegetated with imported native grass and forb seed as well as weedy annuals. The development zone is nearly devoid of native understory habitat constituents due to the past terracing and fire clearance vegetation management. There should be no native habitat loss or direct impact to existing natural plant communities as a result of the proposed development.



Development area (photo facing southeast).

Development impacts resulting in bare soils will require that erosion control measures be installed to keep loose soils from migrating off site into outlining native sensitive redwood habitat and potentially impacting water quality values as the site watersheds into the Big Sur River, located north and east of the parcel.

Surrounding the proposed development area, native coast live oaks and Shreve's oaks of various ages are found along the slopes. Approximately seven oaks (ranging from 8" to 30" DBH) adjacent to the north of the development are impacted from soil deposition from past site impacts and have developed fungal disease present as the trees have severe trunk decay issues. These oaks have been inspected by a certified arborist and resulting observations and tree recommendations are included in the Tree Assessment/Forest Management Plan prepared by Frank Ono (April 17, 2019). Several of the trees also show signs of trunk bleeding caused by *Phytophthora ramorum*, the pathogen responsible for the sudden oak death disease. This disease is not justification for oak removal as infected oak trees have little or no impact on local disease levels and spread. Non-oak foliar hosts are actually known to spread the pathogen (mostly bay trees). However considerations need to be made for removal if the trees are determined to present a hazard. Tree removal, tool sanitation, and debris disposal protocols can be found on the University of California Agriculture and Natural Resources Integrated Pest Management (UC-IPM) website and guidelines also included in the arborist report.

Natural grades should be restored around the oak trees on the slope north of the proposed project. If the soils are not excavated around the trunks, decay-causing fungi will continue to enter the heartwood and the decay process will continue. After soil excavation around the trunks, wounded and dead bark should be removed carefully to the area where new wood can be seen along the edges of the wound. These steps will help to prolong the viability of the tree as wood cells develop a barrier to isolate the infected area.



Native oak trees are found adjacent to the development area, though construction impacts have been designed and sited to avoid the trees, however past impacts are manifesting on most of the subject oaks adjacent to the development area and grading is proposed to occur in close proximity to several oaks on the north slope near the driveway and first floor of the residence. These trees outside the development area exist within the fuel management zone and will require appropriate detailing to remove dead tree litter, limbing of lower tree branches, and understory pruning/mowing

management in order to keep the site in compliance for fire clearance mandates. A 36" bay laurel is proposed for removal to accommodate the new residence. This bay laurel has likely declined due to root impacts caused by past terracing that altered the native grade of the site in the location south of the tree. The tree canopy is thinning and major roots have been severed, leaving the large tree in a hazardous state.



VI. RARE, THREATENED, AND ENDANGERED SPECIES AND HABITAT

The proposed development site was surveyed for occurrences of potential habitat and impacts to rare, threatened, and endangered plant and wildlife species. The site was also surveyed for current sensitive elements listed by the California Department of Fish and Wildlife Natural Diversity Data Base (CNDDDB) for the Big Sur USGS Quadrangle and adjacent quadrangles in the Big Sur region, though a spring survey was not conducted. Apart from the previously above listed sensitive elements, the potential for listed special-status wildlife species within the development area was determined to be low, based on the conducted site survey, presence of micro-habitat characteristics, biological knowledge of the target species that occur within the vicinity, and lack of native understory habitat within the building site.

State Listing is pursuant to Section 1904 (Native Plant Protection Act of 1977) and Section 2074.2 and 2075.5 (California Endangered Species Act of 1984) of the Fish and Game Code, relating to listing Endangered, Threatened, and Rare species of plants and animals. Federal Listing is pursuant with the Federal Endangered Species Act of 1973.

VII. IMPACT ASSESSMENT AND RECOMMENDATIONS

In accordance with the Big Sur Coast LUP, the proposed development is sited and designed to minimize further site disturbance and impacts to native habitat, as the development will occur mostly in previously disturbed, impacted, and graded areas. With the implementation of the below listed items, the project should have a less than significant impact on special natural communities, plants, and animals protected by local, state, or federal regulations. By implementing the listed protection measures and restoration practices, the project should enhance the remnant habitats found on the parcel through long-term management, site restoration and exotic species control.

Impact 1: Oak Trees

The biological site survey observed nine (9) oak trees adjacent to the development area that are considered potentially hazardous due to fungal, cavity and trunk decay issues that have impacted the integrity of the trees. In depth tree assessments and recommendations are documented in the Tree Assessment Report (Frank Ono, April 17, 2019)

To prevent further impacts to tree resources, protective fencing should be installed around the perimeter of the coast live oak trees that are to be retained located in close proximity to the development in order to prevent unwarranted adverse impacts, such as tree/trunk damage, soil deposition, or soil compaction of critical root zones during the construction period. Fencing should also be continuous in wrapping around the tree trunks and should protect as much of the critical root zones as feasibly possible. See arborist report for tree protection standards.

Recommendation 1:

1. Prior to any land disturbance or mobilization of equipment and under the guidance of the Project Arborist, install tree protection fencing around the perimeter of the trees adjacent to the development area to the maximum edge necessary to protect root systems and prevent compaction while able to reasonably conduct the construction project.
2. Grading must avoid detrimental impacts to major roots of the existing pine trees and a minimum of 50% of the existing soil surface around the trees should be preserved.
3. No soil deposition should occur to alter the native grades in the location of the existing trees.
4. Soil grades around oak trees north of the development as shown on the map included in Section XI below should be returned to original grades and decayed bark should be removed from oak trunks.
5. Tree removal, pruning, protection, and replacement measures should be followed per the recommendations and best management practices outlined in the arborist report.

Impact 2: Restoration of Disturbed Soils

Implementing restoration practices within the natural communities on site will be consistent with LUP policy regarding restoring natural environments by removal of exotic plants (Ref. LUP Policies 3.3.3.A.10). To restore all areas of disturbance, including the decommissioning of existing house area, and all areas on the development area currently enveloped by invasive species, habitat restoration should be enacted with strategies that include long term protocols required for the restoration and management of the oak woodland habitat and understory constituents that occurs on site. Additionally, erosion control measures will be required to cover bare soils and long-term exotic species management will be critical to eliminate invasive species and promote native flora.

Recommendation 2:

1. Restore all impacted ground disturbed areas with site-identified oak woodland understory species and eliminate all aggressive exotic invasive species that could adversely impact the

restoration of natural communities within the project site. Objectives for accomplishing the project goals will include:

- a. Prior to ground disturbance, to prevent the spread of exotic species, eradicate invasive species in areas to be restored.
 - b. Stabilize soils with erosion control measures.
 - c. Seed disturbed areas with approved native seed mix or plant materials by planting in the late Fall season to coincide with seasonal rains.
 - d. Establish long-term maintenance program for invasive species control, and soil stabilization.
 - e. Avoid impacts to outlining habitats and improve area as habitat for wildlife.
2. Prior to mobilization or land disturbance activities, temporary erosion and sediment control devices must be installed at the lower development perimeter to prevent unwarranted impacts to sensitive redwood habitat resources adjacent and downslope of the development zone.
 3. The grassland knoll located at the south pinnacle of the property should be encouraged to persist by removing landscape materials, rock piles and construction debris. This small patch of floristically-rich grassland habitat area could be managed by a late summer seasonal mowing after wildflowers have set seed.

Impact 3: General

The project development area is not located in direct proximity to any site identified sensitive elements or habitat, though general best management practices should be in place to protect impacts from occurring on adjacent native habitat occurring downslope and potential off-site erosion.

Recommendation 3:

1. Use of heavy equipment should be restricted to areas within the construction envelope and access road.
2. Sediment control devices should be installed on the downhill perimeter of the construction envelope and exposed soil areas prior to construction. Specifically, sediment control devices, debris fencing or silt dams should be installed in a manner that adjacent habitat is protected from disturbed excavated or graded construction soils or construction debris from moving offsite. No site erosion shall be permitted to enter areas supporting natural communities beyond the impact perimeter of the development. Disturbed soils shall be stabilized prior to rainy weather, either with the use of tarping, biodegradable netting, mulching, or hydroseeding an approved native or sterile seed mix, mulch and tackifier.
3. Prior to final grading, all construction debris shall be removed and construction activities completed in the areas to be treated with site stabilization plantings. To protect adjacent habitats and trees from inadvertent soil deposition impacts, excavated material should not be cast into adjacent habitats; rather it should be hauled off location and disposed at a receiver site.
4. Storm water runoff from impervious surfaces must be dispersed in such a way as to prevent rilling and site erosion.
5. After the completion of the soil disturbance activities, all disturbed soils shall be stabilized with site-identified understory restoration species, with the plant materials installed in the fall months prior to or in conjunction with the seasonal rains. Any invasive out-plantings that stray from the specified native plant restoration seeding/planting could negatively impact the extant natural communities through competition, shading, or invasion.
6. Any disturbed soil generated by the project must be kept free of invasive, exotic plant species.

7. The location of the site can be prone to high winds and construction materials should be secured, tied down, and tarped on a daily basis to prevent loss of materials or construction debris from entering surrounding habitats or lost downslope to the steep canyons. Trash enclosures need to have lids and tie-downs to prevent trash from blowing into surrounding natural communities.

Impact 4: Exotic Species Control

Adoption of an eradication of invasive species should be on going in an effort to enhance and maintain existing native habitats adjacent to the development zone. Several site-identified highly invasive exotic species, such as Italian thistle and veldt grass, have the ability to invade adjacent habitat areas throughout the property or offsite. Invasive species can easily overwhelm disturbed soils and storm water runoff from unvegetated slopes can adversely impact water quality and adjacent sensitive habitat. Implementing an exotic species eradication plan will be consistent with LUP policy regarding restoring natural environments by removal of exotic plants (Ref. LUP Policies 3.3.3.A.10). Comprehensive eradication of the invasive, exotic species from the development areas and outside the development zones (and restoration of these habitats) would allow the existing proposed development to be compatible with the habitats occurring on the parcel, and would reduce long-term impacts there, which if left unmitigated would eventually severely degrade or destroy the sensitive elements of the parcel. To prevent erosion in areas treated for eradication, exposed areas not stabilized with existing native plants must be revegetated with site appropriate native species endemic to the communities in which the exotics were removed.

Recommendation 4:

1. In order to protect the habitat values of the parcel and adjoining areas, invasive species within the development area should be eradicated prior to grading activities. In addition to the Italian thistle and veldt grass identified within the development area, several identified species along the access road leading to the property [including French broom (*Gensita monspessulana*) and sticky eupatorium (*Ageratina adenophora*)] are listed by the Cal-IPC as highly invasive species having substantial adverse ecological impacts on native plant communities. By hand removing prior to grading, the species are less likely to spread from its seeds or rhizomes where they have the ability to thrive rapidly in disturbed soils.
2. All disturbed soil generated during any site grading shall be kept free of exotic species, which if left unattended, could cause inadvertent spread of the species and degradation of the sensitive habitats on the site.
3. Mobilization of equipment can also lead to invasive species introductions from other locations. Earthmoving equipment should be pressure-washed prior to mobilization to reduce the ability of invasive species from entering a site and becoming a nuisance.

Impact 5: Fuel Management Guidelines

Fuel management plans are developed to create defensible space around structures through the removal and thinning of vegetation on the parcel and developing new planting concepts using fire-wise landscaping and habitat restoration. Fuel modification should be accomplished through the removal of highly flammable and dead vegetation around the proposed structures and decking, including thinning of additional vegetation and fire-wise landscaping with low-fuel native plant materials. See arborist report for additional fire defensible space treatments.

Recommendation 5:

1. Vegetation in the mixed understory landscape at the Konig property should be maintained by the reduction of fuel ladders, use of fire-wise landscaping materials, and removal of dead limbs and other ground-laying flammable debris, including piles of cut branches and non-organized firewood piles.

2. Future landscape and restoration plantings should be installed by carefully spacing shrubs and trees, utilizing low groundcovers or mulch, and reducing mass plantings. Plants must be spaced so that fire cannot spread horizontally or vertically (by way of a fuel ladder) from plant to plant. Future treatments around structures should offer protection from intense flames through the use of properly maintained irrigated plants with high moisture content, through walkways, gravel/stone, or paved surfaces. Vines or other climbing plants attached to structures should be carefully considered, as vines can provide a receptive fuel directly on to the structure.
3. Trees should be treated by removing dead ground material and deadwood tree limbs to reduce fuel loads. Live tree limbs should be pruned up to at least 6-feet above the bare soils and a minimum 3X the height of underlying plants.
4. Fuel Modification Plans generally do not extend to areas outside the subject parcel, however the owner is encouraged to collaborate with adjacent private landowners and agencies to extend fuel modifications in ways that benefit everyone in the community.
5. Fuel Management Plans are not static as the landscape and natural vegetation will continue to change over time. Long-term maintenance is required to ensure that defensible space is maintained and should include vegetation and structural management. In addition to the prescriptions described above, the roof gutters should be maintained to be free of leaves, pine needles, tree duff and other vegetative debris, deadwood pruning should continue yearly especially with any oak tree adjacent to the residence that overhangs the roof, maintain any chimney or stove pipe flue-screening for optimum performance and trim all tree limbs with 10-feet of the outlet, and ensure house numbers are posted per Fire Department requirements.

Impact 6: Nesting Survey

A nesting survey was not conducted for the development of this biological assessment as site observations were carried out in the off season. Prior to any proposed tree removal activity that occurs during typical nesting season (February - August), a nesting survey should be performed to determine if any active raptor or migratory bird nests occur within the project site or within 300-feet of the proposed tree removal activity.

Recommendation 6:

No more than 30-days prior to ground disturbance or tree removal, if such actions are proposed during nesting season, a nesting survey should be prepared by a County qualified biologist to determine if any active raptor or migratory bird nests occur within the project site or immediate vicinity.

VIII. LIST OF SPECIES ENCOUNTERED (* indicates non-native exotic species)

Tree Species

Acer macrophyllum	big leaf maple
Hesperocyparparus macrocarpa	Monterey cypress
Notholithocarpus densiflorus	tan oak
Pinus radiata	Monterey pine
Quercus agrifolia	coast live oak
Quercus parvula var. shrevei	Shreve's oak
Sequoia sempervirens	coast redwood
Umbellularia californica	bay tree

Shrub Species

Acmispon glaber var. glaber	deerweed
Artemisia californica	California sagebrush
Bachcharis pilularis	coyote brush
Ceanothus thrysiflorus	California lilac

Epilobium canum
Eriophyllum staechadifolium
Frangula californica
Genista monspessulana *
Heteromeles arbutifolia
Lavendula sp. *
Lonicera hispidula
Rubus ursinus
Toxicodendron diversilobum

California fuchsia
lizard tail
coffeeberry
French broom
toyon
French lavender
hairy honeysuckle
California blackberry
poison oak

Herbaceous/Forb Species

Achillea millefolium
Adiantum jordanii
Agrostis pallens
Artemisia californica
Avena fatua *
Brodiaea elegans
Bromus diandrus *
Bromus hordeaceus *
Bromus madritensis ssp. rubens *
Calystegia macrostegia ssp. cyclostegia
Carduus pycnocephalus *
Carex globosa
Chlorogalum pomeridianum
Disporum hookeri
Dryopteris californica
Ehrharta erecta *
Eschscholzia californica
Elymus glaucus
Festuca arundinacea *
Festuca perennis *
Galium triflorum
Hieracium albiflorum
Hordeum murinum *
Iris douglasiana
Polypodium glycyrrhiza
Polystichum californicum
Polystichum minimum
Pteridium aquilinum
Smilacina racemosa
Stachys bullata
Stipa pulchra
Symphoricarpos albus var. laevigatus
Trientalis latifolia
Trillium ovatum
Vinca major *

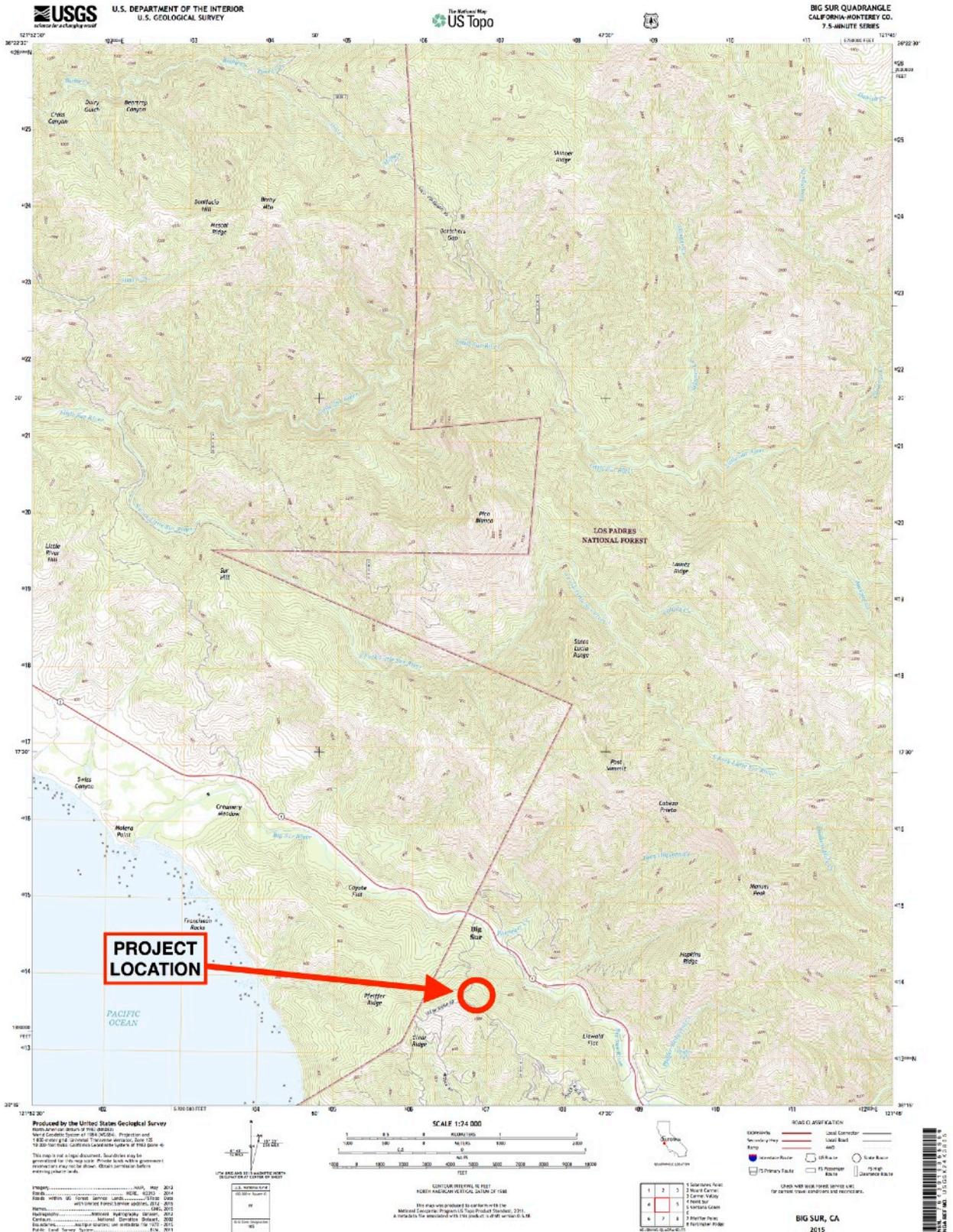
yarrow
maidenhair fern
leafy bentgrass
California sagebrush
wild oat
harvest brodiaea
riggut brome
soft brome
foxtail brome
coast morning glory
Italian thistle
rounded fruit sedge
soap plant
fairy bells
California wood fern
veldt grass
California poppy
blue wildrye
tall fescue
Italian rye grass
sweet-scented bedstraw
white-flowered hawkweed
foxtail barley
Douglas iris
licorice fern
California sword fern
common sword fern
Western brackenfern
false Solomon's seal
wood mint
purple needlegrass
common snowberry
pink star-flower
Western wakerobin
periwinkle

Wildlife Species

Aphelocoma californica
Calypte anna
Cathartes aura
Cyanocitta stelleri
Junco hyemalis
Melospiza crissalis
Thomomys bottae

scrub jay
Anna's hummingbird
turkey vulture
Steller's jay
dark-eyed junco
California towhee
Botta's pocket gopher

IX. REGIONAL MAP



X. VEGETATION MAP

