APPENDIX 5

US Fish and Wildlife Consultation

Department of Energy
Office of Science
Berkeley Site Office
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JAN 21 2011

VIA EMAIL

Ryan Olah
U.S. Fish and Wildlife Service
Sacramento Fish and Wildlife Office
Coast Bay Region
2800 Cottage Way W-2605
Sacramento, CA 95825

Subject: Section 7 Informal Consultation for the Construction of the Computational Research and Theory (CRT) Facility at the Lawrence Berkeley National Laboratory (LBNL)

References: Draft Environmental Assessment (DOE/EA 1700) Computational Research and Theory Facility Project

Dear Mr. Olah:

The U.S. Department of Energy Department of Energy (DOE) requests your concurrence with our determination that the subject action (construction of the CRT) may affect, but is not likely to adversely affect the threatened Alameda whipsnake (*Masticophis lateralis euryxanthus*) or its critical habitat. Our determination was based on extensive studies of the whipsnake on LBNL and the action area study enclosed.

On September 14, 2010, the DOE sent for review and comment by the United States Fish and Wildlife Service (USFWS) the National Environmental Policy Act draft EA referenced above regarding the proposed construction and operation of the CRT Facility. Section 5.4 of the draft EA includes analysis of potential impacts to the Alameda whipsnake, a federally-listed "threatened" species. The construction activities associated with the proposed action would begin in early 2011 and be completed by late 2013. The facility would be constructed on a 2.25 acre site situated between two densely developed building complexes to the east, the LBNL's main roadway to the west and north, and an area of undeveloped "perimeter open space" to the south above UC Berkeley's Memorial Stadium. The new three-story building would consist of an approximately 3,000-gross-square-meter (32,000-gross-square-foot) computing floor with a high ceiling and two additional floors of office space for a total of approximately 12,980-gross-

square-meters of space. All of the haul routes are on existing paved roads. There will be no off-road vehicle use other than on the project site.

The following information below and the enclosed provide the best information available for assessing the risks posed to the Alameda whipsnake in accordance with 50 CFR 402; 16 U.S.C. 1536 (c), the regulations implementing Section 7 of the Endangered Species Act.

- The site, which is predominantly vegetated with eucalyptus and non-native grassland, does not contain core habitat or features characteristic for optimal Alameda whipsnake habitation.
- The site is disturbed, highly constricted, and surrounded on two of three sides by busy roadways and development; it does not serve as a habitat corridor for the Alameda whipsnake because habitat only occurs on one side.
- Although numerous biological surveys have taken place on the relatively small CRT site, no evidence of Alameda whipsnake habitation or presence has ever been noted there. In fact, no Alameda whipsnakes have ever been reported in the area of the project during several decades of annual vegetation management on that site.
- The proposed project would employ a rigorous set of preventative construction practices specifically designed to avoid incidental taking of the Alameda whipsnake. These are known as "Standard Project Features," or "SPFs."
- The "SPFs" were designed in past informal consultation with USFWS; with Karen Swaim who is USFWS' consulting biological expert on Alameda whipsnakes; and with other professional consulting biologists. LBNL has formally committed to following these SPFs for projects such as this.
- Project construction SPF's concerning the Alameda whipsnake include:
    - Alameda whipsnake identification and awareness training provided for all construction personnel; establishment of official site monitors prior to construction;
    - "Stop work" and USFWS-approved relocation protocols established prior to construction commencement;
    - Vegetation management (grass and brush removal) prior to project commencement and maintained throughout construction;
    - Implementation of pre-construction surveys and snake fencing, as appropriate;
    - Hours of operations, project lighting, and off-road speed limits shall be established;
    - Full time designated monitoring and daily site surveys prior to daily work commencement.
- Studies (enclosure [1]) which most recently examined this site in connection with the CRT EA (competed in June 2007) support a conclusion that this project would not adversely affect the Alameda whipsnake.

There has been only one documented occurrence of the Alameda whipsnake at the 202-acre LBNL site in its 70-year history. That occurrence was reported at the far southeastern corner of the Lab hill site, approximately two-thirds of a mile from and in very different habitat than presented by the proposed CRT site. Prior to the single occurrence at the LBNL site, the DOE and the LBNL facility have worked diligently to ensure the species' protection at the LBNL site. In fact, this effort to monitor for the possible presence of whipsnakes and to ensure their protection began at LBNL in the mid-1990s, prior to the species' initial listing by the USFWS in 1997. The DOE and University of California have commissioned several studies over the past two decades to continually seek evidence of the species' presence on the LBNL site and to understand how best to avoid incidental takings. We have worked closely with whipsnake expert biologist Karen Swaim, other consulting biologists, and the USFWS in the past to ensure that that we employ construction practices that would not adversely affect this species.

A copy of the draft EA can be found at http://www.lbl.gov/Community/CRT/index.html and a site specific study is enclosed. Additional studies and information are provided as enclosures or will be provided upon request. We will also provide USFWS with background studies and information during your upcoming site visit to LBNL, expected to occur on January 25, 2011.

We appreciate your time and attention in this matter and would further appreciate any efforts the USFWS could make in helping to expedite this process, as we are approaching deadlines for the completion of the NEPA process.

If you have any questions please contact the undersigned at (510) 486-7909 or email kim.abbott@bso.science.doe.gov.

Sincerely,

K. Abbott

Kim Abbott
Environmental Program Manager

Enclosures:
(1) Site Specific Study for the Construction of the CRT
(2) Swaim 2006 Report
(3) LBNL 2006 Long Range Development Plan Environmental Impact Report July 2007

cc (w/encl.):
F. Gardipee, FWS
J. Philliber, LBNL

Site Specific Alameda Whipsnake Study

Alameda whipsnake (*Masticophis lateralis euryxanthus*) is listed as threatened under both federal and state law and is generally found in open-canopied shrub communities, including coastal scrub and chaparral, and adjacent habitats including oak woodland/savanna and grassland areas (Swaim 1994). Recent surveys and studies have shown that Alameda whipsnake can be found in a wider variety of habitats than previously thought. For example, whipsnakes have been found in grasslands with very little scrub present, in coastal scrub with dense canopy cover, and in patches of scrub less than 0.5 acre in size (Swaim 2003). Therefore, habitat associations for this subspecies should include those that co-occur in the general chaparral/scrub habitat mosaic (Alvarez 2005). These recent findings suggest the possibility that whipsnakes could inhabit, or disperse through, areas of the LBNL site where coastal scrub habitat occurs in a mosaic with other habitat types such as grassland or woodland. Though habitat types and features used by Alameda whipsnakes may vary, home ranges typically are centered on areas of scrub habitats with open to partially open canopy, on south-, southeast-, east-, and southwest-facing slopes. Rock outcrops are important for protection from predators and as habitat for western fence lizards and other prey species (Swaim 1994).

A recent whipsnake habitat assessment of LBNL (Swaim 2006) found that potential whipsnake occurrence would be most likely in the easternmost portion LBNL that is contiguous with open space to the north and east and along the south-facing slopes of Strawberry Canyon. These areas are primarily open space with a mosaic of grassland, coastal scrub, riparian woodland, and stands of non-native trees and provide a potential dispersal corridor from designated critical habitat for the species (USFWS 2006) to areas of potential suitability for the whipsnake. The 2006 LBNL habitat assessment identified and mapped potential for Alameda whipsnake occurrence based on habitat types present and other factors, including habitat fragmentation and existing land uses. Areas designated as having "highly suitable potential habitat" for whipsnake (which include the CRT project site) were those that included relatively large patches of coastal scrub in a mosaic of other habitat types and that were contiguous with larger open space areas and known occupied habitat and/or proposed critical habitat (Swaim 2006; McGinnis 1996). Areas designated as having "potential habitat" were those that contained smaller patches of scrub in a mosaic with other habitat types but where there was also a fairly significant degree of fragmentation and habitat degradation and a lesser degree of contiguity with larger areas of less disturbed potential habitat.

After conducting site visits during the summer of 2000, the USFWS determined that most of the LBNL site, including areas with existing facilities, should be excluded from its final critical habitat listing (USFWS 2000)[1]. The 2000 designation of critical habitat was rescinded in 2003 but a new critical habitat designation was proposed in 2005 and adopted in October 2006 that, similar to the 2000 designation,

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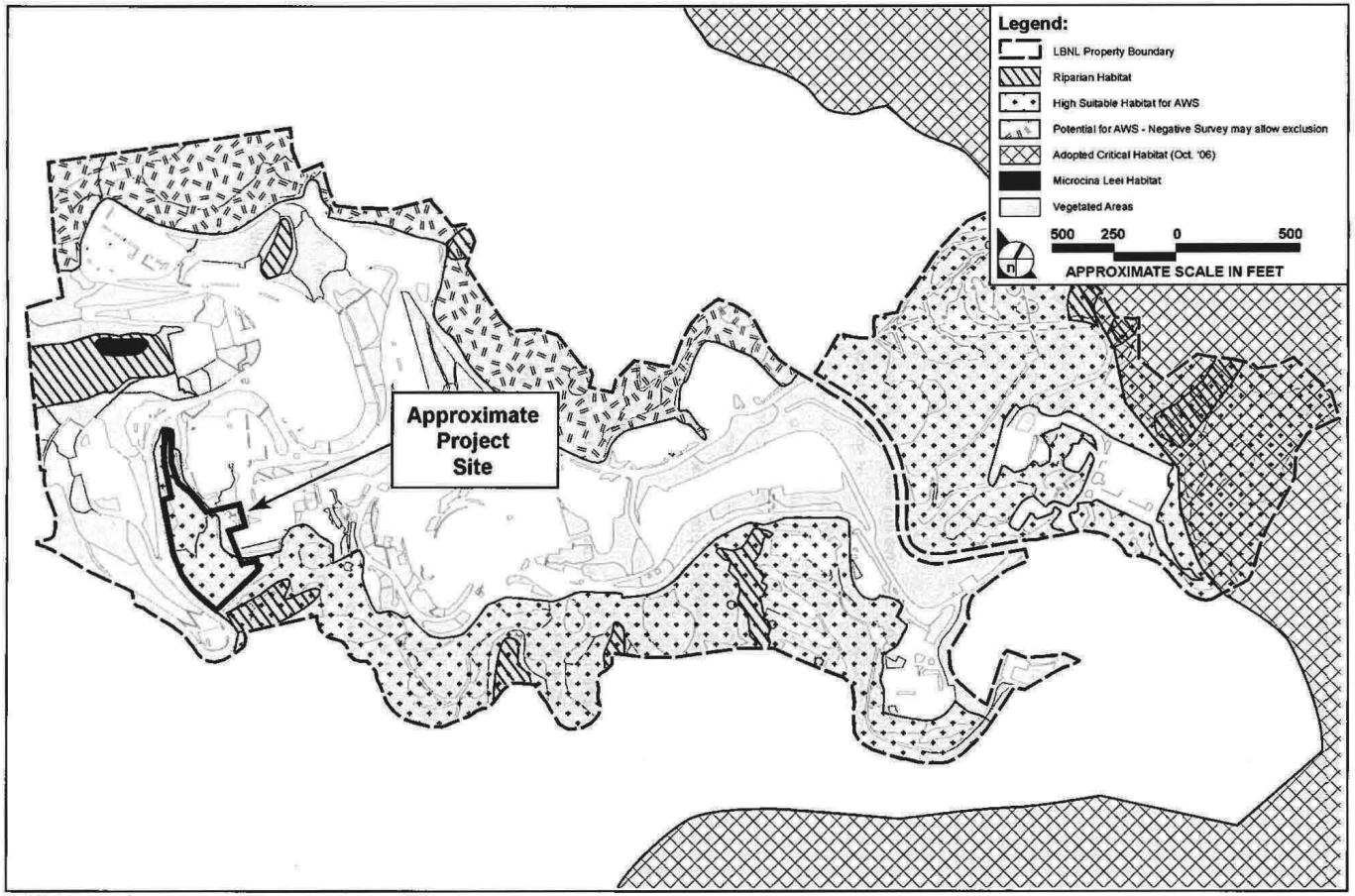
[1] Critical habitat for the Alameda whipsnake was rescinded by court order on May 9, 2003. For the purposes of this analysis, the concept is still relevant in that the designation of critical habitat implies a high likelihood of species' presence where critical habitat elements are found. Even though critical habitat has been rescinded, the species is still fully protected under the FESA. In addition, the USFWS (2002) published a draft recovery plan that includes the species, and areas that were formerly designated as critical habitat units are now designated as recovery units under the plan. Finally, critical habitat for the species was re-proposed in October 2005 (USFWS 2005d) and, as adopted in October 2006 (USFWS 2006), includes the easternmost portion of the Lab site.

includes the easternmost portion of the LBNL site[2]. This area is designated as a fixed constraint under the 2006 LRDP. Since it is a protected area, no development is proposed or allowed.

The project site is within an area of LBNL identified as having "highly suitable potential habitat" for Alameda whipsnake (see **Figure 4.3-2, Sensitive Habitat at LBNL**). A qualified biologist evaluated the site-specific suitability of the project site for Alameda whipsnake on June 28, 2007 and concluded that this project would not adversely affect the Alameda whipsnake. The project site is located within a eucalyptus grove, has a grassland understory, and does not contain scrub communities often associated with the Alameda whipsnake. However, the project site is near areas containing high quality habitat for Alameda whipsnake. Specifically, coastal scrub habitats and open space along south facing slopes occur to the south of the project site that could be traversed. As such, when considered with nearby habitats, the project site may be part of a mosaic of habitats utilized by the species. While core habitat does not occur within the project boundary and Alameda whipsnake is not expected to permanently reside on the project site, the subspecies may temporarily utilize on-site habitats.

[2] The adopted critical habitat, while smaller than that proposed in 2005 (155,000 acres adopted, compared to 203,000 acres proposed), includes the same part of the Lab main site as included in the proposed critical habitat. Most of the 48,000 acres excluded from the adopted critical habitat are in eastern Contra Costa County, though smaller areas were excluded in the East Bay hills in western Contra Costa and southern Alameda counties.



SOURCE: Perkins+Will - September 2007, LBNL, ESA (2003); Swain Report - July 2006

FIGURE **4.3-2**

Sensitive Habitat at LBNL

924-002-08/07

ALAMEDA WHIPSNAKE HABITAT ASSESSMENT
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July 10, 2006

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1.0 INTRODUCTION

1.1 Report Purpose

This report provides an assessment of the potential for the Alameda whipsnake (*Masticophis lateralis euryxanthus*) to occur on Lawrence Berkeley National Laboratory (LBNL) in Berkeley, Alameda County, California. This information is needed to update the Long Range Development Plan. The Alameda whipsnake (AWS) is a both a State and Federally listed threatened species.

1.2 Project Location

The study area site is located adjacent on the University of California, Berkeley, in (UCB) the City of Berkeley, Alameda County, California (Figure 1). It is bordered to the north and west by residential development and developed portions of UCB and to the east and south by undeveloped lands owned by the University.

The majority of the study area has been excluded from the currently proposed critical habitat area for the AWS (Figure 1). Only a small portion near the eastern boundary of LBNL is within the newly proposed critical habitat for the Alameda whipsnake (U. S. Fish and Wildlife Service, 2005).

1.3 Alameda Whipsnake Ecology

In order to provide a context for the conclusions of the habitat assessment, a summary of the information known about habitat use by the Alameda whipsnake is provided below.

The Alameda whipsnake is a slender, fast moving, diurnal snake with a narrow neck and relatively broad head. The dorsal color is sooty-black with yellow-orange dorso-lateral stripes. The anterior portion of the stripes and ventral surface of the snake are heavily pigmented with orange-rufous coloration. Adults reach up to five feet in length.

The Alameda whipsnake is associated with chaparral, Diablan sage scrub, northern coyote brush scrub, and riparian scrub communities and the adjacent mosaic of grassland and wood habitats found in Alameda and Contra Costa Counties. Swaim (1994) found that the home ranges (convex polygon method) of six radio-equipped whipsnakes were centered in scrub communities. Within those home ranges, Alameda whipsnakes had one or more “core areas” or areas of concentrated use. Habitat in the areas of concentrated use was open or partially open canopy scrub on slopes with northeast, east, southeast, south, or southwest aspect. Rock outcrops and talus were also abundant within the core areas of the Alameda whipsnake. There was also a high degree of spatial overlap of home ranges and core areas of five individuals monitored at Tilden Regional Park. Overlap of home ranges may occur in areas where resources, such as food are abundant (Mace et al. 1983; Gregory et al. 1987; Hiscocks and Perrin 1988) and specific habitat requirements are met.

Although “core areas” had certain parameters, the range of habitat use by individual AWS and AWS populations is much broader. AWS use all aspects, a wide range of canopy cover and types of vegetation, and areas without rock outcrops.

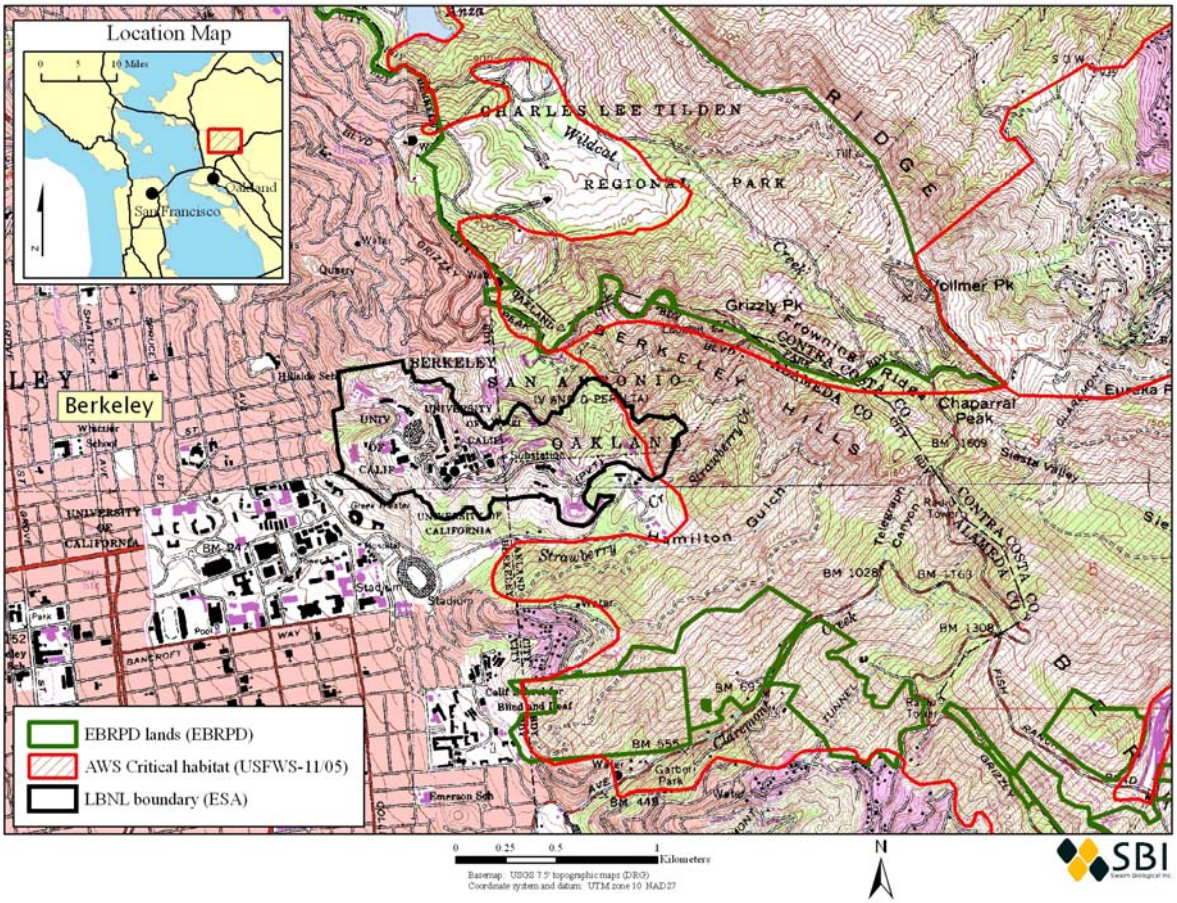

Figure 1. Regional Location

Studies of Alameda whipsnakes equipped with radio transmitters and existence of observations of free-ranging whipsnakes outside of scrub have shown that they also utilize grassland, oak woodland/savanna, oak bay woodland, and adjacent to chaparral and scrub communities even the understory of small Eucalyptus stands with scrub understory (Swaim 1994, Swaim Biological Consulting 2000a, 2000b, 2002, 2003, Alvarez et al. 2005). Grassland habitats were used by male whipsnakes most extensively during the mating season in spring (Swaim 1994). Rock outcrops in and near scrub are an important feature of high quality whipsnake habitat because they provide cover and promote lizards, which are important prey for the Alameda whipsnake (Stebbins 1985, Swaim 1994, Harry Greene, pers. Comm.). Although most radio locations were within 100 feet of scrub, whipsnakes also ranged into the surrounding grassland for distances of greater than 500 feet (Swaim 1994). A recent review of whipsnake locality data revealed many observations of whipsnakes at locations over 500 feet from scrub and ranging up to approximately four miles (Swaim Biological Consulting 2000a, 2000b, 2002, 2003, Alvarez et al. 2005).

The frequency of use of non-scrub habitats is probably highest in xeric habitats adjacent to scrub, especially when rock outcrops and drainages with riparian vegetation are present. At a minimum, the function of the use of non-scrub habitats is related to foraging, mate-searching, and dispersal. Non-scrub habitats that are within the general mosaic of scrub/grassland /woodland in the range of the AWS are also essential for gene flow because of the patchy and dynamic nature of scrub and chaparral habitats.

Although telemetry data to date (Swaim 1994) has provided a great deal of information regarding habitat use by the Alameda whipsnake, it has several limitations. All of the telemetry data is biased toward the habitat use, needs/patterns of the largest of adults (4+ feet). Little information is available for smaller adults, juveniles and hatchlings, which may be more likely to use non-scrub habitats for dispersal and foraging. Another limiting factor of the Swaim (1994) telemetry data is sample size. Only five individuals (two female, three male) were monitored for periods greater than approximately three months.

2.0 METHODS

2.1 AWS Distribution

Information on distribution of the AWS in the project area was gathered from sources including the California Natural Diversity Database (CNDDB), the California Academy of Sciences (CAS), Museum of Vertebrate Zoology, and other knowledgeable biologists working in the San Francisco Bay Area.

2.2 Habitat Assessment

Field assessments of the study area were conducted on May 31, 2005 and November 30, 2005 to determine the type and condition of habitats present on the site and in the vicinity of the study area. We also used 2004 color aerial photographs to determine the types of habitat present in the vicinity of this parcel (approximately one kilometer).

3.0 RESULTS

3.1 AWS Distribution

The observations of AWS closest to the project site are from UCB Ecological Study Area southeast and east of the LBNL, (Figure 2). These observations include multiple historic and recent (2004) observations of AWS from areas that are still undeveloped. Several of the observations are from the Ecological Study Area owned and managed by UCB.

3.2 Habitat Assessment

Undeveloped habitats that remain within LBNL have been mapped by Environmental Science Associates and include arroyo willow scrub, grassland, bay woodland, coastal scrub, conifer stands, Eucalyptus stands, oak woodland, oak-bay woodland, and ornamental (Figure 3). Although much of the study area is already developed with existing buildings, roadways and landscaping, coastal scrub is distributed in several locations on and adjacent to LBNL (Figure 3). None of these areas have been specifically surveyed by trapping, but have highly suitable potential habitat and direct connection to areas where AWS have been documented. The presence of these scrub patches within the mosaic of other habitats (woodland, grassland) is typical of habitats that are known to support the AWS. There are no significant barriers between the documented occurrences of AWS near LBNL and the LBNL site itself. Although roads are deterrents, they are not barriers because AWS will cross them (CNDDB 2005, K. Swaim personal observation).

The largest patches of scrub are found in the area of LBNL northeast of Centennial Drive and range up to 2.79 acres in size. Several of these scrub patches are contiguous with off-site scrub making the patch size even larger. The undeveloped area along the southern boundary of LBNL also contains several patches ranging up to 1.1 acres in size. This southern portion of LBNL is adjacent to an undeveloped area between Centennial Drive and LBNL. This area contains several patches of scrub. Only two very small patches of scrub (0.05 and 0.06 acres) are located within the undeveloped area along the northern boundary of LBNL. However, there are larger areas of scrub that are close to the northern boundary of LBNL in the undeveloped area between the LHS and LBNL.

4.0 CONCLUSIONS

Based on the habitat assessment we prepared a map that designates three types of areas on the site (Figure 3).

1) Areas where highly suitable potential AWS habitat is present. AWS could use any of the habitat types in these areas. This includes the small eucalyptus and conifer stands that are present, although use of these habitats would be less than in more open habitats. These areas include the portion of LBNL northeast of Centennial Drive and the southern portion of LBNL which is north of Centennial Drive (Appendix A, B)

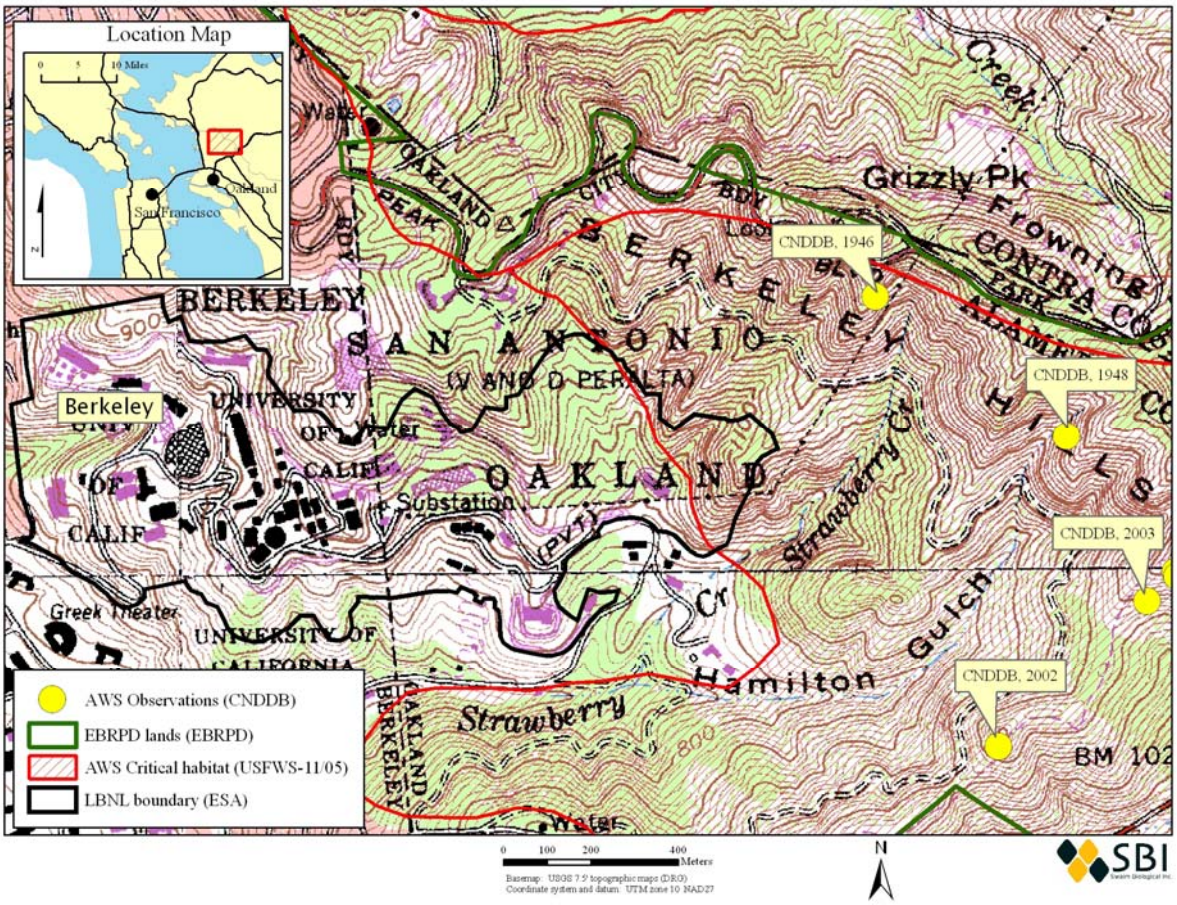

Figure 2. Nearest AWS Observations to Study Area.

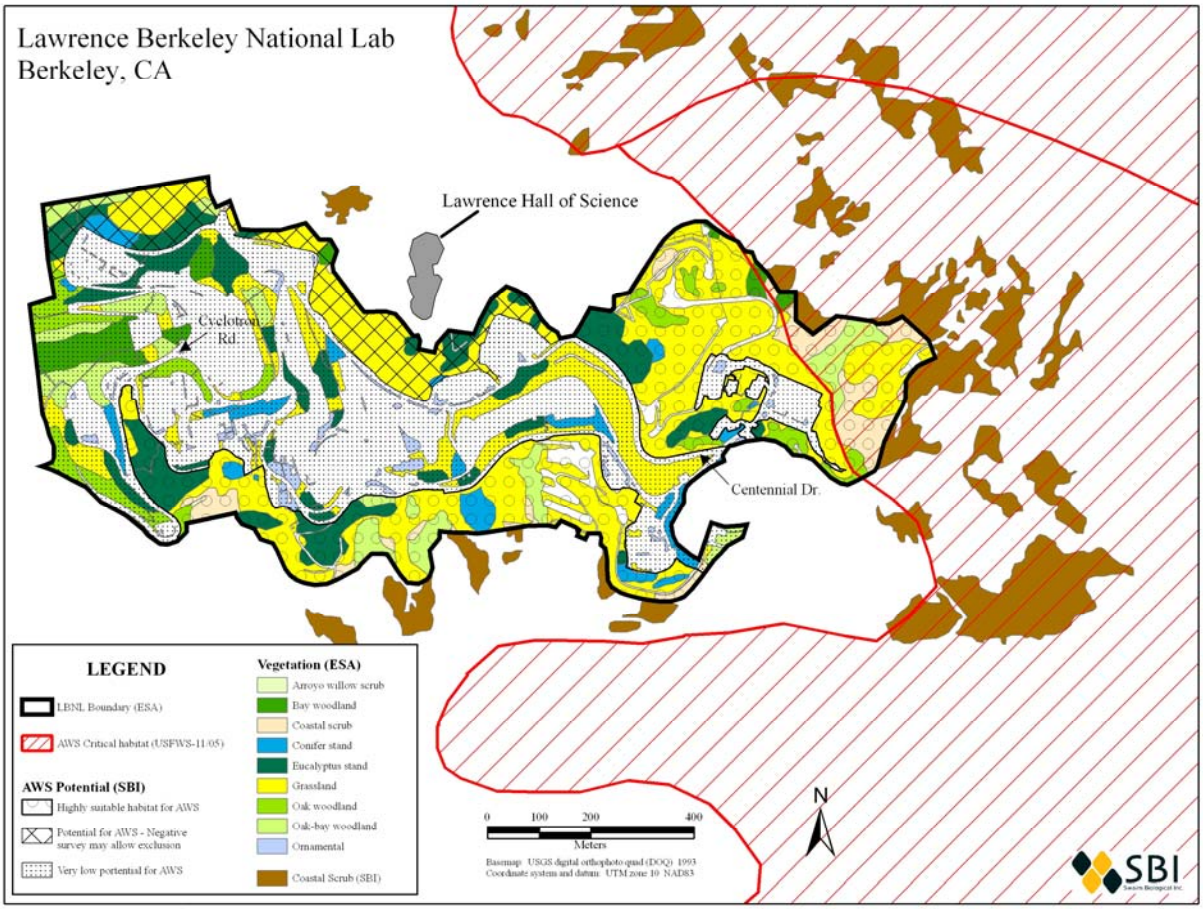

Figure 3. Potential for AWS at LBNL

2) Areas where there is potential habitat (some scrub is present and the patch size is potentially large enough to support a populations), but the potential for AWS may be lower. The lower potential for presence is due to fragmentation caused by buildings and roads that has resulted in isolation from larger areas of habitat and degradation of the habitat in those isolated areas through vegetation management that eliminates ground cover. The area considered to be potential habitat is the northern boundary area below the Lawrence Hall of Science (LHS). Several scrub patches are present in the undeveloped area between LBNL and LHS and a small population of AWS may be present in the designated area. (Appendix C)

3) Areas where AWS are not likely to occur due to small habitat patch size and isolation from scrub habitats by multiple paved roads, buildings, and bare slopes. The AWS would not be expected to user remainder of the site on any significant or predictable basis.

5.0 SURVEY RECOMMENDATIONS

To determine the actual status of the AWS at LBNL, trapping surveys would need to be conducted at the areas in question. Informal consultation with the USFWS and CDFG would be needed to determine if a survey could be designed to determine negative findings for the AWS and result in projects that would require that no take avoidance or mitigation measures be implemented.

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PERSONAL COMMUNICATIONS

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Appendix A

Habitat Conditions in Area of LBNL northeast of Centennial Drive

Appendix B

Habitat Conditions in Area Along the Southern Boundary of LBNL

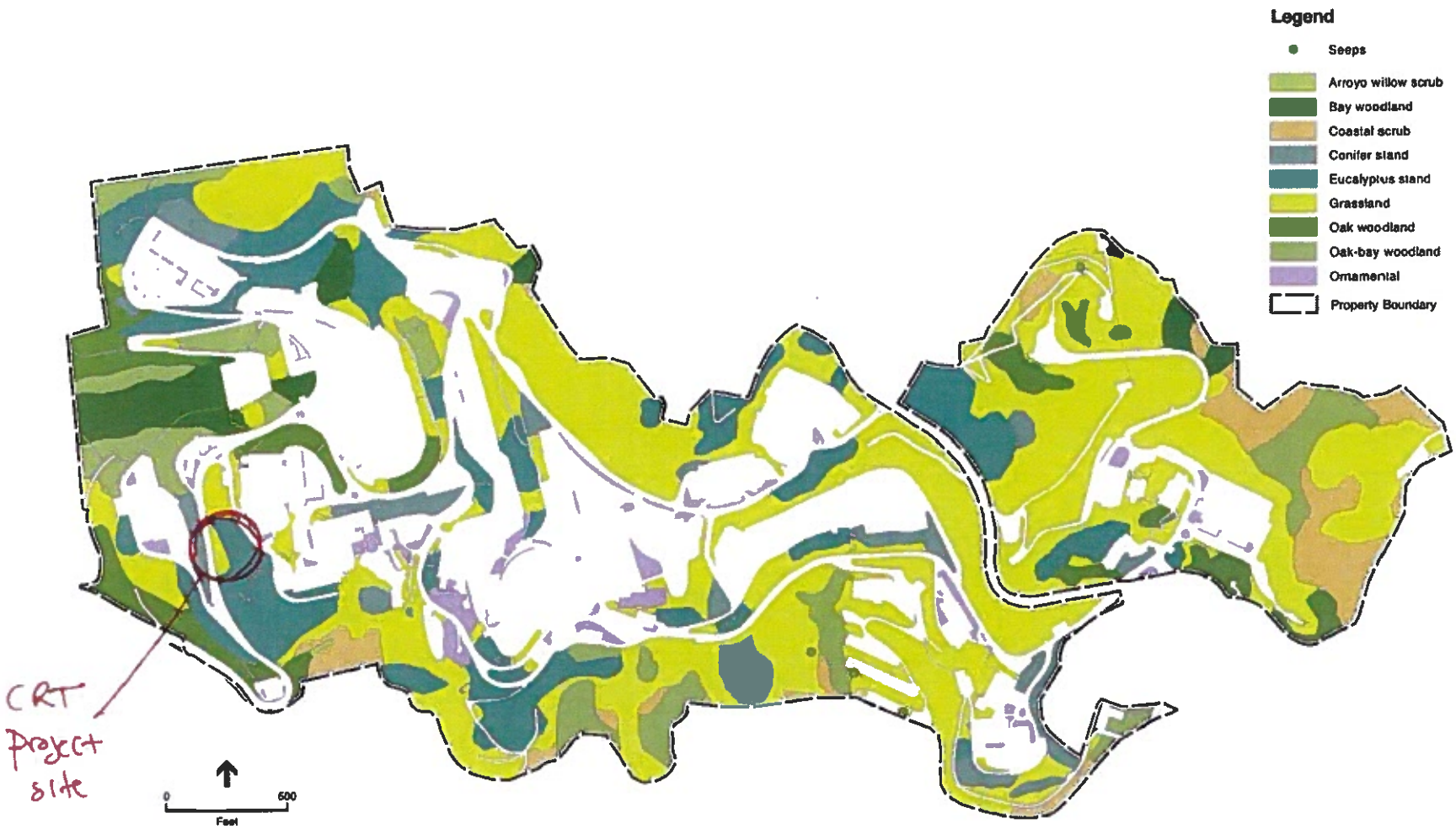
Appendix C

Habitat Conditions in the Undeveloped area Along the Northern Boundary of LBNL and the LHS

LBNL

2006 Long Range Development Plan Environmental Impact Report

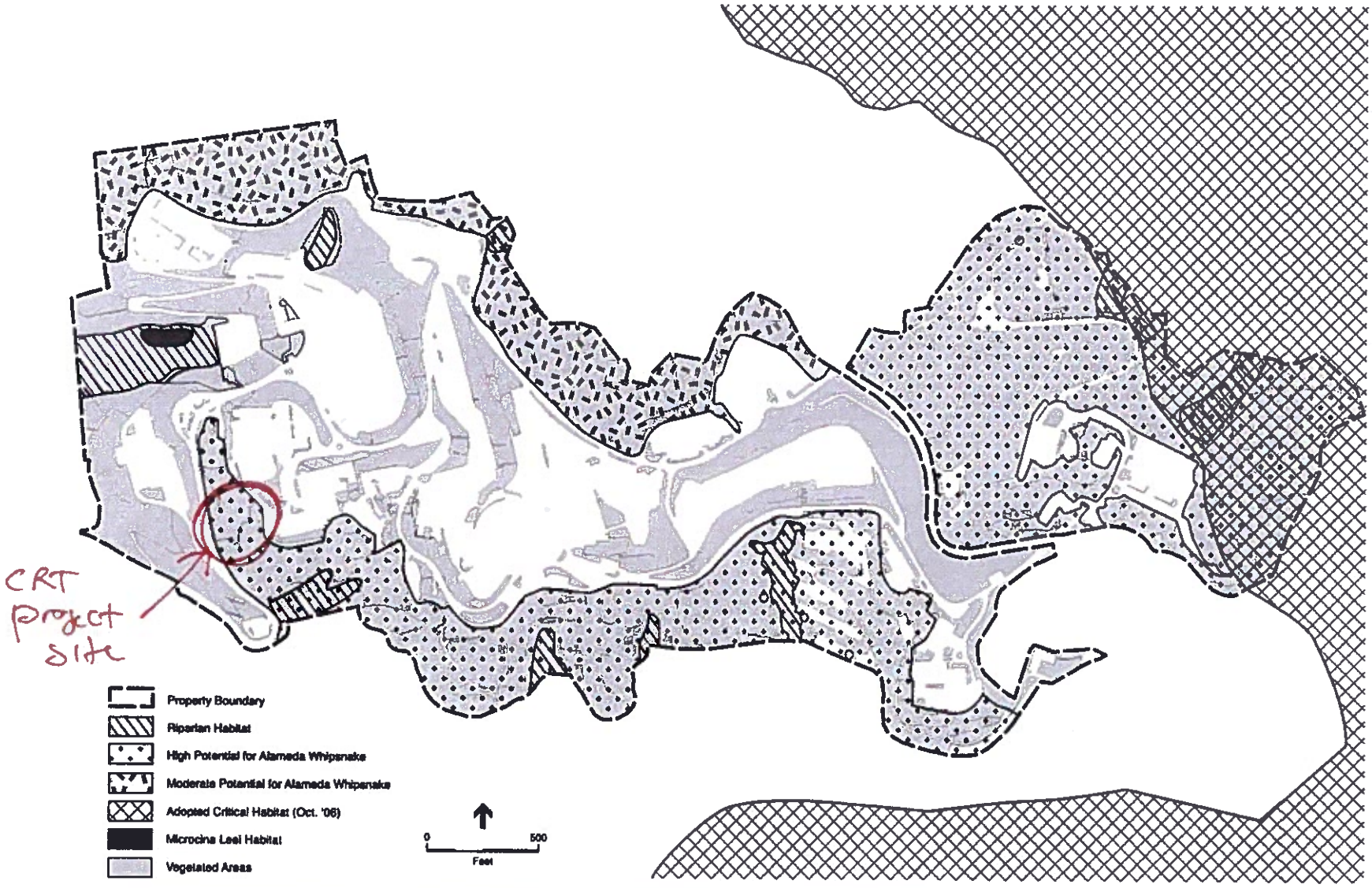
(July 2007)



SOURCE: LBNL; ESA (2003)

LBNL 2006 Long Range Development Plan . 201074

Figure IV.C-1
Vegetation at LBNL



SOURCE: LBNL; ESA (2006)

LBNL 2006 Long Range Development Plan . 201074

Figure IV.C-2
Sensitive Habitat at LBNL

Individual Future Projects/Illustrative Development Scenario. The Illustrative Development Scenario is a conceptual portrayal of potential development under the LRDP. Actual overall development that is approved and constructed pursuant to the 2006 LRDP would be less intense than portrayed in the scenario. The scenario was developed before the 2006 LRDP was reduced in scope in response to comments from the City of Berkeley, and thus the scenario includes an overall level of potential development that is greater than is being proposed in the 2006 LRDP. Each of the proposed buildings that is included in the scenario, however, might be constructed pursuant to the 2006 LRDP, and thus the scenario remains an appropriate and conservative basis for the evaluation of impacts on special bats. For the reasons stated above, potential individual projects under the LRDP such as those identified in the Illustrative Development Scenario could adversely affect special-status bats, and the above impact statement would apply. For the reasons stated above, and with implementation of Mitigation Measure BIO-4, the impact of such projects on special-status bats would be less than significant.

Impact BIO-5: Implementation of the 2006 LRDP could result in take or harassment of Alameda whipsnakes. (Significant; Less than Significant with Mitigation)

There has never been a reported sighting of an Alameda whipsnake on the LBNL hill site or its immediate vicinity. Though habitat types and features used by Alameda whipsnakes may vary, home ranges typically are centered on areas of scrub habitats with open to partially open canopy, on south-, southeast-, east-, and southwest-facing slopes. Rock outcrops are important for protection from predators and as habitat for western fence lizards and other prey species (Swaim, 1994). However, recent surveys and studies undertaken elsewhere in the region have shown that Alameda whipsnake can be found in a wider variety of habitats than previously thought. For example, whipsnakes have been found in grasslands with very little scrub present, in coastal scrub with dense canopy cover, and in patches of scrub less than one-half acre in size (Swaim, 2003). These recent findings suggest the possibility that whipsnakes could be inhabiting, or disperse through, areas of the LBNL site where coastal scrub habitat occurs in a mosaic with other habitat types such as grassland or woodland. A recent whipsnake habitat assessment of the LBNL hill site (Swaim, 2005) found that potential whipsnake occurrence would be most likely in the easternmost portion of the Lab that is contiguous with open space to the north and east and along the south-facing slopes of Strawberry Canyon. Both of these areas are primarily open space with a mosaic of grassland, coastal scrub, riparian woodland, and stands of non-native trees and provide a potential dispersal corridor from areas identified as critical habitat for the species (USFWS, 2006) to areas of coastal scrub with potential suitability for the whipsnake.

The 2005 LBNL habitat assessment identified and mapped potential for Alameda whipsnake occurrence based on habitat types present and other factors, including habitat fragmentation and existing land uses. Areas designated as having high potential for whipsnakes were those that included relatively large patches of coastal scrub in a mosaic of other habitat types and that were contiguous with larger open space areas and known occupied habitat and/or proposed critical habitat. Based on these factors, these are areas where whipsnakes are considered to have a high

potential to occur (Swaim, 2005). Areas designated as having moderate potential were those that contained smaller patches of scrub in a mosaic with other habitat types but where there was also a fairly significant degree of fragmentation and habitat degradation and a lesser degree of contiguity with larger areas of less disturbed potential habitat. These areas may support a small whipsnake population (Swaim 2005). The habitat assessment found that the whipsnake would not be expected to use the remainder of the site (i.e., existing highly developed areas) on any predictable basis (Swaim, 2005).

After conducting site visits during the summer of 2000, the USFWS determined that most of the LBNL site, including areas with existing facilities, should be excluded from its final critical habitat listing[20,21] (USFWS, 2000). The 2000 designation of critical habitat was rescinded in 2003 but a new critical habitat designation was proposed in 2005 and adopted in October 2006 that, similar to the 2000 designation, includes the easternmost portion of the LBNL site.[22] This area is designated as a fixed constraint under the 2006 LRDP. Based on the habitat assessment, areas with moderate to high potential for whipsnake occurrence were mapped as sensitive habitat in Figure IV.C-2 in this document and should be avoided to the extent feasible. With the exception of potential development in the eastern portions of the hill site, the majority of development proposed under the 2006 LRDP can be considered infill development and would not occur in or near areas that provide suitable habitat for the Alameda whipsnake or within areas proposed as critical habitat. Mitigation Measures (BIO-5a through BIO-5f) would be implemented as directed below at project sites located within areas identified as having moderate to high potential for whipsnake occurrence to ensure that the species is protected to the greatest extent possible during project construction (see Figure IV.C-2).

> **Mitigation Measure BIO-5a:** With the approval of the USFWS on a case-by-case basis, relocate any snake encountered during construction that is at risk of harassment; cease construction activity until the snake is moved to suitable refugium. Alternatively, submit a general protocol for relocation to the USFWS for approval prior to project implementation.

20 Critical habitat for the Alameda whipsnake was rescinded by court order on May 9, 2003. For the purposes of this analysis, the concept is still relevant in that the designation of critical habitat implies a high likelihood of species' presence where critical habitat elements are found. Even though critical habitat has been rescinded, the species is still fully protected under the FESA. In addition, the USFWS (2002) published a draft recovery plan that includes the species, and areas that were formerly designated as critical habitat units are now designated as recovery units under the plan. Finally, critical habitat for the species was re-proposed in October 2005 (USFWS, 2005d) and, as adopted in October 2006 (USFWS, 2006), includes the easternmost portion of the Lab site.

21 As noted in Chapter I, Introduction, because the LRDP is a University-mandated planning document, it is not subject to review under the National Environmental Policy Act (NEPA). NEPA review would be required for LRDP development projects subject to an authorization or decision by the U.S. Department of Energy or another federal agency. In such instances, consultation with the USFWS would be required prior to implementation of the LRDP, pursuant to Section 7 of the FESA. This consultation would likely be informal and consist of documentation presented to the USFWS by the federal lead agency for the project indicating that the development project would have no impacts on Alameda whipsnake or whipsnake habitat.

22 The adopted critical habitat, while smaller than that proposed in 2005 (155,000 acres adopted, compared to 203,000 acres proposed), includes the same part of the Lab main site as included in the proposed critical habitat. Most of the 48,000 acres excluded from the adopted critical habitat are in eastern Contra Costa County, although smaller areas were excluded in the Easy Bay hills in western Contra Costa and southern Alameda counties.

Mitigation Measure BIO-5b: Conduct focused pre-construction surveys for the Alameda whipsnake at all project sites within or directly adjacent to areas mapped as having high potential for whipsnake occurrence. Project sites within high potential areas shall be fenced to exclude snakes prior to project implementation. This would not include ongoing and non-site specific activities such as fuel management.

Methods for pre-construction surveys, burrow excavation, and site fencing shall be developed prior to implementation of any project located within or adjacent to areas mapped as having high potential for whipsnake occurrence. Such methods would be developed in consultation or with approval of USFWS for any development taking place in USFWS officially designated Alameda whipsnake critical habitat. Pre-construction surveys of such project sites shall be carried out by a permitted biologist familiar with whipsnake identification and ecology (Swaim, 2002). These are not intended to be protocol-level surveys but designed to clear an area so that individual whipsnakes are not present within a given area prior to initiation of construction. At sites where the project footprint would not be contained entirely within an existing developed area footprint and natural vegetated areas would be disturbed any existing animal burrows shall be carefully hand-excavated to ensure that there are no whipsnakes within the project footprint. Any whipsnakes found during these surveys shall be relocated according to the Alameda Whipsnake Relocation Plan. Snakes of any other species found during these surveys shall also be relocated out of the project area. Once the site is cleared it shall then be fenced in such a way as to exclude snakes for the duration of the project. Fencing shall be maintained intact throughout the duration of the project.

Mitigation Measure BIO-5c: (1) A full-time designated monitor shall be employed at project sites that are within or directly adjacent to areas designated as having high potential for whipsnake occurrence, or (2) Daily site surveys for Alameda whipsnake shall be carried out by a designated monitor at construction sites within or adjacent to areas designated as having moderate potential for whipsnake occurrence.

Each morning, prior to initiating excavation, construction, or vehicle operation at sites identified as having moderate potential for whipsnake occurrence, the project area of applicable construction sites shall be surveyed by a designated monitor trained in Alameda whipsnake identification to ensure that no Alameda whipsnakes are present. This survey is not intended to be a protocol-level survey. All laydown and deposition areas, as well as other areas that might conceal or shelter snakes or other animals, shall be inspected each morning by the designated monitor to ensure that Alameda whipsnakes are not present. At sites in high potential areas the monitor shall remain on-site during construction hours. At sites in moderate potential areas the monitor shall remain on-call during construction hours in the event that a snake is found on-site. The designated monitor shall have the authority to halt construction activities in the event that a whipsnake is found within the construction footprint until such time as threatening activities can be eliminated in the vicinity of the snake and it can be removed from the site by a biologist permitted to handle Alameda whipsnakes. The USFWS shall be notified within 24 hours of any such event.

Mitigation Measure BIO-5d: Alameda whipsnake awareness and relevant environmental sensitivity training for each worker shall be conducted by the designated monitor prior to commencement of on-site activities.

All on-site workers at applicable construction sites shall attend an Alameda whipsnake information session conducted by the designated monitor prior to beginning work. This session shall cover identification of the species and procedures to be followed if an individual is found on-site, as well as basic site rules meant to protect biological resources, such as speed limits and daily trash pickup.

Mitigation Measure BIO-5e: Hours of operation and speed limits shall be instituted and posted.

All construction activities that take place on the ground (as opposed to within buildings) at applicable construction sites shall be performed during daylight hours, or with suitable lighting so that snakes can be seen. Vehicle speed on the construction site shall not exceed 5 miles per hour.

Mitigation Measure BIO-5f: Site vegetation management shall take place prior to tree removal, grading, excavation, or other construction activities. Construction materials, soil, construction debris, or other material shall be deposited only on areas where vegetation has been mowed.

Areas where development is proposed under the 2006 LRDP are subject to annual vegetation management involving the close-cropping of all grasses and ground covers; this management activity would be performed prior to initiating project-specific construction. Areas would be re-mowed if grass or other vegetation on the project site becomes high enough to conceal whipsnakes during the construction period. In areas not subject to annual vegetation management, dense vegetation would be removed prior to the onset of grading or the use of any heavy machinery, using goats, manual brush cutters, or a combination thereof.

Most of the above mitigation measures are based on avoidance measures developed in informal consultation with the USFWS during site surveys for the water tank and fire road realignment components of the LBNL Sitewide Water Distribution Upgrade project, which was located in the easternmost portion of LBNL. The incorporation of these mitigation measures into that project resulted in an informal determination by the USFWS that the Sitewide Water Distribution Upgrade project would not be likely to adversely affect Alameda whipsnake or its critical habitat (USFWS, 2000; LBNL, 2001a; Philliber, 2002).

The incorporation of these measures, including the measures identified above under Mitigation Measures BIO-5a for all project sites and BIO-5b and BIO-5c for sites within high potential areas, would reduce potential impacts resulting from implementation of projects under the LRDP to less-than-significant levels. Mitigation Measure BIO-5a is not necessary prior to LRDP project activities to reduce a potentially significant impact to a less-than-significant level, as a project could be halted until a whipsnake relocation plan was approved. However, LBNL intends to voluntarily enact this mitigation measure proactively to minimize potential project delays if whipsnake were encountered.

Significance after Mitigation: Less than significant.

Project Variant. Compared to the LRDP, the project variant would not result in any change in buildings or structures developed, and therefore impacts would be the same as those described for the proposed project. With incorporation of Mitigation Measures BIO-5a through BIO-5f, the impact would be less than significant.

Individual Future Projects/Illustrative Development Scenario. The Illustrative Development Scenario is a conceptual portrayal of potential development under the LRDP. Actual overall development that is approved and constructed pursuant to the 2006 LRDP would be less intense than portrayed in the scenario. The scenario was developed before the 2006 LRDP was reduced in scope in response to comments from the City of Berkeley, and thus the scenario includes an overall level of potential development that is greater than is being proposed in the 2006 LRDP. Each of the proposed buildings that is included in the scenario, however, might be constructed pursuant to the 2006 LRDP, and thus the scenario remains an appropriate and conservative basis for the evaluation of impacts on the Alameda Whipsnake. Locations of buildings, configurations, uses, and other features of actual development may vary from the scenario. All development (demolition or construction) occurring within or directly adjacent to the areas mapped as having high to moderate potential for Alameda whipsnake occurrence in Figure IV.C-2 would incorporate the mitigation measures presented above. This development could include Illustrative Development Scenario buildings S-1, S-8, S-9, S-11, S-12, S-13, S-14, and S-15. Also included would be roads R-1, R-2, and R-5; parking lots PL-8, PL-9, and PL-10; and parking structure PS-2. For the reasons stated above, potential development in these areas could result in take or harassment of Alameda whipsnakes.

Mitigation Measures BIO-5a, BIO-5b, and BIO-5c(1) through BIO-5f would apply to projects that would occur within or directly adjacent to areas mapped as having high potential for whipsnake occurrence. This development would include, but not be limited to, development identified in the Illustrative Development Scenario as S-9, S-11, S-12, S-13, S-14, and S-15; R-1 and R-2; PL-8, PL-9 and PL-10; and PS-2.

Mitigation Measures BIO-5a, BIO-5c(2) through BIO-5f would apply to projects that would occur within or directly adjacent to areas mapped as having moderate potential for whipsnake occurrence. This development would include, but not be limited to, development identified in the Illustrative Development Scenario as S-1, S-8, and R-5. No mitigation would be required for development projects occurring in already highly developed areas.

With implementation of Mitigation Measures BIO-5a through BIO-5f as indicated above, the impact from potential individual projects under the LRDP such as those described in the Illustrative Development Scenario associated with potential take of Alameda whipsnake would not result in a substantial adverse effect on special-status species, nor interfere substantially with the movement of any resident or migratory species or impede the use of native wildlife nursery sites, and therefore the impact of such projects on the whipsnake would be reduced to a less-than-significant level.

United States Department of the Interior

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In Reply Refer To:
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FEB 24 2011

Mr. Kim Abbott
Environmental Program Manager
Department of Energy
Office of Science
Berkeley Site Office
Lawrence Berkeley National Laboratory
1 Cyclotron Road, MS-90-1023
Berkeley, California 94720

Subject: Informal Consultation on the Proposed Construction of the Computational and Theory Facility at the Lawrence Berkeley National Laboratory

Dear Mr. Abbott,

This letter responds to the Department of Energy's (DOE), Lawrence Berkeley National Laboratory (LBNL) January 21, 2011, letter requesting informal consultation with the U.S. Fish and Wildlife Service (Service) for the proposed construction of the Computational and Theory Facility (CRT) in the City of Berkeley, Alameda County, California. Your letter was received by the Service on January 21, 2011. At issue are the potential effects of the proposed CRT on the threatened Alameda whipsnake (*Masticophis lateralis euryxanthus*). This response is issued under the authority of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act).

The Service used the following information during our review of your request: (1) your letter to the Service dated January 21, 2011; (2) Enclosures 1, 2 and 3 of your letter, which included the *Site Specific Study for the Construction of the CRT*, the *Swaim 2006 Report*, and an excerpt from the *2006 Long Range Development Plan Environmental Impact Plan Report*, dated July 2007; (3) the site plan map; (4) the *Draft Environmental Assessment for Computational and Theory Facility Project DOE/EA – 1700*, dated September 2010; (5) the January 25, 2011, site visit conducted by the Service with Kim Abbott, Henry Martinez, and Jeff Philliber of the LBNL, DOE; (6) additional conservation measures proposed and sent to the Service via electronic mail on January 21, 2011; and (7) other information available to the Service.

The proposed CRT involves the construction of a new three-story building that will consist of an approximately 32,000 square-foot computing floor with a high ceiling and two additional floors of office space for a total of approximately 139,715 square feet of space on a 2.25 acre site situated between two densely developed building complexes to the east, the LBNL's main

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roadway to the west and north, and an area of undeveloped "perimeter open space" to the south above UC Berkeley's Memorial Stadium. All of the access routes are proposed to be on existing paved roads. Only necessary vehicles and construction equipment will be allowed within the immediate project site. The LBNL proposes to begin construction of the CRT in early 2011 and complete the project by late 2013.

Alameda whipsnakes have not been observed or captured during protocol-level surveys conducted by Swaim (2006) (Enclosure 2). No suitable habitat for breeding exists within the project action area. There has been only one documented occurrence of the Alameda whipsnake at the 202-acre LBNL site in its 70-year history. This occurrence was reported at the far southeastern corner of the LBNL hill site, approximately two-thirds of a mile from the project action area.

The Service concurs with your determination that the proposed CRT project is not likely to adversely affect the Alameda whipsnake based on the following:

1. The site, which is predominantly vegetated with eucalyptus and non-native grassland, does not contain suitable habitat to support Alameda whipsnake.
2. The site is disturbed, highly constricted, and surrounded on two of three sides by busy roadways and development.
3. Although numerous biological surveys have been conducted on the proposed CRT site, no evidence of Alameda whipsnake presence has been documented in this area.
4. The LBNL will employ a rigorous set of preventative measures specifically designed to avoid incidental taking of the Alameda whipsnake. These are known as Standard Project Features (SPFs). The SPFs were designed in past informal consultation with the Service; with Karen Swaim; and with other professional consulting biologists. LBNL proposes to implement the following SPFs for the proposed CRT project.
5. Project construction SPFs for the Alameda whipsnake include:
    a. Alameda whipsnake identification and awareness training will be provided for all construction personnel;
    b. Service-approval and designation of official on-site biological monitors prior to construction;
    c. "Stop work" protocols to be established prior to construction commencement;
    d. Vegetation management (grass and brush removal) will be conducted prior to project commencement and maintained throughout construction;
    e. Implementation of pre-construction surveys and exclusion fencing for snakes, as necessary;
    f. Hours of operations, project lighting, and off-road speed limits will be approved and established before project construction begins;
    g. Full time monitoring and daily site surveys prior to daily work commencement will be conducted by the Service-approved biological monitor.

The following conservation measures proposed by the LBNL, in addition to the above SPFs, will be implemented:

1. Hours of operation and speed limits will be instituted and posted. All construction activities that take place on the ground (as opposed to within buildings) at the construction sites will be performed during daylight hours and with suitable lighting so that any snakes present may be seen. Vehicle speed on the construction site will not exceed five miles per hour.
2. Excavations will be inspected for entrapped wildlife before commencement of construction activities every morning. Any animals discovered will be allowed to escape voluntarily and without harassment before construction activities resume. Pipes that are stored on the site will be inspected for trapped animals before the pipe is used in any way. Pipes, in or adjacent to trenches left open overnight, will be capped.

The following habitat quality measure proposed by the LBNL, in addition to their currently established program developed to protect and enhance habitat to support Alameda whipsnake within their campus, will be implemented:

1. In an effort to minimize existing threats to Alameda whipsnakes within LBNL, all current on-site erosion control materials (e.g. straw wattle) that contain plastic monofilament will be replaced with coconut fiber or similar products during all regular maintenance activities. From this point forward, LBNL will use only the coconut fiber types of erosion control materials throughout the entire campus.

As provided in 50 CFR § 402.14, initiation of formal consultation is required where there is discretionary Federal agency involvement or control over the action (or is authorized by law) and if: (1) new information reveals effects of the agency action that may affect a listed species or critical habitat in a manner or to an extent not considered in this review; (2) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (3) a new species is listed or critical habitat is designated that may be affected by the action.

Please contact Florence Gardipee, Fish and Wildlife Biologist, or Ryan Olah, Coast Bay Branch Chief, at (916) 414-6600, or by email (Flo_Gardipee@fws.gov or Ryan_Olah@fws.gov), if you have any questions regarding this response on the proposed construction of the Computational and Theory Facility

Sincerely,

E. Tattersall

Eric Tattersall
Assistant Deputy Field Supervisor

cc: Conrad Jones, California Department of Fish and Game, Napa, California