

December 9, 2003

Ann Bowers  
U.S. Fish & Wildlife Service  
2800 Cottage Way, W2605  
Sacramento, CA 95825-1846

**Subject: Result of Surveys for the California Red-legged Frog for the South Hill Project in Nevada County, California**

Dear Ann:

This letter report describes the results of surveys for the California red-legged frog (CRLF) conducted for the SouthHill Village project in Nevada County, California. The information provided herein is consistent with "Guidance on Site Assessment and Field Surveys for California Red-legged Frogs (*Rana aurora draytonii*)", prepared by the U.S. Fish and Wildlife Service (Service) and dated February 18, 1997.

A CRLF habitat assessment was previously conducted by Foothill Associates for this property and a letter report was submitted to the Service on October 23, 2002 (enclosed). After subsequent coordination with the Service, it was determined that focused CRLF surveys consistent with Service protocol were warranted on the subject site. The Service also requested that suitable aquatic habitats within one mile of the subject site be surveyed if property access is obtained.

As shown on Figure 4 of the enclosed habitat assessment, a pond is present within one mile of the project site, to the west, that is potentially suitable for supporting CRLF. Demar Hooper, representing the project applicant, obtained contact information for the landowner of this site, and both Mr. Hooper and I placed telephone calls to the landowner requesting property access for the purpose of conducting CRLF surveys. However, the landowner did not return these telephone calls to grant property access. Therefore, surveys were not conducted on this adjacent property.

Please see the enclosed habitat assessment for a description of the survey area description and location, and methods and results of the habitat assessment. The following describes methods and results of the focused CRLF survey on the project site, and provides conclusions regarding the likely status of this species on-site.

#### **Methods**

Focused CRLF surveys on the SouthHill Village project site were conducted four times, twice

during the day and twice at night, with more than 24 hours between each survey. The dates and times these surveys were conducted are indicated below. These surveys were conducted by Anne Flannery of Ibis Environmental with assistance from Ellen Berryman of Foothill Associates. On October 16 and 22, David Funk (Funk Forestry) also assisted in the frog surveys.

<u>Date</u>	<u>Survey Time</u>
October 16, 2003	7:30 am to 12:00 pm
October 22, 2003	7:20 pm to 9:30 pm
October 28, 2003	7:15 am to 9:20 am
October 29, 2003	6:30 pm to 8:30 pm

**Day surveys:** The first day survey (October 16) consisted initially of walking the property and inspecting the wetlands to ascertain which specific areas needed to be included in the focused searches for CRLF. Aquatic CRLF habitat within the study area consists primarily of Pond 1 and Pond 2 as shown on Figure 2 of the enclosed habitat assessment. It was determined during the October 16 survey that Pond 3 was not suitable for CRLF because the pond had dried to a diameter of approximately 4 feet and was filled with over 100 bullfrog tadpoles (see enclosed photograph). The small intermittent drainages on-site are potentially suitable for summer and dispersal habitat for CRLF, but in these areas the vegetation was too dense to conduct effective walking surveys.

The day surveys were conducted on clear, sunny days (October 16 and 28). Surveyors walked slowly along the perimeters of Ponds 1 and 2, visually scanning the water and banks, using binoculars. Surveyors did not conduct dip-netting.

**Evening surveys:** The two evening surveys were conducted on still nights at least one hour after sunset, with temperatures ranging from 58 to 65 degrees Fahrenheit. During these evening surveys, surveyors walked slowly along the perimeters of Ponds #1 and #2. Surveyors used 6-volt lamps and binoculars to look for amphibians. Surveyors also noted any amphibian vocalizations and identified calls to species.

## **Results**

No CRLF adults or tadpoles were observed in the survey area. The only amphibian species observed on the project site was bullfrog (*Rana catesbeina*, tadpoles and adults). Only tadpoles and no adults were observed in Pond 3, while only adults and no tadpoles were observed in Ponds 1 and 2.

*October 16 day survey.* Pond 1 was surveyed between 9:15 am and 9:33 am (18 minutes). No frogs of any species were seen or heard in Pond 1. Pond 2 was surveyed between 10:00 am and 11:00 am (one hour), during which twenty-five (25) bullfrogs were detected. Approximately 100 bullfrog tadpoles were observed in Pond #3, which had dried to a perimeter of only a few feet (see enclosed photograph).

*October 28 day survey.* Pond 1 was surveyed between 8:45 am and 9:15 am (30 minutes). Two (2) unidentified frog plops were heard and one bullfrog was heard jumping into the pond. Pond 2 was surveyed between 7:15 am and 8:30 am (one hour and 15 minutes). Twenty-six (26) bullfrogs were seen and one unidentified frog plop was heard in Pond 2.

*October 22 night survey.* Pond 1 was surveyed between 7:15 pm and 7:53 pm (38 minutes). Eight (8) bullfrogs were seen and two (2) unidentified frog plops were heard. Pond 2 was surveyed between 8:00 pm and 9:20 pm (one hour and 20 minutes). Seventy-seven (77) bullfrogs were identified and one unidentified frog plop was heard.

*October 29 night survey.* Pond 1 was surveyed between 8:00 pm and 8:30 pm (30 minutes). Ten (10) bullfrogs were detected. Pond 2 was surveyed between 6:20 pm and 7:40 pm (one hour and 20 minutes). Eighty-six (86) frogs were detected, eight-two (82) of which were bull frogs and four (4) of which could not be identified.

## **Discussion**

No CRLF adults or tadpoles were observed during protocol-level surveys of suitable habitat on the South Hill project site. This and additional lines of evidence indicate that CRLF is highly unlikely to be present on the project site.

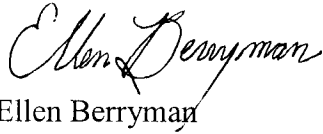
The nearest known location for CRLF is from Sailor Flat in Nevada County, over 8 miles from the South Hills project site. The main avenues of dispersal for this species are through connected watersheds, with some upland dispersal occurring during rain events and recorded up to one mile from the aquatic habitat (USFWS, 2001). Wetlands on the project site are not hydrologically connected to the habitat at the Sailor Flat site, or within the same watershed. Based on distance and lack of habitat connectivity, it is highly unlikely that CRLF dispersal occurs between the nearest known CRLF population and the project site.

The abundance of bullfrogs in the aquatic habitat on-site further indicates that a population of CRLF is not likely to be present. Hayes and Jennings (1988) found a negative correlation between bullfrog presence and the presence of CRLF. Although bullfrogs and CRLF can co-occur, they generally do not. Bullfrogs prey on tadpoles, juveniles and large adults. Bull frogs also have a competitive advantage over CRLF because they are larger, have more generalized feeding habits, and have an extended breeding season, and bull frog tadpoles are unpalatable to many predatory fish. Researchers found less than 5% survival rates of CRLF tadpoles in the presence of bullfrog tadpoles, whereas in ponds free of bullfrog tadpoles, survival rates were estimated in the range of 30-40% (Lawler, 1999).

In conclusion, given (1) the lack of observations of any CRLF during protocol-level surveys of the South Hill site, (2) the abundance of bull frogs in aquatic habitat on-site, and (3) the distance from, and lack of connectivity to, the nearest known CRLF population, it is unlikely that CRLF are present on the proposed project site.

Thank you for your review of these survey results. Please contact me at (916) 435-1202 if you have any questions or require additional information.

Sincerely,



Ellen Berryman

cc: Tom Cavanaugh, US Army Corps of Engineers  
Laura Whitney, US Army Corps of Engineers  
Steve Dolim, Catlin Properties

Literature Cited

Hayes, M. P. and M. R. Jennings. 1988. Habitat correlates of distribution of the California red-legged frog (*Rana aurora draytonii*) and the foothill yellowlegged frog (*Rana boylei*): implications for management. In Management of amphibians, reptiles, and small mammals in North America. eds R. C. Szaro, K. E. Severson and D. R. Patton. Gen. Tech. Rep. RM166. USDA Forest Service, Rocky Mountain Forest and Range Experiment Station, Fort Collins, CO. pp. 144158.

Lawler, S. P., D. Dritz, T. Strange, and M. Holyoak. 1999. "Effects of Introduced Mosquitofish and Bullfrogs on the Threatened California Red-Legged Frog." *Conservation Biology* 13(3):613-22.

U.S. Fish and Wildlife Service. 2001. Endangered and Threatened Wildlife and Plants; Final Determination of Critical Habitat for the California red-legged frog. Federal Register: Vol. 66, No. 49. March 13, 2001.



October 23, 2002

Ann Bowers  
U.S. Fish and Wildlife Service  
2800 Cottage Way, W2605  
Sacramento, CA 95825-1846

**Subject: Results of a Habitat Assessment for California Red-Legged Frog for the South Hills Site, Nevada County**

Dear Ann:

The following letter report describes the findings of a California red-legged frog (CRLF) habitat assessment conducted for the South Hills site in Nevada County. As part of this assessment we also are requesting Service input as to the likelihood of extant populations of CRLF existing in the area. This letter provides the information required in the 1997 USFWS Guidance on Site Assessment for CRLF, which includes:

- An assessment determining if the project area is within range of the species;
- An analysis of whether or not there are known CRLF occurrences within 5 miles of the project area; and,
- An assessment of habitats within the project area and within a one mile radius of the project area.

### Survey Area Description and Location

The site is located immediately south of Grass Valley, adjacent to La Barr Meadows Road and east of Highway 49 on the USGS 7.5-minute series Grass Valley quadrangle (Figure 1). The site is composed of two parcels that are on the east and west sides of La Barr Meadows Road. The eastern portion of the site is bordered by La Barr Meadows Road, a gravel pit to the north, and coniferous forest to the east and south. The western portion of the site is bordered by La Barr Meadows Road on the east, coniferous forest to the north and south, and Highway 49 to the west. The estimated elevation of the project area ranges from 2,000 to 2,400 feet above mean sea level (MSL).

Portions of the site have been mined in the past and much of the western portion of the site has been significantly modified for use as a sawmill. A comparison of topography data from 1901, 1949, and 1995 shows significant changes in site hydrology and topography (oversize map, attached). Historically, an intermittent drainage flowed through the site from the western side out the southeast boundary. Three ponds were excavated on the site, along with the construction of several dirt roads. Site elevations were altered in many areas. Many areas of the lower elevations of the site have large concrete slabs and old building foundations, gravel and asphalt

pads, and rubble. Vegetation types on the project site include chaparral, mixed conifer forest, willow scrub, ruderal habitat, and wetlands. Wetlands are shown on Figure 2.

## **Methods**

Available information pertaining to the natural resources of the region was reviewed, including the CNDDDB (Grass Valley quadrangle), USFWS Protocol Survey for California Red-Legged Frog (1997).

The study area was assessed on October 16, 2001, 9AM and 1PM, and October 29, 2001, between the hours of 3PM to 5PM. The project area and one mile from project boundaries were assessed for aquatic habitats suitable for CRLF. Both upland and aquatic habitats were noted. Aquatic habitats within one mile, where accessible, were identified and characterized.

The assessment included walking the entire project site, with special attention paid to areas that were considered wetland habitat. When the surveyor reached an aquatic habitat that was inundated, the habitat was approached slowly and the shore and water scanned for presence of amphibians through binoculars and the naked eye. Any sightings or calls of amphibians and other aquatic wildlife were noted. Where aquatic habitats were dry, the bottoms of the wetland were walked to look for any signs of amphibians (when inundated areas dry out near the end of the summer, stranded or dead tadpoles or juveniles can sometimes be found). Any evidence of crayfish or fish would be noted as well. Off-site aquatic habitats were identified by looking for wetlands marked on the quadrangle and/or hydrology maps for the area or topographic indications of potential water flow. Off-site aquatic habitats were checked in the same manner, where accessible. Many aquatic habitats within one mile of the project site were on private property and were not accessible. Photographs of upland and aquatic habitats on-site and accessible off-site are attached.

## **Results**

### **RLF records**

There are no CNDDDB records for CRLF within 10 miles of the study area (Figure 3). The Draft Recovery Plan for RLF states that currently, only a few drainages in the foothills of the Sierra Nevada are known to support CRLF. CRLF historically occurred in the lower elevations of Nevada County. Records of extant populations of CRLF occur in Weber Reservoir, near Placerville, El Dorado County, and on Indian Creek, near the town of Woodleaf, Butte County. Another unverified 1998 record occurs on Forest Service land in Sierra County at approximately 5,200 feet. As per our conversation, there are two additional recent records for RLF in Yuba County and Placer counties. My understanding is that the Yuba County record occurs near the Bullard's Bar reservoir. Figure 4 shows the project site in relation to known extant RLF records in Yuba, Nevada, and El Dorado counties. The drainages on the site flow into Wolf Creek watershed, which is part of the Upper Bear River watershed. There are no current records for RLF in this watershed.

### **Aquatic habitat**

Aquatic habitats within the project area include approximately 0.89 acres of pond, 0.04 seasonal wetland, 1.71 acres of seasonal marsh, and 0.18 acres of intermittent drainage (Figure 5). There are three ponds on the site, two to the west of La Barr Meadows Road and one to the east. These ponds are labeled Pond 1 through 3 on Figure 2.

Pond 1 and 2 were inundated at the time of the assessment. Pond 1 is a deep, man-made industrial pond. Cattail was the dominant emergent plant. Trees were restricted to the upper edges of the excavated basin. Pond 2 was the largest pond and is also artificial. Cattails and willows occur along the edges of this pond. Bullfrogs were heard calling and observed sitting on the edge of both ponds. Run-down dock facilities are present on Pond 2. These ponds may have been stocked for fishing in the past. Pond 3 is shallower than the other two ponds and was dry at the time the assessment was conducted. Several dead juvenile bullfrogs were observed in Pond 3.

All other drainages, seasonal marsh, and seasonal wetlands on the site were dry during the assessment. On-site drainages are mostly steep, narrow gullies that appear to carry storm-water run-off from upland areas. The areas mapped as seasonal wetland varied from blackberry (*Rubus discolor*)/California rose (*Rosa californica*) dominated areas to willow scrub. Seasonal marsh was dominated by herbaceous species such as bog rush (*Juncus effusus*), iris-leaved rush (*Juncus* sp.), and nutsedge (*Cyperus* sp.). No amphibians were observed in these habitats during the assessment.

Aquatic habitats within one mile of the project site include perennial and intermittent drainages, Wolf Creek, and a large reservoir. The off-site drainage immediately north of the site was accessible and a portion of the drainage was walked (see Figure 4). That portion of the drainage occurred in a highly disturbed area and adjacent land had been leveled and asphalted. The drainage was approximately 1.5 foot wide and was shallowly inundated (approx. 6 inches to 1 foot deep) at the time of the survey. The water was stagnant in the portion viewed and had a heavy growth of algae. Other aquatic habitats in the area were on private property or accessed by private roads and were not viewed. No amphibians were observed in these habitats.

### **Upland habitat**

Mixed coniferous forest is the predominant habitat type found on the project site. Native trees and shrubs, including black oak (*Quercus kelloggii*), ponderosa pine (*Pinus ponderosa*), madrone (*Arbutus menziesii*), coffeeberry (*Rhamnus californica*), ceanothus (*Ceanothus* sp.), scotch broom (*Cytisus scoparius*), and manzanita (*Arctostaphylos* sp.), comprise the tree and shrub canopy. Herbaceous vegetation is dispersed among the understory such as St. John's wort (*Hypericum* ssp.), wild carrot (*Daucus carota*), plantain (*Plantago* sp.), and Kentucky bluegrass (*Poa pratensis*).

Ruderal vegetation is present in several areas on the project site. Vegetation is sparse in these areas and includes species such as soft chess brome (*Bromus hordeaceus*), yellow starthistle (*Centaurea solstitialis*), lotus (*Lotus* sp.), white sweetclover (*Melilotus alba*), (*Baccharis*

*pilularis*), curly dock (*Rumex crispus*), Kentucky bluegrass, clover (*Trifolium* sp.), and chickory (*Rafinesquia californica*).

Chaparral habitat is found in several areas on the project site. Vegetation in these areas is extremely dense, and is dominated by several shrubs such as toyon (*Heteromeles arbutifolia*), yerba santa (*Eriodictyon* sp.), scotch broom, and manzanita.

### **Discussion**

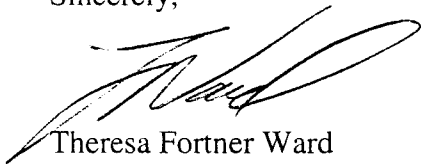
Aquatic habitats on the project site and within one mile of the site are suitable habitat for this species. However, several factors argue against the possibility that a remnant population of RLF is present.

- There are no recent records for CRLF in Nevada County and known records for this species occur in different watersheds than Upper Bear Creek.
- The presence of bullfrogs in the ponds would make it difficult for a population of red legged frogs to survive, though these species are known to co-exist in coastal populations of RLF over 100 miles away. The combination of predatory fish and bullfrogs is particularly problematic for RLF.
- Extensive modification of site hydrology on and off-site, modification of site topography, and human use of the site. The site was used intensively in the past as a saw mill.
- The ponds are of recent construction (see attached oversized figure, USGS map history).

However, we understand the high level of concern with CRLF in the Sierra Foothills. If it is the determination that CRLF are an issue in the vicinity of this project, we would like to set up an informal meeting with Service staff to discuss this project as soon as possible.

Please contact me at (916) 782-1011 if you have any questions or comments regarding this submittal. I appreciate your assistance in this matter.

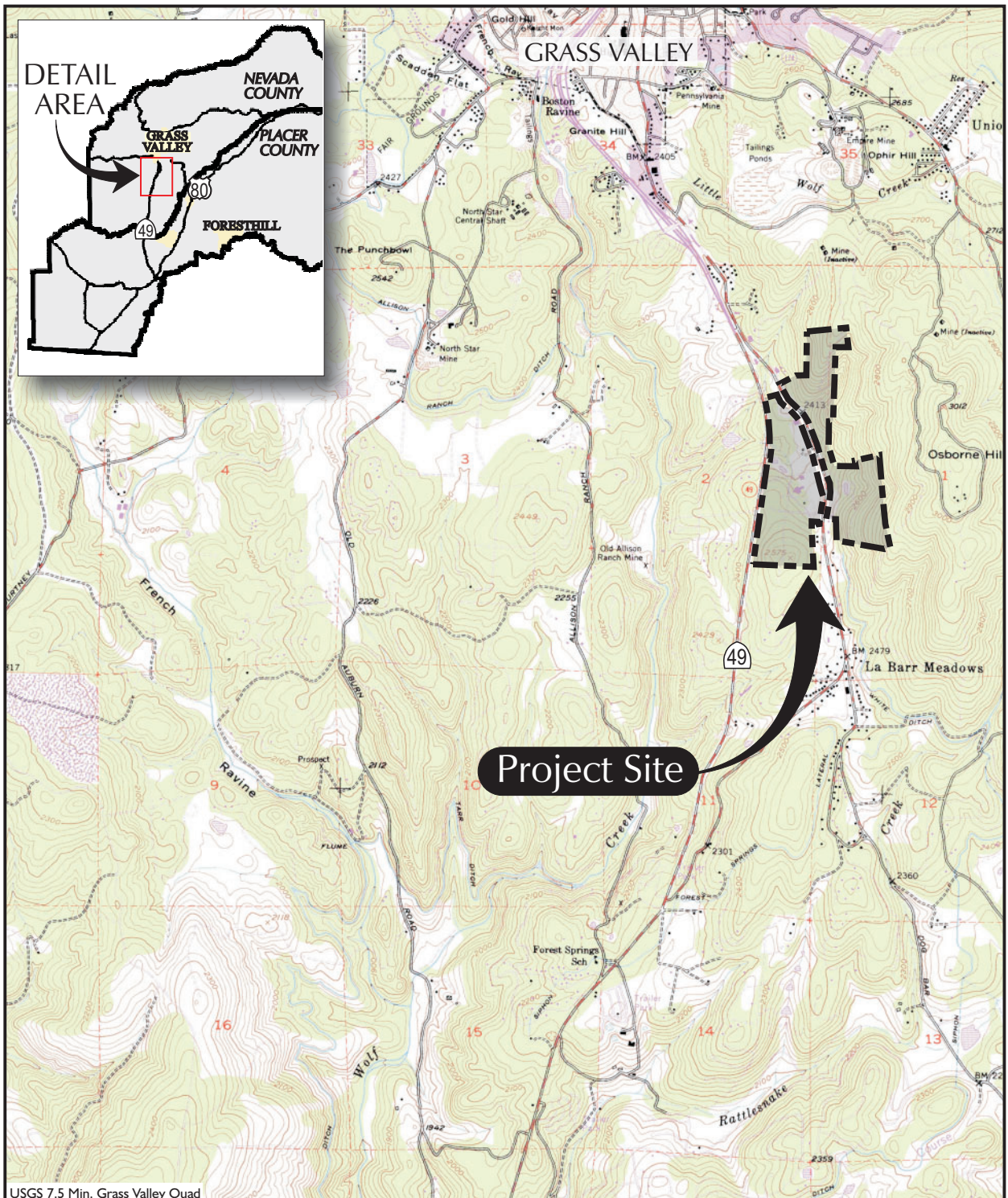
Sincerely,



Theresa Fortner Ward  
Regulatory Specialist/Associate Biologist

c: Steve Dolim, Catlin Properties, Inc.  
Demar Hooper, Taylor, Hooper & Wiley





### SITE AND VICINITY

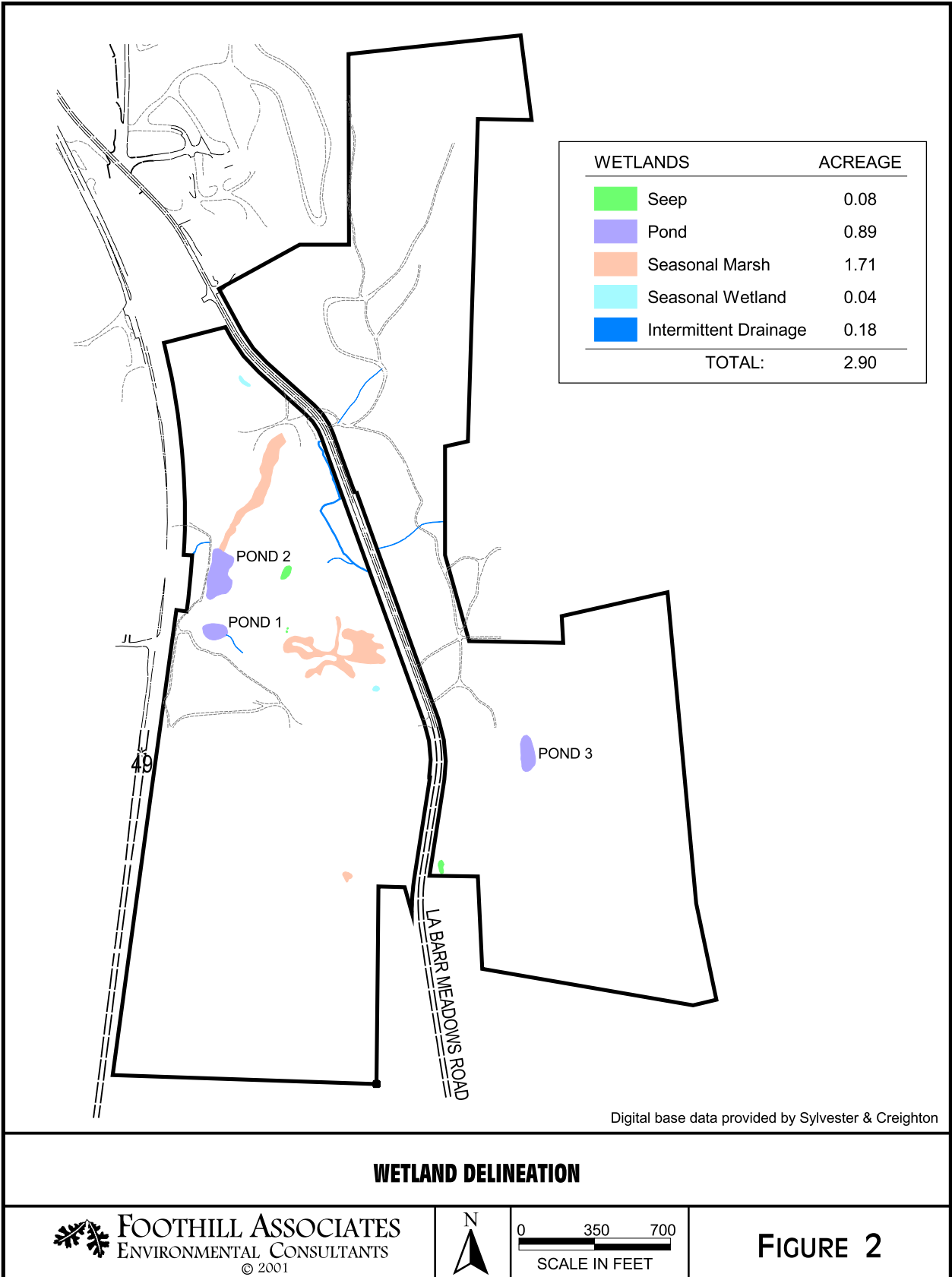


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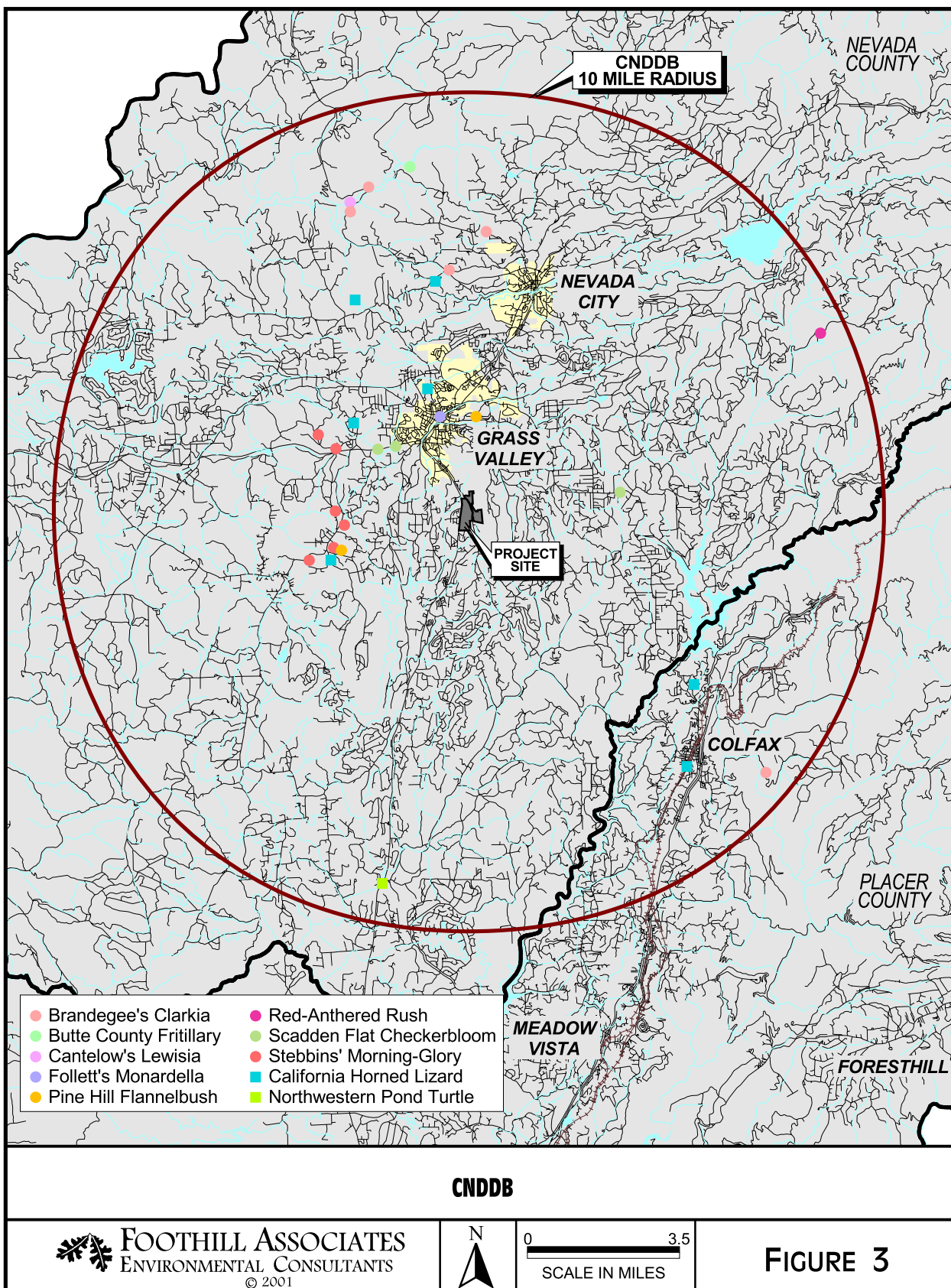


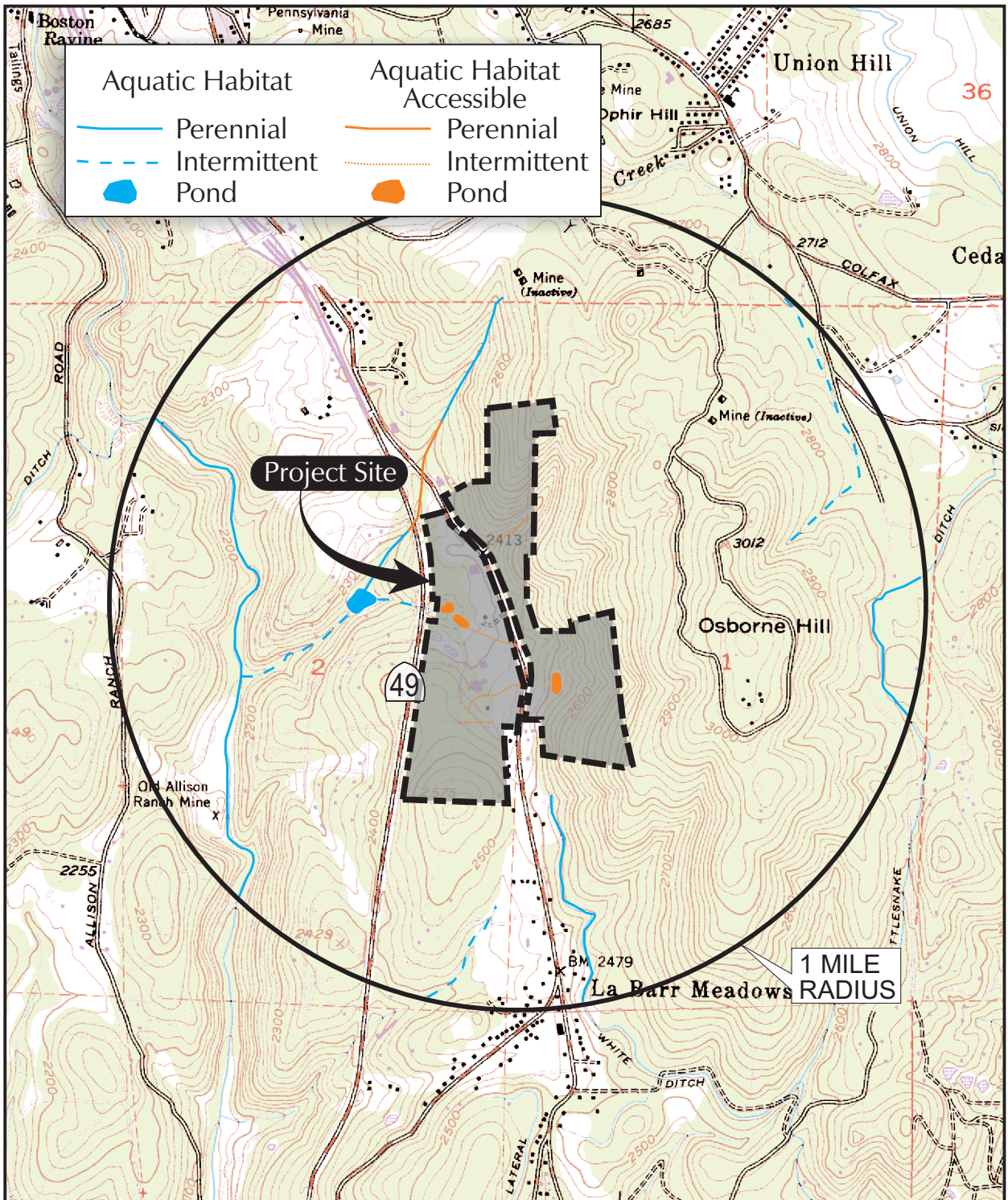
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**FIGURE 1**









## AQUATIC HABITATS



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**FIGURE 4**



