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19 June 2014

Chris Perri
Apple Homes Development, Inc.
16 Sherman Court
Scotts Valley, CA 95066

RE: APN 022-162-69 at Scotts Valley Drive & Mt. Hermon Road in Scotts Valley, CA
Presence-Absence Survey Report for the Endangered Mount Hermon June Beetle

Dear Chris:

This letter reports on the findings of my presence-absence survey for the endangered Mount Hermon June beetle (MHJB) at the above-noted property. Six males of the MHJB were observed during my one-night survey at your property. The remainder of this letter provides pertinent background information on the MHJB and describes my survey methods, findings, and conclusions, plus recommendations for project planning.

Background Information.

This beetle is known scientifically as *Polyphylla barbata* (Coleoptera: Scarabaeidae) and was described in 1938 from specimens collected on Mount Hermon in Santa Cruz County. Of the 28 species of *Polyphylla* that occur in North America, the MHJB has one of the most restricted geographic ranges. It is found in association with Zayante sandy soils in the Felton-Scotts Valley-Mt. Hermon-Ben Lomond area of Santa Cruz County, CA. More recently, it has also been found at Bonny Doon and some other outlying areas from this core area of Zayante sandhills. Due to the beetle's limited geographic range and the historical and anticipated loss of habitat within its limited range, the U.S. Fish & Wildlife Service (USFWS) recognized the MHJB as an endangered species in 1997, pursuant to provisions of the federal Endangered Species Act of 1973 (FESA).

The Zayante sandhills support several indigenous plant communities that are preferred by the MHJB, including Silverleaf Manzanita Chaparral with Ponderosa pine, Sand Chaparral, mixed Silverleaf Manzanita Chaparral, Ponderosa pine forest, dense sand parkland and open sand parkland. These plant communities often intergrade to become a mosaic mixture of Ponderosa pine, chaparral, and sparsely-vegetated areas of grasses, forbs and subshrubs.

In most years, adults of the MHJB are active from about mid-May through mid-August. Males fly each evening for approximately one hour after dusk in search of females that are flightless and remain at mouths of their earthen burrows. Observations of flying males suggest that most flight activity occurs within a few feet above ground.

Although specific life history information for the MHJB is unknown, information from closely related species suggests that most of the beetle's life cycle is spent as a larva or grub that lives below ground and is a root feeder, presumably on one or more of the plants that are indigenous to the sand parkland vegetation. Larval development is believed to require at least one year, and perhaps as long as two or three years.

Survey Methods.

The USFWS considers three nights of surveys, conducted throughout the MHJB's summer activity period, necessary to demonstrate absence of the beetle at a particular location. Males of MHJB are attracted to black lights, so black light traps operated between about 8:30 and 10:00 pm is the standard procedure used to determine presence or absence of MHJB at new survey locations. A one-night survey at your property was performed on the evening of June 18, 2014. I did not undertake the second or third surveys.

Your property measures approximately 2.264 acres. Soils at your property are identified by Bowman and Estrada (1980) as Elder sandy loam and Pfeiffer gravelly sandy loam. Zayante sands, which are known to support vegetation characteristic of the sandhill habitats and MHJB occur near your property and may even transition onto your property.

Six battery-operated, black light traps were placed in different portions of the property. All traps were placed at ground level in an effort to attract any MHJBs that were on-site, but to minimize the broadcast of light that could have attracted beetles from adjacent parcels. All traps were operated from about 8:15 to 10:30 pm.

Two additional traps were placed at the peak of Mount Hermon. Because this is a known location for the MHJB, it was used as a control to demonstrate that the endangered beetle was active on each of the survey nights.

Survey Results.

Based on the resident native plants, I suspect your property originally supported Ponderosa Pine forest. However, invasive and landscape plants have colonized and degraded the native habitat.

Six males of the endangered Mount Hermon June beetle were trapped at your property, with one male in each of the six traps that were deployed. On the same evening, 17 MHJBs were observed in the two control traps at the peak of Mount Hermon. These survey findings indicate that despite the degraded habitat conditions, the MHJB occurs at your property.

Temperatures during my survey ranged from 67°F to 59°F. These temperatures are well within the range that MHJB is known to be active.

Conclusions and Recommendations for Project Planning.

Because the endangered MHJB occurs at your property, a permit for incidental take of the beetle will be required by the USFWS to comply with the FESA. If your project involves more than 15,000 sq. ft. of ground disturbance, it will not qualify for inclusion under the group permit administered by the City of Scotts Valley and Santa Cruz County. Rather, an individual incidental take permit would be required. To obtain and individual incidental take permit a habitat conservation plan must be prepared and the most effective form of conservation to secure this permit would be the purchase of conservation credits from the Zayante Sandhills Conservation Bank. I suggest that you check with Mr. Chad Mitcham of the Watsonville office (actually a local branch of the Ventura office) of USFWS to confirm this. He can be reached at (805) 512-6805.

Reference Cited.

Bowman, R.H. and D.C. Estrada. 1980. Soil Survey of Santa Cruz County, California. US Dept. of Agriculture, Soil Conservation Service. 148 pp. & maps.

If you have any questions about my survey or need further assistance, please contact me.

Sincerely,

Richard A. Arnold

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President