Attachment #10

From: James Paulus [mailto:j_paulus@msn.com]
Sent: Friday, April 03, 2015 11:11 AM
To: Jen Daugherty; John Hooper
Subject: Bio resources report for Mountainside

Hello Jen,

Thank you for the opportunity to clarify statements made in the draft report for Mr. Hooper's property at 413 Rainbow Lane. I have attached the revised report, dated April 3, which replaces the March 31 draft. While the overall conclusion of no habitat for Rare, Threatened, and Endangered species is unchanged in this revised draft, changes of substance have been made at page 3, paragraph 4, and at page 5, last two paragraphs. Also, a few typos have been fixed.

Please call or write if you have any questions regarding these findings.

Yours truly,

Jim Paulus
(760) 937-7177

Assessment of Biological Resources at
413 Rainbow Lane, Mammoth Lakes

April 3, 2015

Jim Paulus, Ph.D.

A literature review and a field survey to inventory biological resources were performed at 413 Rainbow Lane, which is an undeveloped property within the Town of Mammoth Lakes, Mono County, California. The proposed development of this lot to provide housing would remove most of the existing (remnant) vegetation. The purpose of the March 2015 assessment was to determine whether any plant communities, plant species, or wildlife species that are considered sensitive are currently present, and whether the site has any potential value as habitat for sensitive species.

Based upon a review of CNDDB records for the USGS Old Mammoth and Mammoth Mountain quadrangles (CDFW, 2015a), the Town's current list of potentially occurring sensitive species for this area (Town of Mammoth Lakes, 2007), and the level of current disturbance and isolation of the site within an urbanized setting, a total of four plant species (Table 1) and six animal species (Table 2) have some potential to occur as remnant or relic populations. For this assessment, potentially occurring plant species were considered to be "sensitive" if they have current state or federal status as rare, threatened or endangered (CDFW, 2015b), or are included in the list of CNDDB special plants (CDFW, 2015c), or are included by the California Native Plant Society in their inventory of sensitive California plants (CNPS, 2001, 2015). Wildlife that are "sensitive", as used in this report, are listed or considered candidates for state or federal listing as threatened or endangered (CDFW, 2015d), or meet definitions of rare or endangered under the California Environmental Quality Act (Section 15380 CEQA Guidelines), or are listed in the CNDDB list of special animals (CDFW, 2015e).

Vegetation. There are no aquatic, riparian, meadow, or wetland plant associations embedded within the upland forest of the site, and no depressed areas that could pond or maintain elevated soil moisture into the normal growing season. Sensitive plants that regionally rely on wet habitats, including Lemmon's milkvetch (*Astragalus lemmonii*), various moonworts (*Botrychium ascendens*, *B. crenulatum*, *B. lunaria*, and *B. minganense*), subalpine fireweed (*Epilobium howellii*), King's ivesia (*Ivesia kingii*), seep kobresia (*Kobresia bellardii*), Hockett Meadows lupine (*Lupinus lepidus* var. *culbertsonii*), scalloped-leaved lousewort (*Pecidularis crenulata*), and flatleaf pondweed (*Potamogeton robbinsii*) would be very unlikely to occur due to lack of suitable mesic habitat. Water birch (*Betula occidentalis*), the dominant plant of the sensitive riparian community Water Birch Riparian Scrub, does not occur on or near the site.

Pumice is present in the soil profile, but no depressed or otherwise internally drained, pumice-dominated, open areas or "flats" that might signal the sensitive upland community Mono Pumice Flats were found. Local occurrences of the sensitive species Mono milkvetch (*Astragalus monoensis*) and Mono Lake lupine (*Lupinus duranii*) are generally restricted to Mono Pumice Flats or similar open areas with nutrient-poor pumice soils. While Mono Lake lupine is not found in open forest or otherwise outside of these flats (reported occurrences of this species in forest slope habitat in Mammoth Lakes have been recently shown to invariably be Gray's lupine, *Lupinus grayi*), there is some possibility that Mono milkvetch could occur based upon known populations at disturbed roadsides in forest habitats (CDFW, 2015a).

Table 1. Rare plant species that potentially could occur at the proposed project. Flowering period data is from CNPS (2015). A key to the rank or status symbols follows the table. NL = not listed.

Scientific Name Common Name Life Form	Rank or Status				Habitat	Flowering Period
	USFWS	CDFW	CNPS	NDDB		
Astragalus johannis-howellii Long Valley milkvetch herbaceous perennial	NL	R	1B.2	S2	sagebrush scrub	June-August
Astragalus monoensis Mono milkvetch herbaceous perennial	NL	R	1B.2	S2	pumice flats, scrub, forest	June-August
Boechera pinzliae Pinzl's rockcress herbaceous perennial	NL	NL	1B.3	S1	alpine scree, subalpine forest	July
Hulsea brevifolia short-leaf hulsea herbaceous perennial	NL	NL	1B.2	S3	coniferous forest, usually sandy	May-August

Rank or status, by agency:

USFWS = U.S. Fish and Wildlife Service under the Endangered Species Act (CDFW, 2015b):

E = Endangered

CDFW = California Department of Fish and Wildlife listings under the Native Plant Protection Act and California Endangered Species Act (CDFW, 2015b):

R = Rare

CNPS = California Native Plant Society listings (CNPS, 2001, 2015):

1B = rare and endangered in California and elsewhere,

2B = rare, threatened or endangered in California, but more common elsewhere,

4 = plants of limited distribution – a watchlist.

Threat Code extensions:

.1 is Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat,

.2 is Fairly endangered in California (20-80% of occurrences threatened),

.3 is Not very endangered in California (< 20% of occurrences threatened or no current threats known).

NDDB = California Natural Diversity Data Base rankings by the CDFW (CDFW, 2015c)

S1 = **Critically Imperiled** - Critically imperiled in the state because of extreme rarity (often 5 or fewer populations) or because of factor(s) such as very steep declines making it especially vulnerable to extirpation from the state,

S2 = **Imperiled** - Imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation,

S3 = **Vulnerable** - Vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.

Davidson's sedum (a.k.a. Pine City sedum), which has been cited as occurring in the Mammoth Lakes area (Town, 2007), is now recognized as *Sedum nevium*, a species strictly of a few Mojave Desert mountain ranges. The local collection from the late 19th century attributed to Pine City is now thought to have been a mis-labeled specimen, and occurrence locally is very unlikely. Pinzl's rockcress (*Boechera pinzliae*, syn. *Arabis pinzliae*) is considered to be a species of alpine rock scree at elevations greater than 3000 m. Although this habitat does not occur on the site, Pinzl's rockcress was included in the search list for the March 2015 field survey (Table 1).

Vegetation occurring at the proposed project was inventoried on March 27, 2015, by walking a series of parallel transects spaced at 25 ft intervals across the entire property. The botanical portion of the survey was floristic, striving to identify every species that was encountered. Identifications were completed to the level of taxa necessary to distinguish the occurring plants from potentially occurring sensitive species (Table 1), using classification and nomenclature of The Jepson Manual (Baldwin, *et al.*, 2012).

Mixed Coniferous Forest (an *Abies concolor – Pinus contorta* ssp. *murrayana* association) is the only plant community that occurs on the site. The forest is highly disturbed, as reflected by a near total absence of the subcanopy shrub and herbaceous strata that typify nearby examples outside Town limits. It is bounded on all sides by housing and resort developments to a degree that access to the site by any sensitive wildlife is now highly unlikely. The tree canopy closure is 10-20%. The lower strata are sparse (<< 1% total living cover, even at tree canopy gaps) and non-diverse, and the herbaceous assemblage includes weedy populations of non-native plants (Appendix A). This community type is common and widespread in Mono County.

No populations of sensitive plants were encountered during the March 2015 survey. While this timing is well in advance of the periods of anthesis for potentially occurring sensitive species (Table 1), leaf and growth form characters were consistently available to allow confidence in identification of each taxa present. No plants exhibited compound leaves, as would be expected of Long Valley milkvetch and Mono milkvetch. None of the occurring perennial herbs exhibited leaves in a basal rosette growth form, which would be expected if Pinzl's rockcress were to occur, and no other members of the distinctive genus *Boechera* were present. Finally, no perennials bearing woolly or glandular-haired spathulate leaves were found, as would be expected if short-leaf hulsea occurs. Relic populations of any sensitive plant species would be very unlikely due to the intensity of the ongoing disturbance of the understory, and no habitat for the potentially occurring species was found. It is concluded that only common plant species will be affected by the proposed project.

Wildlife. The upland forest habitat that is currently available for wildlife is isolated and highly disturbed. It is overall monotonous, with no microhabitat variations or surface waters that could provide locally unique or important resources for wildlife. Caves, standing snags, and other structural features that could harbor roosting bats such as sensitive myotis bats (*Myotis evotis*, *M. yumanensis*), Townsend's big-eared bat (*Corynorhynus townsendii townsendii*), pallid bat (*Antrozous pallidus*) and red bat (*Lasiurus blossevillii*) are not present. The site has no seasonal or perennial aquatic features, and is located more than one mile distant from the nearest reliable aquatic habitat (Mammoth Creek riparian woodlands and meadows), thereby precluding any occurrences of the sensitive Owens Valley springsnail

(*Pyrgulopsis owensensis*), Wong's springsnail (*Pyrgulopsis wongi*), Owens tui chub (*Gila bicolor snyderi*), Owens sucker (*Catostomus fumieventris*), Owens speckled dace (*Rhynichthys osculus* ssp. 2, spp. 5), Yosemite toad (*Anaxyrus canorus*, syn. *Bufo canorus*), Sierra Nevada yellow-legged frog (*Rana sierrae*, formerly incl. *R. muscosa*), and Mt. Lyell shrew (*Sorex lyelli*). There is no habitat for sensitive birds that nest in these settings, including northern harrier (*Circus cyaneus*) and willow flycatcher (*Empidonax traillii*). The riparian denning habitat of Sierra Nevada mountain beaver (*Aplodontia rufa californica*) is not present.

Table 2. Special status wildlife species that could potentially occur at the proposed project. Key to status codes (CDFW, 2014e) is given below, NL = not listed.

	status		
species	**state**	**federal**	**habitat**
birds			
Accipiter gentiles northern goshawk (nesting)	SSC	NL	dense coniferous forest
Aquila chrysaetos golden eagle (nesting)	WL FP	BCC	tall trees, often open habitats
Haliaeetus leucocephalus bald eagle (nesting)	E	(delisted)	tall trees, usually near lakes, rivers
Strix nebulosa great grey owl (nesting)	E	NL	dense coniferous forest
mammals			
Martes caurina sierrae Sierra marten	SSC CT	CT	dense coniferous forest
Pekania pennanti fisher	SSC	NL	dense coniferous forest

1. Rank or status, by agency:

State = State of California under the California Endangered Species Act (CDFW, 2015e)
SSC = Species of Special Concern,
WL = Watchlist Species,
FP = Fully Protected,
CT = Candidate Threatened.

Federal = U.S. Fish and Wildlife Service under the Endangered Species Act (CDFW, 2015d).
BCC = Birds of Conservation Concern,
CT = Candidate Threatened.

The occurring forest is unsuitable for use by greater sage grouse (*Centrocercus urophasianus*), and recently proposed Critical Habitat for this species of treeless sagebrush scrub habitats does not approach the site. The property's small size, isolation and lack of understory cover effectively remove it

from the local resident and migratory mule deer (*Odocoileus hemionus*) range, and loss of the forest fragment will have no substantial affect upon the movements of these animals. Similarly, secretive animals of large habitat areas typically far outside zones of intense human development, including Sierra Nevada bighorn sheep (*Ovis canadensis*), Sierra Nevada red fox (*Vulpes vulpes necator*), and wolverine (*Gulo gulo*) would not use this site due to its isolation amid an urbanized setting.

The entire site was searched for evidence of current usage by wildlife on March 27, 2015. Trees were searched for evidence of current nesting or observations of associated avian territorial behavior, finding none. While sensitive predatory birds that have fidelity to long-term nesting sites, such as bald eagle (*Haliaeetus leucocephalus*), golden eagle (*Aquila chrysaetos*), California spotted owl (*Strix occidentalis occidentalis*), great grey owl (*Strix nebulosa*), northern goshawk (*Accipiter gentiles*) and prairie falcon (*Falco mexicanus*) may transiently perch on the tall pines of this site, no large raptor nests are present. No owl packets or whitewash areas were located beneath these trees. The only birds observed during the survey were Steller's jays (*Cyanocitta stelleri*). No bank swallows (*Riparia riparia*) or examples of their typical colonial habitat were observed. The only evidence of use by mammals was abundant domestic dog sign and bear scat. Downed tree bole and standing hollow snag habitats, which would be required for denning American marten (*Martes caurina sierrae*, formerly incl. *M. americana*) or fisher (*Pekania pennanti* West Coast DPS, formerly incl. *Martes pennanti pacifica*) are completely absent from the remnant stand. Furthermore, all woody debris such as would typify native habitat have been removed. No rodent-sized holes or other den excavations were found.

It is concluded that sensitive wildlife does not occur at the property. There is no evidence that sensitive species with site fidelity such as nesting raptors now use or ever used this area. Over time, the park-like domestication of this site and urbanization of the adjacent landscape in all directions has made it very unlikely that potentially occurring sensitive mammals would reside within or have access to the proposed project site. Therefore, it is my opinion that no habitat for any potentially occurring sensitive wildlife is present.

Conclusions. The pre-construction literature review and field survey indicate that it is very unlikely that any sensitive plant and wildlife will be negatively affected by the proposed project at 413 Rainbow Lane. The site's vegetation is currently highly disturbed, and no longer functions naturally to provide habitat for any of the area's potentially occurring sensitive species. The property is surrounded by developments such as housing and a ski resort, thereby isolating the occurring forest fragment from expansive native habitats at the public lands outside the Town of Mammoth Lakes. As such, the project would be an example of infilling within a largely urbanized environment. The late March 2015 field survey determined that native understory plant populations have been largely removed, creating a park-like, open appearance, and only common species are currently present. Furthermore, none of the region's potentially occurring sensitive wildlife species were detected during the March 2015 survey, and special habitat features that might make this forest fragment important to maintaining local wildlife population viability are not present.

References

Baldwin, BG, Goldman, DH, Keil, DJ, Patterson, R, Rosatti, TJ, and DH Wilken, (eds.), 2012. The Jepson Manual: Vascular Plants of California, 2nd Ed. University of California Press, Berkeley.

California Department of Fish and Wildlife, Natural Diversity Database, 2015a. CNDDB Rarefind 5 search results for USGS Old Mammoth quadrangle. March 18. CDFW Natural Heritage Division, Plant Conservation Program, Sacramento.

California Department of Fish and Wildlife, Natural Diversity Database, 2015b. State and Federally Listed Endangered, Threatened, and Rare Plants of California (revised January 2015). Resource Management and Planning Division, Biogeographic Data Branch, Sacramento.

California Department of Fish and Wildlife, Natural Diversity Database, 2015c. Special Vascular Plants, Bryophytes and Lichens List (revised January 2015). The Resources Agency, State of California, Sacramento.

California Department of Fish and Wildlife, Natural Diversity Database, 2015d. State and Federally Listed Endangered, Threatened, and Rare Animals of California (revised March 2015). Resource Management and Planning Division, Biogeographic Data Branch, Sacramento.

California Department of Fish and Wildlife, 2015e. California Natural Diversity Database: Special Animals List (revised March 2015). The Resources Agency, State of California, Sacramento.

California Native Plant Society, 2001. Inventory of Rare and Endangered Plants of California, 6th Edition. Special Publ. 1, California Native Plant Society, Sacramento.

California Native Plant Society, 2015. Inventory of Rare and Endangered Plants (online edition, v7). California Native Plant Society. Sacramento, CA. http://www.cnps.org/inventory

Appendix A. List of plant species observed at 413 Rainbow Lane on March 27, 2015.

species	common name	habit
Pinaceae		
Abies concolor	white fir	NT
Pinus contorta ssp. *murrayana*	lodgepole pine	NT
Pinus jeffreyi	Jeffrey pine	NT
Pinus monticola	western white pine	NT
Asteraceae		
Dieteria canescens	hoary aster	NPH
Erysimum perenne	western wallflower	NPH
Brassicaceae		
Descurainia sophia	tansy mustard	IAH
Lepidium perfoliatum	clasping pepperweed	IAH
Chenopodiaceae		
Salsola tragus	Russian thistle	IAH
Ericaceae		
Arctostaphylos nevadensis	pine mat manzanita	NS
Arctostaphylos patula	green manzanita	NS
Polygonaceae		
Eriogonum nudum	nude buckwheat	NPH
Eriogonum wrightii var. *subscaposum*	Wright's buckwheat	NPH
Polygonum aviculare ssp. *depressum*	prostrate knotweed	IAH
Cyperaceae		
Carex rossii	Ross' forest sedge	NPGL
Poaceae		
Stipa hymenoides	western ricegrass	NPG
Stipa occidentalis	western needlegrass	NPG

key to growth habit codes:

A	annual
G	grass
GL	grass-like
H	herb
HS	halfshrub
I	introduced
N	native
P	perennial
S	shrub
T	tree

Dr. Jim Paulus, Biologist

March 25, 2015

Jim Paulus received his doctorate of science degree in the field of biology from the University of California, Santa Cruz. He was trained in botany by the classical phylogenist Dr. Patrick Elvander and completed studies of California's natural communities and ecology in the Cooper tradition under Dr. Jean Langenheim. Dr. Paulus' research in natural plant communities has been applied in the design of sustainable agricultural systems, and his work has received recognition at the national level by the Pew Charitable Trust and American Association for the Advancement of Science. Most recently, his research on the uses and cultivation of native vegetation has been successfully applied to solving dust pollution at Owens Lake in Inyo County, California.

During the period 1994 to 2006, Dr. Paulus served as the Director of Biological Resources Monitoring for Owens Lake dust mitigation, a project area of over 100 square miles. During this time, he was responsible for and served as field surveyor for 100 to 250 pre-construction botanical, nesting bird, and sensitive wildlife surveys per year. Focused surveys were routinely conducted for many nesting shorebird species and raptors, bats, Owens Valley vole, and sensitive arthropods. In Mono County, Jim has established and completed many programs that began with pre-construction surveying and ultimately fulfilled multi-year Mitigation Monitoring and Reporting Plan protocol surveying and reporting requirements. Target species in these restoration situations have included crowned muilla, Inyo County star tulip, willow flycatcher, yellow warbler, American badger, and mule deer. As biologist for Mono County, Dr. Paulus has completed pre-construction surveys and reporting for these potentially occurring species and others.

For the last 19 years, Dr. Paulus has developed an expertise in identifying and managing the often sensitive biological resources of the Eastern Sierra Nevada. The environmental consultant, biological survey, and vegetation community mapping services that he has provided have aided governmental agencies including the County of Mono and the U.S. Forest Service, BLM, and Caltrans in Bishop. He has authored revegetation plans, biological resource monitoring programs, and streambed alteration permit conditions. He completed training in jurisdictional determination methods for Waters of the United States in 1994, then added 30 post-graduate units of completed education in important wetlands regulatory changes such as the SWANC decision and adoption of the Arid West Supplement, and has performed 19 medium and high profile delineations of wetland resources. This includes more than 5000 acres delineated in the Owens Valley alone. To date, Jim has written more than 200 technical reports that document plant and wildlife resource presence or absence in the Eastern Sierra. His authoritative biological resource overviews (usually Biological Assessment documents) have been applied to projects ranging from small (e.g., communication tower sites) to large (e.g., a power plant in Mono County), and his knowledge of the local biota and understanding of relevant environmental issues have been captured in many successful project EIR/EIS efforts under CEQA and NEPA.

The following list is representative of reports that Dr. Paulus has prepared for projects in the Eastern Sierra region. He also performed all of the field work required for these efforts:

Biological Assessments

Paulus, J, 2008. Assessment of biological resources for the Airport Utility Underground Project at Mammoth Yosemite Airport. Report dated October 30, 2008, prepared for Public Works Department, Town of Mammoth Lakes, California.

Paulus, J, 2008. College Connector Trail Project assessment of biological resources. Report dated November 6, 2008, prepared for the Town of Mammoth Lakes, California.

Paulus, J, 2009. Meridian Boulevard Expansion Project assessment of biological resources. Report dated January 30, 2009, prepared for the Town of Mammoth Lakes, California.

Paulus, J, 2011. Natural Environment Study (NESMI): Sierra Park and Sierra Nevada Sidewalks Project #SRTSL-5439(022). Report and Permit Application dated April 22, 2011, prepared for Caltrans, District 9 Bishop and Town of Mammoth Lakes, California.

Paulus, J, 2011. Assessment of biological resources: M-1 Replacement Power Plant at Casa Diablo, Mono County. Report dated December 20, 2011, prepared for Environmental Management Associates, Brea, California.

Paulus, J, 2013. West Portal Wireless Telecommunications Facility assessment of biological resources. Report dated June 28, 2013, prepared for County of Mono Community Development Department, Mammoth Lakes, California. (also revegetation plan, pre-construction surveys)

Paulus, J, 2013. June Lake Private Lands Hazardous Fuels Reduction Project assessment of biological resources. Report dated August 26, 2013, prepared for June Lake Fire Protection District and Inyo National Forest, Mammoth Ranger District. (pre-thinning surveys also)

Wetland Delineations

Paulus, J, 2000. Delineation of wetlands for the Eastern Sierra Interagency Visitor Center Expansion Project, Lone Pine, California. Report dated December 15, 2000, prepared for U.S. Army Corps of Engineers, Ventura, California.

Paulus, J, 2000. Delineation of wetlands for Lots 4, 5 and 6, Sierra Valley Site Tr. 2, Mammoth Lakes, California. Report dated July 30, 2000, prepared for L.K. Johnston and Associates, Mammoth Lakes, California.

Paulus, J, 2006. Delineation of Waters of the State of California and Wetlands within the Adobe Ponds Project Area, Adobe Ranch, Mono County, California. Report dated July 10, 2006, prepared for Greenbridges LLC, Bakersfield.

Paulus, J, 2008. Bear Lake Impoundment Project Determination of Jurisdictional Status. Report dated October 5, 2008, prepared for U.S. Army Corps of Engineers, Ventura, California.

Surveys for Sensitive Species

Paulus, J, 2005. Birchim CSD proposed well site assessment of wildlife resources. Report dated August 24, 2005, prepared for the Bauer Environmental Services, Inc., Irvine, California.

Paulus, J, 2013. Botanical report of the Goat Pit gravel extraction site. Draft report dated June 11, 2013, prepared for Mono County Community Development Dept., Mammoth Lakes.

Paulus, J, 2013. Assessment of special status wildlife occurrence at the County of Mono mine site at Benton. Report dated July 30, 2013, prepared for the Mono County Community Development Dept., Mammoth Lakes, California.

Paulus, J, 2014. Botanical survey of the Waterford Gap Project site. Report dated August 7, 2014, prepared for Town of Mammoth Lakes, California.

Personal references are available for the above projects, and for work completed in the Eastern Sierra Nevada ranging back into the early 1990's. For additional past project details, and for personal references, Jim can be reached at j_paulus@msn.com. General references:

Ted Schade Great Basin Unified Air Pollution Control District, Bishop (760) 872-8211
Mr. Schade, Director, supervised Dr. Paulus' work in the Owens Valley for 13 years.

Scott Burns Mono County Planning Dept. (760) 924-1800
Mr. Burns, Planner, directs an agency that has used Dr. Paulus' services since 1996

Larry Nickerson Mammoth-Pacific Geothermal Energy (760) 924-4774
Mr. Nickerson, Plant Supervisor, has used Dr. Paulus' environmental services since 2000

To contact Jim Paulus;	Eastern Sierra	Central Valley
	(760) 937-7177	(559) 683-4058
	PO Box 1605	PO Box 2657
	Mammoth Lakes, CA 93546	Oakhurst, CA 93644