North State Resources, Inc.

TECHNICAL MEMORANDUM

Date: January 7, 2014

To: Benchmark Resources
Attn: Mr. Andrew White
2515 East Bidwell Street
Folsom, CA 95630

From: North State Resources, Inc.

Subject: Moody Flats Project: 9-Quad CNDDB Search.

Attached is a report from a recent query of the California Department of Fish and Wildlife Natural Diversity Database (CNDDB) for the proposed Moody Flats project (Attachment A). Specifically, this report shows the results of what is called a "9-quad search;" which consists of a CNDDB search including the USGS quadrangle in which the proposed project is located, and all adjacent USGS quadrangles. This type of search is typically used to query the CNDDB for records near, and in the vicinity of an area of interest.

The CNDDB query we previously conducted for the Moody Flats Biological Resources Assessment Report was a single quadrangle search, which consisted of a search of the USGS quadrangle in which the proposed project is located. We relied on other databases and related information (e.g., USFS), and our recent/on-going experience in the project vicinity (which includes CNDDB searches of all USGS quadrangles in the vicinity – well beyond a 9-quadrangle search) during our review of existing information for the assessment. The attached 9-quad search and analysis was conducted based on a CDFW comment to the DIER, to verify that there are no outstanding CNDDB species occurrences that should be included in our biological analysis for the project, and to conduct an updated CNDDB search.

The 9-quad search resulted in 48 element occurrences (i.e., species and special habitats) (California Natural Diversity Database 2013). Fourteen of these occurrences[1] include species and/or special plant communities that do not meet the special-status definitions and criteria set forth in the biological resource assessment. Of the remaining 34 species, eight[2] have no potential to occur in or near the 3M property or project area due to one or more reasons: the project area is outside of the known or suspected species geographic range; the project area is outside the known species elevation range; or the project area does not contain potential habitat for the species. That leaves 26 species remaining from the 9-quad query results; all of which were included in our biological analysis and Biological Resources Assessment Report. Our biological analysis also includes 45 species not included in the CNDDB 9-quad search results, illustrating one of the many reasons not to rely too heavily on the CNDDB alone to develop a list of potentially occurring special-status species for a given project.

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[1] Antioch Dunes anthicid beetle, Sacramento anthicid beetle, Great Valley Cottonwood Riparian Forest, Great Valley Valley Oak Riparian Forest, Great Valley Willow Scrub, Oregon shoulderband, kneecap lanx, silver-haired bat, California linderiella, western pearlshell, Klamath sideband, Shasta sideband, Yuma myotis, and Shasta chaparral.

[2] Big-scale balsamroot, Sulphur Creek Brodiaea, American peregrine falcon, Boggs-lake hedge-hyssop, osprey, Ahart's paronychia, purple martin, and bank swallow.

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In summary, all of the plant and wildlife species included in the 9-quad query results that meet the special-status criteria defined in the Biological Resources Assessment Report and/or potentially occur in the project area or vicinity have been included in the biological analysis conducted for the proposed project.

References

California Natural Diversity Database. 2013. California Natural Diversity Database [Internet]. California Department of Fish and Wildlife, Sacramento, California, USA; [November 25, 2013]. Available from: https://map.dfg.ca.gov/rarefind/view/RareFind.aspx.

ATTACHMENT A

Moody Flats Project
9-Quad CNDDB Query Report

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad is (Project City (4012263) or Bohemotash Mtn. (4012274) or O'Brien (4012273) or Minnesota Mtn. (4012272) or Bella Vista (4012262) or Palo Cedro (4012252) or Enterprise (4012253) or Redding (4012254) or Shasta Dam (4012264))

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Ageratina shastensis Shasta ageratina	G2 S2	None None	Rare Plant Rank - 1B.2	2,000 2,000	15 S:1	1	0	0	0	0	0	1	0	1	0	0
Agrostis hendersonii Henderson's bent grass	G2Q S2	None None	Rare Plant Rank - 3.2	480 884	26 S:9	1	1	1	0	0	6	1	8	9	0	0
Anthicus antiochensis Antioch Dunes anthicid beetle	G1 S1	None None		700 700	6 S:1	0	0	0	0	0	1	1	0	1	0	0
Anthicus sacramento Sacramento anthicid beetle	G1 S1	None None	IUCN_EN-Endangered	700 700	13 S:1	0	0	0	0	0	1	1	0	1	0	0
Balsamorhiza macrolepis big-scale balsamroot	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive USFS_S-Sensitive	625 625	43 S:1	0	1	0	0	0	0	0	1	1	0	0
Branchinecta lynchi vernal pool fairy shrimp	G3 S2S3	Threatened None	IUCN_VU-Vulnerable	400 560	611 S:9	1	2	2	0	0	4	2	7	9	0	0
Brodiaea matsonii Sulphur Creek brodiaea	G1 S1	None None	Rare Plant Rank - 1B.1	650 710	2 S:2	1	1	0	0	0	0	0	2	2	0	0
Clarkia borealis ssp. borealis northern clarkia	G3T3 S3	None None	Rare Plant Rank - 1B.3 BLM_S-Sensitive USFS_S-Sensitive	1,140 3,000	73 S:9	1	5	1	0	0	2	2	7	9	0	0
Corynorhinus townsendii Townsend's big-eared bat	G3G4 S2S3	None Candidate Threatened	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive WBWG_H-High Priority	1,360 2,300	237 S:2	0	1	0	0	0	1	1	1	2	0	0
Cryptantha crinita silky cryptantha	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive USFS_S-Sensitive	400 720	46 S:7	1	0	0	0	0	6	6	1	7	0	0
Desmocerus californicus dimorphus valley elderberry longhorn beetle	G3T2 S2	Threatened None		432 490	201 S:2	0	1	1	0	0	0	1	1	2	0	0

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California Natural Diversity Database

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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Emys marmorata western pond turtle	G3G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable USFS_S-Sensitive	500 1,200	1137 S:21	1	18	0	0	0	2	1	20	21	0	0
Euderma maculatum spotted bat	G4 S2S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern WBWG_H-High Priority	460 460	68 S:1	0	0	0	0	0	1	1	0	1	0	0
Falco peregrinus anatum American peregrine falcon	G4T4 S2	Delisted Delisted	CDF_S-Sensitive CDFW_FP-Fully Protected USFWS_BCC-Birds of Conservation Concern	1,250 1,250	34 S:1	0	1	0	0	0	0	0	1	1	0	0
Fritillaria eastwoodiae Butte County fritillary	G3Q S3	None None	Rare Plant Rank - 3.2 USFS_S-Sensitive	1,675 1,675	235 S:1	0	0	0	1	0	0	0	1	1	0	0
Gratiola heterosepala Boggs Lake hedge-hyssop	G2 S2	None Endangered	Rare Plant Rank - 1B.2 BLM_S-Sensitive	490 490	93 S:1	0	0	1	0	0	0	0	1	1	0	0
Great Valley Cottonwood Riparian Forest Great Valley Cottonwood Riparian Forest	G2 S2.1	None None		450 480	56 S:2	0	1	1	0	0	0	2	0	2	0	0
Great Valley Valley Oak Riparian Forest Great Valley Valley Oak Riparian Forest	G1 S1.1	None None		420 460	33 S:3	1	0	1	1	0	0	2	1	3	0	0
Great Valley Willow Scrub Great Valley Willow Scrub	G3 S3.2	None None		420 420	18 S:1	0	0	0	0	0	1	1	0	1	0	0
Haliaeetus leucocephalus bald eagle	G5 S2	Delisted Endangered	BLM_S-Sensitive CDF_S-Sensitive CDFW_FP-Fully Protected IUCN_LC-Least Concern USFS_S-Sensitive USFWS_BCC-Birds of Conservation Concern	420 1,800	315 S:42	0	8	0	0	1	33	4	38	41	1	0
Helminthoglypta hertleini Oregon shoulderband	G1 S1	None None	BLM_S-Sensitive	900 4,120	15 S:8	0	0	0	0	0	8	8	0	8	0	0

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Hydromantes shastae Shasta salamander	G1G2 S1S2	None Threatened	BLM_S-Sensitive IUCN_VU-Vulnerable USFS_S-Sensitive	800 3,850	64 S:39	4	24	0	0	0	11	12	27	39	0	0
Juncus leiospermus var. leiospermus Red Bluff dwarf rush	G2T2 S2	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive USFS_S-Sensitive	480 670	56 S:15	1	8	3	0	3	0	4	11	12	2	1
Lanx patelloides kneecap lanx	G2 S2	None None		500 1,100	26 S:2	0	0	0	0	0	2	2	0	2	0	0
Lasionycteris noctivagans silver-haired bat	G5 S3S4	None None	IUCN_LC-Least Concern WBWG_M-Medium Priority	640 640	138 S:2	0	0	0	0	0	2	2	0	2	0	0
Lathyrus sulphureus var. argillaceus dubious pea	G5T1T2 S1S2	None None	Rare Plant Rank - 3		7 S:1	0	0	0	0	0	1	1	0	1	0	0
Legenere limosa legenere	G2 S2.2	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive	495 500	78 S:3	1	2	0	0	0	0	0	3	3	0	0
Lepidurus packardi vernal pool tadpole shrimp	G3 S2S3	Endangered None	IUCN_EN-Endangered	400 540	274 S:19	1	9	0	0	0	9	3	16	19	0	0
Limnanthes floccosa ssp. bellingeriana Bellinger's meadowfoam	G4T3 S1	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive USFS_S-Sensitive	950 950	5 S:1	0	0	0	0	0	1	1	0	1	0	0
Limnanthes floccosa ssp. floccosa woolly meadowfoam	G4T4 S3.2	None None	Rare Plant Rank - 4.2	500 900	54 S:3	1	0	0	0	0	2	3	0	3	0	0
Linderiella occidentalis California linderiella	G3 S2S3	None None	IUCN_NT-Near Threatened	400 520	384 S:12	0	6	1	0	0	5	0	12	12	0	0
Margaritifera falcata western pearlshell	G4G5 S2S3	None None		485 485	74 S:1	0	0	0	0	0	1	1	0	1	0	0
Martes pennanti fisher - West Coast DPS	G5T2T3Q S2S3	Candidate Candidate Threatened	BLM_S-Sensitive CDFW_SSC-Species of Special Concern USFS_S-Sensitive	1,090 1,400	647 S:13	0	12	0	0	0	1	0	13	13	0	0
Monadenia churchi Klamath sideband	G2G3 S2	None None		1,200 3,000	5 S:4	0	0	0	0	0	4	4	0	4	0	0
Monadenia troglodytes troglodytes Shasta sideband	G1G2T1T2 S1S2	None None	IUCN_DD-Data Deficient USFS_S-Sensitive	1,200 2,000	15 S:6	0	1	0	0	0	5	5	1	6	0	0

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Myotis yumanensis Yuma myotis	G5 S4?	None None	BLM_S-Sensitive IUCN_LC-Least Concern WBWG_LM-Low-Medium Priority		256 S:1	0	0	0	0	0	1	0	1	1	0	0
Neviusia cliftonii Shasta snow-wreath	G2 S2.2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive USFS_S-Sensitive	1,080 1,400	21 S:9	3	5	0	0	0	1	1	8	9	0	0
Oncorhynchus tshawytscha chinook salmon - Central Valley spring-run ESU	G5 S1	Threatened Threatened	AFS_TH-Threatened	465 490	13 S:2	0	0	0	0	0	2	1	1	2	0	0
Oncorhynchus tshawytscha chinook salmon - Sacramento River winter-run ESU	G5 S1	Endangered Endangered	AFS_EN-Endangered	280 280	2 S:1	0	0	0	0	0	1	0	1	1	0	0
Orcuttia tenuis slender Orcutt grass	G2 S2	Threatened Endangered	Rare Plant Rank - 1B.1	480 560	96 S:8	1	1	3	1	1	1	4	4	7	1	0
Pandion haliaetus osprey	G5 S3	None None	CDF_S-Sensitive CDFW_WL-Watch List IUCN_LC-Least Concern	1,072 1,072	482 S:1	0	0	0	0	0	1	0	1	1	0	0
Paronychia ahartii Ahart's paronychia	G2 S2	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive	600 670	58 S:3	0	3	0	0	0	0	0	3	3	0	0
Progne subis purple martin	G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	1,070 1,150	45 S:4	0	4	0	0	0	0	0	4	4	0	0
Rana boylii foothill yellow-legged frog	G3 S2S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened USFS_S-Sensitive	583 1,390	805 S:14	0	11	1	0	0	2	0	14	14	0	0
Riparia riparia bank swallow	G5 S2S3	None Threatened	BLM_S-Sensitive IUCN_LC-Least Concern	430 430	296 S:1	0	0	0	0	0	1	1	0	1	0	0
Sagittaria sanfordii Sanford's arrowhead	G3 S3	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	600 600	93 S:1	0	0	0	0	0	1	0	1	1	0	0
Trilobopsis roperi Shasta chaparral	G1 S1	None None	USFS_S-Sensitive	460 607	2 S:2	0	1	0	0	0	1	1	1	2	0	0

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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Viburnum ellipticum	G5	None	Rare Plant Rank - 2B.3	1,100	29	0	1	0	0	0	0	0	1	1	0	0
oval-leaved viburnum	S2.3	None		1,100	S:1											