

DRAFT Ferris' Milkvetch Habitat Model

Habitat: Ferris' milkvetch habitat includes areas with suitable soil type within the following land cover types:

- Grassland with and without Vernal Swale Complex;
- Vernal Pools and Altered Vernal Pools;
- Emergent Wetland; and,
- Managed Wetland.

The following soil survey map units support low-elevation clay-based soil series with poor drainage that are considered to be suitable soil types for Ferris' milkvetch present within the planning area: Anita-Galt complex (100), Bosquejo clay (104), Busacca clay loam (105), Bosquejo clay loam (109), Clearlake clay (118), Gridley taxadjunct clay loam (120), Gridley taxadjunct-Calcic Haploxerolls complex (125), Gridley taxadjunct loam (127), Liveoak sandy clay loam (138), Liveoak-Galt taxadjunct complex (139), Marcum-Gridley clay loam (143), Farwell clay loam (175), Dodgeland silty clay loam (180), Dodgeland silty clay loam (181), Esquon-Clearlake complex (220), Llanoseco silty clay loam (250), Whitecabin-Ordferri silty clays (252), Whitecabin- Ordferri complex (255), Ordferri silty clay (260), Galt clay (336), Galt clay loam (337), Subaco taxadjunct clay (400), Calcic Haploxerolls (416), Conejo clay loam (420), Oxyaquic Xerofluvents clay (439), Haploxerolls clay loam (448), Lofgren-Blavo complex (500), Lofgren-Blavo complex (501), Edjobe silty clay (519), Esquon-Neerdobe complex (520), Clearlake silty clay loam (522), Esquon silty clay loam (523), Neerdobe clay loam (528).

Assumptions: Ferris' milkvetch has historically been found in a diversity of alkaline or sub-alkaline soil, low-elevation habitat types, including marshes, drainage edges, fallow rice fields, and vernal-wet meadows (USFWS 2005). Typically found within a valley grassland matrix, the taxon is often found in areas containing vernal pools but it is not strictly a vernal pool species (USFWS 2005). Given these habitat preferences, suitable habitat is defined as the grassland, grassland with vernal swale complex, vernal pool and altered vernal pool, emergent wetland, and managed wetland land cover types, when present on suitable clay-based soils within the Modesto and Basin geologic formations in the planning area. Suitable habitat for the plant was selected by intersecting selected land cover types with selected soil map units.

The NRCS Soil Survey for Butte County was used to select suitable soils within the planning area (NRCS 2006). Soils that support Ferris' milkvetch are defined as lowland, poorly drained, alkali and sub-alkali soils that overlie the Basin and Modesto (e.g. lowland, alluvial deposits) geologic formations. Soils are typically adobe clay (CNDDB 2007). To determine suitable soils for Ferris' milkvetch, the California Natural Diversity Database and various NRCS soil surveys were used to initially identify the relationship between Ferris' milkvetch occurrences and soil map units within and outside Butte

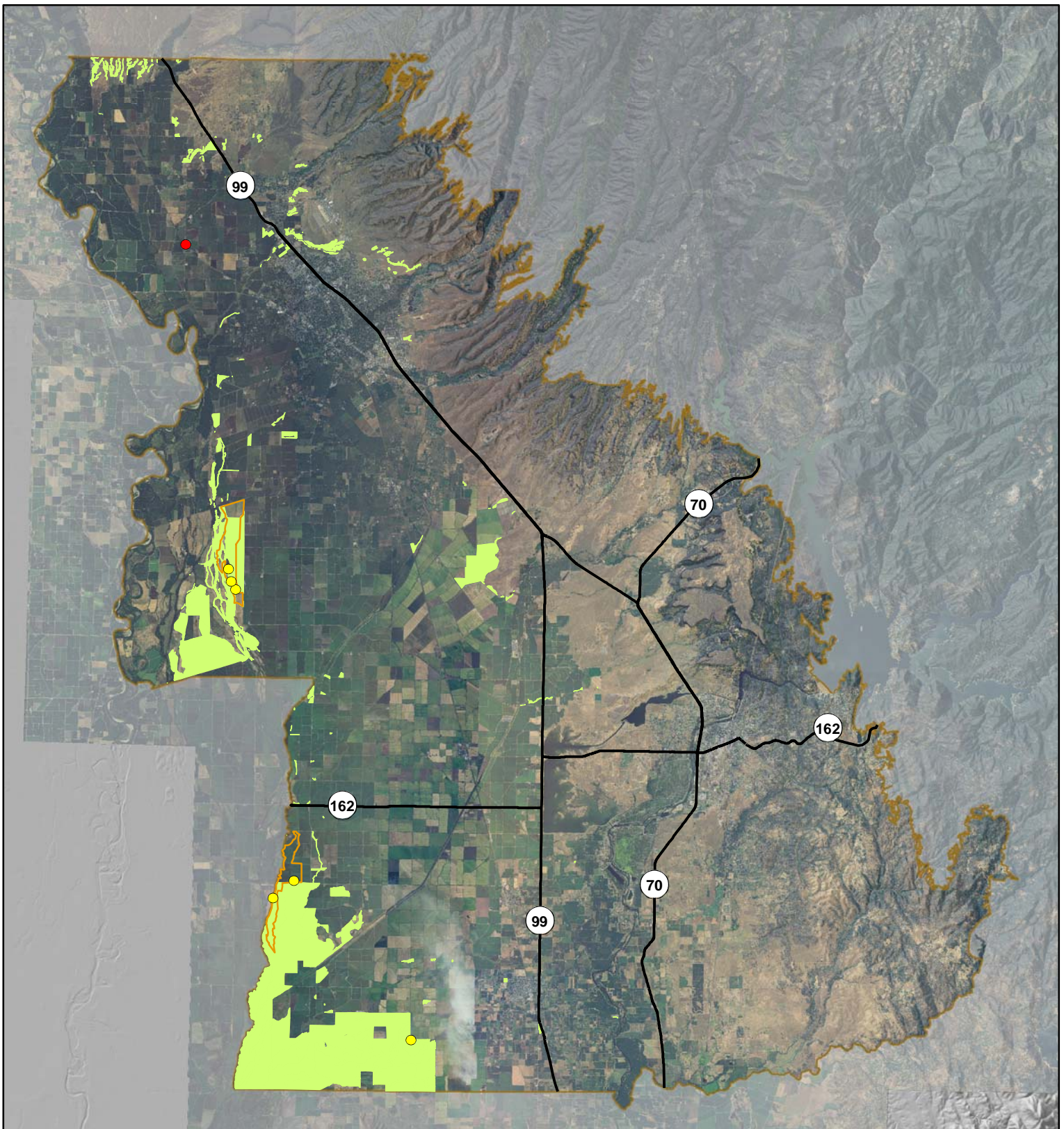
County (NRCS 1968, NRCS 1972, NRCS 1977, NRCS 2006a, NRCS 2006b, CNDDDB 2007). Selected soils map units were those that occur within the planning area and that support historic or current Ferris' milkvetch occurrences within or outside the County. Physical and chemical characteristics (e.g., soil pH, percent clay, hydrologic soil groupings, and parent material) were examined to verify the suitability of these soils, and to identify additional suitable soils within the planning area (NRCS 2006). Generally soils that fall within the Basin and Modesto formation, and with high clay content, and poor drainage were considered suitable. All soils were cross-referenced with existing research on the plant. NRCS was consulted to confirm that appropriate soils were chosen in the planning area (Conlin, pers. comm.).

References

- CNDDDB (California Natural Diversity Database). 2007. California Department of Fish and Game, Sacramento, CA.
- Natural Resources Conservation Service (NRCS). 1968. Soil Survey of Glenn County, California. Website:
http://soils.usda.gov/survey/printed_surveys/state.asp?state=California&abbr=CA
- Natural Resources Conservation Service (NRCS). 1972. Soil Survey of Yolo County, California. Website:
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- Natural Resources Conservation Service (NRCS). 1977. Soil Survey of Glenn County, California. Website:
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- Natural Resources Conservation Service (NRCS). 2006a. Soil Survey of Colusa County, California. Website:
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http://soils.usda.gov/survey/printed_surveys/state.asp?state=California&abbr=CA
- United States Fish and Wildlife Service (USFWS). 2005. Recovery plan for vernal pool ecosystems of California and southern Oregon. Portland, Oregon. Xxvi + 606 pages.

Personal Communication:

Andrew Conlin, phone conference with Drs. Paul Cylinder and Letty Brown on December, 4, 2007.



Legend

- Occurrence: CNDDb
- Occurrence: Extirpated
- Habitat
- Recovery Core Area
- Planning Area Boundary

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**Figure A.31: Ferris' Milkvetch
Habitat Model**

This map presents outcomes of a draft habitat model that is described in the Covered Species Accounts of the HCP/NCCP. The purpose of the model is to identify areas within the planning area where the species occurs or could occur based on known habitat requirements. Please note occurrence data recorded here is based on available data and not representative of all occurrences.

