Dataset Name: *Alameda and Contra Costa Fine Scale Grassland Map*

Version: 1/15/2025

Credits: Nomad Ecology, Benson Bio Consulting, Tukman Geospatial LLC, East Bay Regional Parks District, California Department of Fish and Wildlife Vegetation Classification and Mapping Program (CDFW VegCAMP), California Native Plant Society Vegetation Program (CNPS) Access: Publicly Available
Fine Scale Grassland Dataset Summary:

This fine scale grassland map represents native grasslands and low-cover shrublands throughout select East Bay Regional Parks District (EBRPD) lands – a 74-class grassland map with 2,805
polygons. The mapping was conducted in the spring-summer of 2023 and 2024. The map also includes a non-native matrix covering areas not mapped as native grasslands or low-cover shrublands.

Table 1 provides links for viewing the fine scale grassland web map and downloading the corresponding data. Spatial data for this project is also available on pacificvegmap.org.

Table 1. Links for viewing and downloading the fine scale grassland map

Description	Location
Alameda and Contra Costa Fine Scale Grassland Web Map	https://vegmap.press/alcc_grassland_webmap
Alameda and Contra Costa Fine Scale Grassland Feature Service	https://vegmap.press/alcc_grassland_fs
ALCC Final Mapping Boundary	https://vegmap.press/alcc_grassland_mapping_boundary
ALCC Releve Survey Points	https://vegmap.press/alcc_releve_surveys

Alameda and Contra Costa Fine Scale Grassland Map Datasheet

Alameda and Contra Costa Fine Scale Grassland Mapping Key	Incoming, expected end of January 2025
Description	Location
Alameda and Contra Costa Fine Scale Grassland Final Report	Incoming, expected end of January 2025
Alameda and Contra Costa Fine Scale Grassland Layer Package	https://vegmap.press/alcc_grassland_layer_pkg

Fine Scale Grassland Methods Overview:

At the request of the East Bay Regional Parks District (EBPRD), Nomad Ecology (Nomad), Benson Bio Consulting (Shelly Benson), and Tukman Geospatial (project manager Brittany Burnett) conducted a fine-scale grassland vegetation mapping project on 11,000 acres of grasslands and low-cover shrublands in 16 parks owned and managed by East Bay Regional Parks District (EBRPD) in Alameda and Contra Costa counties. This project used field vegetation sampling and mapping to produce a fine-scale vegetation map (alliance and association level) to identify the composition and location of these native grassland vegetation types.

The methods used for this vegetation sampling and mapping project are consistent with the Manual of California Vegetation and followed protocols established by CDFW VegCAMP and CNPS. These include the Survey of California Vegetation Classification and Mapping Standards (CDFW 2022) and the CDFW-CNPS Protocol for the Combined Vegetation Rapid Assessment and Relevé Field Form (CDFW-CNPS 2024). The mapping and relevé sampling occurred over two field seasons: 2023 and 2024.

In preparation for this field effort, field staff (Nomad Ecology and Shelly Benson) created a dichotomous mapping key of herbaceous and shrub types expected to exist within the project boundary. This mapping key was later expanded on in the 2024 field season, informed by a new draft floristic key CNPS developed to support the Alameda and Contra Costa fine scale vegetation map (Tukman Geospatial, 2025). Prior to initiation of field work, Tukman Geospatial generated an ArcGIS Online web map for field mapping. Field staff used this webmap for collection of native grassland data.

Grassland mapping field data was collected by Nomad Ecology principal vegetation ecologist Erin McDermott, Benson Biological Bio Consulting vegetation ecologist Shelly Benson, and Nomad Ecology botanists Jaclyn Inkster, Talaya Rachels, Leanne Feely, Clare Loughran, Christina Rodriguez, and Mehrey Vaghti. Field mapping data was collected in the study area in two seasons: in spring and in summer. The entire study area was surveyed and mapped in the spring when herbaceous vegetation was fully developed to obtain accurate cover values and reliable identification. A subset of the study area was re-surveyed in the summer to capture later blooming species that were not detectable in the spring, particularly summer annuals.

Alameda and Contra Costa Fine Scale Grassland Map Datasheet

After field work concluded, field staff conducted a thorough quality assurance process, which involved checking for polygons under the 1/5-acre minimum mapping unit (MMU), overlapping polygons, and accurate data attribution. Upon completion of this step, Tukman Geospatial received two layers of draft grassland mapping polygons for post-processing: one from the 2023 field season and one from the 2024 field season.

Late season site visits resulted in some overlapping native grassland polygons, where late season types overlapped with spring types. Tukman Geospatial generated a feature service containing only the area of overlaps, and field staff selected the vegetation type most appropriate for each overlap area.

Post-processing began by merging the alliance-level fine scale grassland data from both field seasons into one feature class. Then fine scale grassland polygons that aligned with forest and shrub polygons generated in the Alameda and Contra Costa fine scale enhanced lifeform map (Tukman Geospatial, 2025) were identified. These selected polygons were snapped to align with the enhanced lifeform polygons in cases where the native grassland polygons were slightly different in geometry from the grasses mapped in the enhanced lifeform map. Polygons mapped during this grassland mapping project which overlapped low-cover shrub stands in the enhanced lifeform map (e.g., *Artemisia californica* or *Baccharis pilularis* that contained native grasses) were also snapped to their corresponding shrub polygons in the enhanced lifeform map.

Additionally, the fine scale grassland map was crosswalked to a look up table that added the National Vegetation Classification (NVC) hierarchy to the attribute table of the map. The crosswalk incorporated NVC taxonomic classification fields (such as "Group", "Alliance", "Association", and "Mapping Unit") as well as categories to assist map users (such as "Life form," "Map Year", and "Landscape Unit"). The crosswalking process also created the final taxonomic classification field, called "Finest Vegetation Type." This step also involved removing extraneous fields used to QA/QC the field-collected data.

To create a final mapping boundary that reflects the actual footprint field staff visited for mapping, the original survey sample plan delivered to the mapping team by East Bay Regional Parks (and prepared by Vollmar Natural Lands Consulting, Inc.) was used as the baseline for developing the boundary. Field staff provided shapefiles of areas originally assigned that were not mapped, and areas outside of the original project boundary that they visited. These shapefiles were integrated into the survey sample plan to generate the final mapping boundary. Areas within the final mapping boundary defined in the enhanced lifeform map as anything other than herbaceous or non-native herbaceous were removed, so that the final mapping boundary does not include such habitats as forest, shrublands not mapped in this project, water, and developed.

Finally, post processing occurred to assign all remaining grassland in the grassland mapping survey area (that was not mapped as native grassland polygons or low-cover shrub polygons) to a vegetation type to create a "wall to wall" single feature class. For all parks except Ohlone, the remaining grassland was identified as "Californian Ruderal Grassland,

Meadow & Scrub Group" based on the mapper's confidence that the remaining areas did not meet the definition of native grassland stands and had less than 10% relative cover of native species. In Ohlone, the remaining grassland was identified as "Californian Annual & Perennial Grassland Macrogroup" because virgate tarweed (*Holocarpha virgata*) was widespread in grasslands throughout the entire park and is likely more widespread than was mapped. Areas mapped in the enhanced lifeform map as anything except upland herbaceous or non-native herbaceous were excluded from the matrix.

These matrix polygons were incorporated into the final grassland map and flagged "Yes" in the field "Matrix Flag."

Full methodology and analysis for this mapping project can be found in the final report. Fine Scale Grassland Map Attributes:

Table 2 shows the attributes (fields) in the fine scale grassland map.

Table 2. Fine Scale Map Attribute

Attribute Name	Attribute Alias	Description
Recorder	Recorder	Name of field staff/ mapper.
Finest_Vegetation_Type	Finest Vegetation Type	Finest level of taxonomic classification for the stand.
Confidence	Confidence	Mappers confidence in the field identification of vegetation type.
RelativeNative	Relative Native Cover	Relative cover of native species, classified into 4 categories.
TotalHerb	Total Herbaceous Cover	Total absolute herbaceous of stand, classified into 4 categories
Quality	Quality	Mappers assessment of stand quality, classified into 3 categories.
Notes	Notes	Stand notes, stand history, list of species.
CollectedDate	Field Collected Date	Date polygon was mapped.
MapYr	Map Year	Year polygon was mapped; "0" for non-native matrix.
Sample	Sample	SurveyID of the sample releve for this stand, if relevant. Otherwise "N/A." "RR" at the end of the sample name denotes the sample was a Reference Relevé.
Park	Park Name	East Bay Regional Parks name.

Attribute Name	Attribute Alias	Description
Name	Landscape Unit	Regional grassland landscape units (LUs) delineated during the East Bay Ecological Health Assessment (CITE).
MappingUnit	Mapping Unit	When relevant, the Mapping Unit designation for the stand. Otherwise "N/A."
Association	Association	When relevant, the Association designation for the stand. Otherwise "N/A."
Alliance	Alliance	When relevant, the Alliance designation for the stand. Otherwise "N/A."
Group_	Group	When relevant, the Group designation for the stand. Otherwise "N/A."
LifeForm	Life Form	Life form of the stand, classified into 6 categories.
LifeHistory	Life History	Life history of the stand, either "annual" or "perennial."
MatrixFlag	Matrix Flag	"Yes" if non-native matrix; "No" if native grassland.
Acres	Acres	Acres of the stand.