

Survey of California Vegetation Classification and Mapping Project Deliverables

June 30, 2015

This document lists the deliverables expected from a complete vegetation classification and mapping project, from field sampling and vegetation classification through mapping and Accuracy Assessment. Some projects may include only a subset of these tasks, as when a relatively small area is mapped using an existing SCV-compliant vegetation classification and not requiring a formal Accuracy Assessment. For such projects, appropriate deliverables should be supplied and an abbreviated report may be written. Not all of these deliverables must be physically conveyed to the map requester, but they should be archived and available upon request.

Please direct any questions to VegCAMP staff prior to the finalization of deliverables. Standards for all aspects of a vegetation mapping project, including classification, mapping, and accuracy assessment are provided in the [Survey of California Vegetation Classification and Mapping Standards](#).

An outline that illustrates the format and content of the mapping report is included below.

Deliverables

- Original field survey forms (if paper forms used) and/or digital copies of the forms
- Field survey database, including field observations and plant species information
- Mapping geodatabase, including plot locations and vegetation polygons, and full metadata to CDFW BIOS and SCV standards
- Accuracy Assessment database, including “goodness-of-fit” scores and vegetation types assigned to polygons by mappers, field staff and scorers.
- Digital plot photographs
- Voucher specimens
- Classification and/or mapping report
- Signed landowner access permission letters
 - Database IDs of associated survey points
 - Conditions of access (e.g., collecting restrictions, submission of final data, etc.)
 - Documentation that access conditions were met

Survey of California Vegetation Classification and Mapping Report Outline

This outline defines the required report content for a complete vegetation mapping project, from field sampling and vegetation classification through mapping and Accuracy Assessment. Some reports may cover only portions of a complete mapping project (for instance, an Accuracy Assessment Report), so only the applicable sections of this outline would be included.

A. Title page

1. Project title
2. Date
3. Preparer
4. Agency for which the report was prepared
5. Contract number, if applicable

B. Abstract

C. Acknowledgments

1. Funder(s)
2. Landowner access contacts
3. Data contributors
4. Staff

D. Introduction

1. Purpose, scope, study area, context, etc.
2. Map delineating the study area

E. Methods

1. Field sampling
 - a. Sample allocation method
 - b. Field sampling methods (Reconnaissance, Rapid Assessment (RA)/Relevé)
 - c. Map of surveyed data points
 - d. Taxonomy standard (e.g., USDA NRCS PLANTS Database)
 - e. Digital data entry methods and field survey database description
 - f. Database quality control
2. Classification
 - a. Data analysis
 - (1) Description of analysis, software used, and steps performed
 - (a) Cover class categories used for analysis
 - (b) Identification of plots and species removed (if any) as outliers and the criteria for their removal
 - (c) For hierarchical clustering, report distance measure and linkage method used
 - b. Data classification
 - (1) Description of approach to developing classification
 - (2) Table showing final classification names for each field survey (some may be unclassifiable), and number and ranges of classes

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- (3) Table showing relationship of final vegetation types in classification to USNVC hierarchy standards
- c. Vegetation key creation
 - (1) General approach to developing the key
 - (2) Description of the field test of the key
- d. Description writing
 - (1) Approach to summarizing environmental data for each vegetation type
 - (2) Approach to summarizing species data for each vegetation type
- e. Definitions of terms used in descriptions and keys
- 3. Mapping
 - a. Map classification creation (adaptation of vegetation classification)
 - (1) Adapting the vegetation classification to the map classification
 - (2) USNVC hierarchy level at which vegetation types were mapped
 - (3) Vegetation types that were not mappable
 - b. Use of field data assisting photo-interpretation or modeling
 - c. Ancillary data (geology, topography, hydrology, etc.), and base and ancillary imagery used for the map
 - d. Mapping criteria
 - (1) Minimum mapping units (MMUs) for vegetation type changes and cover breaks
 - (2) Minimum width of linear polygons
 - (3) Full descriptions of each map attribute (may be listed here or in an appendix)
 - e. Field survey dates, with area surveyed
 - f. Description of mapping geodatabase and quality control methods
- 4. Accuracy Assessment (AA)
 - a. Sample allocation method
 - b. Field sampling methods
 - c. Map depicting locations of surveyed AA points
 - d. Measures to ensure the independence of field samplers, AA scorers, and mappers
 - e. Scoring method and goodness-of-fit scoring rules
 - f. Process for providing feedback to mappers and correcting the map

F. Results

- 1. Sampling
 - a. Floristics
 - (1) Total number of species encountered in project
 - (2) List of species used in the analysis, with codes (may be listed here or in an appendix)
 - (3) List of rare species, their rarity ranking, and the vegetation types in which they were found
 - (4) Location of and number of voucher specimens collected (list any rare species documented with vouchers)

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- b. Number and type (RA, Relevé, Reconnaissance) of samples collected for each vegetation type
- c. Accuracy of field survey database, if tested
- 2. Analysis
 - a. Table with all plant taxa and corresponding survey ID's and cover categories imported into analysis software
 - b. For indicator species analysis, report cluster groupings with relatively low p-values and high numbers of indicator species
 - c. Table identifying final cluster groupings and all survey ID's included in each group
- 3. Classification
 - a. Table showing relationship of final vegetation types in the classification to USNVC hierarchy standards, with sample sizes for each type sampled at the finest hierarchical level (e.g., at Alliance, Association level)
 - b. Vegetation key (may be listed here or in an appendix)
 - c. Vegetation type descriptions (may be listed here or in an appendix)
 - (1) Summary
 - (2) Distribution in project area and global distribution
 - (3) Environmental description
 - (4) Comments
 - (5) Total number of samples of this type in the project area, and list of field survey database IDs for all samples
 - (6) Rarity status
 - (7) Table summarizing constancy and abundance values for taxa in each vegetation type (for abundance, include minimum, maximum and average values for each taxon). Optional categories can include indicator, exotic, or special status species notation.
 - d. Crosswalk to other vegetation classifications (may be listed here or in an appendix)
- 4. Mapping
 - a. Summary statistics (total number of polygons, average polygon size)
 - b. Number of polygons and acreage mapped for each vegetation type
 - c. Common and uncommon vegetation types
 - d. Detailed description of all map classes and their identification, with examples over imagery
- 5. Accuracy Assessment (AA)
 - a. Results of the sample allocation process
 - b. Number of AAs of each vegetation type mapped
 - c. Summary statistics
 - (1) Contingency table (confusion matrix), (may be here or in an appendix)
 - (2) Table of results showing vegetation type, and users' and producers' accuracy

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- d. Discussion of types that did not achieve 80% accuracy
 - (1) Potential reasons for confusion
 - (2) Possible remedies to improve accuracy
- e. Actions taken to correct the map

G. Literature Cited

H. Appendices

1. Field survey forms and protocols
2. Vegetation type descriptions (if not included in the body of the report)
3. Vegetation key (if not included in the body of the report)
4. Crosswalk to other vegetation classification systems (if not included in the body of the report)
5. Map attribute descriptions (if not included in the body of the report)
6. List of species used in the analysis, with codes (if not included in the body of the report)
7. Contingency table (confusion matrix) for AAs