



Santa Clara Valley Habitat Plan CLARIFICATION AND INTERPRETATION

Subject	Land Cover Classifications where Coyote Brush is a Common or Dominant Species
Clarification Number	2017-004
Approved	Edmund Sullivan, Executive Officer <i>Ed Sullivan for EPS</i>
Draft Date	November 6, 2017

Category

Land Cover Types and their interpretation and classification in the field.

Topic

Clarification in mapping strategy for the coyote brush scrub land cover type prior to impacts and land cover classifications of the chaparral and northern coastal scrub natural community.

Issue/Question/Problem Statement

Based on three years of Plan implementation, it has been very difficult for biologists to distinguish several land cover types in the field that are described in the Santa Clara Valley Habitat Plan (Habitat Plan) as having coyote brush as a component species. In the Habitat Plan land cover type definitions, there is substantial overlap between three important land cover types: coyote brush scrub, northern mixed chaparral/chamise chaparral, and northern coastal scrub/Diablan sage scrub. This overlap has caused confusion in the field and resulted in a likely over-mapping of coyote brush scrub for Habitat Plan application packages. In addition, the Habitat Plan is silent on how to deal with coyote brush as a successional species and this has also resulted in confusion in mapping coyote brush scrub.

Discussion

The Habitat Plan (Section 3.3.5) identifies four land cover types that comprise the chaparral and northern coastal scrub natural community. The four land cover types are as follows:

- Northern mixed chaparral/chamise chaparral,
- Mixed serpentine chaparral,
- Northern coastal scrub/Diablan sage scrub, and
- coyote brush scrub.

The Habitat Plan describes that coyote brush can appear as a “native” (i.e., not primarily a successional invader) in all except one of the above land cover types, but in varying amounts and importance. In addition, coyote brush is identified as a dominant component of two associations of northern mixed chaparral/chamise chaparral: the coyote brush/annual grass shrubland association and the coyote brush-California sagebrush-toyon shrubland association. It is not mentioned as an associate of mixed serpentine chaparral, but is mentioned as a component of northern coastal scrub/Diablan sage scrub. The mention of “associate” does not indicate dominance in these vegetation types.

It is also important to note that the land cover types discussed above are also defined and differentiated by physical (i.e., slope, aspect and soil type) factors as well as biological ones. The Habitat Plan describes the coyote brush scrub land cover type as follows:

Coyote brush scrub is a type of northern coastal scrub dominated by coyote brush. Common associated shrub species in Santa Clara County include California sagebrush, California lilac (Ceanothus spp.), lupine species, bush monkey flower, hoary coffeeberry, and poison-oak. This land cover type is generally found on windy, exposed sites with shallow, rocky soils (Holland 1986); it also occurs on river terraces. Typically it also represents the first stage (and least mature in terms of composition development) of scrub occupation of former grassland sites in the succession stage described above (Ford and Hayes 2007). Coyote brush scrub occupies an estimated 180 acres (0.04%) of the study area. In the study area, it is also found adjacent to a few riparian areas and on mid-slopes in the northeastern portion of the study area. (page 3-55)

The Habitat Plan does not provide sufficient guidance for a qualified biologist to accurately distinguish the land cover types associated with the northern mixed chaparral/chamise chaparral and northern coastal scrub/Diablan sage scrub land cover types. In particular, the Habitat Plan describes coyote brush as being a dominant or prominent species in three different land cover types (mixed chaparral/chamise chaparral, northern coastal scrub/Diablan sage scrub, and coyote brush scrub). The northern mixed chaparral/chamise chaparral land cover type is described as having seven vegetation associations, four of which include coyote brush and two of which (coyote brush/annual grass shrubland association and coyote brush-California sagebrush-toyon shrubland association) are dominated by coyote brush.

While the California annual grassland land cover type description in Habitat Plan Chapter 3 *Physical and Biological Resources* does not discuss coyote brush, this species is known to invade grassland by means of seed dispersal. The invasion into grassland is typically at stand edges in bare zones (often caused by natural disturbances) and is uniformly present (not scattered), possibly because of the presence of grazing livestock and deer (Barbour et al. 2007). Similarly, in areas where oak woodland land cover types intergrade with typically scrub or chaparral-associated species, and where there is a partially open oak canopy with limited grazing and absence of periodic fire, understory species—including coyote brush—may also establish (Holland and Keil 1995).

Coyote brush is also known to occur in association with riparian forest and scrub land cover types in areas of a relatively open canopy, such as areas disturbed due to natural events or human intervention (e.g., on-going riparian vegetation management associated with stormwater management).

Based on site inventories conducted to date, it has been very difficult for field biologists to distinguish several land cover types in the field that have coyote brush as a common or dominant species. Additional guidance is needed for qualified biologists to better understand how they should map land cover types in the field with coyote brush as a common or dominant component. This additional guidance will help to ensure that that Habitat Plan is implemented consistent with how it was developed.

Determination/Justification

The approach used to resolve the issue is based on the basic assumption that in order for the land cover type to be considered coyote brush scrub, it must meet the exact definition of the land cover type as it is found in the Plan. The two circumstances where this has caused confusion include similarity to other chaparral/scrub communities and where coyote brush is present as a successional invader of another land cover type (such as annual grassland, oak woodlands, or riparian areas), and will be dealt by the following process.

1. Is coyote brush a dominant¹ species in the assessed land cover type? Note that answering this question involves a field survey by a qualified biologist.
 - a. If “yes,” go to 2.
 - b. If “no,” the land cover type is not coyote brush scrub for the purposes of recording impacts under the Habitat Plan. The vegetation should be mapped as one of the other land cover types.
2. Is coyote brush present as a successional invader (i.e., the general land cover type present is not northern mixed chaparral/chamise chaparral, mixed serpentine chaparral, northern coastal scrub/Diablan sage scrub or coyote brush scrub as specifically defined in Table 1 [at end of memorandum], including all physical aspects of the specific definition)?

¹ Dominant is defined as a plant species occupying more than 50% of the impacted land cover type.

Clarification Number: 2017-004

- a. If “yes,” the land cover type is not coyote brush scrub for purposes of recording impacts under the Habitat Plan. The vegetation should be mapped as one of the other land cover types.
 - b. If “no,” go to 3.
3. Are all of the following physical conditions present:
- the vegetation is located in a windy, exposed area; and
 - the vegetation is located on shallow, rocky soils (including locations on river terraces); and
 - the vegetation grows on a gentle slope with a grade of less than 15%?
- a. If “yes,” the vegetation should be mapped as coyote brush scrub land cover type for purposes of recording impacts under the Habitat Plan.
 - b. If “no,” the land cover type is not coyote brush scrub for the purposes of recording impacts under the Habitat Plan. The vegetation should be mapped as one of the other land cover types.

Clarifications to Other Land Cover Types

Private applicants, Participating Special Entities, and Co-Permittees continue to be required to verify, map, and quantify project impacts to all land cover types. For these land cover types, field verification and mapping is required by a Qualified Biologist. A “qualified biologist” is a biologist trained to perform the given task; such a person is, more specifically, a wildlife biologist, or botanist. For land cover verification, the qualified biologist must be competent in land cover delineation. Applicants will provide the local jurisdiction with a brief resume of the biologist to verify the qualifications of the biologist. If the task has the potential to result in take of covered species (e.g., discouraging use of a den by a San Joaquin kit fox), the biologist must be approved by the Habitat Agency and Wildlife Agencies prior to conducting such tasks.

Table 1. Clarification of Land Cover Types in the Habitat Plan that Include Coyote Brush

Land Cover Type	Clarification of Associated Plant Species
<p>California Annual Grassland Primarily herbaceous plant community dominated by nonnative annual grasses.</p>	<p>Non-native annual grasses, native and nonnative forbs, trees and shrubs comprising less than 15% canopy cover. Coyote brush invades grassland by means of seed dispersal and establishment. Coyote brush is often present in grasslands in low to moderate amounts, and may be associated with stinging nettle (<i>Urtica dioica</i>) and poison oak (<i>Toxicodendron diversilobum</i>)</p>
<p>Northern Coastal Scrub/Diablan Sage Scrub Evergreen shrubs with an herbaceous understory in openings. Usually found at elevations below 300 feet.</p>	<p>Dominated by California sagebrush, black sage, or coyote brush (or a combination of these three species) with associated species: California buckwheat (<i>Eriogonum fasciculatum</i>), California lilac, lupine, hoary coffeeberry, poison-oak, and bush monkey flower.</p>
<p>Northern Mixed Chaparral/Chamise Chaparral Broad-leaved sclerophyll shrubs, 2–4m tall, forming dense, often nearly impenetrable vegetation.</p>	<p>Chamise (<i>Adenostoma fasciculatum</i>), manzanita (<i>Arctostaphylos</i> spp.), scrub oak (<i>Quercus berberidifolia</i>), and ceanothus (<i>Ceanothus</i> spp)</p>
<p>Mixed Serpentine Chaparral Fire-adapted shrubs found on serpentine soils.</p>	<p>Coyote ceanothus, Calistoga navarretia (<i>Navarretia heterodoxa</i>), Santa Clara Valley dudleya, Mt. Hamilton thistle, smooth lessingia, and Tiburon Indian paintbrush (<i>Castilleja affinis</i> ssp. <i>neglecta</i>)</p>
<p>Oak Woodland community Upland tree-dominated with at least 10% cover of hardwood tree species.</p>	<p>Coyote brush may be present in low amounts, and may be present with other opportunistic species such as wild oats (<i>Avena barbata</i> and <i>A. fatua</i>) and brome grassland (<i>Bromus diandrus</i>, <i>B. hordeaceus</i>, and <i>B. madritensis</i>)</p>
<p>Riparian Forest and Scrub community Landscape position along creeks and around open water bodies. Dominant influencing factors include steepness of the channel, frequency of disturbance, and hydrologic regime present.</p>	<p>Coyote brush (present in low to moderate amounts) in areas with open canopy or on the edges of the riparian corridor. May be associated with stinkwort (<i>Diuriscus graveolens</i>), yellow star thistle (<i>Centaurea solstitialis</i>), and annual grasses</p>

References

References do not include those already cited in the Santa Clara Valley Habitat Plan.

Barbour, Michael G., Todd Keeler-Wolf, Allan A. Schoenherr. 2007. Terrestrial Vegetation of California, 3rd Edition. University of California Press.

V.L. Holland and David J. Keil. 1995. California Vegetation. University of California Press.