

Table 3. Preliminary Working Draft Biological Goals, Objectives and Conservation Actions for the Santa Clara Valley Habitat Plan: Grassland Natural Communities and Associated Serpentine Covered Species.

Note: These goals and objectives were developed during a workshop in December with Local Partner staff and biologists, Wildlife Agency staff and species experts, outside species experts, and consultants. Comments from workshop participants have been incorporated and there was a follow up conference call to review those comments and allow for further input.

Draft Biological Goals and Objectives	Conservation Actions	Monitoring Action
Ecosystem/Landscape		
TBD		
Natural Communities		
<p>Goal 4. Maintain and enhance functional grassland communities that benefit covered species and promote native biodiversity. [perhaps call out the importance of disturbance in this community as a critical process to maintain]</p>		
<p>Objective 4.1. Protect about 6,000 acres of serpentine grassland containing the full range of serpentine grassland associations and species including serpentine seeps and serpentine rock outcrops as part of the Reserve System. [Note: This target will change because the habitat model for Bay checkerspot butterfly will be updated]</p>	<p>LAND-39. Acquire in fee title or obtain easements on 6,000 acres of serpentine grassland with the full range of serpentine grassland associations and vegetation diversity found throughout the study area.</p>	
<p>Objective 4.2. Protect ___ acres of annual grassland in a diversity of soils types and other environmental gradients including areas suitable for enhancing native species.</p>	<p>LAND-40. Acquire in fee title or obtain easements on ___ acres of annual grassland as part of the Reserve System.</p>	

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<p>Objective 4.3. Protect native grassland stands in a diversity of soils types and other environmental gradients with areas suitable for enhancing native species. [Note: This objective is not measurable because we do not know where native grassland stands occur but this is an important point that we do not want to lose in the broad]</p>	<p>LAND-41. Acquire in fee title or obtain easements on areas of native perennial grasslands as part of the Reserve System.</p>	
<p>Objective 4.4. Enhance grasslands by reducing cover and biomass of non-native plants and by increasing the diversity of native plants.</p>	<p>GRASS-1. Continue or introduce livestock and native herbivore (e.g., elk) grazing in a variety of grazing regimes to reduce the cover, biomass, and diversity of exotic grasses and herbs.</p> <p>GRASS-2. Conduct prescribed burns to enhance the community and to control or, where possible, eradicate invasive plants.</p> <p>GRASS-3. Conduct mowing in selected areas to mimic grazing where use of livestock is impractical.</p> <p>GRASS-4. Selectively apply herbicides or other treatments (e.g., hand or mechanical removal) to eradicate or control invasive plants.</p> <p>GRASS-5. Conduct selected seeding of native forbs and grasses.</p> <p>CHAP-3. Negotiate a let-burn policy in the study area with local and state fire agencies that could include paying ranchers for initial loss of livestock forage and structures (e.g., fences, corrals) to allow fire frequency to return to historic levels and eliminate or reduce need for prescribed burns.</p>	

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<p>Objective 4.5. Increase the distribution and availability of California ground squirrels to increase the prey base San Joaquin kit fox and golden eagle and burrow availability within grassland for California tiger salamander, California red-legged frog, western burrowing owl, golden eagle, San Joaquin kit fox, and other native species (from grassland section).</p>	<p>GRASS-6. Cease using rodenticides within the Reserve System and when possible outside of the Reserve System except when needed to protect the integrity of structures such as levees, stock pond dams, roads or to prevent nuisance (<i>as defined in the Fish & Game Code Sections 4150 and 4152</i>) populations from moving onto adjacent private lands.</p> <p>GRASS-7. Encourage expansion of existing colonies and colonization of new areas within the Reserve System where conflicts with covered activities will be minimized.</p>	
<p>Species</p>		
<p>Goal 10. Maintain or improve viability of existing Bay checkerspot butterfly populations, increase the number of populations, and expand the geographic distribution to ensure the long-term persistence of the species in the study area.</p>		
<p>Objective 10.1. Protect 4,900 acres of serpentine grasslands in core populations to protect a range of slopes, aspects, and microhabitats.</p> <p>Potential Alternatives:</p> <ul style="list-style-type: none"> • 6,000 acres (100% protection = infeasible target) • 5,100 acres (90% protection of remaining large parcels = aggressive target) • 4,000 acres (65% of protection of available habitat = modest target) 	<p>LAND-42. Acquire in fee title or obtain easements on 4,900 acres of suitable habitat for Bay checkerspot butterfly on Silver Creek Hills, Coyote Ridge, Pigeon Point, Tulare Hill, Santa Theresa Hills, areas west of Calero Reservoir, and the Kalanas, and Hale/Falcon Crest. Prioritize sites according to threat, patch size, current occupancy and prevalence of cool microsites for Bay checkerspot butterflies.</p>	

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<p>Objective 10.2. Within the Reserve System on sites with degraded serpentine grassland, improve management to enhance populations of larval host plants and adult nectar sources and reestablish Bay checkerspot butterfly.</p>	<p>See GRASS-1 through GRASS-4. GRASS-8. Translocate Bay checkerspot butterflies (eggs, larvae, or adults) from core populations into suitable but unoccupied sites if natural dispersal fails to reestablish population.</p>	
<p>Goal 11. To maintain viability, protect and increase the size and number of populations of Coyote ceanothus, Santa Clara Valley dudleya, Metcalf Canyon jewelflower, most beautiful jewelflower, smooth lessingia, fragrant fritillary, Mt. Hamilton thistle, Loma Prieta hoita (i.e., covered serpentine plants) within the study area.</p>		
<p>Objective 11.1. Protect all four of the known extant populations of Coyote ceanothus with a buffer zone of 150 meters (500 feet) around each population, where possible, to reduce external influences and allow expansion of populations.</p>	<p>LAND-43. Acquire in fee title or obtain easements on sites in the study area that support Coyote ceanothus or provide the necessary buffer between incompatible land uses, focusing first on protection of the largest populations and those under greatest threat of development. RESEARCH-8. Conduct experimental burning where feasible in protected populations to determine the importance of fire for plant regeneration.</p>	
<p>Objective 11.2. Establish two new populations of Coyote ceanothus in the reserve system to reduce risk of extinction.</p> <p>Potential Alternatives:</p> <ul style="list-style-type: none"> • Establish two new populations (modest target that contributes to recovery) • Establish four new populations to fully meet recovery standard in USFWS Recovery Plan (aggressive target, may be infeasible) 	<p>RESEARCH -9. Identify suitable locations in the reserve system for establishing two new populations of Coyote ceanothus, prioritizing establishment of populations on the west side of the Santa Clara Valley. RESEARCH-10. Determine suitable propagation or planting techniques for Coyote ceanothus and determine appropriate seed sampling techniques from existing populations. RESEARCH -11. Design and implement field experiments (if the number of propagules allows) to test alternative techniques for population establishment.</p>	

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<p>Objective 11.3. Protect at least ___ currently unprotected populations of Santa Clara Valley dudleya with a buffer zone of 150 meters (500 feet) around each population, where possible, to reduce external influences and allow expansion of populations.</p>	<p>LAND-45. Acquire in fee title or obtain easements on ___ sites in the study area that support populations of Santa Clara Valley dudleya.</p>	
<p>Objective 11.4. Expand the population sizes of Santa Clara Valley dudleya to ensure each population has at least 2,000 individuals.</p>	<p>RESEARCH-12. Experimentally establish species on unoccupied but suitable rock outcrops using seeds and transplanted adults from large populations</p> <p>RESEARCH-13. Experimentally create suitable habitat on rock outcrops by filling rock crevices with suitable soil and establish new site for the species.</p> <p>RESEARCH-14. Experimentally exclude livestock from covered-plant populations to test the effects of livestock grazing.</p>	
<p>Objective 11.5. Protect at least ___ currently unprotected populations of Metcalf Canyon jewelflower including a buffer zone of 150 meters (500 feet) around each population, where possible, to reduce external influences and allow expansion of populations.</p> <p>Potential Alternatives:</p> <ul style="list-style-type: none"> • Protect 4 populations (moderately high target; all of the known unprotected populations; however it may be feasible) • Protect 2 populations (conservative target) 	<p>LAND-46. Acquire in fee title or obtain easements on sites in the study area that support populations of Metcalf Canyon jewelflower.</p> <p>LAND-47. [optional] Acquire in fee title or obtain easements on north side of Tulare Hill to allow for reintroduction on west side of Valley.-</p>	
<p>Objective 11.6. Increase the number of protected populations and expand the population sizes of Metcalf Canyon jewelflower to ensure each population has at least 2,000 individuals (<i>Source: USFWS Recovery Plan</i>)</p>	<p>RESEARCH-16. Experimentally create suitable habitat by scraping serpentine soils down to bedrock, similar to roadcuts and seed areas.</p> <p>RESEARCH-17. Reintroduce Metcalf Canyon jewelflower to Tulare Hill and Santa Theresa Hills once management reestablishes suitable habitat.</p>	

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<p>Objective 11.7. Protect at least 10 currently unprotected populations of most beautiful jewelflower with a buffer zone of 150 meters (500 feet) around each population, where possible, to reduce external influences and allow expansion of populations.</p> <p>Potential Alternatives:</p> <ul style="list-style-type: none"> • Protect 10 populations (high target; may be feasible) • Protect 5 populations (more conservative target; probably feasible) 	<p>LAND-48. Acquire in fee title or obtain easements on sites in the study area that support populations of most beautiful jewelflower.</p>	
<p>Objective 11.8. Increase the size of most beautiful jewelflower populations to ensure each population has at least 2,000 individuals (<i>Source: USFWS Recovery Plan; based on anything?</i>)</p>	<p>RESEARCH-18. Experimentally create suitable habitat by scraping serpentine soils down to bedrock, similar to roadcuts and seed areas.</p>	
<p>Objective 11.9. Protect at least __ populations of Mount Hamilton thistle outside of currently protected lands with a biologically appropriate buffer zone around each population, where possible, to reduce external influences and allow expansion of populations.</p> <p><i>[Note: 24 of 49 occurrences are protected; 17 occurrences not protected; up to 6 occurrences may be affected by covered activities.]</i></p>	<p>LAND-49. Acquire in fee title or obtain easements on sites in the study area that support Mount Hamilton thistle in drainages or spring systems to and stratify protection on both sides of Coyote Valley to ensure geographic diversity in protected populations.</p>	
<p>Objective 11.10 Increase the size of Mt. Hamilton thistle populations to ensure each population has a viable number of individuals each year.</p>	<p>RESEARCH-19. Experimentally exclude livestock from covered-plant populations to test the effects of livestock grazing.</p> <p>REFERENCE hydrologic action</p>	

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<p>Objective 11.11. Protect at least 10 populations of smooth lessingia outside of currently protected lands with a buffer zone of 150-meter (500 foot) buffer around each population, where possible, to reduce external influences and allow expansion of populations..</p> <p>Potential Alternatives:</p> <ul style="list-style-type: none"> • Protect 10 populations (high target; may be feasible) • Protect 5 populations (more conservative target; probably feasible) 	<p>LAND-50. Acquire in fee title or obtain easements on 10 sites in the study area that support population(s) of smooth lessingia.</p>	
<p>Objective 11.12. Increase the size of smooth lessingia populations to ensure each population has at least 2,000 individuals</p>	<p>RESEARCH-22. Experimentally exclude livestock from covered-plant populations to test the effects of livestock grazing.</p>	
<p>Objective 11.13. Protect at least ___ populations of fragrant fritillary outside of currently protected lands.</p> <p>Potential Alternatives:</p> <ul style="list-style-type: none"> • Protect 3 populations (high target; may not be feasible if one population is affected by covered activities) • Protect 1 populations (more conservative target; probably feasible) 	<p>LAND-51. Acquire in fee title or obtain easements on ___ sites in the study area that support fragrant fritillary.</p>	
<p>Objective 11.14. Increase the size of fragrant fritillary populations to ensure each population has a viable number of individuals each year.</p>	<p>RESEARCH-23. Experimentally manage populations to determine ideal management and micro-site needs of this species to increase and maintain viable population numbers.</p>	