

SOUTH FORK WILLOW CREEK RANCH 2022 Landowner Letter

Rangeland Monitoring Network



Point Blue
Conservation
Science



Dear Mike and Kathy Landini,

Thank you for participating in Point Blue Conservation Science's state-wide Rangeland Monitoring Network (RMN; <https://www.pointblue.org/tools-and-guidance/farming-ranching/>).

Point Blue's RMN program is designed to be a long-term effort on each site. Each ranch's data contributes to our state-wide data set, helping us to understand rangeland ecosystems across the state and how they are changing over time. Our baseline sampling at South Fork Willow Creek Ranch occurred in 2015, the 2018 data was RMN's first re-sample, and the data presented here is from 2022 and is the 2nd re-sample at South Fork Willow Creek. Field work was conducted by myself and two technicians, My-Lan Le and Dabid Garcia; photos are from all three of us.

The purpose of this letter is to summarize the data we have collected on your ranch. It is broken down into the following sections:

1. **Cover letter**– this overview, includes detailed Table of Contents on next page
2. **Ranch Fact Sheet** – one page about the soil, plants, and birds on your ranch
3. **Figures and Maps** – these present the various data collected on your ranch from 2015-22
5. **Appendices** – Plant and Bird Lists for your property

These data are best interpreted within the context of a ranch plan (adaptive/ holistic management plan, carbon farm plan, agency management plan, etc.). This landowner letter is meant to help you understand the condition of your land relative to your ecological goals, which hopefully informs future decision-making processes. Since the FAQ would be duplicative of the FAQ in the Divide Ranch landowner letter, I omitted that section in this document–see the Divide Ranch letter for more information.

Thank you so much for participating in our Rangeland Monitoring Network! I have deeply enjoyed all the hours spent collecting ecological data on your ranch, and am grateful for the opportunity to do so. I hope the information presented here is useful and interesting to you. Please reach out with any questions or feedback.

Best,

Sophie Noda
Working Lands Ecologist
Point Blue Conservation Science



Table of Contents

Cover Letter

Ranch Fact Sheet

Maps

Map 1. Point Blue Rangeland Monitoring Points

Map 2. Bird Species Richness in 2022

Map 3. Soil Organic Carbon (SOC): change from 2018-2022

Map 4. Plant Species Richness in 2022

Figures

Fig 1. Scatterplot of Soil Organic Carbon (SOC) in 2018 and 2022

Fig 2. Scatterplot of soil compaction in 2018 and 2022

Fig 3. Box and whisker plot of soil health change

Fig 4. Soil health curves

Fig 5. Vegetation cover summary bar graph in 2018 and 2022

Fig 6. Box and whisker plot of functional group cover ranch wide change 2018-2022

Fig 7. Box and whisker plot of functional group cover ranch wide in 2022

Fig 8. Vegetation functional group cover by point in 2018 and 2022

Fig 9. Grassland focal species abundance over time

Fig 10. Riparian focal species abundance over time

Fig 11. Oak savannah species abundance over time

Fig 12. Bird species richness per point

Frequently Asked Questions (FAQs)

Appendices

I. Plant List

II. Bird List



Foothill poppy;
Eschscholzia caespitosa



Purple owl's clover;
Castilleja exserta



Sunrise at South Fork Willow Crk

South Fork Willow Creek Ranch Fact Sheet – 2022

SOIL



Illustrations by Mel Preston

Textures: Loam (at sampling point SFWO-02, 04, and 05), and sandy loam (sampling point SFWO-19)

Soil Organic Carbon (SOC): At South Fork Willow Creek, shallow SOC (0-10 cm depth) averaged 1.15% and deep SOC (10-40 cm) averaged 0.48%. From 2018-22, average shallow SOC **declined by 21%** and average deep SOC **declined by 9.5%**. In

2015-18, average shallow SOC **increased by 49%** and deep SOC **declined by 40%**.

Compaction: At South Fork Willow Creek, soil points showed no evidence of compaction. 4 out of 4 points were under the target NRCS target for bulk density, and 2 of the 4 points below the 10-minute NRCS target infiltration time. Average infiltration time **increased by 36%** from 2018-2022, and bulk density **decreased 6%** in the same time frame. A decreased bulk density indicates a reduction in soil compaction while an increase in water infiltration time indicates that water is being absorbed into the soil slower, which could be due to a few different factors, including compaction.



PLANTS

Diversity: We detected 69 plant species at South Fork Willow Creek Ranch in 2022. We detected an average of 43 species per point.

Abundance: The top 5 most abundant plant species (and their average % cover) were: 19% Blue oak (*Quercus douglasii*), 17% Red brome (*Bromus rubens*), 16% soft chess (*Bromus hordeaceus*), 12% slender oatgrass (*Avena barbata*), and 11% Red-stemmed filaree (*Erodium cicutarium*).

Perennial Grass: At the time of our plant surveys at South Fork Willow Creek, we detected an average perennial grass cover of 2% across the 3 points we monitored; these were Melic grass (*Melica sp.*), Purple needle grass (*Stipa pulchra*), Bulbous bluegrass (*Poa bulbosa*), and Harding grass (*Phalaris aquatica*).

Annual Grass: South Fork Willow Creek had an average absolute cover of 61% annual grass. Three top annual grass species are outlined above. **Forbes:** We found 1.3% perennial forb absolute cover and 47% annual forb absolute cover on average, plus a 2.7% average cover of legumes, which include vetches, lupines, and clovers. **Trees & Shrubs:** South Fork Willow Creek had 19% cover of shrubs and trees at the sites surveyed. Woody plant species on our surveys consisted exclusively blue oak (*Quercus douglasii*). For a complete list of plants detected see Appendix I.

Bare Ground: An average of 7% bare ground between points.

*Orange = non-native species or Cal-IPC listed Invasive Species | Green = native species or desirable finding

BIRDS



Diversity: We detected 44 bird species at South Fork Willow Creek in 2022. There was an average of 9 species per point at each visit, which is an increase from when we last did surveys in 2016 and had an average of 6.5 species per point. A full

species list can be found in Appendix II. **Abundance:** The top 5 most common bird species detected at S. Fork Willow Creek were: European Starling (107), Mourning Dove (41), White-breasted Nuthatch (39), Oak Titmouse (30), and Ash-throated Flycatcher and Western Meadowlark tied (25).

Changes in community composition: The last time Point Blue did bird surveys was in 2016. Oak Titmouse, White-breasted Nuthatch, Acorn Woodpecker, California Quail, and Nuttall's Woodpecker all are 5 species that increased in abundance from 2016-22. Lark Sparrow, Western Meadowlark, Western Kingbird, and Ash-throated Flycatcher saw decreases in abundance.

Orange = below average or undesirable | Blue = average or no change | Green = above average or desirable

Maps and Figures

Maps

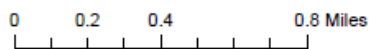
South Fork Willow Creek 2022 Rangeland Monitoring Network



RMN Sampling Point Type

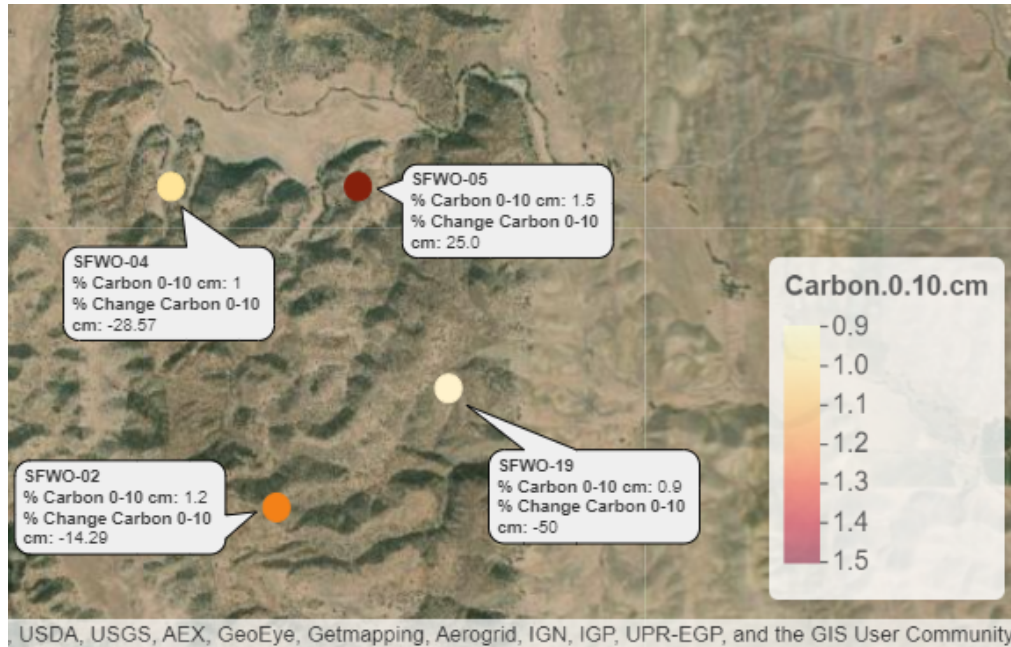
Notes

- birds only
- soil, veg, and birds
- fences_and_boundary



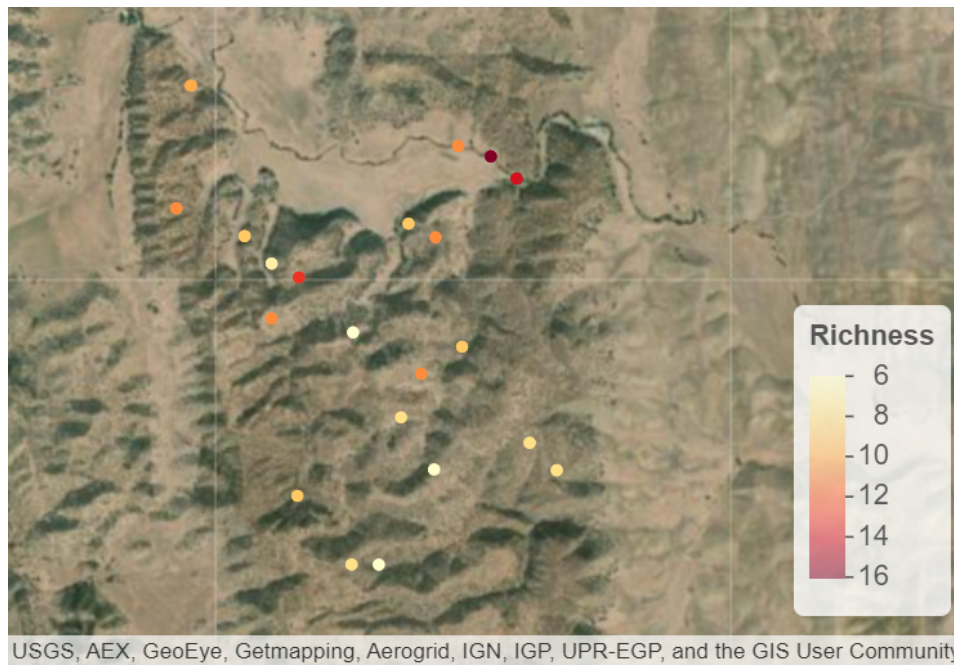
Map 1. Sampling points monitored in 2022. From the riparian transect, only SFWR-13, -14, and -15 were visited for bird counts.

Percent soil organic carbon and change at 0-10 cm



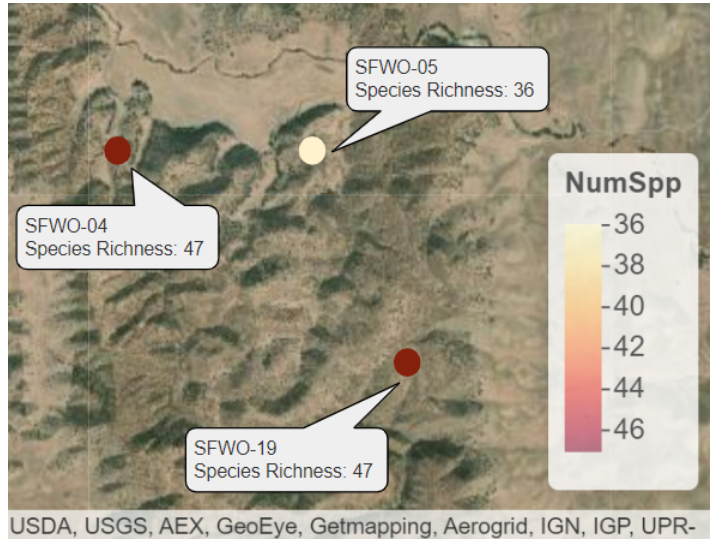
Map 2. Shallow SOC in 2022 and percent change in shallow SOC at South Fork Willow Creek Ranch between 2018 and 2022. Note a significant increase in carbon at point 05, while 02, 04, and 19 lost carbon.

Bird species richness



Map 3. Total bird species richness (number of species) observed within 300 meters across points at South Fork Willow Creek in 2022.

Vegetation species richness



Figures Part 1: Soil

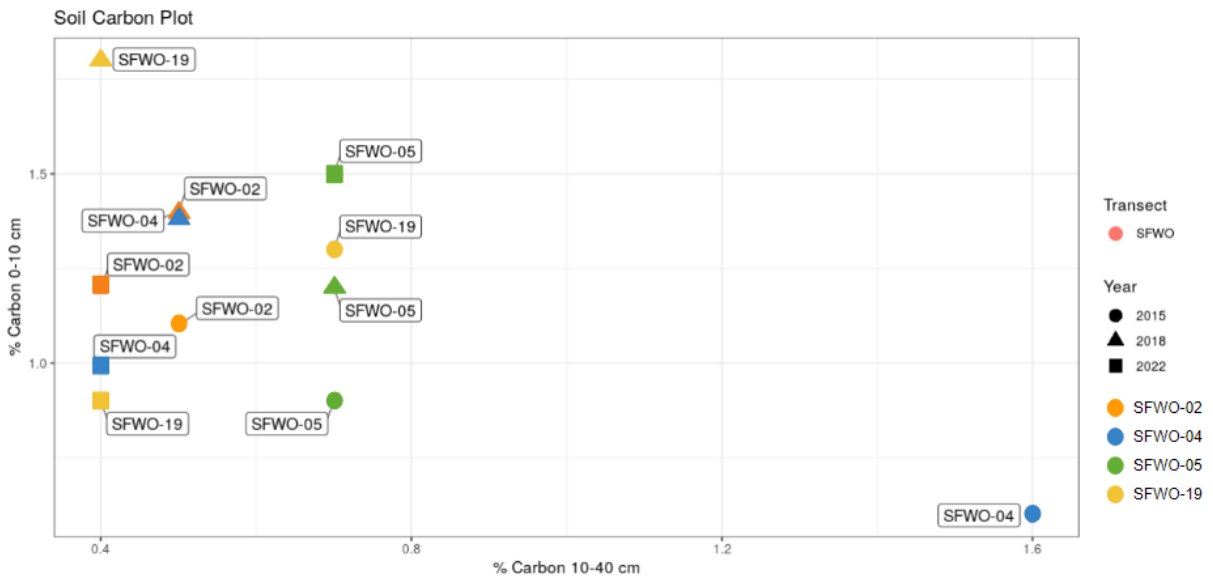


Figure 1. Change in soil carbon from the 2015 and 2018 sampling event to now, 2022. Note an increase in soil organic carbon at the 0-10 cm depth at point -05, and a decrease at the same depth at points -02, 04, and 19. Most of the points have also been losing carbon at the 10-40 cm depth.

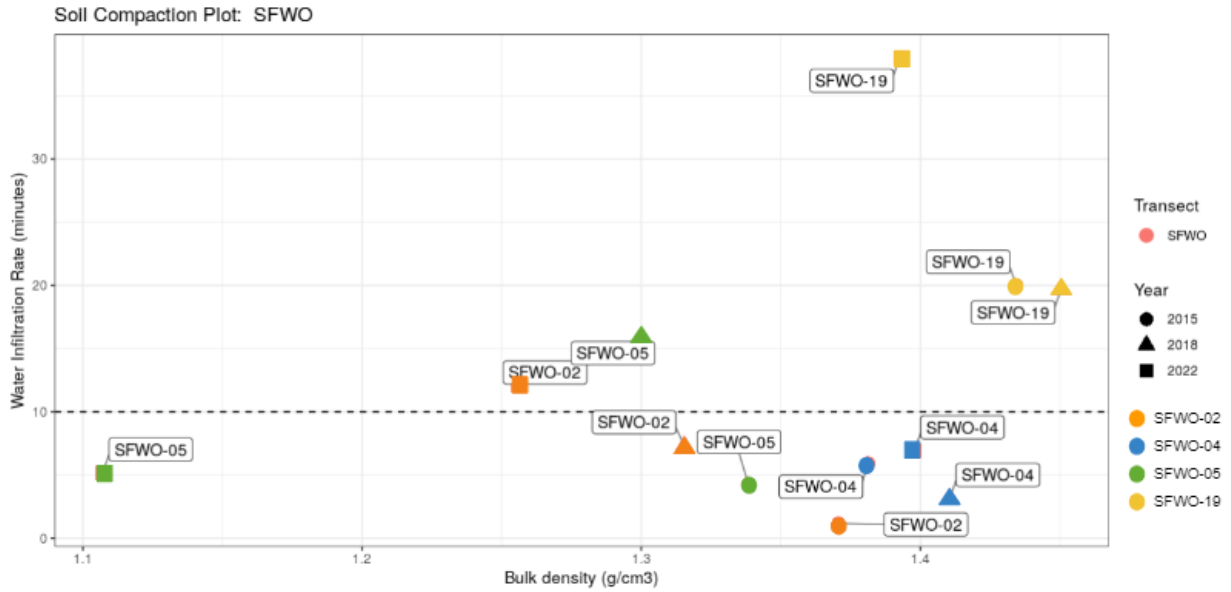


Figure 2. Scatter plot of soil compaction in 2015, 2018, and 2022 with water infiltration times on the Y axis and bulk density on the X axis. Note a decrease in bulk density at all points from 2018-2022 and a stable or decreasing water infiltration time at just 1 of 4 points.

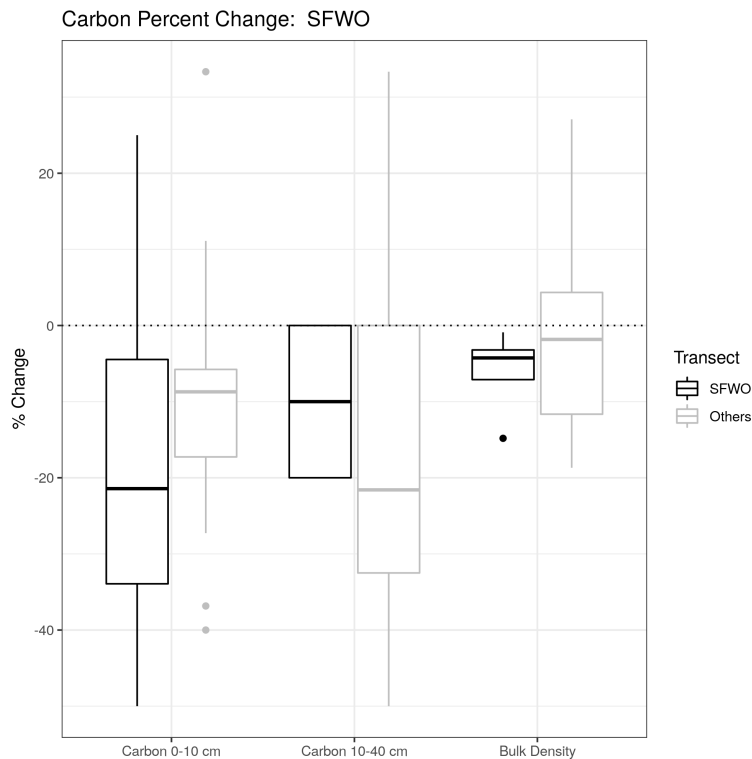


Figure 3. Box and whiskers plot of the percent change in carbon and bulk density from the 2018 sampling event to 2022. The boxes show the upper and lower quartiles (the interquartile range is where 50% of the data are found), the line inside is the median, and the whiskers are the minimum and maximum. Average percent change 2018-22 at all RMN ranches in the Sacramento Valley region are in gray. Note that a decreased bulk density indicates less compaction, which is positive as more pore space allows for more root growth, water holding capacity, and microbe and fungal life.

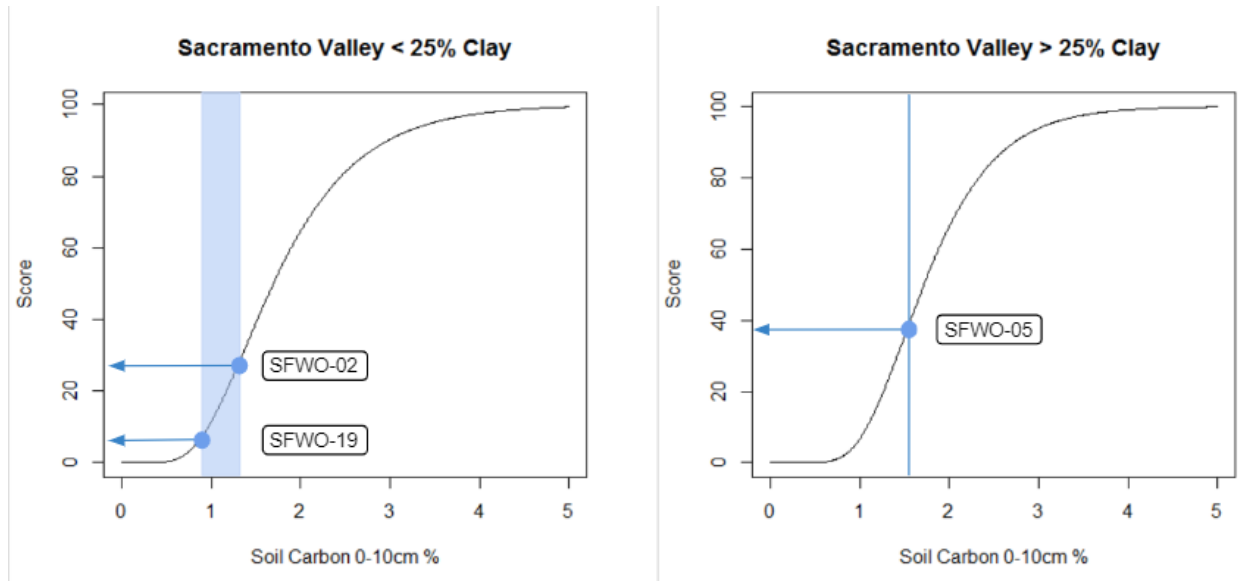


Figure 4. South Fork Willow Creek soils range from 0.9%-1.5% SOC at the 0-10 cm depth and are represented by the blue bar on the soil health curve. They span from the 10th percentile to 35th percentile among soils of a similar clay content within the region (since clay content is a factor that influences a soil’s ability to hold SOC).

The soil health curves were developed by Point Blue soil ecologist Dr. Chelsea Carey and shows the range of what we have observed in the Rangeland Monitoring Network. We make assumptions that our data collection is representative of CA Rangelands.

Figures Part 2: Vegetation

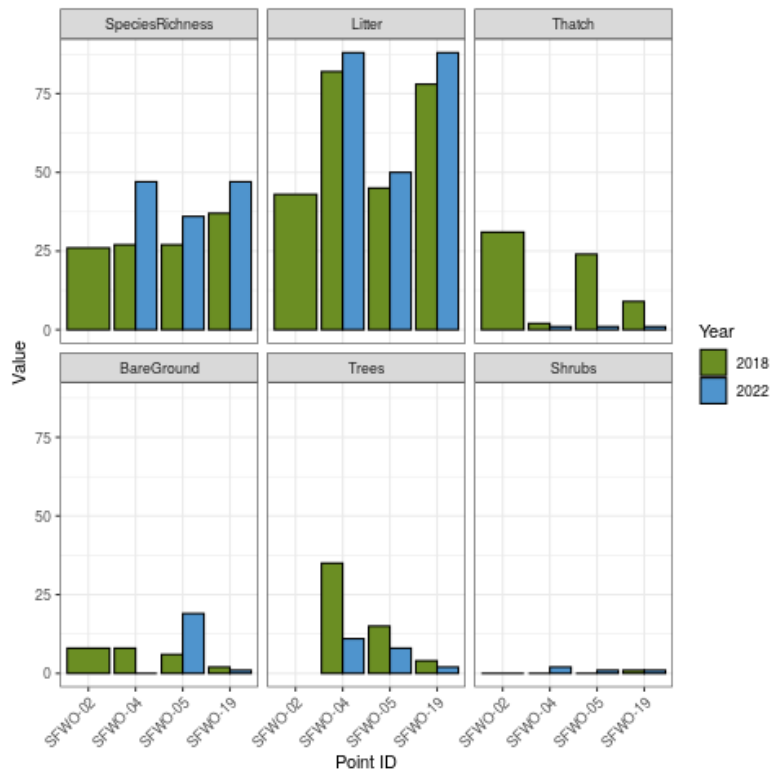


Figure 5. Cover summary of points sampled in 2018 and 2022. Note that in the case of Species Richness, the Y-axis represents number of plant species, however for all other variables the Y-axis represents percent cover. Species richness increased at all points, as did litter, while thatch decreased at all points. Bare ground increased at just one point, -05.

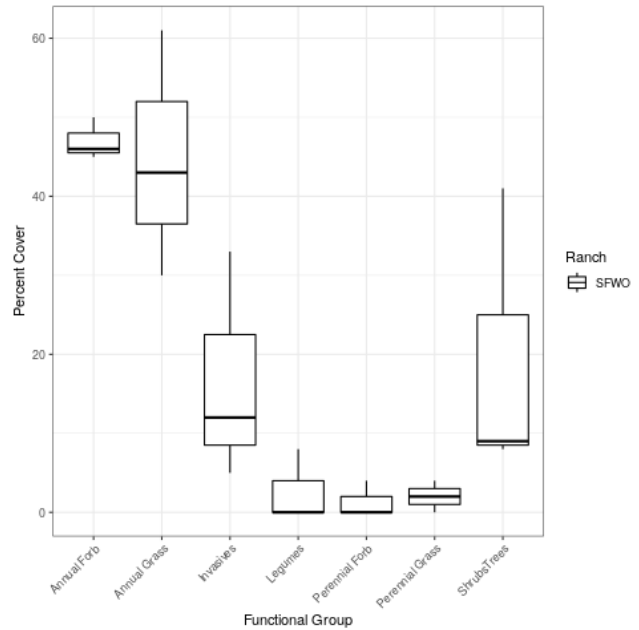
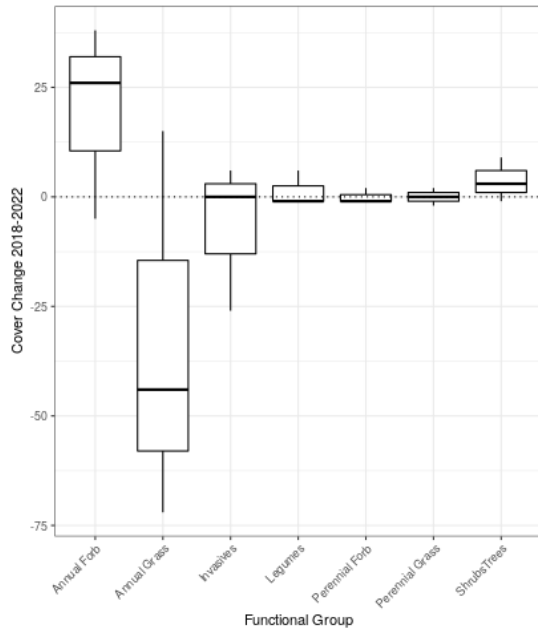


Figure 6 (left). Box and whisker plot of change in percent cover between 2018 and 2022. The boxes show the interquartile range (where 50% of the values occur), the horizontal line inside the box is the median value, and the whiskers show the minimum and maximum values.

Figure 7 (right). Box and whisker plot of percent cover of functional groups represented by 2022 data.

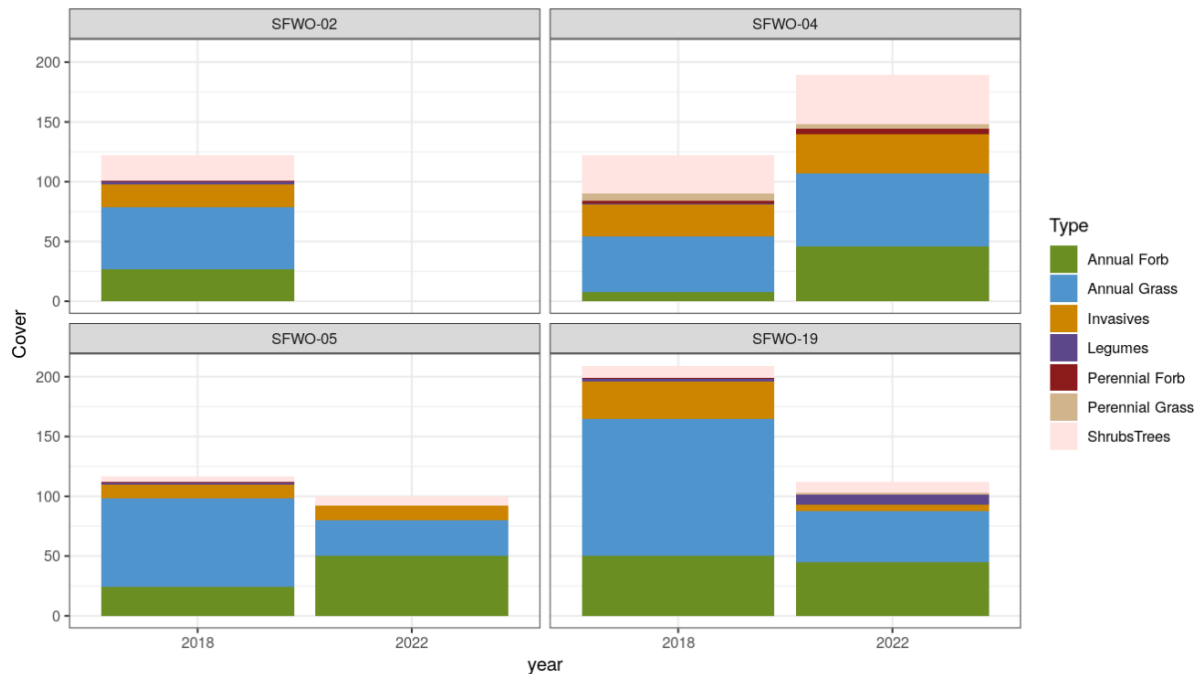


Figure 8. Bar graph with bins showing the % cover of functional groups at each point in 2018 and 2022. Note that % cover well exceeds 100% because we hit multiple species on each pin drop and vegetation is often layered. The species that are contributing to the “Invasive” category are red brome (*Bromus rubens*) and medusahead (*Elymus caput-medusae*). At point -19, medusahead cover reduced from 29% to 0%!

Figures Part 3: Birds

Bird species code key

AMKE	American Kestrel	TRES	Tree Swallow	CASJ	California-Scrub Jay
LASP	Lark Sparrow*	WAVI	Warbling Vireo	EUST	European Starling
MALL	Mallard	WIFL	Willow Flycatcher	LEWO	Lewis's Woodpecker
WEBL	Western Bluebird*	WIWA	Wilson's Warbler	NUWO	Nuttall's Woodpecker
WEKI	Western Kingbird	YEWA	Yellow Warbler	HUVI	Hutton's Vireo
WEME	Western Meadowlark	ACWO	Acorn Woodpecker	OATI	Oak Titmouse
BANS	Bank Swallow	ATFL	Ash-throated Flycatcher	WBNU	White-breasted Nuthatch
BHGR	Black-headed Grosbeak	CAQU	California Quail		

Table 1. Species codes list for interpretation of bird figures below. * = focal species in more than one habitat type

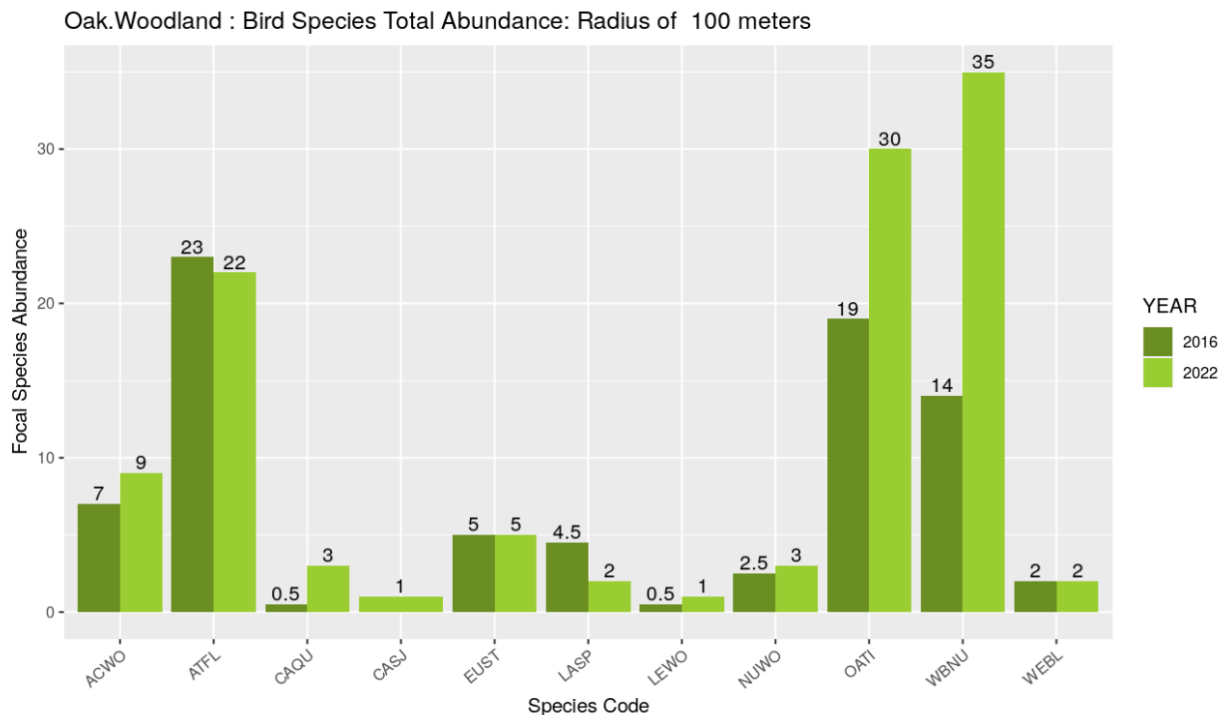


Figure 9. Oak Woodland species abundance in 2016-2022. An increased abundance in many species is a positive sign and demonstrates an increasing capacity of the ranch to support nesting birds. We observed a marked increase in Acorn Woodpecker, Oak Titmouse, White-breasted Nuthatch, and California Quail as well as increases in many other species.

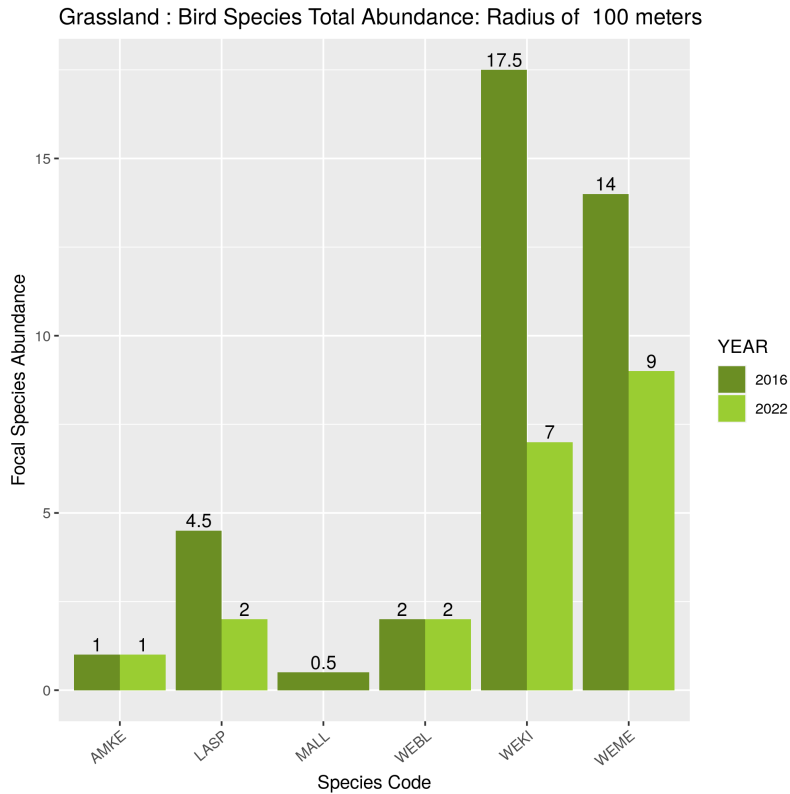


Figure 10. Grassland bird species abundance in 2016 and 2022. We observed stable abundance in American Kestrel and Western Bluebird. We also observed a decrease in Lark Sparrow, Western Kingbird, and Western Meadowlark.

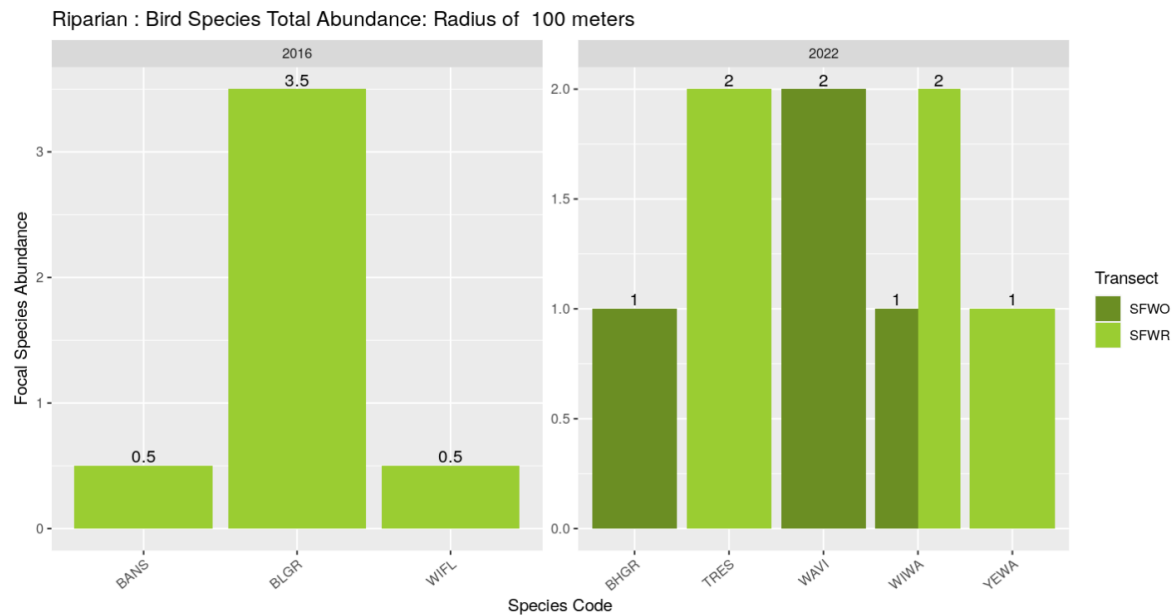


Figure 11. Riparian bird species abundance in 2016-2022. SFWR is a riparian transect that contains 15 points, 3 of which we revisited in 2022. It is really neat that Bank Swallows and Willow Flycatchers were observed in the riparian area in 2016, however they were not observed again in 2022. Many of these riparian species have only been detected in the riparian transect points, including the Bank Swallow, Willow Flycatcher, Tree Swallow, and Yellow Warbler.

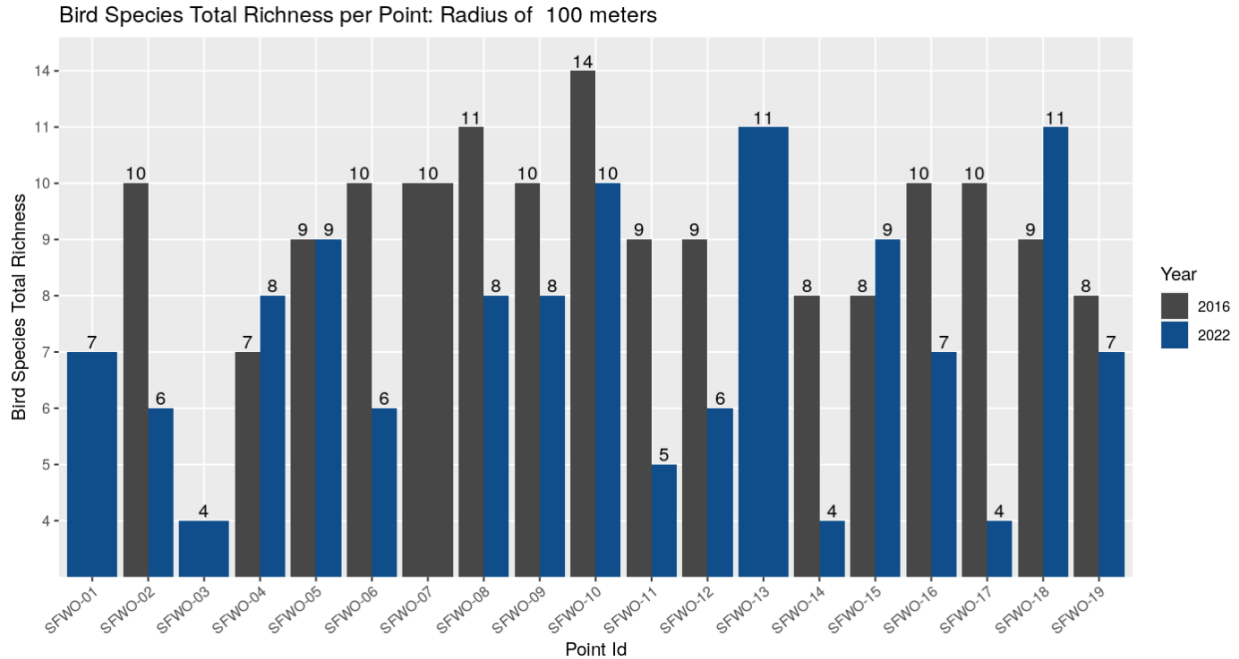


Figure 12. Species richness per point and per visit in 2016 and 2022 for detections within 100 meters. We observed an increase in species richness at many of the points we monitored. Note that in 2022 we visited points once for bird counts, whereas in 2016 Point Blue visited points twice, and this increase is despite that change in effort.

Frequently Asked Questions (FAQs)

Very abbreviated for South Fork Willow Creek to avoid repetitiveness from the Divide Ranch letter.



What points are being resampled and what is their history of sampling?

Soils: In 2022, we revisited the 4 soil points that were last sampled in 2018 and were first sampled in 2015. This year's sampling event was the 2nd resample of these 4 points. The 3 points we revisited in 2022 are a subset of the 19 points that are selected for bird surveys (not including the riparian transect of bird points).

Vegetation: In 2022, we visited 3 of the 4 points that were soil sampled. These 3 points were originally surveyed in 2018, so this is their first time getting resampled. One soil point, SFWO-02, had vegetation surveyed in 2018, but not in 2022.

Birds: In 2022, we visited 22 points at South Fork Willow Creek. We did 1 round of bird surveys at all points during the peak of nesting season in mid-May. The last time Point Blue staff did bird surveys was in 2016, when 2 rounds were completed at 34 points. The first time surveys were completed was in 2014.

What plants are growing on my ranch?

The **top 5 most abundant plant species** found on your ranch are listed on your ranch fact sheet, and **Appendix I** has a complete list of plants we documented on your property. It is organized by plant

families and also has other information, such as whether each species is an annual or perennial. If you want to know more about a particular species, there are many resources available. Two places we recommend starting are calflora (www.calflora.org) and USDA plants (<https://plants.sc.egov.usda.gov>).

The four of the five most common pasture plants detected at South Fork Willow Creek in 2015, 2018, and 2022 were non-native. Red brome (*Bromus rubens*), soft chess (*Bromus hordeaceus*), slender oatgrass (*Avena barbata*), and red-stemmed filaree (*Erodium cicutarium*) were detected with the highest frequency in 2022. Three are considered quality livestock forage: filaree, soft chess, and slender oatgrass. Red brome is considered moderate to poor quality forage because there is reportedly a short period in which it is palatable to cattle. While species like filaree and slender oatgrass are considered good forage, it should be noted that they are non-native and competitive, and should be managed to ensure that they do not outcompete other native and more desirable plant species.

What changes did we see in the ranch's bird community from 2019-22?

There was an increase in abundance of many species from 2015 to 2022 (see **Figures 9-11** and Fact Sheet). Oak Titmouse and White-breasted Nuthatch abundance increased dramatically, over doubling in the case of White-breasted Nuthatches. On the Ranch Fact Sheet, **Changes in community composition** tells you which species increased, decreased, or stayed the same. Many species increased in abundance or maintained stable abundances, with a few notable exceptions (discussed below).

Did all species increase from 2019 to 2022?

No. See **Figures 9-11** for changes in species abundance in each focal group. Some decreases that stood out were in the grassland focal group, including Lark Sparrow, Western Kingbird, and Western Meadowlark.

How can this data inform land management?

See the Divide Ranch letter for more detailed recommendations. Many of those recommendations apply to South Fork Willow Creek due to the similar habitat, vegetation, topography, and management. Something to keep an eye on for South Fork Willow Creek specifically is the medusahead presence. As mentioned in **Figure 8**, medusahead cover went from 29% to 0% at point -19. This is a significant victory and I encourage you to keep up the good work and to target medusahead in areas that you observe it popping up. Medusahead is still present at point -19 as we picked it up on the releve portion of our survey, but in significantly lower numbers. (Releve: we spend an extra 30 minutes recording every species within a 50 m radius that was not recorded on the line-point intercept survey, which is where percent cover is derived from).

I will include a flier resource from UC Cooperative Extension about timing of grazing and mowing treatments for medusahead and barbed goatgrass. Apologies if you are already familiar with this resource or its information.

Appendix: Species Lists

Appendix I: Plant List

Scientific Name	Common Name	Family	Provenance	Functional Group
<i>Anthriscus caucalis</i>	bur chervil	Apiaceae	Non-native	Annual Forb
<i>Daucus pusillus</i>	American wild carrot	Apiaceae	Native	Annual Forb
<i>Torilis arvensis</i>	spreading hedgeparsley	Apiaceae	Non-native	Annual Forb
<i>Achyraea mollis</i>	blow wifes	Asteraceae	Native	Annual Forb
<i>Achillea millefolium</i>	common yarrow	Asteraceae	Native	Perennial Forb
<i>Crepis occidentalis</i>	largeflower hawksbeard	Asteraceae	Native	Annual Forb
<i>Hemizonella minima</i>	opposite-leaved tarweed	Asteraceae	Native	Annual Forb
<i>Hypochaeris glabra</i>	smooth cat's ear	Asteraceae	Non-native	Annual Forb
<i>Lagophylla ramosissima</i>	branched lagophylla	Asteraceae	Native	Annual Forb
<i>Logfia</i>	cottonrose	Asteraceae		Annual Forb
<i>Micropus californicus</i>	q-tips	Asteraceae	Native	Annual Forb
<i>Psilocarphus</i>	woollyheads	Asteraceae	Native	Annual Forb
<i>Silybum marianum</i>	blessed milkthistle	Asteraceae	Non-native	Annual Forb
<i>Sonchus asper</i>	spiny sowthistle	Asteraceae	Non-native	Annual Forb
<i>Amsinckia</i>	fiddleneck	Boraginaceae	Native	Annual Forb
<i>Athysanus pusillus</i>	common sandweed	Brassicaceae	Native	Annual Forb
<i>Capsella bursa-pastoris</i>	shepherd's purse	Brassicaceae	Non-native	Annual Forb
<i>Lepidium nitidum</i>	shining pepperweed	Brassicaceae	Native	Annual Forb
<i>Sisymbrium</i>	hedgemustard	Brassicaceae	Non-native	Annual Forb
<i>Cerastium glomeratum</i>	sticky chickweed	Caryophyllaceae	Non-native	Annual Forb
<i>Silene gallica</i>	common catchfly	Caryophyllaceae	Non-native	Annual Forb
<i>Crassula connata</i>	sand pygmyweed	Crassulaceae	Native	Annual Forb
<i>Croton setigerus</i>	dove weed	Euphorbiaceae	Native	Annual Forb
<i>Lotus wrangelianus</i>	Chilean bird's-foot trefoil	Fabaceae	Native	Legumes
<i>Lupinus bicolor</i>	miniature lupine	Fabaceae	Native	Legumes
<i>Medicago polymorpha</i>	burclover	Fabaceae	Non-native	Legumes
<i>Trifolium albopurpureum</i>	rancheria clover	Fabaceae	Native	Legumes

Scientific Name	Common Name	Family	Provenance	Functional Group
<i>Trifolium hirtum</i>	rose clover	Fabaceae	Non-native	Legumes
<i>Trifolium microcephalum</i>	smallhead clover	Fabaceae	Native	Legumes
<i>Quercus douglasii</i>	blue oak	Fagaceae	Native	ShrubsTrees
<i>Erodium botrys</i>	longbeak stork's bill	Geraniaceae	Non-native	Annual Forb
<i>Erodium brachycarpum</i>	shortfruit stork's bill	Geraniaceae	Non-native	Annual Forb
<i>Erodium cicutarium</i>	redstem stork's bill	Geraniaceae	Non-native	Annual Forb
<i>Geranium molle</i>	dovefoot geranium	Geraniaceae	Non-native	Annual Forb
<i>Nemophila</i>	baby blue eyes	Hydrophyllaceae	Native	Annual Forb
<i>Trichostema laxum</i>	turpentine weed	Lamiaceae	Native	Annual Forb
<i>Allium amplexans</i>	narrowleaf onion	Liliaceae	Native	Perennial Forb
<i>Calochortus luteus</i>	yellow mariposa lily	Liliaceae	Native	Perennial Forb
<i>Dichelostemma capitatum</i>	bluedicks	Liliaceae	Native	Perennial Forb
<i>Triteleia laxa</i>	Ithuriel's spear	Liliaceae	Native	Perennial Forb
<i>Clarkia purpurea</i>	winecup clarkia	Onagraceae	Native	Annual Forb
<i>Eschscholzia californica</i>	California poppy	Papaveraceae	Native	Annual Forb
<i>Plantago erecta</i>	dotseed plantain	Plantaginaceae	Native	Annual Forb
<i>Aira caryophylla</i>	silver hairgrass	Poaceae	Non-native	Annual Grass
<i>Avena barbata</i>	slender oat	Poaceae	Non-native	Annual Grass
<i>Bromus diandrus</i>	ripgut brome	Poaceae	Non-native	Annual Grass
<i>Bromus hordeaceus</i>	soft brome	Poaceae	Non-native	Annual Grass
<i>Bromus rubens</i>	red brome	Poaceae	Non-native	Annual Grass
<i>Hordeum murinum</i>	mouse barley	Poaceae	Non-native	Annual Grass
<i>Lolium perenne</i>	perennial ryegrass	Poaceae	Non-native	
<i>Melica</i>	melicgrass	Poaceae	Native	Perennial Grass
<i>Nassella pulchra</i>	purple needlegrass	Poaceae	Native	Perennial Grass
<i>Phalaris aquatica</i>	bulbous canarygrass	Poaceae	Non-native	Perennial Grass
<i>Poa bulbosa</i>	bulbous bluegrass	Poaceae	Non-native	Perennial Grass
<i>Taeniatherum caput-medusae</i>	medusahead	Poaceae	Non-native	Annual Grass
<i>Vulpia bromoides</i>	brome fescue	Poaceae	Non-native	Annual Grass
<i>Vulpia microstachys</i>	small fescue	Poaceae	Native	Annual Grass

Scientific Name	Common Name	Family	Provenance	Functional Group
<i>Gilia tricolor</i>	bird's-eye gilia	Polemoniaceae	Native	Annual Forb
<i>Leptosiphon ciliatus</i>	whiskerbrush	Polemoniaceae	Native	Annual Forb
<i>Microsteris gracilis</i>	slender phlox	Polemoniaceae	Native	Annual Forb
<i>Navarretia</i>	pincushionplant	Polemoniaceae	Native	Annual Forb
<i>Navarretia pubescens</i>	downy pincushionplant	Polemoniaceae	Native	Annual Forb
<i>Pterostegia drymarioides</i>	woodland pterostegia	Polygonaceae	Native	Annual Forb
<i>Claytonia</i>	Springbeauty, miner's lettuce	Portulacaceae	Native	Forb
<i>Dodecatheon</i>	Shooting star	Primulaceae	Native	Perennial Forb
<i>Galium</i>	bedstraw	Rubiaceae		Forb
<i>Castilleja attenuata</i>	attenuate Indian paintbrush	Scrophulariaceae	Native	Annual Forb
<i>Castilleja exserta</i>	exserted Indian paintbrush	Scrophulariaceae	Native	Annual Forb
<i>Collinsia parviflora</i>	maiden blue eyed Mary	Scrophulariaceae	Native	Annual Forb

Appendix II: Bird List

Species Code	Common Name	Count
EUST	European Starling	107
WBNU	White-breasted Nuthatch	39
OATI	Oak Titmouse	32
ATFL	Ash-throated Flycatcher	25
ACWO	Acorn Woodpecker	22
LASP*	Lark Sparrow	4
CASJ	California Scrub-Jay	5
CAQU	California Quail	4
NUWO	Nuttall's Woodpecker	3

Focal Species:

Oak Woodland

Grassland

Riparian

Non-focal species

* Oak Woodland and Grassland focal species

Species Code	Common Name	Count
LEWO	Lewis's Woodpecker	1
CALT	California Towhee	1
WEKI	Western Kingbird	10
WEME	Western Meadowlark	25
KILL	Killdeer	4
AMKE	American Kestrel	3
YBMA*	Yellow-billed Magpie	2
WEBL*	Western Bluebird	2
MALL	Mallard	2
BHGR	Black-headed Grosbeak	3
WAVI	Warbling Vireo	3
WIWA	Wilson's Warbler	3
TRES	Tree Swallow	2
YEWA	Yellow Warbler	1
MODD	Mourning Dove	41
RWBL	Red-winged Blackbird	19
CLSW	Cliff Swallow	6
RCSP	Rufous-crowned Sparrow	4
CORA	Common Raven	4
HOFI	House Finch	4
LEGO	Lesser Goldfinch	3
EUCD	Eurasian Collared-Dove	3
ROWR	Rock Wren	2

Species Code	Common Name	Count
BUOR	Bullock's Oriole	2
BHCO	Brown-headed Cowbird	2
NOFL	Northern Flicker	1
LAZB	Lazuli Bunting	1
WETA	Western Tanager	1
BLPH	Black Phoebe	1
TOWA	Townsend's Warbler	1
AMRO	American Robin	1
HOFI	House Finch	1
BARS	Barn Swallow	1
NOMO	Northern Mockingbird	1