Trees of the Natomas Basin Conservancy 2002-2020

A retrospective report on the annual tree assessment conducted by the Sacramento Tree Foundation

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Trees of the Natomas Basin Conservancy 2002-2020
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Executive Summary

The Sacramento Tree Foundation began conducting an annual assessment of trees for the Natomas Basin Conservancy in 2002. The purpose of the assessment is to compile an inventory of trees with a diameter at breast height (DBH) greater than six inches at each property. This work has been completed by mapping the location of each tree and updating information regarding species and condition on an annual basis. The assessment has historically been completed in late summer and early fall to best assess health conditions during the most stressful season for plants. Additional data points have been included in the annual inventory; early on these included waypoints or reference points, and in some cases these data points were used to geolocate and gather data on non-tree species that were planted as part of restoration efforts at various Natomas Basin Conservancy properties.

Data has been gathered at:

• Alleghany	17 years	*2003-2020*
• Atkinson	17 years	*2003-2020*
• Bennett North	12 years	*2008-2020*
• Bennet South	13 years	*2007-2020*
• Betts, Kismat, and Silva properties	18 years	*2002-2020*
• Bolen South	12 years	*2008-2020*
• Brennan*	4 years*	*2002-2006 **
• Cummings	17 years	*2003-2020*
• Frazer	9 years	*2011-2020*
• Huffman properties	16 years	*2004-2020*
• Lucich North	18 years	*2002-2020*
• Natomas Farms	18 years	*2002-2020*
• Ruby Ranch	11 years	*2009-2020*
• Vestal	12 years	*2008-2020*

**This property is no longer owned by the Natomas Basin Conservancy*

Properties that did not previously contain trees within their boundaries are excluded from this report and a full assessment of all properties has not been a component of the assessment to date. A re-evaluation of properties to be assessed in 2021 may be in order as significant tree moving and tree planting operations appear to be underway on and adjacent to several properties as well as natural regeneration being identified at a number of properties throughout the basin.

The first annual monitoring in 2002 included evaluation of seven properties and 270 data points. Although the primary intention of this project is to document trees with a DBH greater than six inches, additional wayfinding points have been included since 2002 and larger numbers of sapling-sized trees and non-tree data points were added in 2010. Each assessment included a general evaluation of all native vegetation on surveyed Natomas Basin Conservancy's properties, with information given in the narrative of each year's report. Recruitment of new trees and other vegetation has occurred through planting projects as well as natural recruitment on most sites. Numerous native shrubs and vines have been given data points such as coyote brush (*Baccharis pilularis*), mulefat (*Baccharis salicifolia*), buttonbush (*Cephalanthus occidentalis*), California wild rose (*Rosa californica*), California blackberry (*Rubus ursinus*), elderberry (*Sambucus nigra*), hoary coffeeberry (*Frangula californica ssp. tomentella*), and California grape (*Vitis californica*). Some of the scientific names of these plants have changed over the course of the project and historical names are retained within the dataset. This retrospective report is focused on the tree resources that have been consistently surveyed throughout the 18 years of assessments undertaken thus far. Non-tree data points are characterized within annual property reports but are not included in the charts and tables included in this retrospective report.

The 2020 assessment evaluated 3,149 data points at thirteen property groups, a slight decrease from the all-time high of 3,160 data points recorded in 2019. Historically, the Betts, Kismat, and Silva properties have been assessed as a single location within the assessment which does not allow for differentiation when reviewing data retrospectively. These properties were split into individual data sets in 2018 to allow for a more accurate gathering of future information. For this retrospective report, these sites will be remained combined to allow for comparison over the last 18 years. Ruby Ranch and Vestal continue to be assessed as one location within the annual reports; however, it is easy to differentiate the number and location of trees on each property so they are treated as separate locations in this report.

Trees of the Natomas Basin Conservancy 2002-2020

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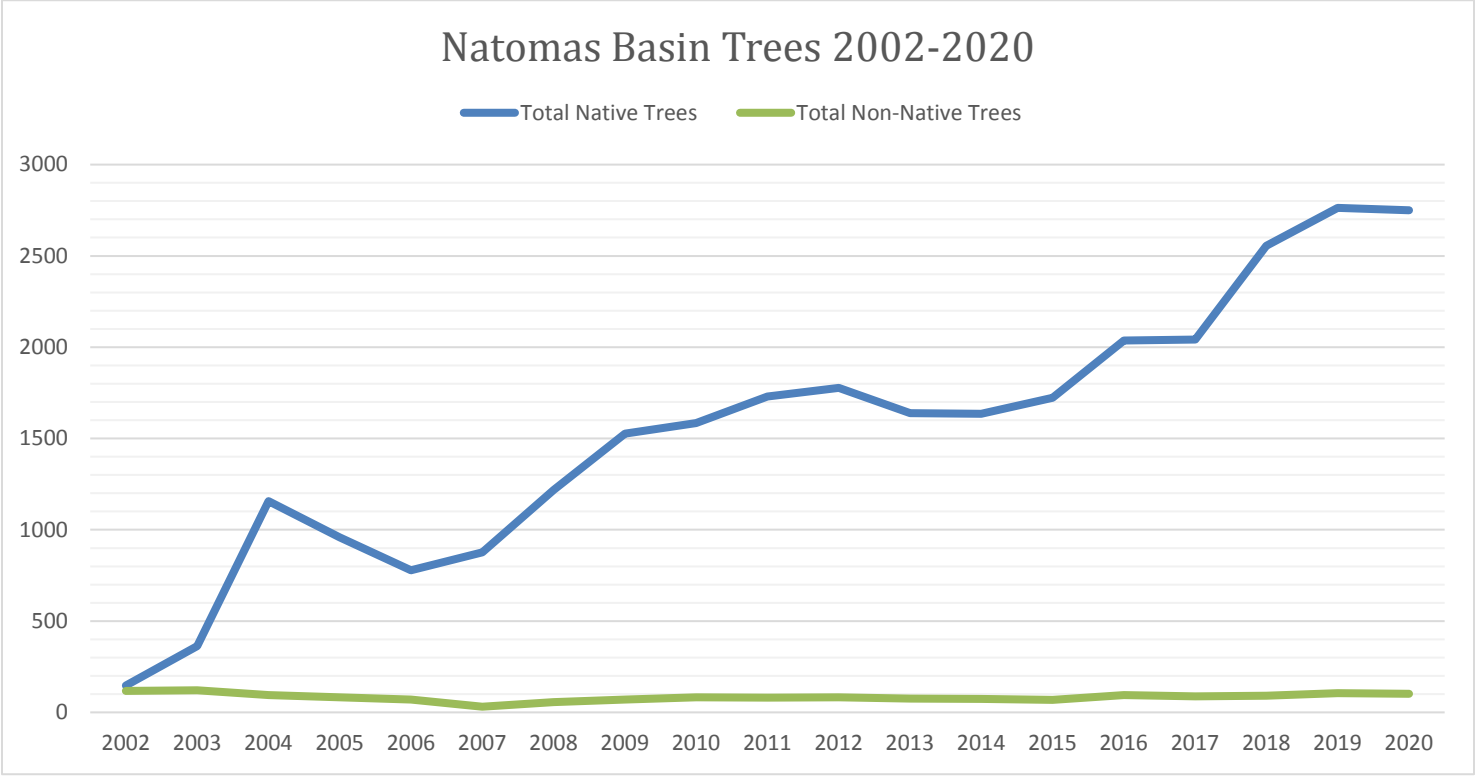
All Properties, 2002-2020

From 2002 to 2020, the annual tree assessment expanded from four properties, 264 trees, and 270 data points to 14 property groups*, 2,851 trees, and 3,160 data points. Over this time, non-native trees decreased from 44% of the trees assessed to only 4% of the trees assessed.

A thorough cleaning of the dataset occurred between 2012 and 2014 and all trees that had been marked as dead or missing in previous years were removed from the dataset. In some cases, trees that had been marked dead remained on the maps and within the dataset for many years, artificially inflating the total number of trees present and skewing the size and species count interpretations. From 2014 forward, newly dead or missing plant material was recorded in the year it was found, then expunged from the data set the following year.

Drought stress was first noted on many properties in 2015 but did not result in tree mortality significant enough to be seen within the trends for individual properties or the annual assessment as a whole. Recruitment of new trees less than 6" flattened out between 2013 and 2015 and could be the result of prolonged drought or a lack of active planting projects during that timeframe.



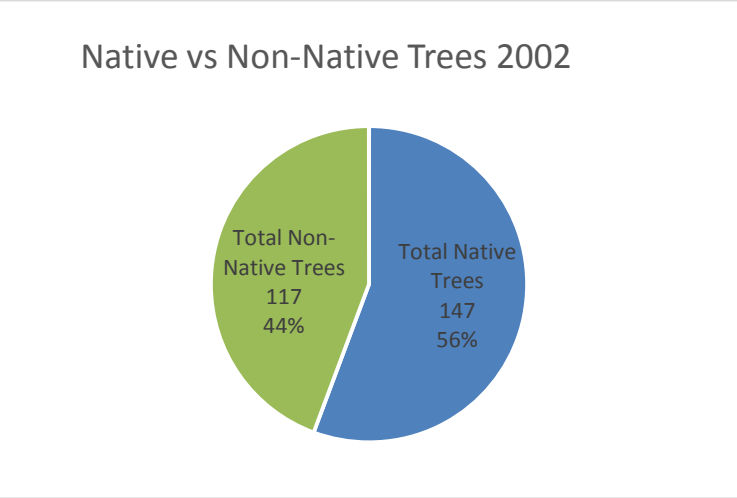
Trees of the Natomas Basin Conservancy 2002-2020

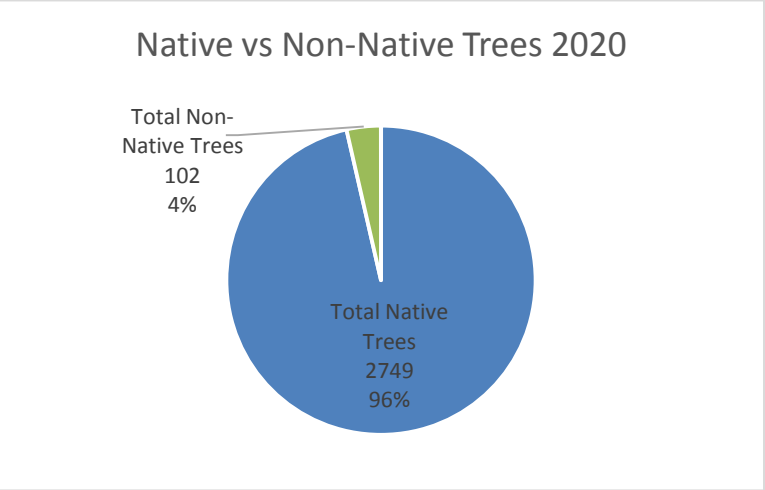
A retrospective report on the annual tree assessment conducted by the Sacramento Tree Foundation

All Properties, 2002-2020

Total Trees Property/ Year

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Allegheny	0	140	171	171	143	150	158	185	187	199	201	178	174	263	294	296	356	371	376
Atkinson	0	80	725	577	206	229	267	306	304	343	338	274	317	317	497	506	814	855	877
Bennet North	0	0	0	0	0	0	19	20	15	17	18	18	20	20	20	17	18	127	112
Bennet South	0	0	0	0	0	9	13	31	31	57	73	67	78	78	82	78	77	68	70
Betts-Kismat-Silva	126	126	119	105	249	219	252	279	314	358	371	333	286	272	288	274	394	399	383
Bolen South	0	0	0	0	0	0	74	101	101	101	108	84	117	118	137	139	151	145	145
Brennan	24	24	22	19	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cummings	0	12	68	22	86	95	168	284	296	297	298	302	313	316	327	354	335	335	332
Frazer	0	0	0	0	0	0	0	0	0	9	9	2	3	3	6	14	13	13	12
Huffman	0	0	17	17	18	15	11	30	30	30	30	28	28	28	39	41	43	32	33
Lucich North	16	4	0	1	0	5	12	18	18	22	30	33	22	20	23	25	25	107	95
Natomas Farms	98	98	129	129	126	186	207	237	263	269	277	281	247	252	315	288	319	314	326
Ruby Ranch	0	0	0	0	0	0	0	8	8	8	4	8	2	2	2	2	2	1	1
Vestal	0	0	0	0	0	0	93	98	99	100	103	106	102	101	102	96	99	101	89
Total	**264**	**484**	**1251**	**1041**	**850**	**908**	**1274**	**1597**	**1666**	**1810**	**1860**	**1714**	**1709**	**1790**	**2132**	**2130**	**2646**	**2868**	**2851**





Trees of the Natomas Basin Conservancy 2002-2020

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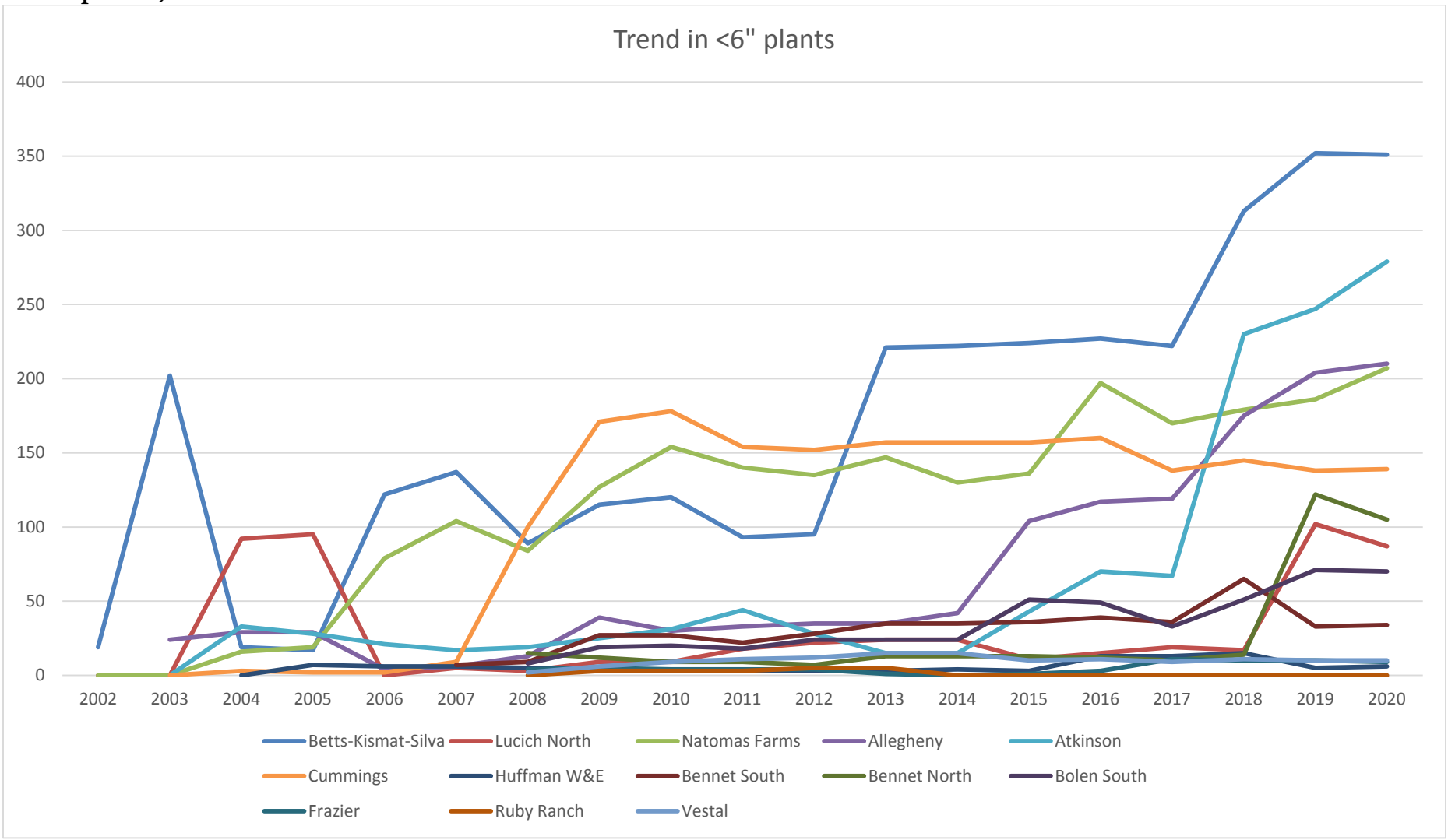
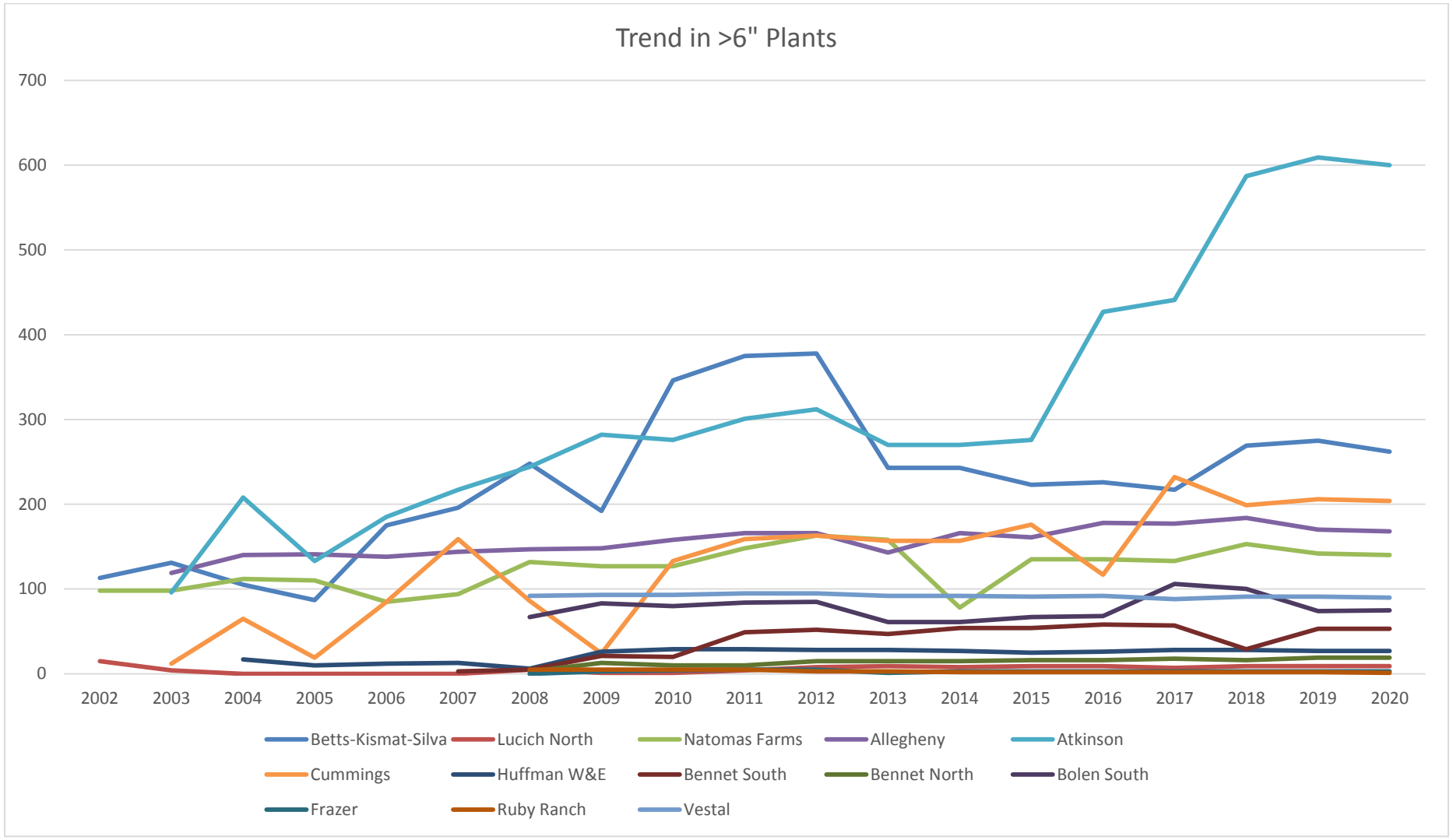
All Properties, 2002-2020



*Does not include the Brennan Property

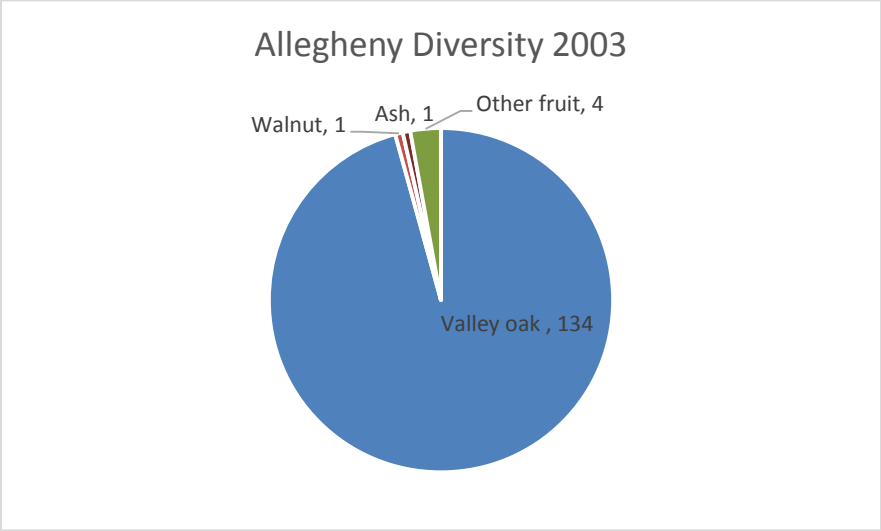
All Properties, 2002-2020

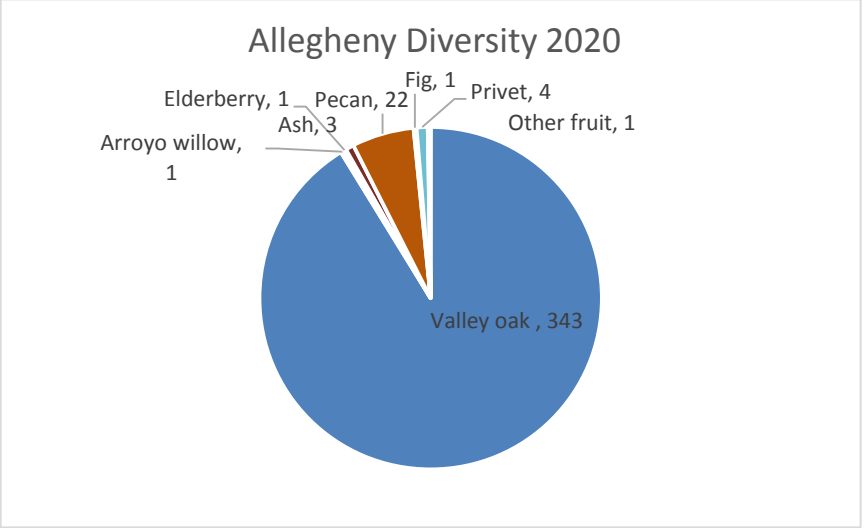


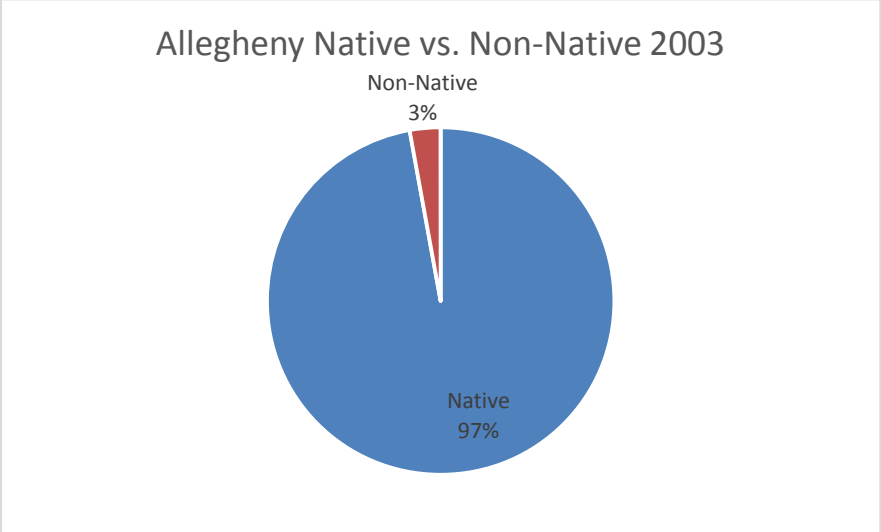
*Does not include the Brennan Property

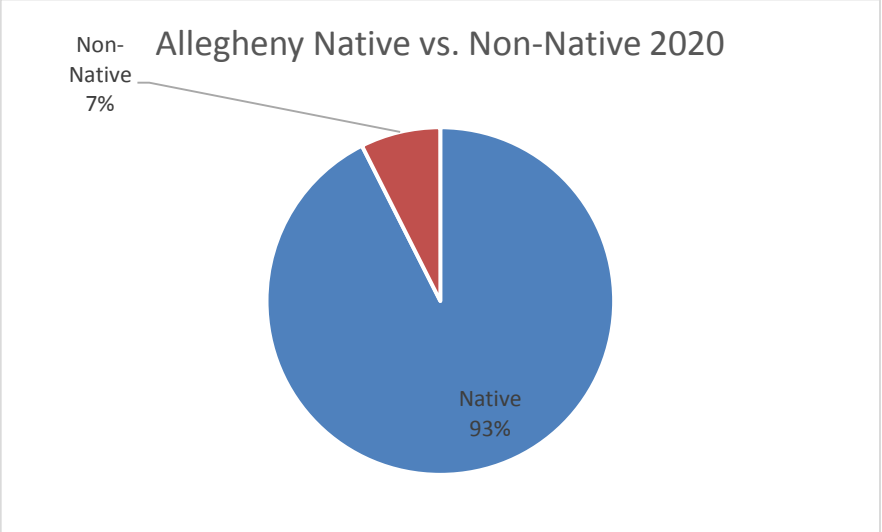
Alleghany Property 2003-2020

Between 2003 and 2020, the number of trees on the Allegheny property increased from 140 to 376. The number of tree species increased from four to seven species, with the percentage of native to non-native trees decreasing slightly, from 97% to 93%.

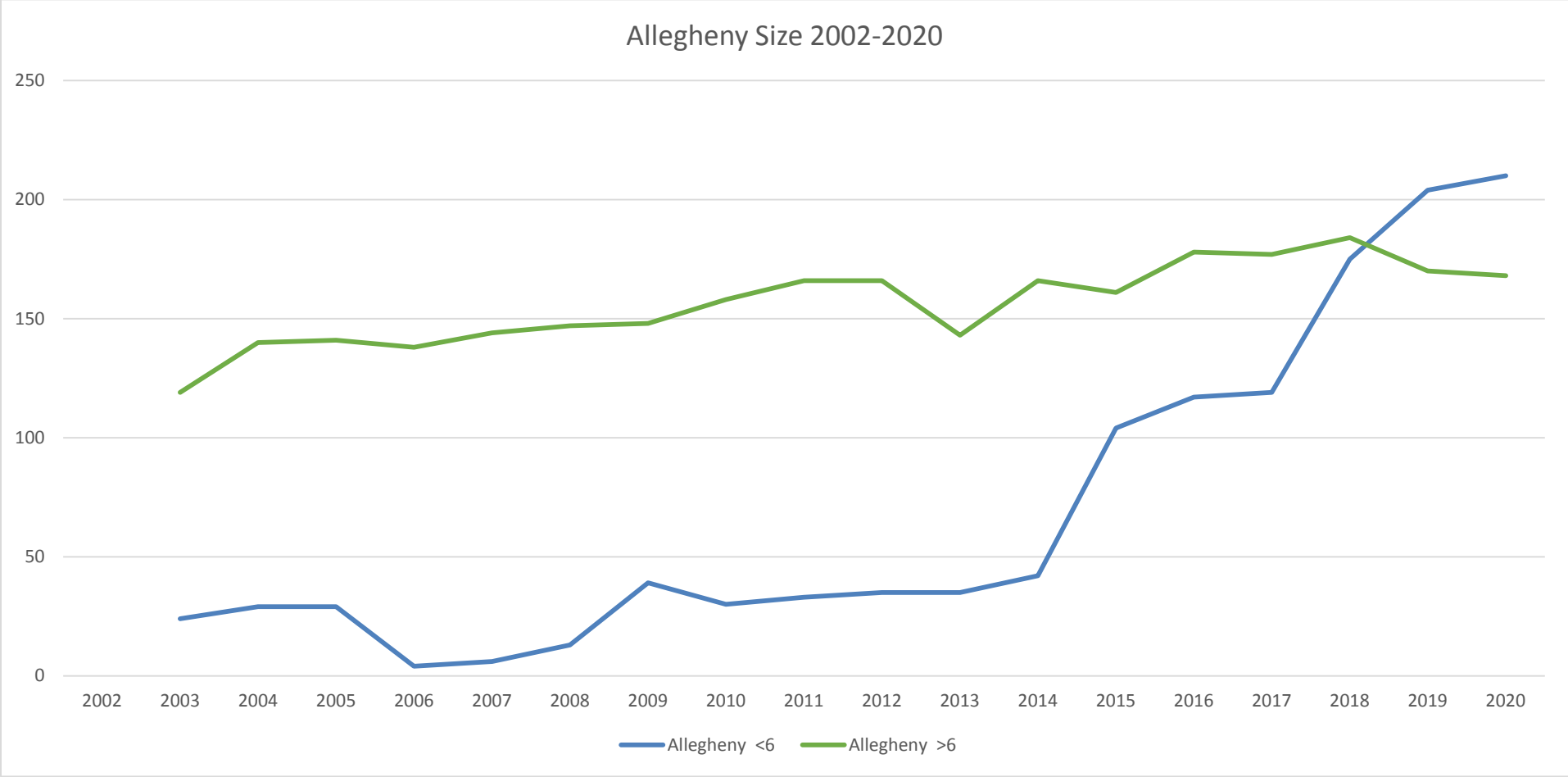








Alleghany Property 2003-2020



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Alleghany Property 2003-2020

Allegheny Trees	Scientific Name	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Valley Oak	*Quercus lobata*	134	156	156	138	139	151	178	179	188	190	173	171	260	289	285	343	342	343
Walnut	*Juglans californica var. hindsii*	1	8	8												1	1		
Cottonwood	*Populus fremontii*		5	5		1	3	3	3	3	3	1							
Arroyo willow	*Salix lasiolepis*																		1
Elderberry	*Sambucus mexicana*						1	1	1	1	1	1							1
Ash	*Fraxinus latifolia*	1			2	5				1	1	1	1	1	1	2	3	3	3
Box Elder	*Acer negundo*		1																
Pecan	*Carya illinoiensis*		1	2	3	3	3	3	4	6	6	2	2	2	3	7	7	20	22
Fig	*Ficus sp.*																	1	1
Privet	*Ligustrum sp.*														1	1	1	4	4
Other Fruit		4				1											1	1	1
Total		**140**	**171**	**171**	**143**	**149**	**158**	**185**	**187**	**199**	**201**	**178**	**174**	**263**	**294**	**296**	**356**	**371**	**376**

Alleghany Property Comments 2003-2020

2009- All trees less than six inches DBH were removed along the canal.

2012- The presence of a large number of honey bees is noted this year as well as several previous years.

2013- More accurate GPS receiver used. 28 valley oaks along the northern property boundary were removed from the assessment as they fall outside of the property boundary.

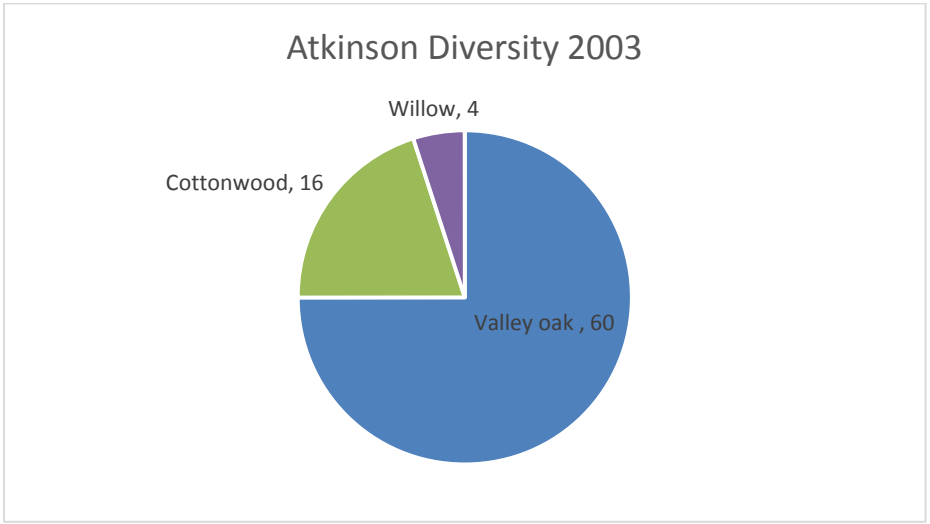
2017- Mechanical and herbicidal damage to saplings noted.

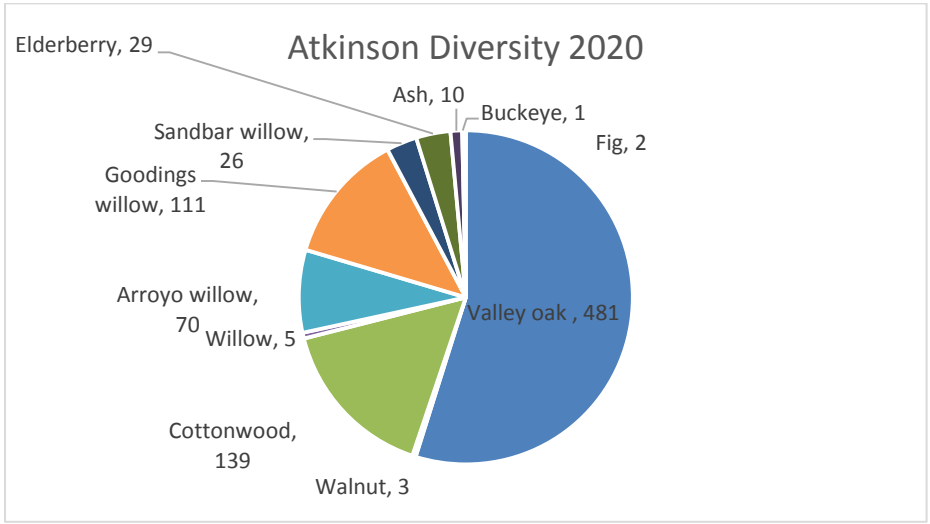
2018- Property was re-mapped using updated technology and sub-meter accuracy.

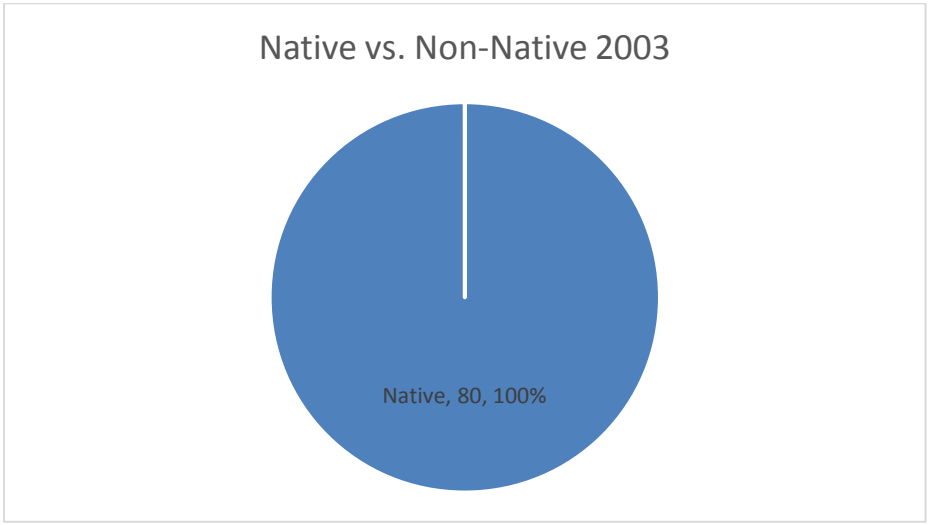
2020- Trees along the Garden Highway are in the process of being removed.

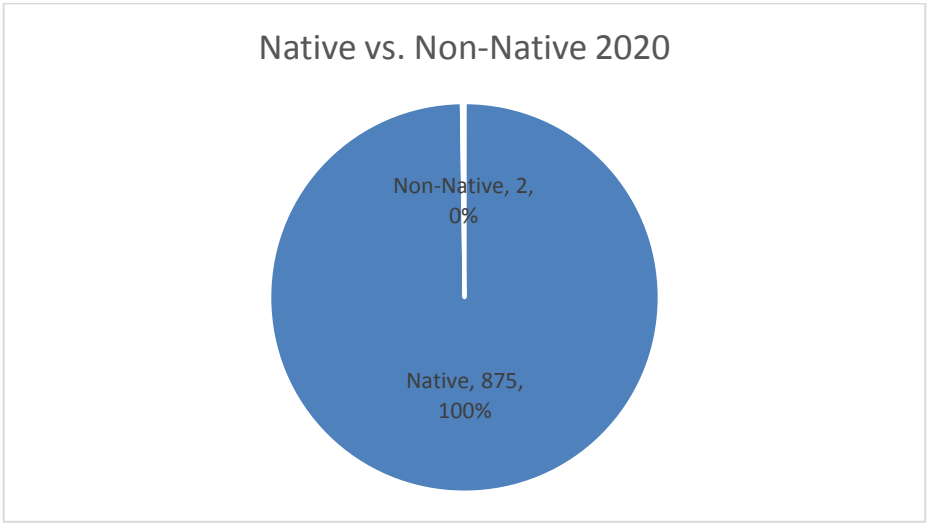
Atkinson Property 2003-2020

Between 2003 and 2020, the number of trees on the Atkinson property increased from 80 to 877. The number of species increased from three to 11 tree species, with the percentage of native to non-native trees remaining steady. Five species of non-native trees were present in small numbers over the 17 year period, with only two individual non-native trees (edible fig) being present in 2020.

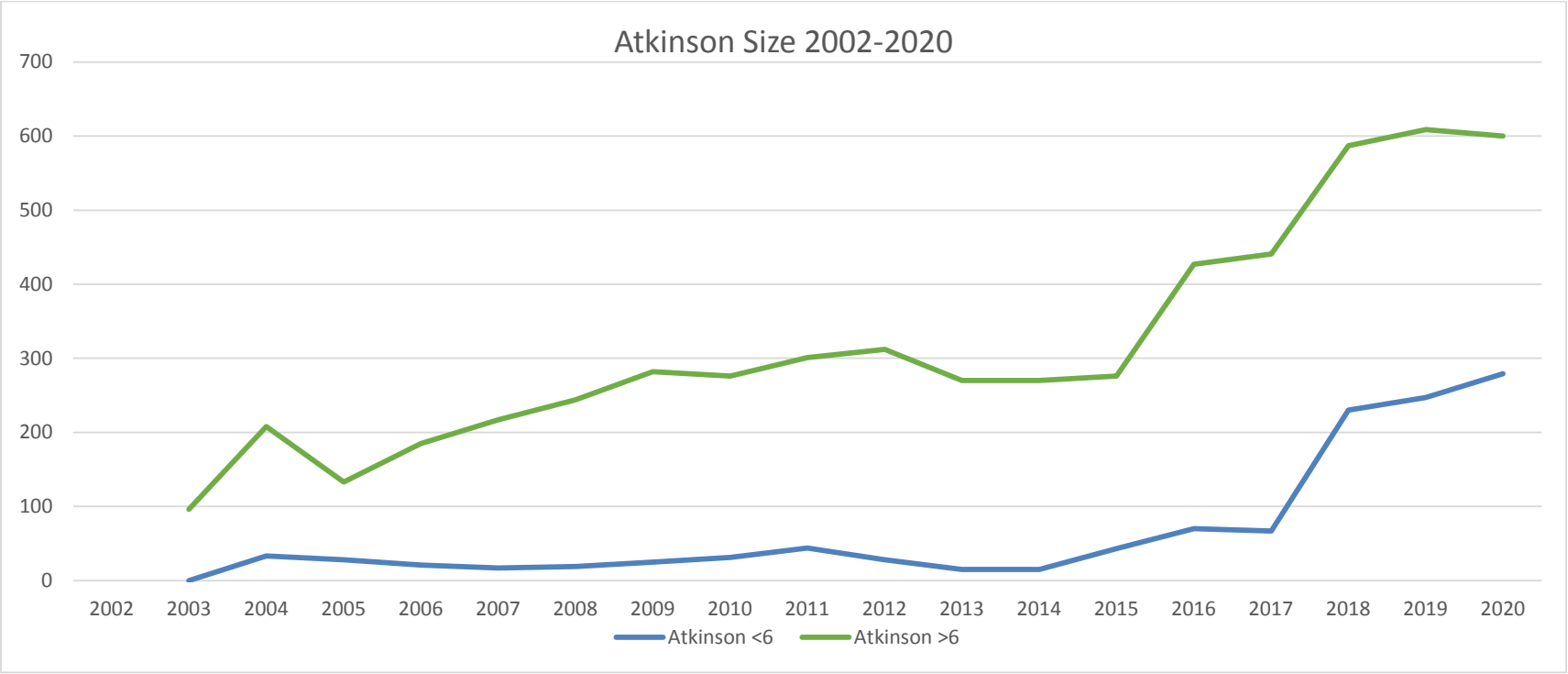








Atkinson Property 2003-2020



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Atkinson Property 2003-2020

Atkinson	Scientific Name	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Valley oak	*Quercus lobata*	60	228	125	136	163	182	210	223	226	223	166	210	212	279	290	463	474	481
Walnut	*Juglans californica var. hindsii*					1	2	1	1	1		1	1	1	1		1		3
Cottonwood	*Populus fremontii*	16	403	360	42	42	50	58	44	65	64	64	56	55	96	90	138	148	139
Willow	*Salix sp.*	4	91	90	25	23	31	33	33								4	4	5
Arroyo Willow	*Salix lasiolepis*									23	23	22	12	11	27	30	61	71	70
Goodings Willow	*Salix gooddingii*									22	22	19	23	23	63	66	104	111	111
Sandbar Willow	*Salix exigua*												11	12	15	17	28	28	26
Elderberry	*Sambucus mexicana*		1	1	1			2	2	3	3	2	3	3	3	3	3	8	29
Ash	*Fraxinus latifolia*																		10
Buckeye	*Aesculus californica*																1	1	1
Pecan	*Carya illinoiensis*												1		2	2	2		
Fig	*Ficus sp.*				2		1	2	1	3	3				10	8	9	10	2
Mulberry	*Morus sp.*		1	1															
Privet	*Ligustrum sp.*														1				
Other Fruit	*various*		1				1												
Total		**80**	**725**	**577**	**206**	**229**	**267**	**306**	**304**	**343**	**338**	**274**	**317**	**317**	**497**	**506**	**814**	**855**	**877**

Atkinson Property Comments 2003-2020

2005- Stand of *Populus alba* removed. These trees were not counted in previous assessments.

2007- Herbicide damage on the east side of the forest area noted.

2009- Storm damage and windthrow felled approximately 50 trees.

2018- Mapped interior of the forest area to include all trees over 6" DBH and all saplings over 4'5" tall with a minimum 1" caliper.

2020- Active tree planting underway on the west side of the property.

Trees of the Natomas Basin Conservancy 2002-2020

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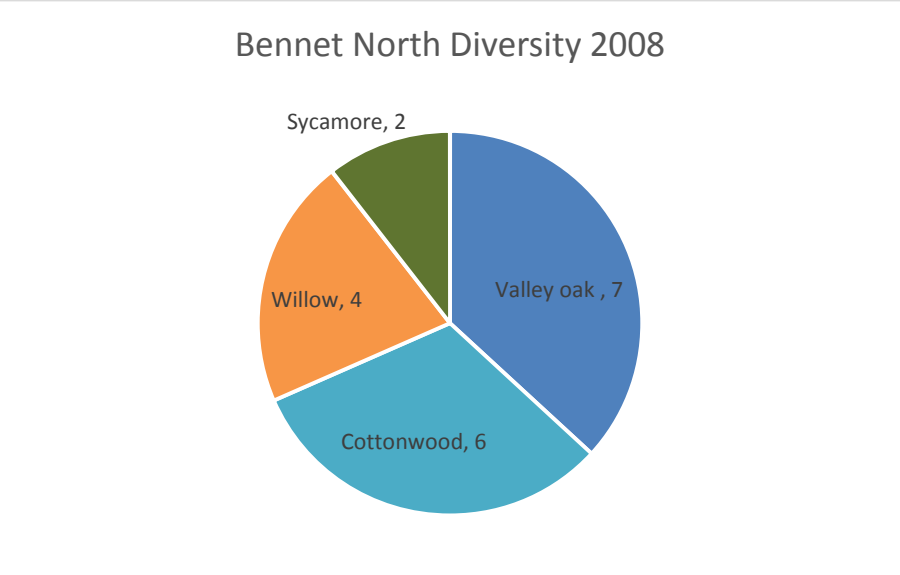
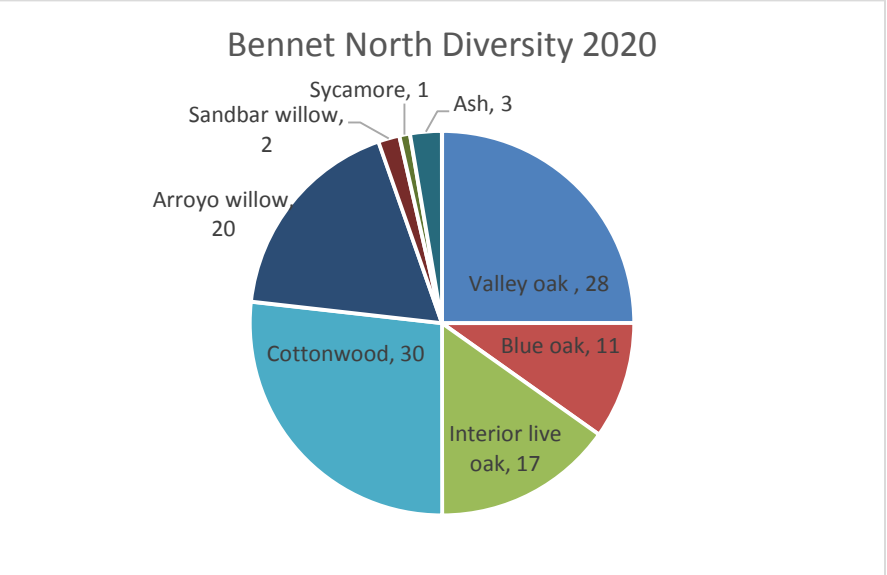
Bennett North Property 2008-2020

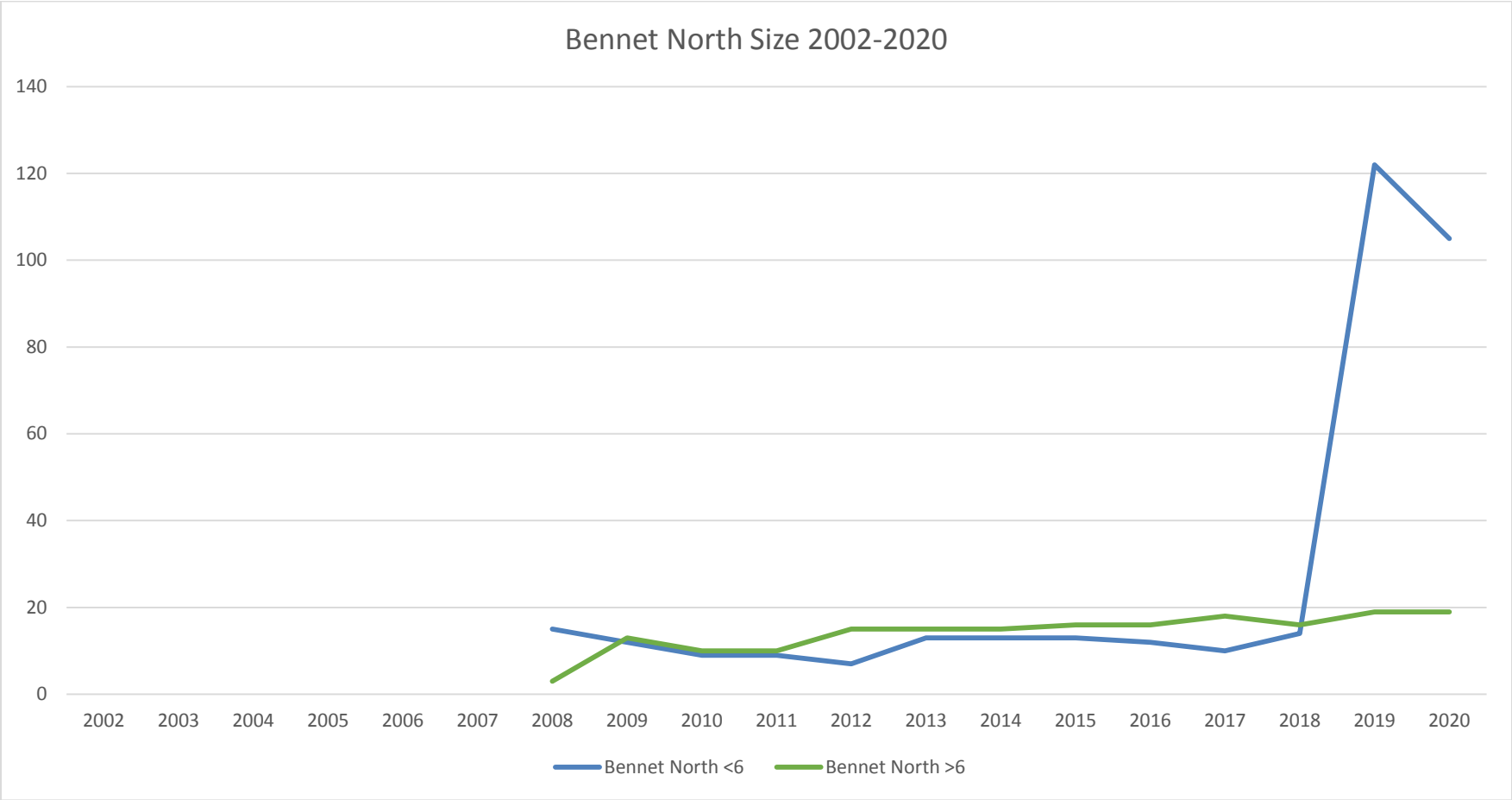
Between 2008 and 2020, the number of trees on the Bennett North property increased from 19 to 112. The number of tree species increased from four to eight species, with no non-native trees being recorded on the property during any of the assessments.





Bennet North	Scientific Name	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Valley oak	*Quercus lobata*	7	7	6	7	7	7	7	7	7	7	7	28	28
Blue oak	*Quercus douglasii*												12	11
Interior Live oak	*Quercus wislizeni*												17	17
Cottonwood	*Populus fremontii*	6	6	6	6	6	6	6	6	6	3	1	33	30
Willow	*Salix sp.*	4	5	3										
Arroyo Willow	*Salix lasiolepis*				3	4	4	4	4	4	4	4	31	20
Goodings Willow	*Salix gooddingii*							2	2	2	2	2	2	2
Sandbar Willow	*Salix exigua*	2	2		1	1	1	1	1	1	1	1	1	1
Elderberry	*Sambucus mexicana*											3	3	3
Total		**19**	**20**	**15**	**17**	**18**	**18**	**20**	**20**	**20**	**17**	**18**	**127**	**112**

Bennett North Property 2008-2020

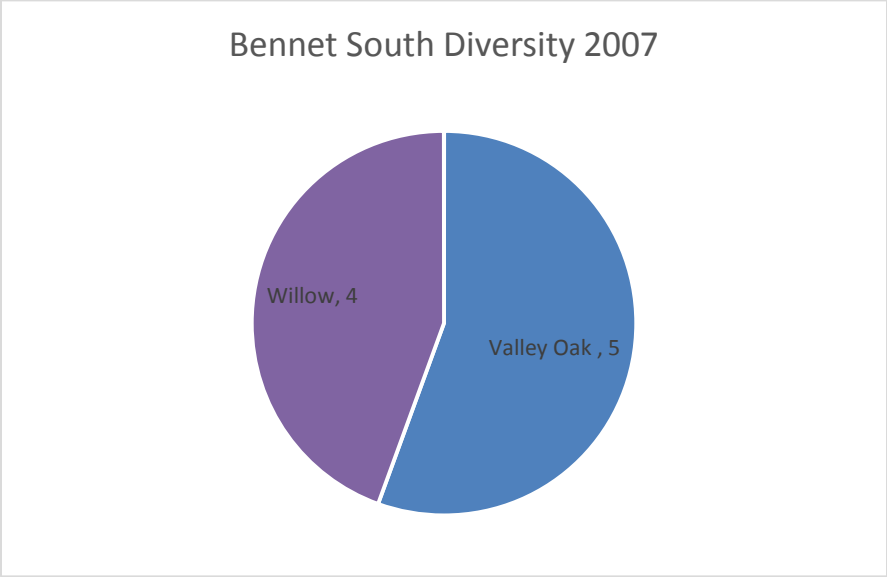


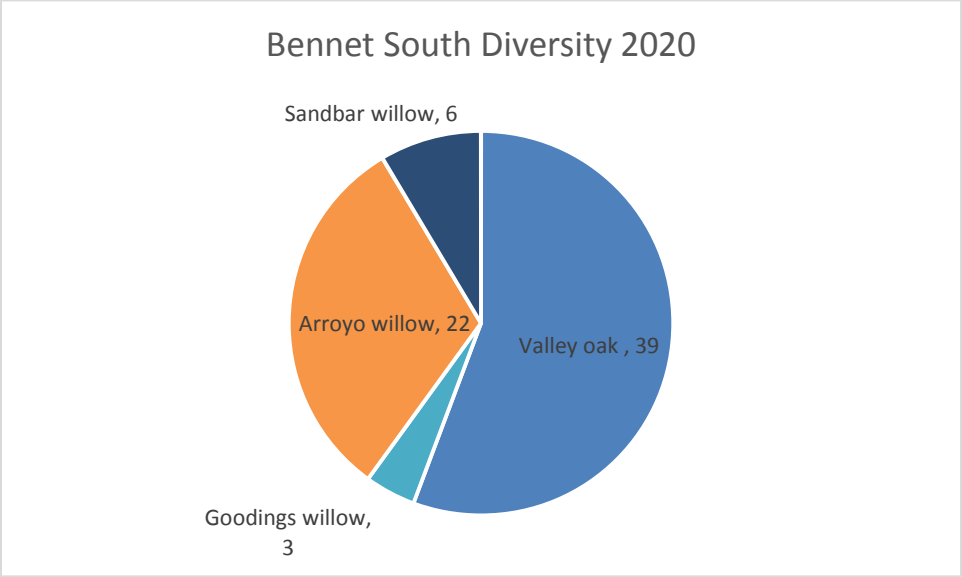
Bennett North Property Comments 2008-2020

2017- Substantial beaver and cattle damage noted.
2018- New plantings mapped.

Bennett South Property 2007-2020

Between 2007 and 2020, the number of trees on the Bennett South property increased from nine to 70, with no non-native trees being recorded on the property during any of the assessments. As the species of willow (Salix sp.) are not indicated in early assessments, it is possible that there was no increase in species over this time period.





Bennet South	Scientific Name	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Valley oak	*Quercus lobata*	5	10	23	23	39	43	43	46	46	46	45	44	39	39
Walnut	*Juglans californica var. hindsii*														
Cottonwood	*Populus fremontii*														
Willow	*Salix sp.*	4	3	8	8										
Goodings willow	*Salix gooddingii*					1	3	1	3	4	4	2	2	2	3
Arroyo willow	*Salix lasiolepis*					17	27	23	22	22	25	24	24	22	22
Sandbar willow	*Salix exigua*								7	6	7	7	7	5	6
Total		**9**	**13**	**31**	**31**	**57**	**73**	**67**	**78**	**78**	**82**	**78**	**77**	**68**	**70**

Bennett South Property 2007-2020

Bennett South Property Comments 2007-2020

2012- New trees were planted including arroyo willow and valley oak.

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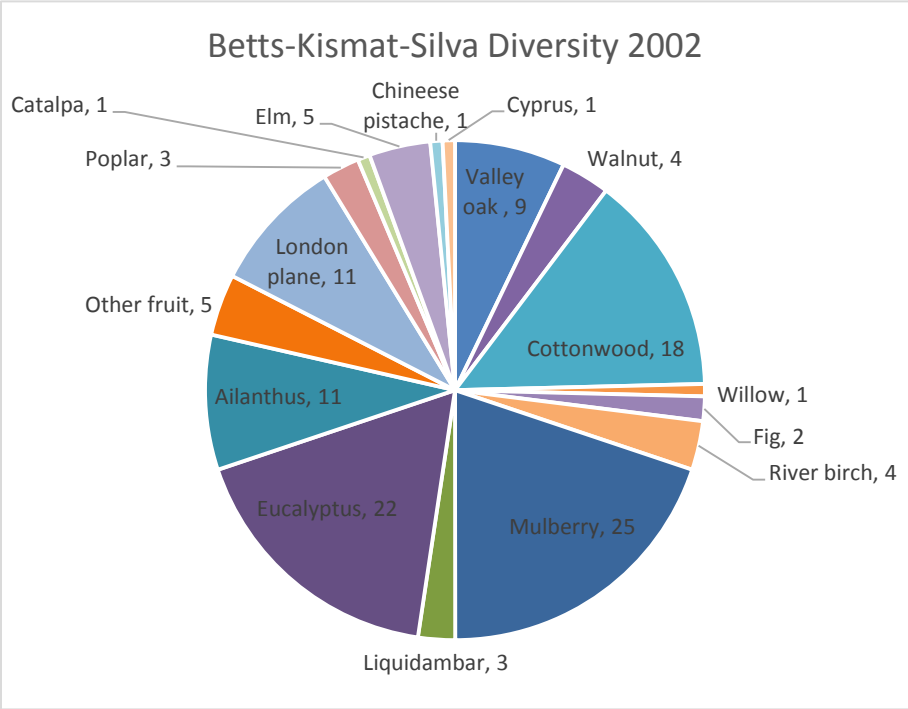
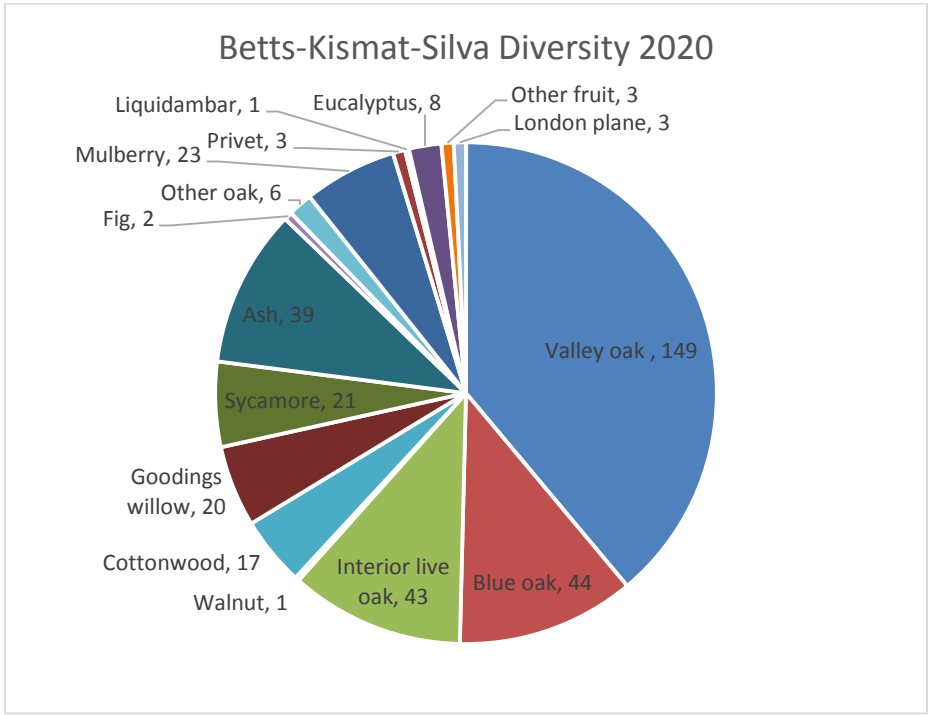
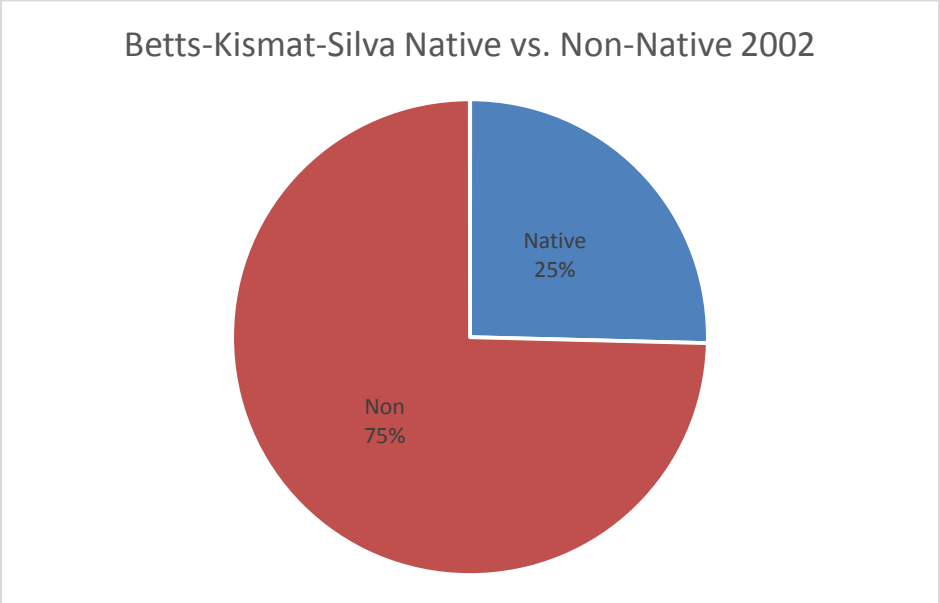
Betts, Kismat, and Silva Properties 2002-2020

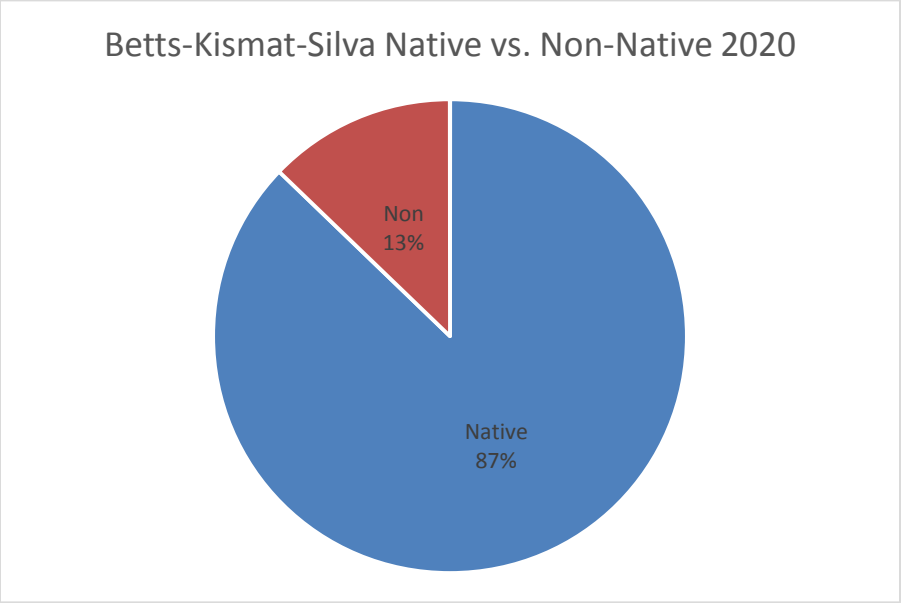
Between 2002 and 2020, the number of trees on the Betts, Kismat, and Silva properties increased from 126 to 383. The number of tree species decreased from 17 to 16 species, with the percentage of non-native trees decreasing dramatically from 75% to 13%. This change has occurred due to the ongoing loss of older, larger, non-native trees on the properties as well as the planting of new native trees at various times over the last 18 years.

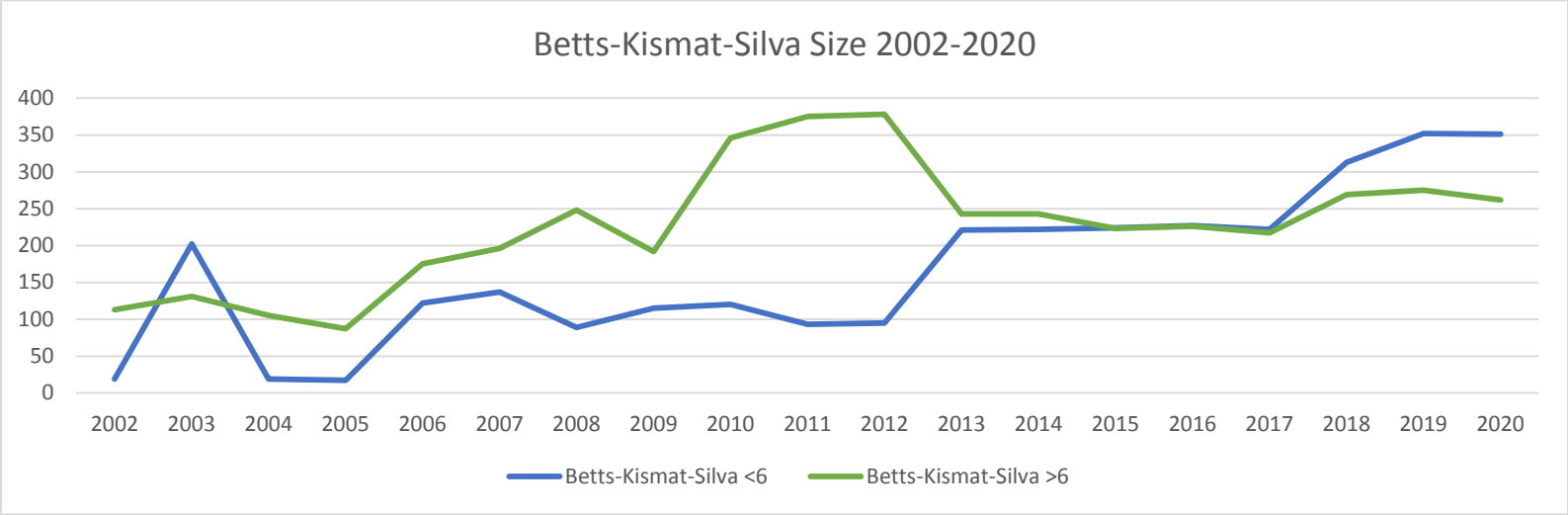




Betts, Kismat, and Silva Properties 2002-2020







Trees of the Natomas Basin Conservancy 2002-2020

A retrospective report on the annual tree assessment conducted by the Sacramento Tree Foundation

Betts, Kismat, and Silva Properties 2002-2020

Betts-Kismat-Silva	Scientific Name	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Valley oak	*Quercus lobata*	9	9	5	5	52	71	83	93	96	92	94	96	93	89	93	100	154	152	149
Blue oak	*Quercus douglasii*										6	6	8	8	9	9	9	42	34	44
Interior live oak	*Quercus wislizeni*										2	3	2	1	1	1	1	47	48	43
Walnut	*Juglans californica var. hindsii*	4	4	5	4	6	4	3	3	3	3	3	3	1	1	1	1	1	1	1
Cottonwood	*Populus fremontii*	18	18	18	18	63	47	40	40	54	55	61	57	34	32	34	25	19	33	17
Willow	*Salix sp.*	1	1	2	2	24	29	31	32	33										
Arroyo Willow	*Salix lasiolepis*										43	44	10	2						
Goodings Willow	*Salix gooddingii*										27	29	26	21	22	23	21	21	21	20
Sycamore	Platanus racemosa			12	12	34	32	32	32	32	32	33	33	31	28	31	25	25	24	21
Ash	*Fraxinus latifolia*					8	13	13	17	23	26	28	27	27	27	27	32	33	35	39
Fig	*Ficus sp.*	2	2	2	2	2		2	2	2	1	1	1	2	2	2	2	2	2	2
Other Oak	*Quercus sp.*					2	4	9	8	14	14	14	14	11	11	7	7	7	7	6
Birch	*Betula sp.*	4	4			6	6	6	9	9	9	9	9							
Mulberry	*Morus sp.*	25	25	44	35	30	5	16	32	33	32	34	34	32	28	33	31	23	24	23
Privet	*Ligustrum sp.*										2	1	1	1	1	3	3	3	3	3
Liquidambar	*Liquidambar styraciflua*	3	3	2	1	2		1	1	1	1	1	1	1		1	1	1	1	1
Eucalyptus	*Eucalyptus sp.*	22	22	20	19	14	3	13	5	11	9	9	10	11	11	11	12	9	9	8
Ailanthus	*Ailanthus altissima*	11	11	6	5															
Other Fruit	*various*	5	5	3	2	2	2	2		1	3	1	1	1	1	3	3	3	3	3
London Plane	*Platanus x acerifolia*	11	11														1	1	2	3
Poplar	*Populus alba*	3	3											9	9	9				
Catalpa	*Catalpa sp.*	1	1																	
Elm	*Ulmus sp.*	5	5																	
Chineese Pistache	*Pistacia chinensis*	1	1																	
Cyprus	*Cupressus sp.*	1	1			2	1	1	1		1									
Other	*various*					2	2		4	2								3		
Total		**126**	**126**	**119**	**105**	**249**	**219**	**252**	**279**	**314**	**358**	**371**	**333**	**286**	**272**	**288**	**274**	**394**	**399**	**383**

Betts, Kismat, and Silva Properties Comments 2002-2020

2002- Trees damaged in a fire prior to first inventory.

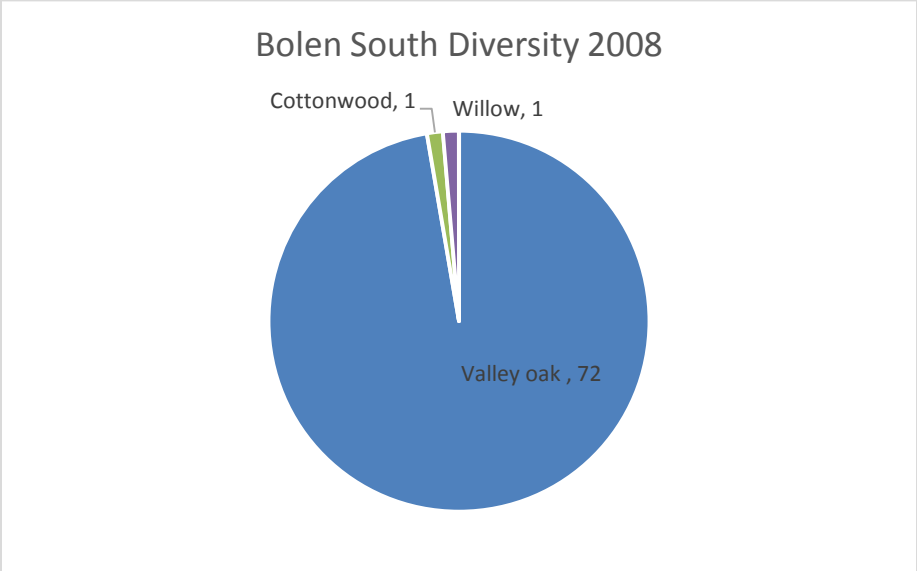
2003- Trees damaged in 2002 recovered to "Good" condition.

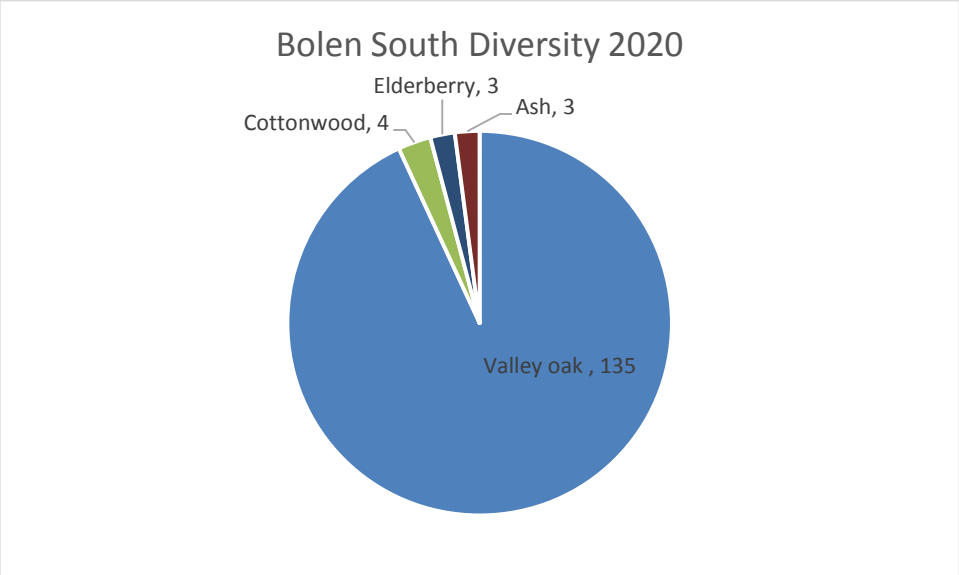
2017- Newly planted trees and stinkwort (*Dittrichia graveolens*) noted.

2018- Large new planting effort underway during the assessment. Most new trees mapped this year.

Bolen South Property 2008-2020

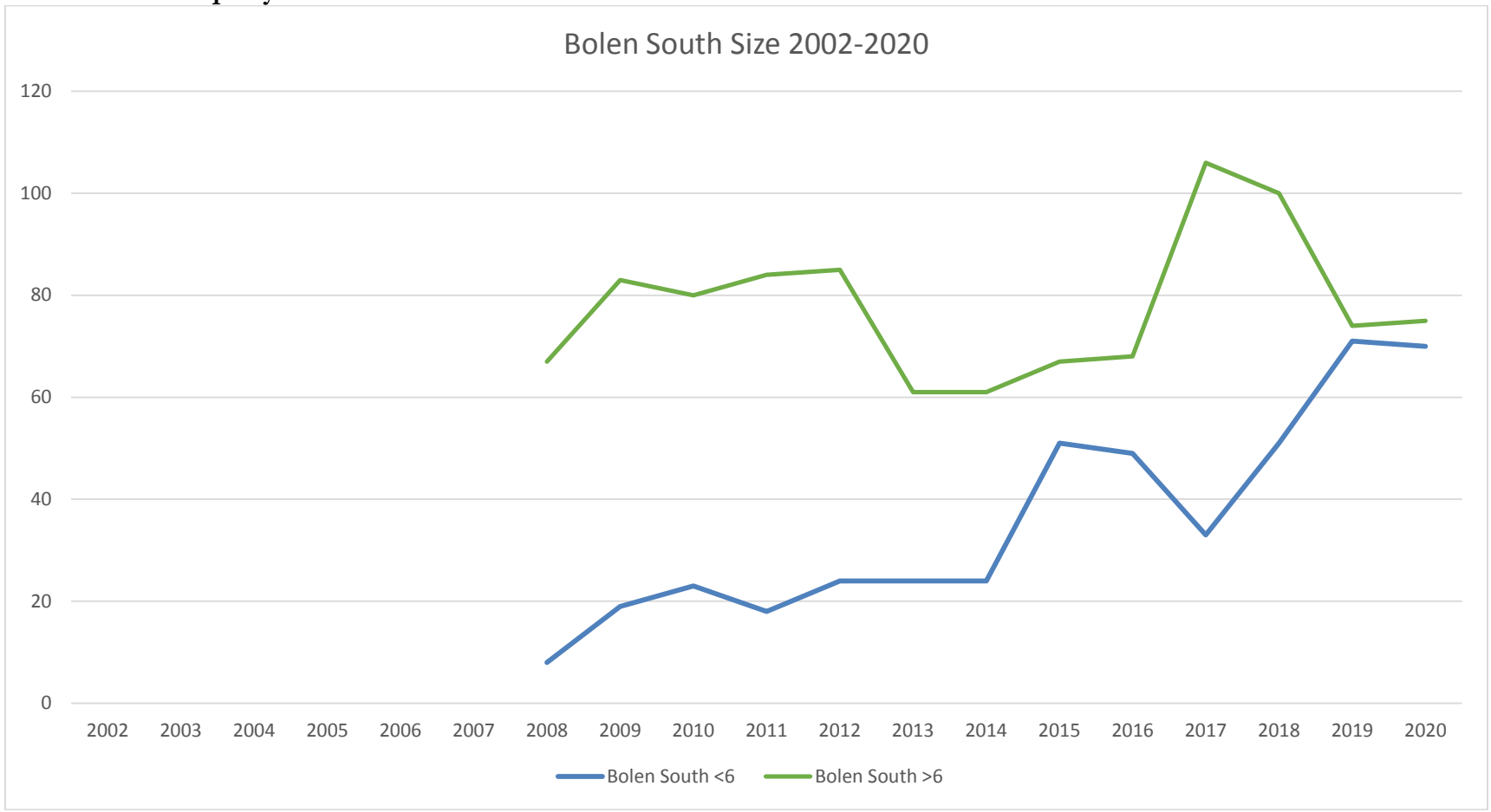
Between 2008 and 2020, the number of trees on the Bolen South property increased from 74 to 145. No non-native trees were recorded on the property during any of the assessments.





Bolen South	Scientific Name	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Valley oak	*Quercus lobata*	72	98	98	98	105	83	115	115	133	135	145	138	135
Walnut	*Juglans californica var. hindsii*													
Cottonwood	*Populus fremontii*	1	1	1	1	1	1	1	1	2	2	3	3	4
Willow	*Salix sp.*	1	1	1										
Goodings Willow	*Salix gooddingii*				1	1								
Elderberry	*Sambucus mexicana*		1	1	1	1		1	1	1	1	2	2	3
Ash	*Fraxinus latifolia*								1	1	1	1	2	3
Total		**74**	**101**	**101**	**101**	**108**	**84**	**117**	**118**	**137**	**139**	**151**	**145**	**145**

Bolen South Property 2008-2020



Bolen South Property Comments 2008-2020

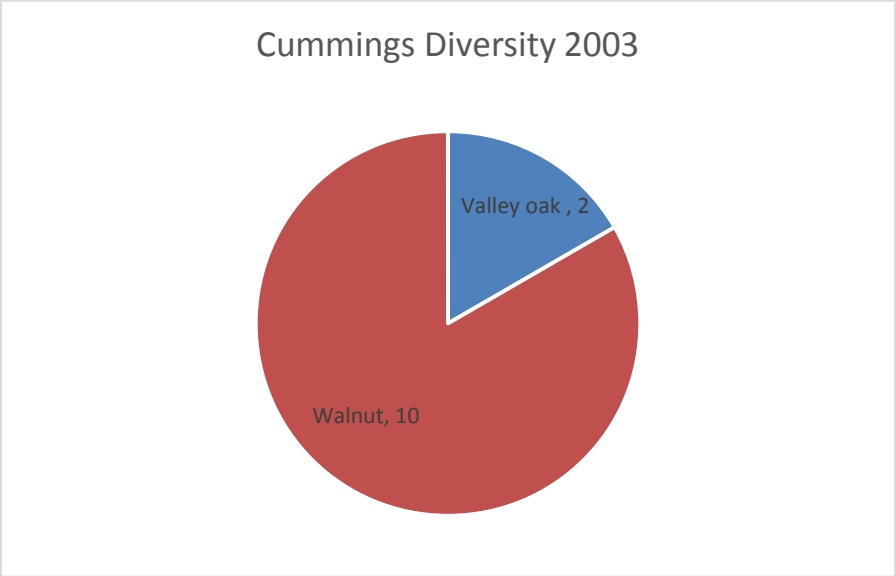
2013- *Asclepias speciosa* patches noted south of the row of valley oaks. Some previously monitored trees excluded as they are outside of the western property boundary.

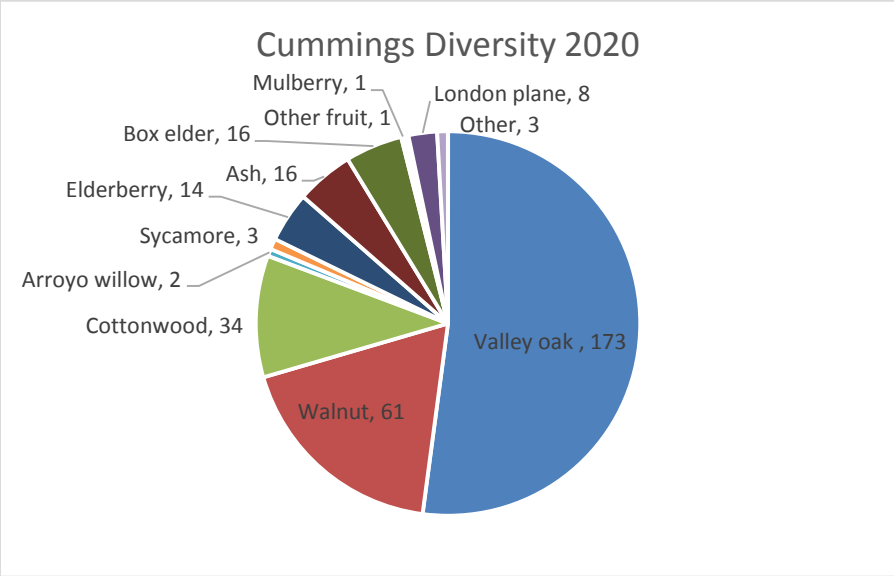
Brennan Property 2002-2006

The Brennan Property was assessed for the first five annual surveys. During this time, the property had between 19 and 24 trees present, all within the greater than six inches category. The property was sold and is not included in the assessment from 2007 on.

Cummings Property 2003-2020

Between 2003 and 2020, the number of trees on the Cummings property increased from 12 to 332. The number of tree species increased from two to 12 species, with the percentage of non-native trees increasing slightly, from 0% to 4%.

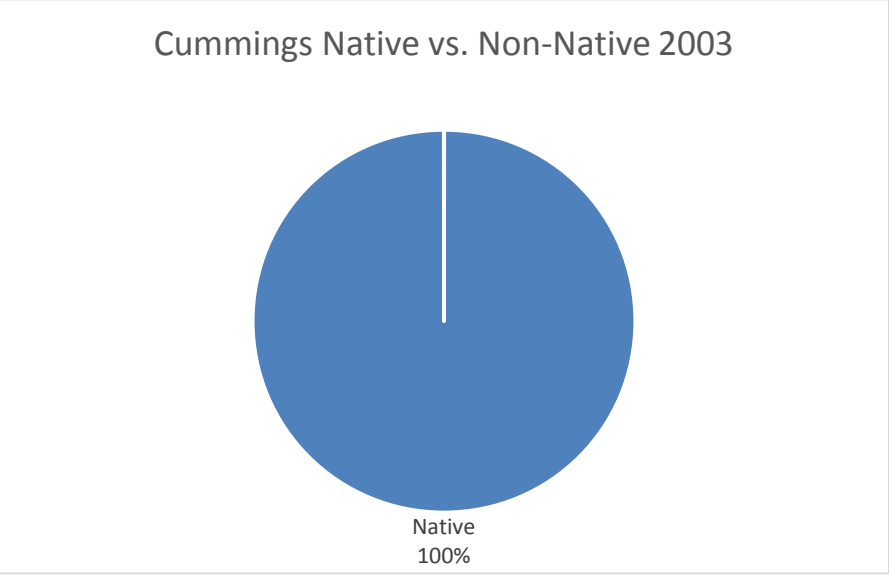


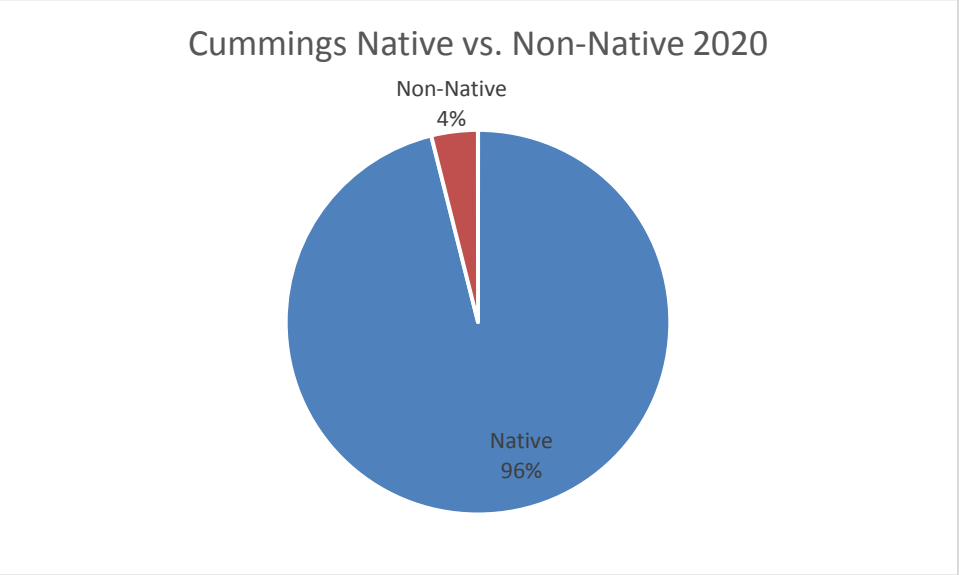


Trees of the Natomas Basin Conservancy 2002-2020

A retrospective report on the annual tree assessment conducted by the Sacramento Tree Foundation

Cummings Property 2003-2020





Cummings	Scientific Name	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Valley oak	*Quercus lobata*	2	24	8	56	60	93	164	177	177	178	179	187	192	195	195	173	173	173
Walnut	*Juglans californica var. hindsii*	10	32	9	16	17	17	38	38	39	39	38	41	41	41	60	59	60	61
Cottonwood	*Populus fremontii*					1	26	25	25	25	25	28	27	31	31	36	36	35	34
Arroyo Willow	*Salix lasiolepis*																4	4	2
Goodings Willow	*Salix gooddingii*		10	4	9	12	4	9	8	9	9	9	9	5	9	9	3	3	3
Sandbar Willow	*Salix exigua*				3	3	10	15	15	16	16	15	14	13	13	14	14	14	14
Sycamore	Platanus racemosa						8	15	13	14	14	14	16	16	16	16	16	16	16
Elderberry	*Sambucus mexicana*		1	1	1	1	10	17	17	17	17	19	19	18	19	17	16	16	16
Mulberry	*Morus sp.*														1	1	2	2	1
Eucalyptus	*Eucalyptus sp.*								2										
Other Fruit	*various*							1	1								1	1	1
London Plane	*Platanus x acerifolia*																9	8	8
Other	*various*		1		1	1									2	6	2	3	3
Total		**12**	**68**	**22**	**86**	**95**	**168**	**284**	**296**	**297**	**298**	**302**	**313**	**316**	**327**	**354**	**335**	**335**	**332**

Cummings Property 2003-2020

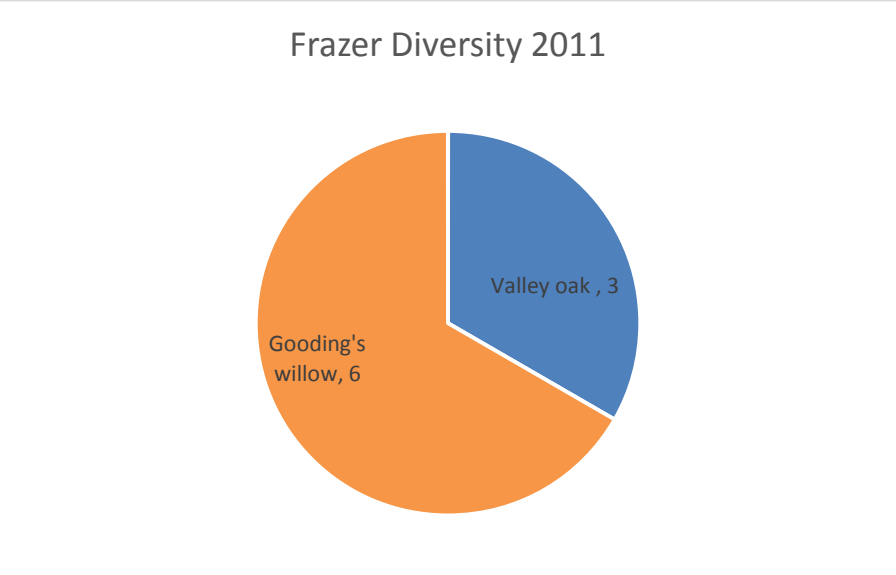
Cummings Property Comments 2003-2020

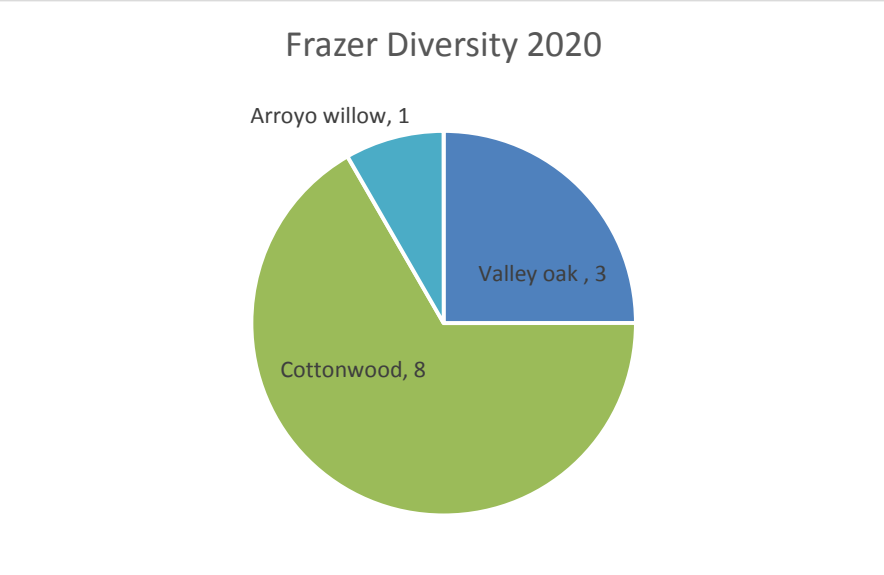
2011 and 2012- Trees noted as outgrowing their planting tubes.

2020- Large project underway on the property. Has resulted in the loss of 145 trees so far.

Frazer Property 2011-2020

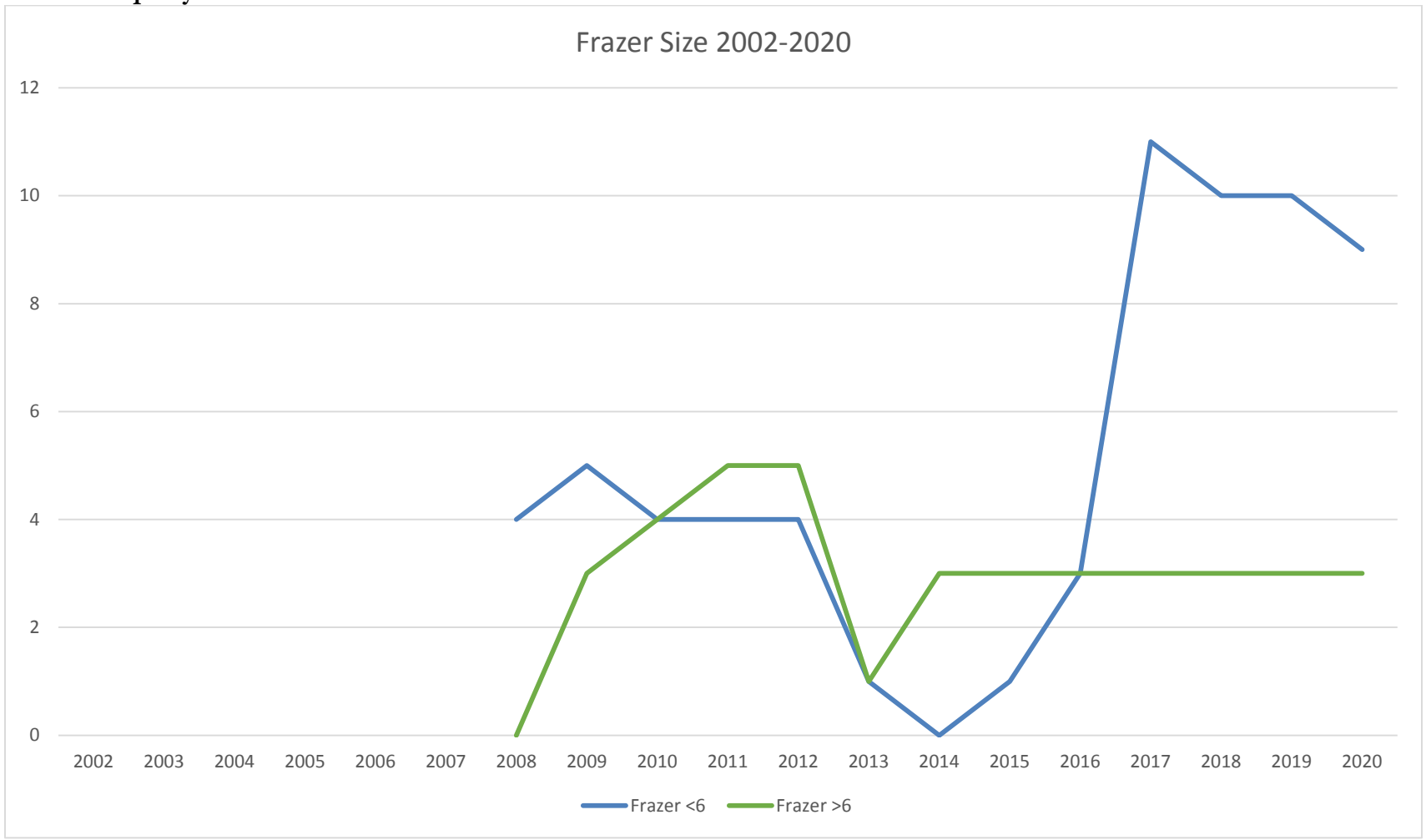
Between 2011 and 2020, the number of trees on the Frazer property increased from nine to 12, with a peak of 14 trees in 2017. The number of tree species increased from two to three species, with no non-native trees being recorded on the property during any of the assessments.





Frazer	Scientific Name	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Valley oak	*Quercus lobata*	3	3	2	3	3	3	3	3	3	3
Cottonwood	*Populus fremontii*							8	8	8	8
Arroyo Willow	*Salix lasiolepis*						2	2	2	2	1
Goodings Willow	*Salix gooddingii*	6	6				1	1			
Total		**9**	**9**	**2**	**3**	**3**	**6**	**14**	**13**	**13**	**12**

Frazer Property 2011-2020



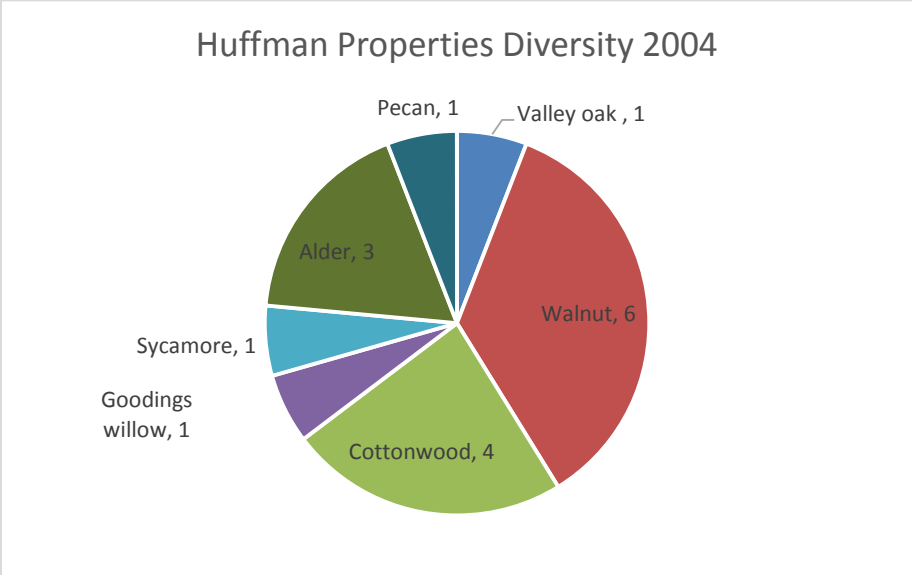
Frazer Property Comments 2011-2020

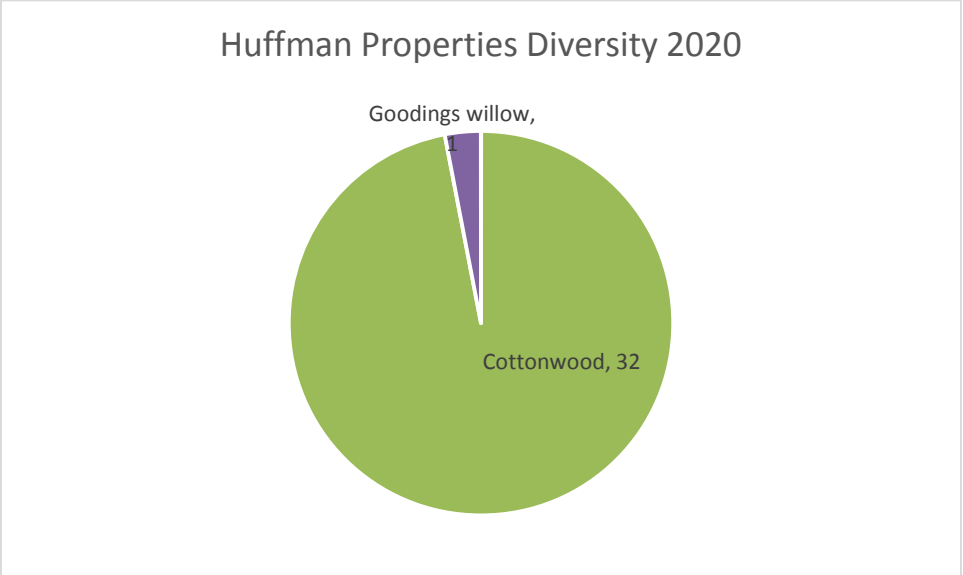
2013- Tree counts adjusted to reflect true location. Some trees credited to the Frazer property were found to be on Lucich North.

2017- New cottonwood plantings.

Huffman East and West Properties 2004-2020

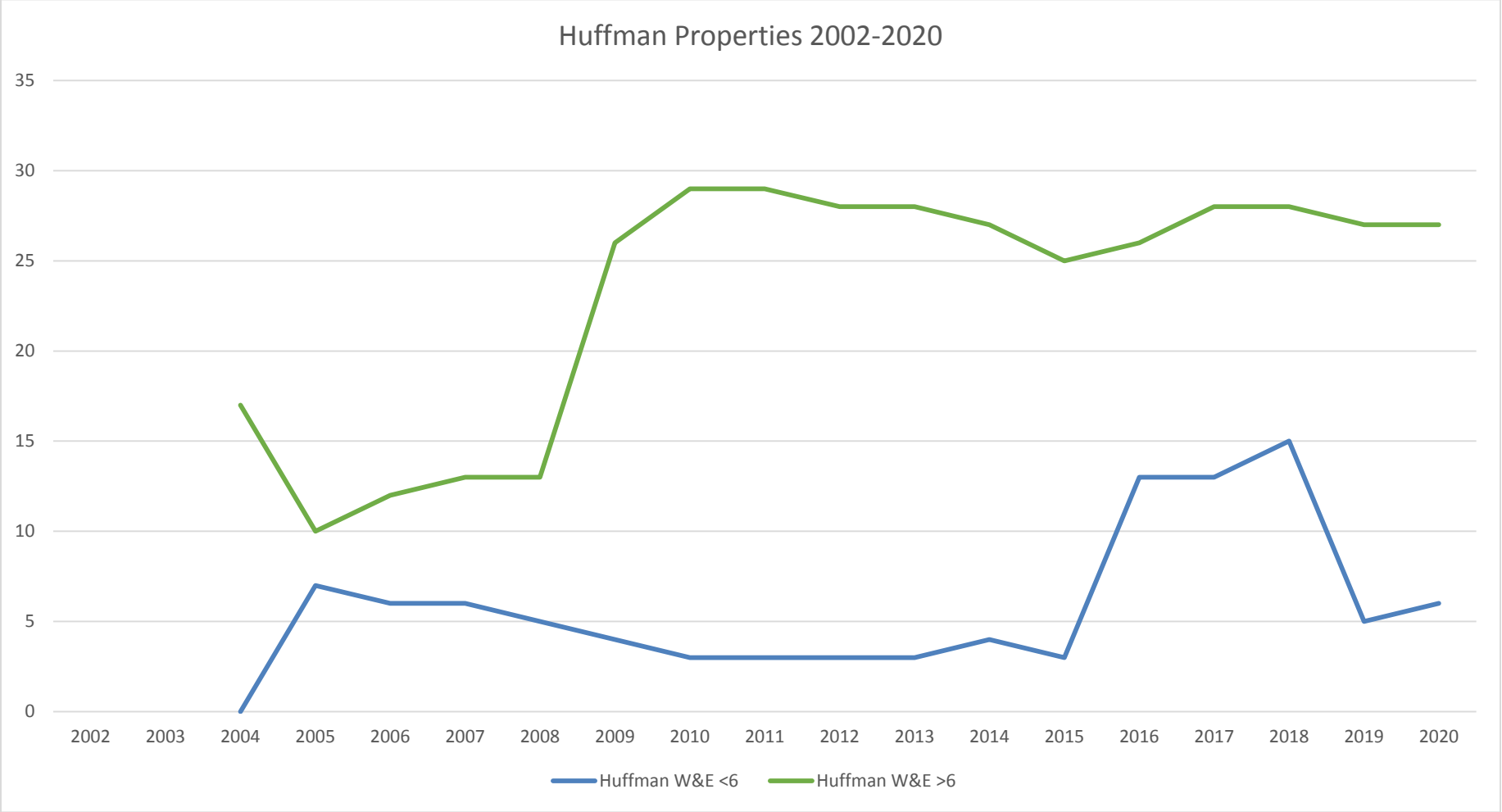
Between 2004 and 2020, the number of trees on the Huffman properties increased from 17 to 33. However, the number of tree species decreased from seven to two species, including the loss of all non-native species identified in previous assessments (1 pecan, 1 elm and one "other").





Huffman W&E	Scientific Name	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Valley oak	*Quercus lobata*	1			1	1	1	1	1	1								
Walnut	*Juglans californica var. hindsii*	6	5	5	5													
Cottonwood	*Populus fremontii*	4	7	8	8	9	28	28	28	28	27	27	27	38	40	42	31	32
Goodings Willow	*Salix gooddingii*	1	1			1	1	1	1	1	1	1	1	1	1	1	1	1
Sycamore	Platanus racemosa	1																
Alder	*Alnus rhombifolia*	3	2	2														
Pecan	*Carya illinoiensis*	1	1	1														
Elm	*Ulmus sp.*		1	1	1													
Other	*various*			1														
Total		**17**	**17**	**18**	**15**	**11**	**30**	**30**	**30**	**30**	**28**	**28**	**28**	**39**	**41**	**43**	**32**	**33**

Huffman East and West Properties 2004-2020



Huffman East and West Properties Comments 2004-2020

2005- Newly planted area on the property.

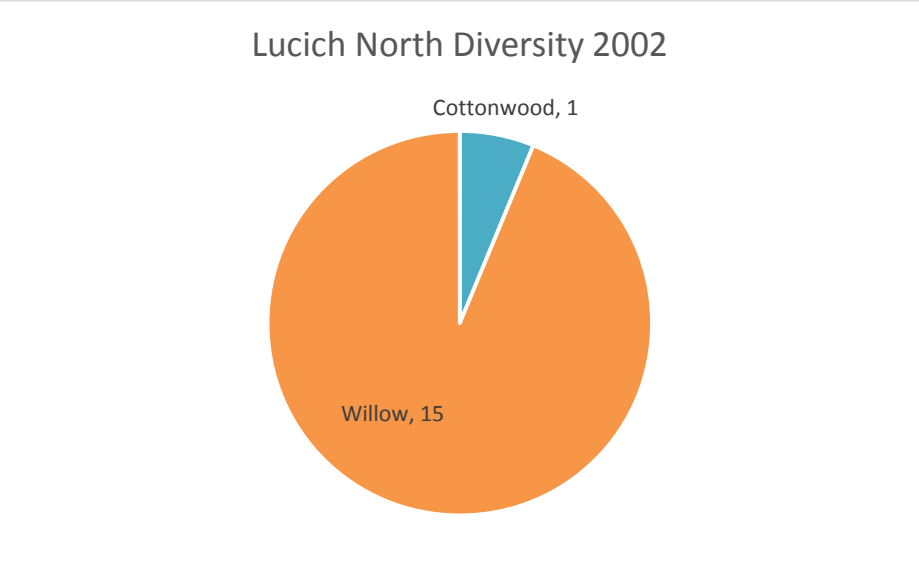
2016- Large utility construction zone adjacent to the cottonwood grove.

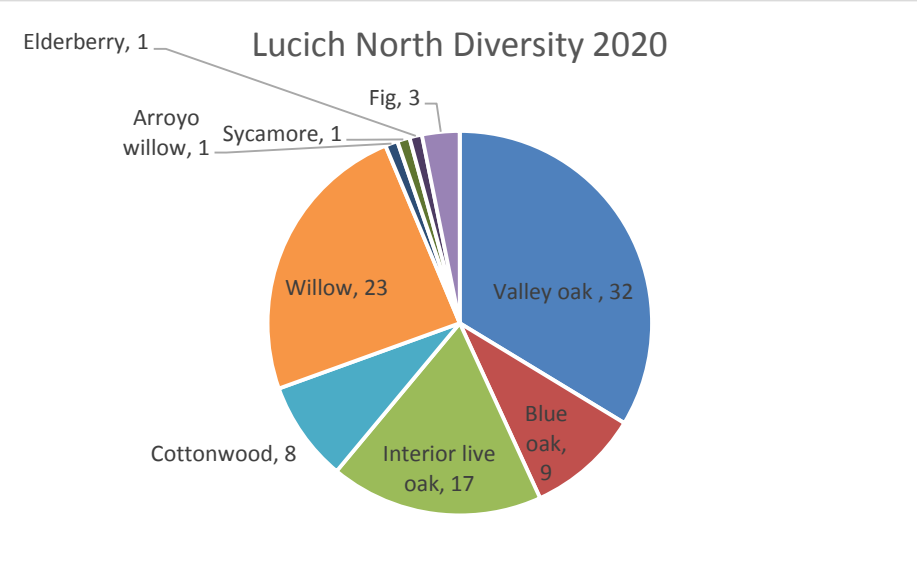
Trees of the Natomas Basin Conservancy 2002-2020

A retrospective report on the annual tree assessment conducted by the Sacramento Tree Foundation

Lucich North Property 2002-2020

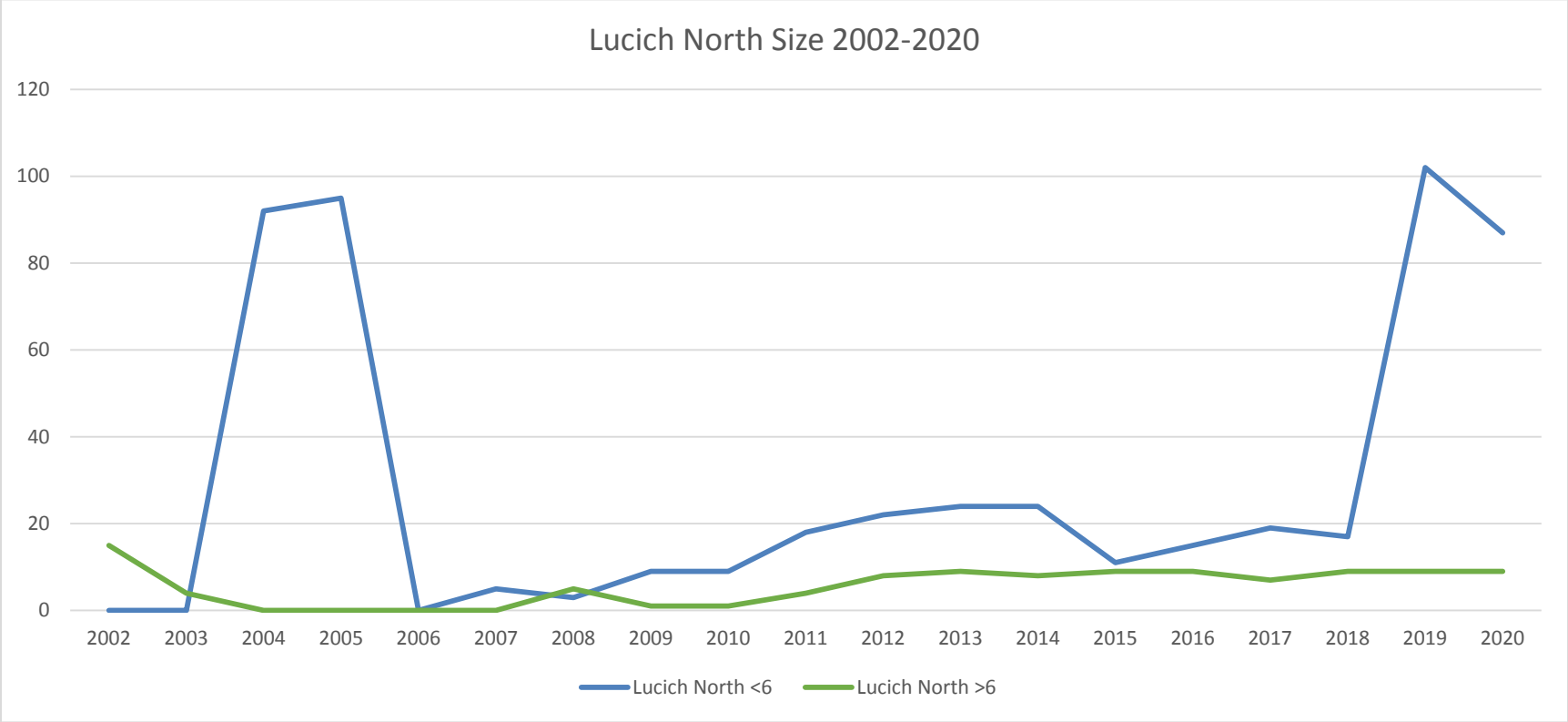
Between 2002 and 2020, the number of trees on the Lucich property increased from 16 to 94. The number of tree species increased from two to eight species, with one species of non-native tree (edible fig) appearing on site for the last four assessments.





Lucich North	Scientific Name	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Valley oak	*Quercus lobata*						3	11	13	13	12	12	13	11	11	11	11	11	35	32
Blue oak	*Quercus douglasii*																		9	9
Interior live oak	*Quercus wislizeni*																		16	17
Walnut	*Juglans californica var. hindsii*																			
Cottonwood	*Populus fremontii*	1						1			1	2	3	3	2	3	7	7	8	8
Willow	*Salix sp.*	15	4		1		2		5	5									34	23
Arroyo Willow	*Salix lasiolepis*										9	16	17	6	1	6	3	3	2	1
Goodings Willow	*Salix gooddingii*													1	4	1				
Sycamore	Platanus racemosa																1	1	1	1
Fig	*Ficus sp.*																1	2	1	3
Total		**16**	**4**	**0**	**1**	**0**	**5**	**12**	**18**	**18**	**22**	**30**	**33**	**21**	**18**	**21**	**23**	**24**	**106**	**94**

Lucich North Property 2002-2020



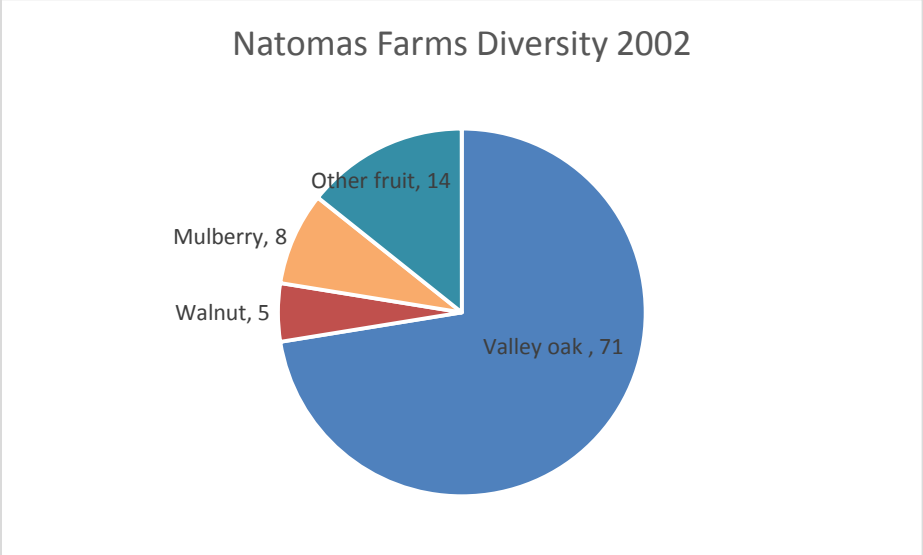
Lucich North Property Comments 2002-2020

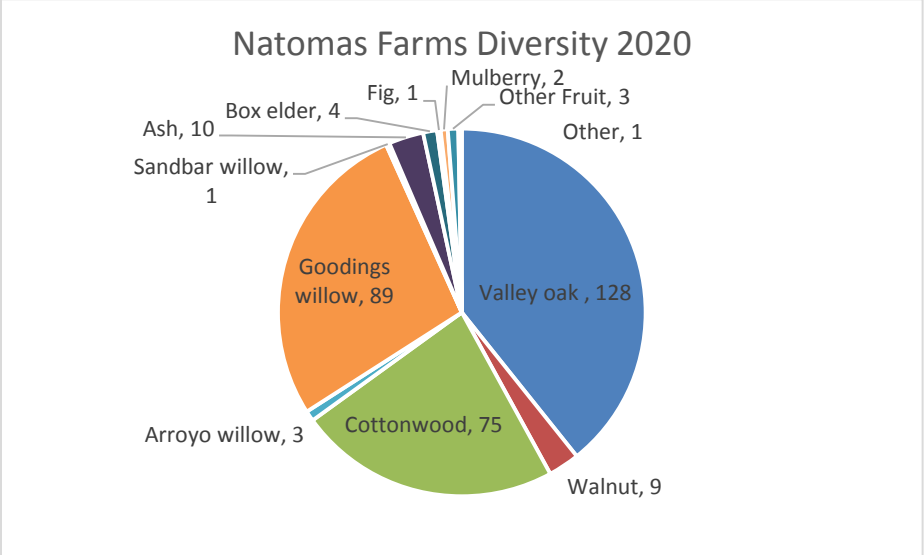
Data taken in 2004 and 2005 included ~95 data points on the Lucich North property that were not listed as a tree species but were given a size rating. The written report indicates that this data was gathered and included in the reporting in error. No data was gathered in 2006 and the property was again included in the annual assessment from 2007 to 2020.

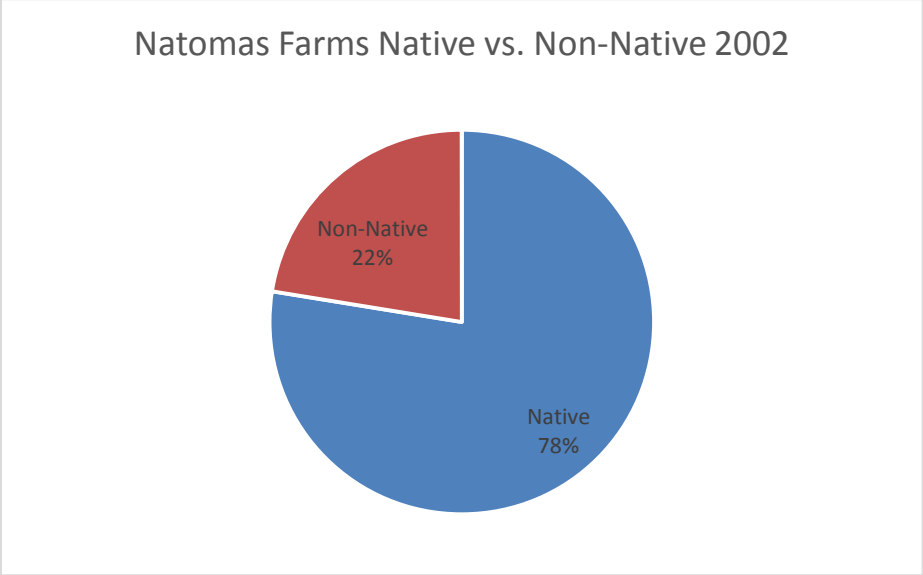
2003- Twelve trees were removed for re-grading and construction of habitat features.
2005- New plantings on the property.
2012- New plantings on the property and grazing deer noted.
2013- Tree count increased due to trees present being attributed incorrectly to the Frazer property.
2017- New cottonwood plantings.

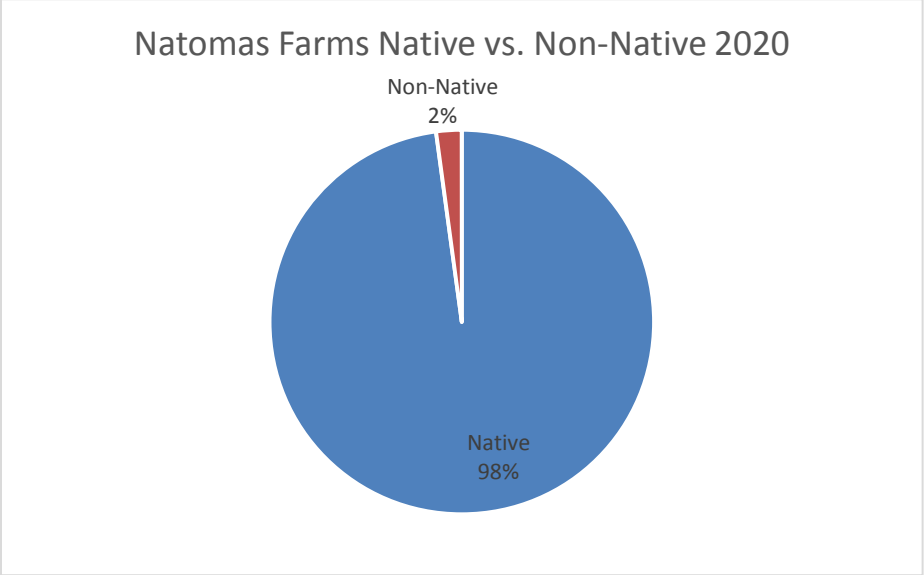
Natomas Farms Property 2002-2020

Between 2002 and 2020, the number of trees on the Natomas Farms property increased from 98 to 325. The number of tree species increased from four to 11 species, with the percentage of non-native trees decreasing from 22% to 2%.

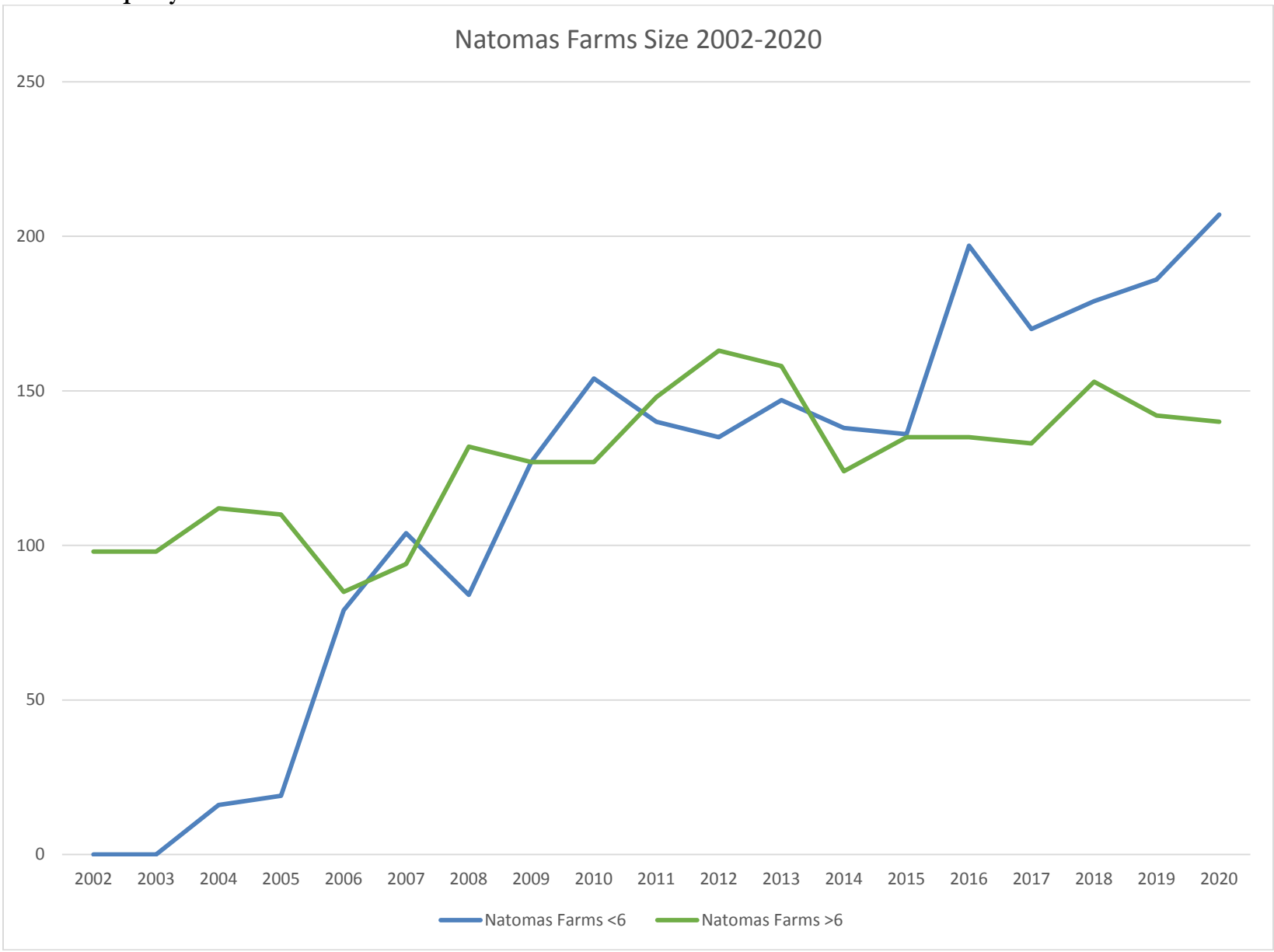








Natomas Farms Property 2002-2020



Trees of the Natomas Basin Conservancy 2002-2020

A retrospective report on the annual tree assessment conducted by the Sacramento Tree Foundation

Natomas Farms Property 2002-2020

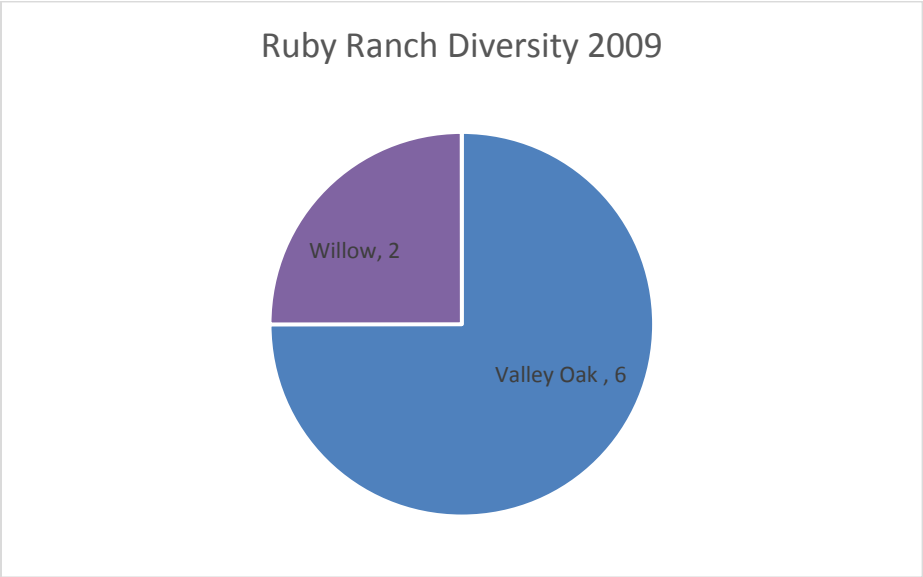
Natomas Farms	Scientific Name	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Valley oak	*Quercus lobata*	71	71	110	110	113	138	147	160	164	169	173	171	147	153	154	136	140	136	128
Walnut	*Juglans californica var. hindsii*	5	5	7	7		5	7	11	11	11	11	12	8	11	11	11	10	10	9
Cottonwood	*Populus fremontii*					12	40	50	50	63	63	68	73	69	70	70	61	79	77	75
Willow	*Salix sp.*							1	5	5										
Arroyo Willow	*Salix lasiolepis*										5	5	2	1					1	3
Goodings Willow	*Salix gooddingii*										1		1	4	2	58	64	74	73	89
Sandbar Willow	*Salix exigua*																	1	1	1
Elderberry	*Sambucus mexicana*				2	1	2	2	11	11	11	11	9	4	2	5	1			
Ash	*Fraxinus latifolia*									9	9	9	9	9	9	9	9	9	10	10
Box Elder	*Acer negundo*												4	5	5	5	4	3	3	4
Alder	*Alnus rhombifolia*			2																
Mulberry	*Morus sp.*	8	8													1	1	1	1	2
Other Fruit	*various*	14	14	10	10		1									2	1	1	1	3
Other	*various*																	1	1	1
Total		**98**	**98**	**129**	**129**	**126**	**186**	**207**	**237**	**263**	**269**	**277**	**281**	**247**	**252**	**315**	**288**	**319**	**314**	**325**

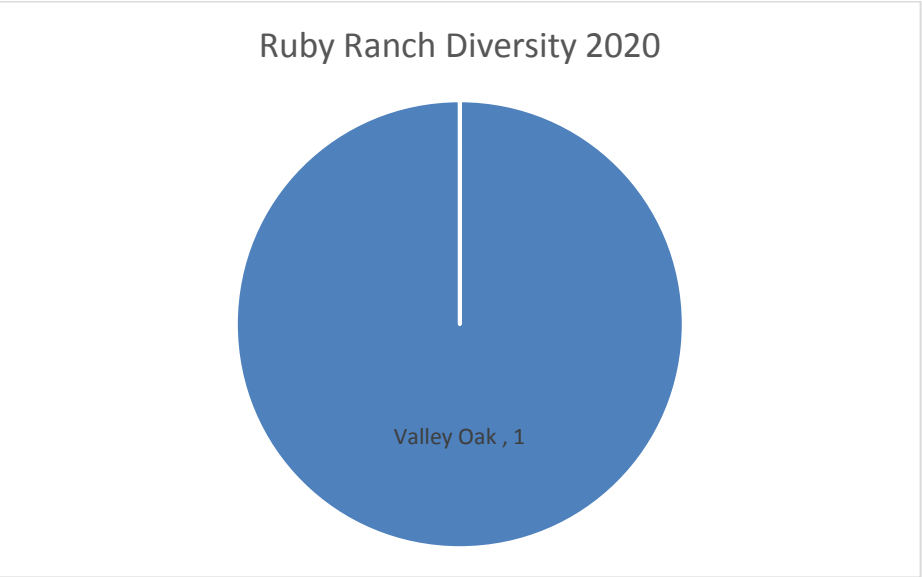
Natomas Farms Property Comments 2002-2020

2005- Excavation and habitat construction underway.
2008- Educational piece developed for the website focused on the Sousa and Natomas Farms properties.
2011- Soil extraction underway, large loss of trees this year (52).
2013- Health of trees along southern property edge continues to decline.

Ruby Ranch Property 2009-2020

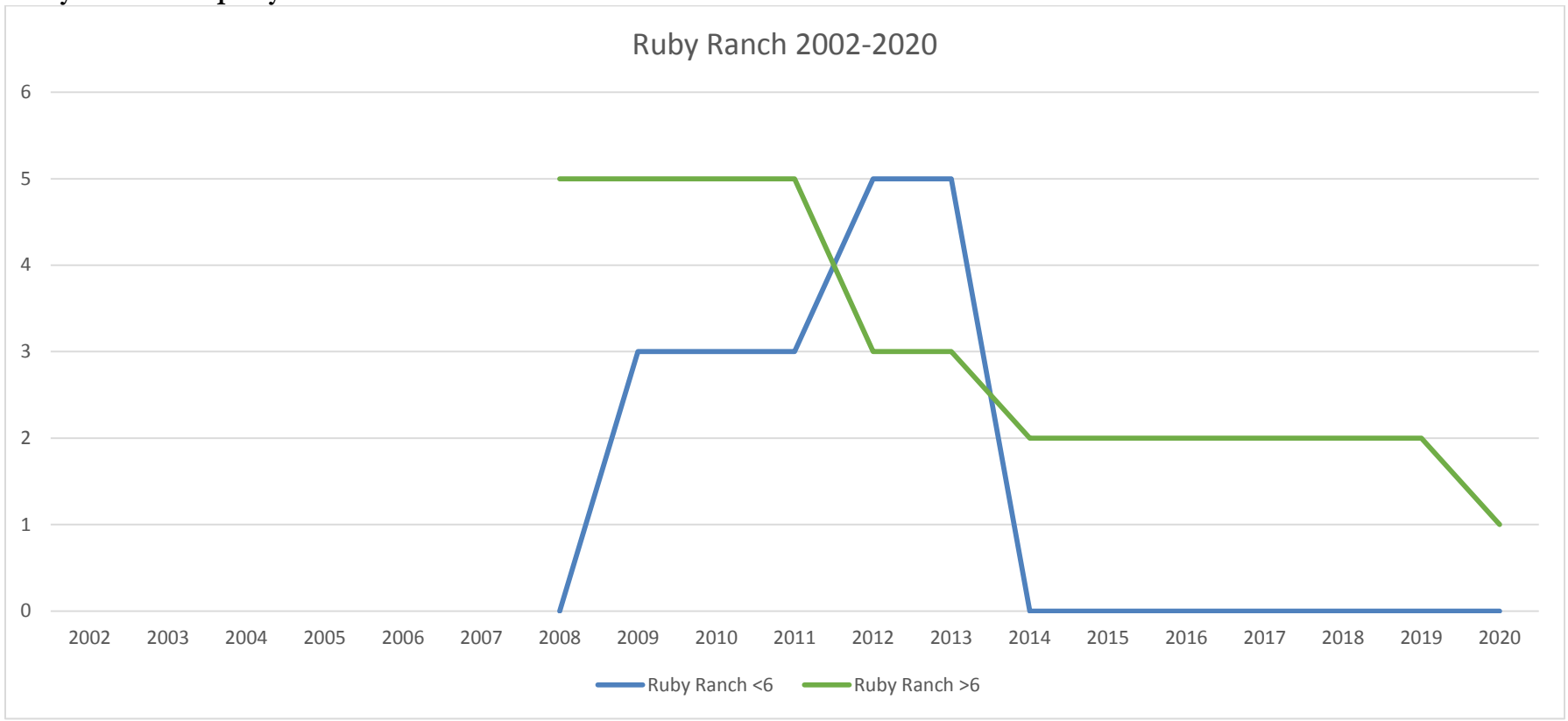
Between 2009 and 2020, the number of trees on the Ruby Ranch property has steadily decreased from eight to one tree with the only tree remaining a large valley oak along the canal. Tree losses over the last few years have been caused by ongoing erosion along the agricultural canal where the trees are located. No non-native trees have been located on the property during any of the assessments.





Ruby Ranch	Scientific Name	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Valley oak	*Quercus lobata*	6	6	6	2	6	2	2	2	2	2	1	1
Willow	*Salix sp.*	2	2										
Arroyo Willow	*Salix lasiolepis*			2	2	2							
Total		**8**	**8**	**8**	**4**	**8**	**2**	**2**	**2**	**2**	**2**	**1**	**1**

Ruby Ranch Property 2009-2020



Ruby Ranch Property Comments 2009-2020

2012- One large valley oak died due to complete submersion in the canal.

2013- Black-crowned night herons roosting in the largest valley oak.

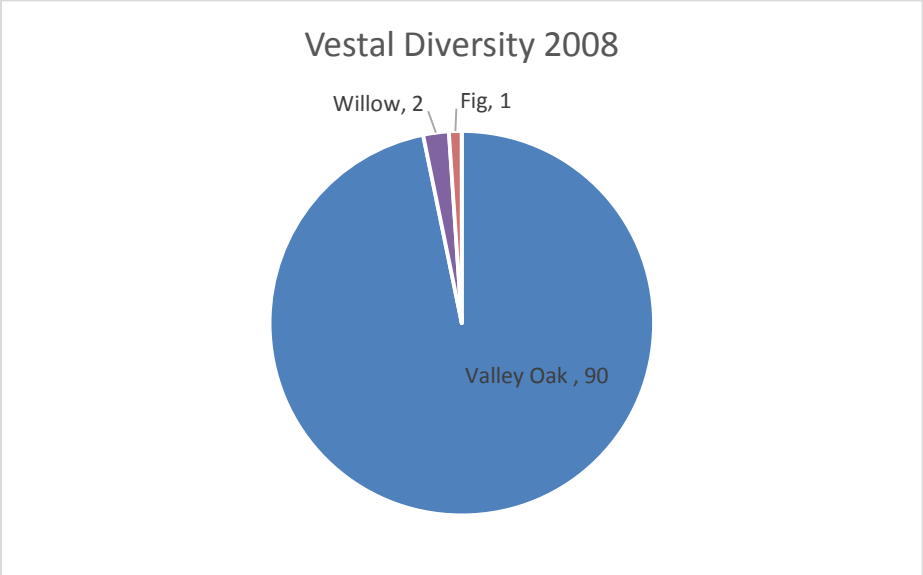
2019- Only one mature valley oak remains on the property.

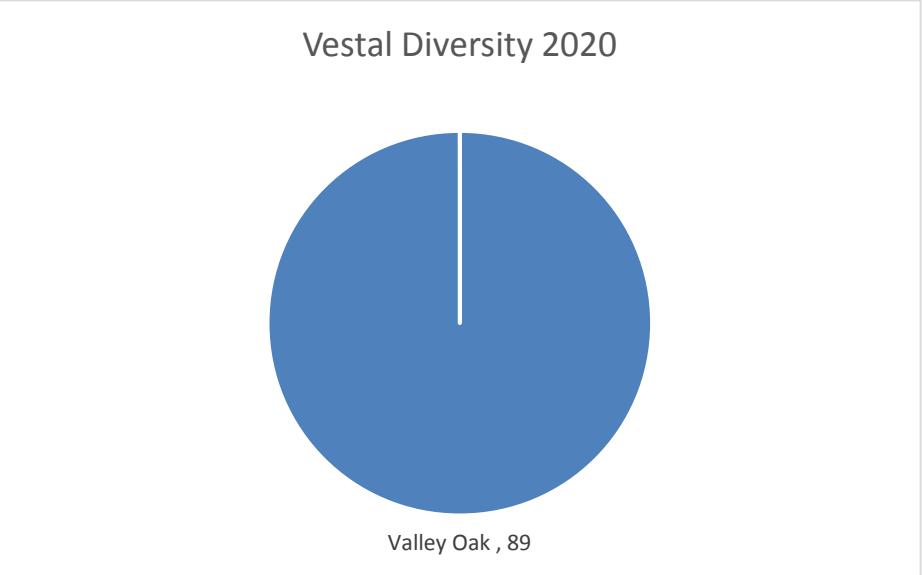
Trees of the Natomas Basin Conservancy 2002-2020

A retrospective report on the annual tree assessment conducted by the Sacramento Tree Foundation

Vestal Property 2008-2020

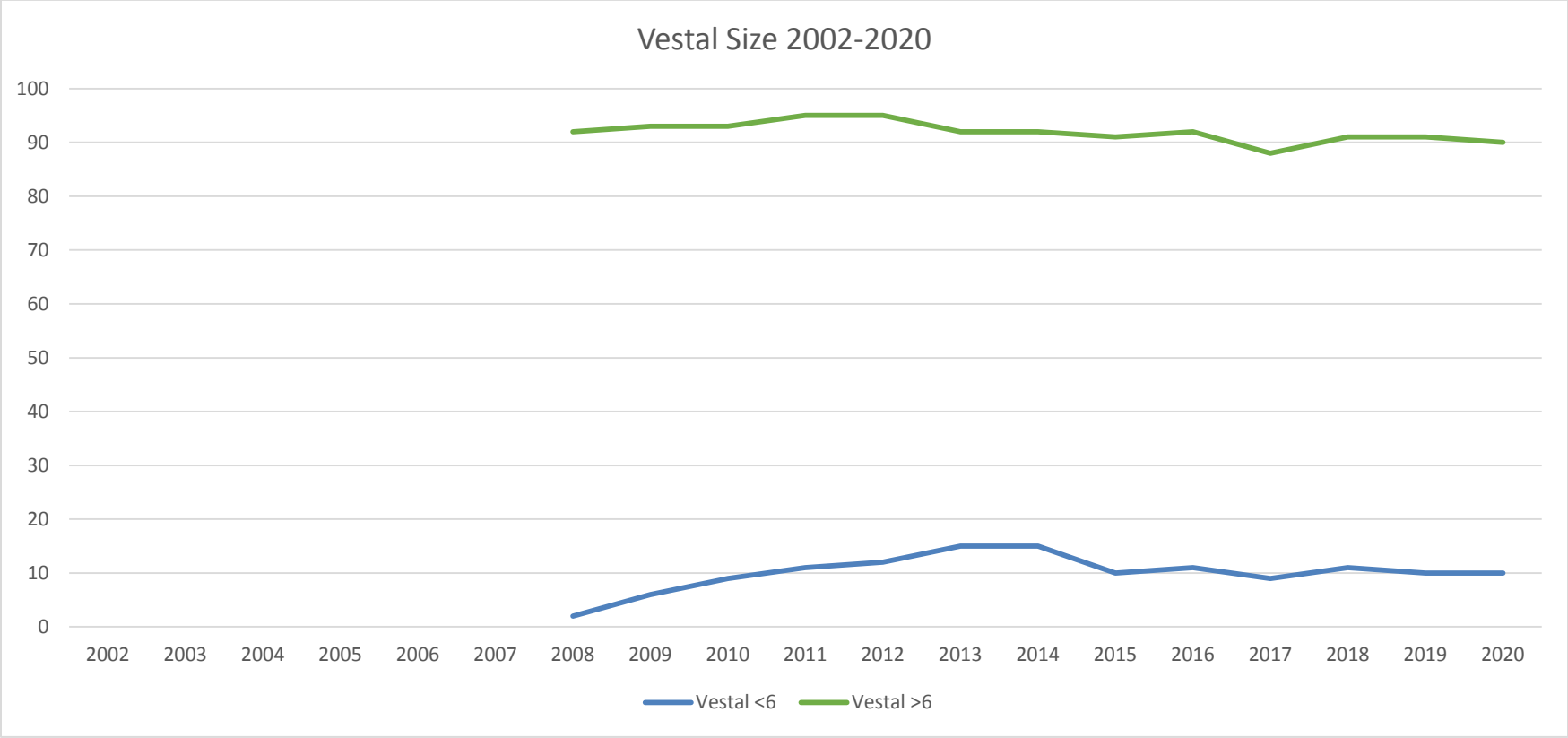
Between 2008 and 2020, the number of trees on the Vestal property has been relatively constant. The number of tree species decreased slightly from three to one. The number of oak trees on site started at 90, hit a peak of 106 in 2013, and has fallen to 89 trees for the 2020 assessment.





Vestal	Scientific Name	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Valley oak	*Quercus lobata*	90	93	95	97	97	100	98	97	98	95	99	101	89
Willow	*Salix sp.*	2	3	3										
Arroyo Willow	*Salix lasiolepis*				1	1	1							
Goodings Willow	*Salix gooddingii*				2	2	2	1	1	1	1			
Fig	*Ficus sp.*	1	2	1		3	3	3	3	3				
Total		**93**	**98**	**99**	**100**	**103**	**106**	**102**	**101**	**102**	**96**	**99**	**101**	**89**

Vestal Property 2008-2020

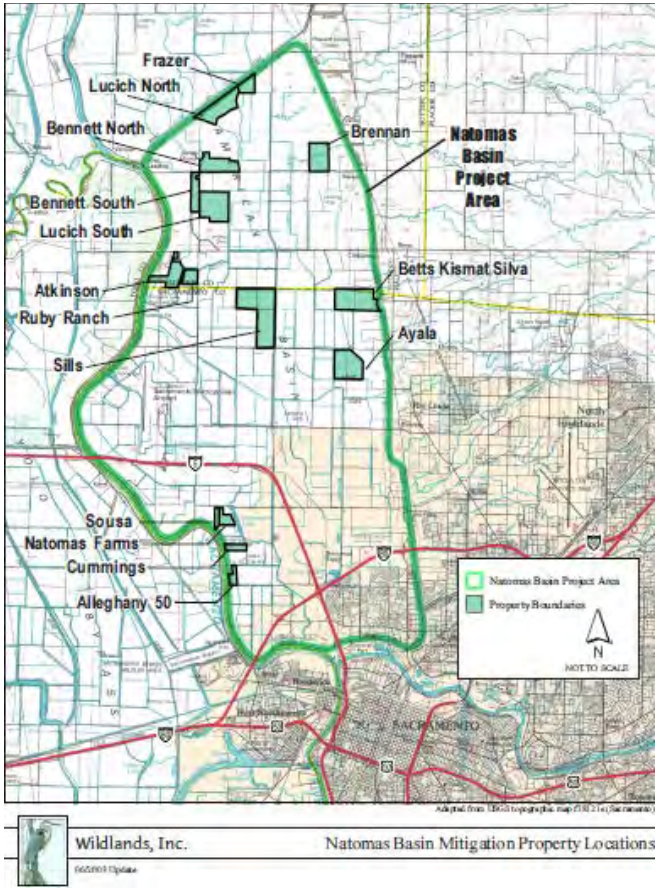


Vestal Property Comments 2008-2020

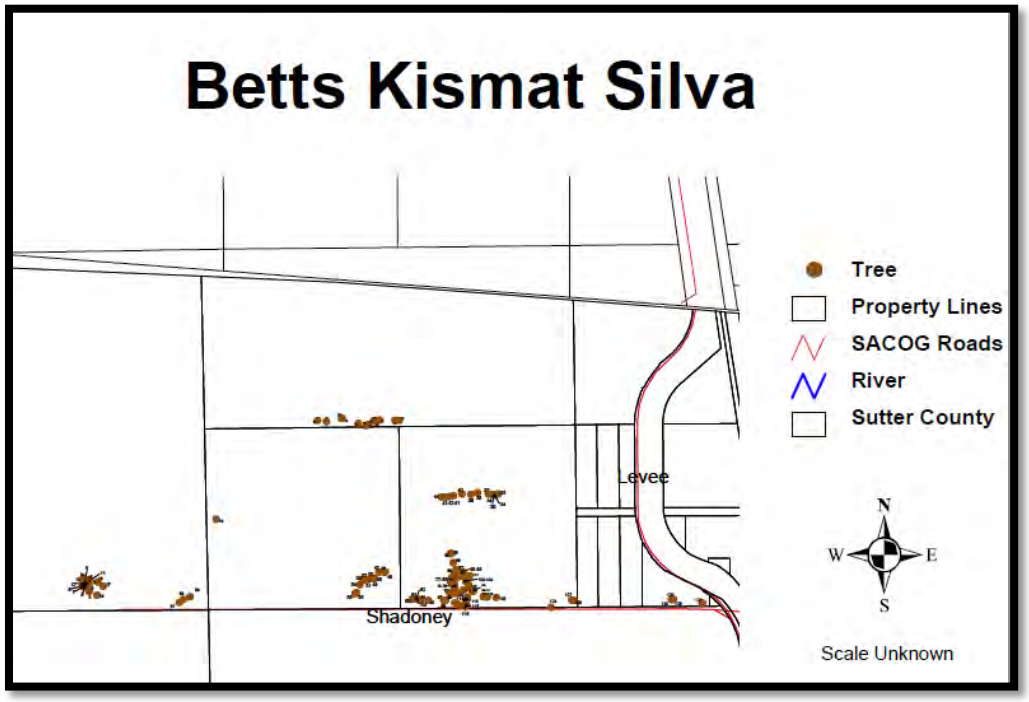
2008- Many Ibis present in late September.
2012- Edible fig saplings noted.

Technology and Map Review 2002- 2020

For 2002 and 2003, an Etrex GIS unit was used for gathering geolocations of data points. This unit had an accuracy of approximately 50 feet. Maps were not included in the first report, with basic mapping accompanying a tree count, narrative, and data tables in the 2003 report. SACOG provided basemaps for Sacramento and Sutter County for the 2003 report.

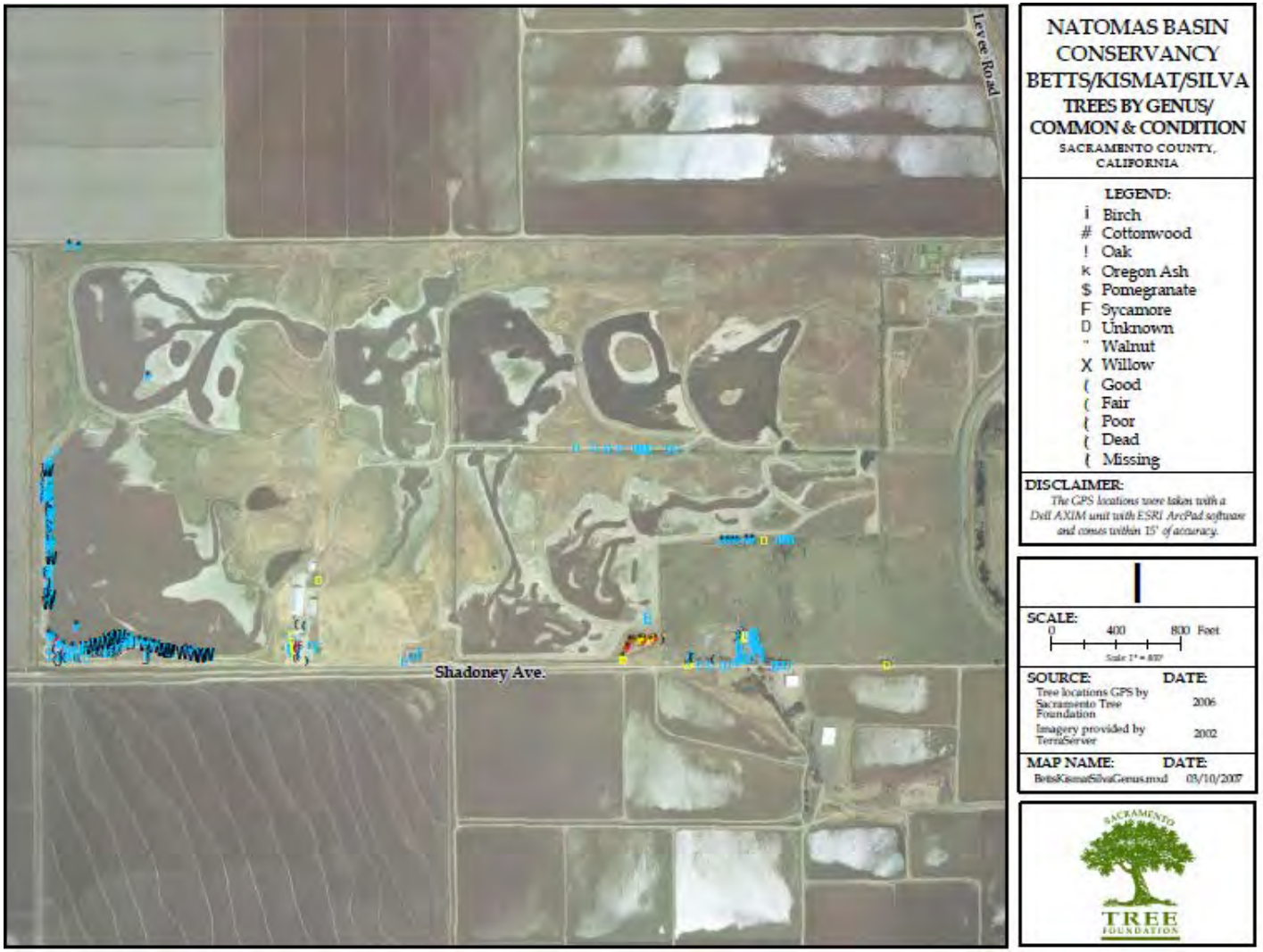


2003 Map of Natomas Basin Properties



2003 Map of the Betts-Kismat-Silva Properties

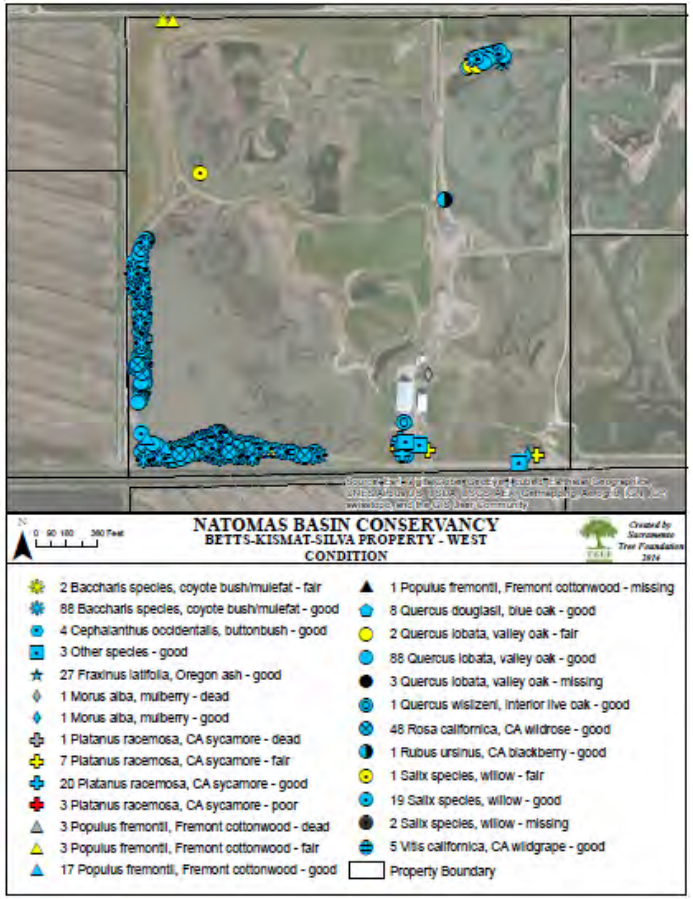
Beginning in 2004, field data was gathered using a Dell Axim unit running ArcPad software. This allowed for database and GPS integration while in the field. This technology did not operate well under tree canopies or in poor weather. Accuracy was increased to 15 feet under optimal operating conditions. Maps were supported by basemaps provided by SAGOG in 2004 and 2005, Terraserver basemapsfrom 2006 to 2009.



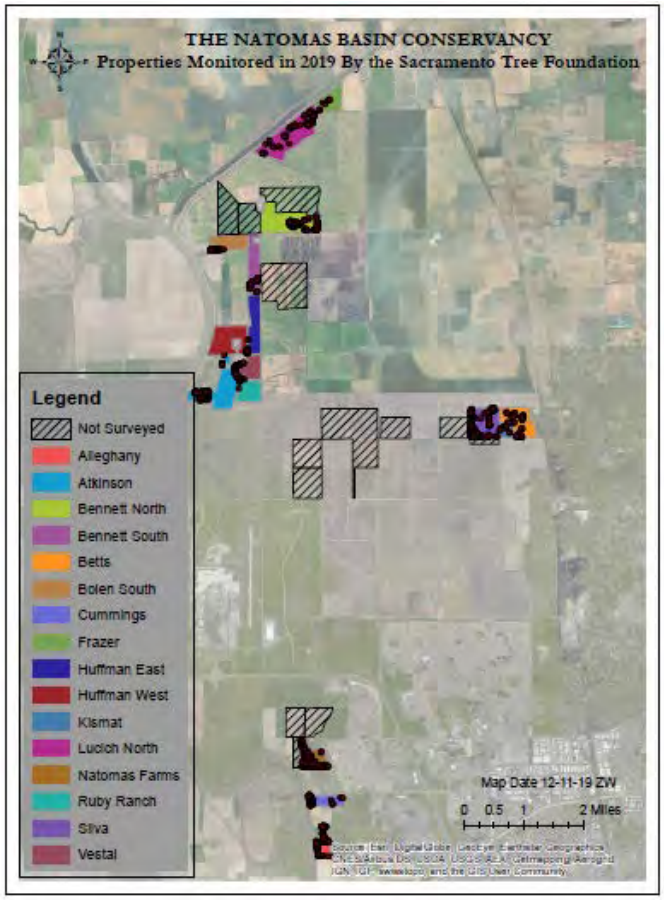
Map of Betts, Kismat, Silva Properties 2006

In 2010 the Tree Foundation upgraded to ArcGIS 9 as our office software, and upgraded our field hardware to a Trimble Nomad unit with accuracy of three meters. This unit was found to not meet optimal accuracy during overcast weather and under heavy tree canopy. From 2010 to 2012, aerial maps from Jones and Stokes and Arc IMS Image Service were used as basemaps for report map making.

In 2014, the Tree Foundation moved to a new mapping and monitoring system, including ArcGIS Online, the Collector for ArcGIS application on an iPad, and the SXBlue II Global Positioning System (GPS) external receiver which allows for sub-meter mapping accuracy. This hardware and software setup continues to be in use as of the 2020 report.



Map of Betts, Kismat, Silva West, 2014



Map of All Properties, 2019

Acknowledgements 2002- 2020

In the 18 years of this project, numerous staff, interns and volunteers have participated in gathering field data, taking photographs, building maps, and writing report components. Most notably, Joni Ramirez was an integral component of this project, beginning in 2002 until her retirement in 2012. Other individuals that have contributed to this project over the last 18 years include:

Joni Ramirez- NeighborWoods Coordinator/Mature Trees Program Manager
Becky McMahon- NATURE Assistant/NATURE Coordinator
Steve Schweigerdt- NeighborWoods Director
Zarah Wyly- NATURE Assistant/Restoration Ecologist/Director of Urban Ecology
Chelsea Wu- GIS intern
Michael Keys- GIS intern
Andrew Wyly- Photography Volunteer
Kelly Conroy-Greenprint Regional Coordinator
Meredith King- Volunteer Coordinator
Connie Cowan- Restoration Field Technician
Erika Teach-NATURE Program Director
Jennifer Szeliga- Director of Urban Forest Renewal
Gabriel Gutierrez- Monitoring Intern
Elke Gomez- Restoration Field Technician
Loren O'Rourke- Restoration Program Manager
Patrice Bolton-Johnson- Partnership and Reporting Specialist

Photo Gallery: Selected photos of Natomas Basin Conserancy Properties 2002-2020

Sacramento Tree Foundation tour with John Roberts, Silva Property, June 13, 2007

Allegheny

Honeybees gather honedew from button galls, 2013

Allegheny along Garden Highway 2005

Allegheny along Garden Highway 2018

Allegheny

Canal in center of Allegheny property 2018

Road at northern Allegheny property line 2018

Atkinson

Atkinson Oaks 2013

Atkinson Forest (west side) December 2009

Atkinson Forest (west side) November 2019

Atkinson

Joni Ramirez monitoring Atkinson 2009

Inside Atkinson Forest 2017

Atkinson Forest road 2009

Atkinson Forest road fall 2019 with Turkeys

Joni with exposed root ball in Atkinson Forest, 2009

Oak natural regeneration in Atkinson Forest 2009

Atkinson

Bird nest in Atkinson forest 2009

Cottonwoods in Atkinson Forest 2009

Atkinson

Oak and Elderberry transplanting into the grassland west of the Atkinson forest, November 2019

Atkinson

Topped oaks along Atkinson powerline easement, 2019

Restored grassland west of Atkinson forest, November, 2019

Bennet North

Meredith monitors trees at Bennet North, 2013

New plantings at Bennet North, 2019

Bennet South

Bennet South, fall 2019

Betts-Kismat-Silva Properties

Joni and Zarah monitoring, 2008

Beaver damage, 2008

Muskrat at Betts-Kismat-Silva, 2009 A. Wyly

Goats at work at Betts-Kismat-Silva, 2008

Betts-Kismat-Silva Properties

Grown in habitat plantings, 2017

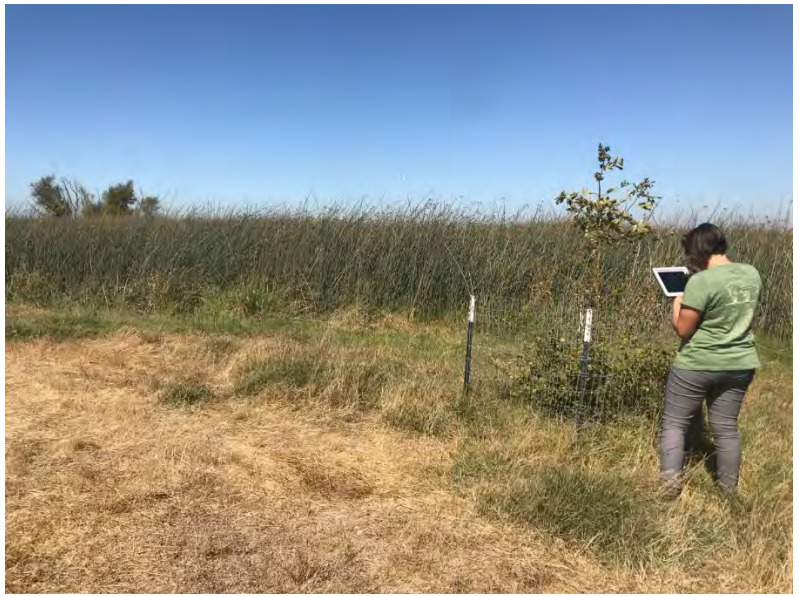
Habitat plantings with irrigation, 2008

Betts-Kismat-Silva Properties

Northern oak grove, 2017 (left)

Habitat plantings in south-west quadrant, 2018 (right)

Access road on southern property boundary, 2018 (left)



Elke monitors a tree, 2018 (right)

Cummings

Forest edge at Cummings, 2019

Sign for Reach B project, Cummings, 2019

Frazer

Frazer property grove plantings, 2018

Frazer

Frazer property new plantings, 2019

Huffman

Huffman cottonwoods, looking south, 2019

Huffman cottonwoods, looking north, 2019

Lucich North

Lucich North, 2013

Lucich North

Lucich north, 2018

Lucich north, 2019

Natomas Farms

Newly built wetlands, 2008.

A. Wyly

Natomas Farms south canal, 2008 A.Wyly

Natomas Farms, 2018

Natomas Farms

Critter path into the tule, 2019

Beaver damage and caging on a cottonwood, 2019

Ruby Ranch and Vestal

Ruby Ranch and Vestal Canal 2012

Kelly monitors trees at Vestal, 2012

Unknown location photos, 2008

Photos by A. Wyly, fall 2008

Natomas Basin Wildlife

Cormorants, 2008 A. Wyly

Sandhill Cranes, 2008 A. Wyly

Night Heron 2008 A. Wyly

Presumed Giant Garter Snake, Silva Property, 2018