

2021 STANDING ACREAGE - INITIAL ESTIMATE

In cooperation with the Almond Board of California

Released: April 22, 2021



RESULTS

Each year Land IQ produces an in-year, statewide almond acreage estimate. The initial bearing acreage estimate is provided in April, with the final estimate, including a non-bearing estimate, provided in November.

The initial bearing acreage estimate is for the 2021 production year (September 1, 2020 - August 31, 2021). Removed orchards have been determined through spatial analysis as of March 31, 2021. Therefore, a numerical estimate of orchards to be removed based on historical analyses and present conditions from April 1, 2021 through August 31, 2021 is also included.

As a result, the 2021 initial estimates are:

- 1,323,722 acres of bearing almonds
- 47,803 acres of removed almonds

These values will be updated for the final 2021 total acreage estimate to be delivered in November 2021. It should be noted that bearing acreage may be adjusted slightly (+/- 1-3%) following summer 2021 ground truthing verification. Any change will mostly likely affect acreage transitioning from non-bearing in 2020 to bearing in 2021, thus the impact on estimates of overall production volume should be considered negligible.

The following table represents removals and bearing acreage by County for 2021. Acreage by year planted and removals by year planted are provided on the following pages.

County	Bearing Acreage	Removed Acreage	County	Bearing Acreage	Removed Acreage
Alameda	688	0	Placer	2,145	0
Butte	33,037	798	Riverside	6	0
Calaveras	197	0	Sacramento	1,979	0
Colusa	59,039	1,849	San Joaquin	76,402	1,687
Contra Costa	315	0	San Luis Obispo	2,213	0
Fresno	252,665	7,515	Shasta	5	0
Glenn	48,786	3,711	Solano	19,607	30
Kern	196,373	10,327	Stanislaus	171,773	5,302
Kings	34,368	517	Sutter	12,129	173
Lake	37	0	Tehama	17,082	315
Madera	142,712	5,119	Tulare	71,388	1,806
Mariposa	4	0	Yolo	39,150	478
Merced	136,152	4,673	Yuba	1,971	5

INTRODUCTION

Beginning in 2019, the ABC began an annual mapping process with two acreage summaries, one delivered in April and one delivered in November, during the same production year. The Land IQ April delivery informs and aligns with the United States Department of Agriculture (USDA) – National Agricultural Statistics Service (NASS) California Almond Forecast, which is an initial subjective forecast for acreage and yield.

APPROACH

Land IQ draws upon on multiple lines of evidence including agronomic and remote sensing knowledge, unique field boundaries, robust on-the-ground verification, customized image analysis, artificial intelligence and machine learning algorithms to classify almond orchards.

For each mapped year, Land IQ performs the following steps:

1. Imagery Acquisition
2. Irrigated Field Boundary Delineation
3. Ground Truthing
4. Remote Sensing Analysis
5. Change Analysis and Update

For the initial estimate determining removals and bearing acreage, Land IQ utilizes the spatial mapping from 2020, in addition to a change analysis to determine removals.

2021 Initial Bearing and Removed Acreage Estimates by Year Planted

	1984		1985		1986		1987		1988	
	Bearing	Removed	Bearing	Removed	Bearing	Removed	Bearing	Removed	Bearing	Removed
Alameda										
Butte	6,648	255	52		202		261	9	143	28
Calaveras	12									
Colusa	743	450	10		50		54		54	
Contra Costa	3									
Fresno	270	93	74	10			1		85	21
Glenn	1,132	30	47		58		77		85	
Kern	347	126	35	77					125	
Kings										
Lake										
Madera	1,792	139	9	37	190		123	60	127	13
Mariposa										
Merced	7,982	835	291	18	142	67	386	11	489	92
Placer	43									
Riverside										
Sacramento	8									
San Joaquin	4,880	439	219	28	83		153	32	261	55
San Luis Obispo	75		19		21		24		9	
Shasta										
Solano	227				36				49	
Stanislaus	10,549	502	305	10	347	35	539	89	720	60
Sutter	428	97	36	26	2		51		42	
Tehama	582	1	7		23					
Tulare	187									
Yolo	129				1				30	
Yuba	25									
Grand Total	36,063	2,967	1,105	206	1,156	102	1,668	201	2,219	269

Source: Land IQ. California Statewide Almond Mapping - 2021. Based on data from USDA National Agricultural Imaging Program (NAIP), USGS Landsat, and other private imagery resources.

2021 Initial Bearing and Removed Acreage Estimates by Year Planted

	1989		1990		1991		1992		1993	
	Bearing	Removed	Bearing	Removed	Bearing	Removed	Bearing	Removed	Bearing	Removed
Alameda										
Butte	182		351	47	192	18	490		589	
Calaveras									5	
Colusa	56		432	130	104	16	101	65	326	39
Contra Costa										
Fresno	157	292	633		163	35	504	40	343	144
Glenn	286		223		178	50	265	62	545	
Kern	249	15	57		287		175		254	
Kings							2			
Lake			12						26	
Madera	255		251	46	105	90	121	92	803	551
Mariposa										
Merced	617	149	1,053	445	658	141	1,010	73	1,982	231
Placer									337	
Riverside										
Sacramento									2	
San Joaquin	291	9	326	12	155	28	290	143	568	38
San Luis Obispo	31		59		6		45		12	
Shasta									2	
Solano	8		43		6		53		87	
Stanislaus	302	61	921	93	836	104	735	325	1,500	951
Sutter	36		150	10	56		71		43	
Tehama	11		21		26					
Tulare		26	3		78		75		208	54
Yolo	16	7	281		1		76	36	352	
Yuba					4				24	
Grand Total	2,497	559	4,815	784	2,855	482	4,012	834	8,008	2,008

Source: Land IQ. California Statewide Almond Mapping - 2021. Based on data from USDA National Agricultural Imaging Program (NAIP), USGS Landsat, and other private imagery resources.

2021 Initial Bearing and Removed Acreage Estimates by Year Planted

	1994		1995		1996		1997		1998	
	Bearing	Removed	Bearing	Removed	Bearing	Removed	Bearing	Removed	Bearing	Removed
Alameda										
Butte	201		577	87	135	37	610	69	1,083	7
Calaveras										
Colusa	615	154	631		487	155	1,846	270	1,062	110
Contra Costa										
Fresno	447	138	488	28	856	940	2,885	917	2,820	1,205
Glenn	480	356	368	189	513	50	1,294	127	764	2
Kern	294	1,546	217	22	1,286	727	1,625	702	3,872	2,348
Kings							242		727	
Lake										
Madera	1,047	405	757	490	1,192	281	2,489	446	1,359	797
Mariposa										
Merced	1,091	431	1,220	44	2,747	296	2,717	198	1,779	632
Placer										
Riverside										
Sacramento									2	
San Joaquin	210	119	399	141	1,164	175	813	60	984	17
San Luis Obispo	1,723		138		3					
Shasta									3	
Solano	31		117				5		229	
Stanislaus	2,155	282	1,636	168	1,960	584	2,606	397	4,081	386
Sutter	242		51		80		603	11	172	
Tehama	47	96	66	19	180	18	344		121	38
Tulare	152		215		200	151	354	77	503	85
Yolo	94		173		243	13	459	70	251	
Yuba	2						138			
Grand Total	8,833	3,528	7,052	1,188	11,047	3,428	19,030	3,343	19,811	5,627

Source: Land IQ. California Statewide Almond Mapping - 2021. Based on data from USDA National Agricultural Imaging Program (NAIP), USGS Landsat, and other private imagery resources.

2021 Initial Bearing and Removed Acreage Estimates by Year Planted

	1999		2000		2001		2002		2003	
	Bearing	Removed	Bearing	Removed	Bearing	Removed	Bearing	Removed	Bearing	Removed
Alameda										
Butte	570	79	573		364	5	621		559	
Calaveras										
Colusa	2,238	322	1,343		1,594	18	1,142		2,155	3
Contra Costa					2					
Fresno	4,173	1,206	5,561	606	4,196	409	6,648	111	6,397	26
Glenn	1,317	741	517	35	1,071	235	562		1,597	55
Kern	4,351	1,987	2,122	535	2,072	423	3,275	150	6,362	197
Kings	393		288		299		1,272	9	136	19
Lake										
Madera	1,135	82	2,253	75	1,395	28	2,270	161	4,071	151
Mariposa										
Merced	2,546	169	2,117	101	2,326	161	2,121	101	3,090	171
Placer										
Riverside										
Sacramento										
San Joaquin	1,427	25	1,147	53	1,334	19	1,196	73	1,391	5
San Luis Obispo									9	
Shasta										
Solano	87		114		146		70		148	
Stanislaus	3,271	554	3,196	128	1,739	45	3,459	114	3,121	43
Sutter	186		74		114				272	
Tehama	146		346		301		299		239	
Tulare	758	54	374	516	194		567	96	1,156	24
Yolo	537	26	200		285	40	175	13	749	13
Yuba	48		47							
Grand Total	23,183	5,247	20,270	2,049	17,434	1,383	23,677	828	31,451	707

Source: Land IQ. California Statewide Almond Mapping - 2021. Based on data from USDA National Agricultural Imaging Program (NAIP), USGS Landsat, and other private imagery resources.

2021 Initial Bearing and Removed Acreage Estimates by Year Planted

	2004		2005		2006		2007		2008	
	Bearing	Removed	Bearing	Removed	Bearing	Removed	Bearing	Removed	Bearing	Removed
Alameda										
Butte	1,294	70	1,140		680	7	799		3,618	16
Calaveras										
Colusa	5,364	77	3,700	17	3,559		2,087		3,138	9
Contra Costa										
Fresno	12,296	342	15,958	146	16,914	121	11,571	98	6,549	18
Glenn	1,945	2	2,490	515	1,755	790	1,737	4	5,189	466
Kern	14,008	95	19,131	233	16,862	356	8,226	250	5,445	90
Kings	1,191		1,567	84	1,487	199	1,121		791	64
Lake										
Madera	6,354	57	6,650	412	8,529	227	7,718	151	11,543	320
Mariposa										
Merced	6,960	15	6,722	59	6,396	23	8,336	19	2,686	31
Placer										
Riverside					6					
Sacramento							95		14	
San Joaquin	2,613	1	2,276	10	1,898	25	2,131	5	1,765	
San Luis Obispo	2						5			
Shasta										
Solano	153	30	476		361		112		65	
Stanislaus	10,664	53	7,620	140	6,431	8	7,038		5,914	12
Sutter	765	5	201		611	3	641	16	218	
Tehama	590		269		513		1,157		1,407	104
Tulare	2,290	154	2,326	216	3,460	294	2,722		1,668	
Yolo	1,436	122	1,480	82	1,809		1,232		1,248	
Yuba	105	5	47		214		37		9	
Grand Total	68,030	1,030	72,053	1,914	71,484	2,052	56,766	543	51,265	1,128

Source: Land IQ. California Statewide Almond Mapping - 2021. Based on data from USDA National Agricultural Imaging Program (NAIP), USGS Landsat, and other private imagery resources.

2021 Initial Bearing and Removed Acreage Estimates by Year Planted

	2009		2010		2011		2012		2013	
	Bearing	Removed	Bearing	Removed	Bearing	Removed	Bearing	Removed	Bearing	Removed
Alameda										
Butte	1,288		1,218		641		435		586	9
Calaveras										
Colusa	2,512		2,074		2,058		1,219	0	1,887	9
Contra Costa										
Fresno	5,544	10	5,729	44	8,472	152	9,294		12,280	95
Glenn	1,137		610		2,215		1,599		1,905	
Kern	5,793	273	4,606	32	8,921	128	6,436		8,854	
Kings	823	97	768	39	404		1,448		2,209	
Lake										
Madera	5,778		2,919		9,129		4,651		7,730	1
Mariposa			4							
Merced	3,145	14	2,602	24	3,384		3,487		4,911	37
Placer										
Riverside										
Sacramento										
San Joaquin	1,194	2	1,328	38	2,999	0	3,131		4,042	36
San Luis Obispo			1							
Shasta										
Solano	121		41		128		13		181	
Stanislaus	5,063	9	3,538	5	8,515		6,778	9	9,875	
Sutter	435		156		390		60		366	
Tehama	341		109		327		510		1,211	
Tulare	2,348		2,361		3,073		1,964		1,080	
Yolo	1,962		486		1,809	54	537		2,657	
Yuba			7		31				224	
Grand Total	37,485	407	28,556	183	52,495	334	41,562	9	59,998	187

Source: Land IQ. California Statewide Almond Mapping - 2021. Based on data from USDA National Agricultural Imaging Program (NAIP), USGS Landsat, and other private imagery resources.

2021 Initial Bearing and Removed Acreage Estimates by Year Planted

	2014		2015		2016		2017		2018*	
	Bearing	Removed	Bearing	Removed	Bearing	Removed	Bearing	Removed	Bearing	Removed
Alameda	146		377		165					
Butte	692		938	14	2,094	3	1,537	37	1,674	
Calaveras			100		80					
Colusa	1,446	1	2,226	1	5,537	2	3,417	2	3,772	
Contra Costa					55		236		18	
Fresno	17,294	258	21,172	5	26,312	0	23,931	3	22,648	
Glenn	2,434		468		5,453	1	4,511	1	3,959	
Kern	9,564		11,463		19,303		12,247	8	18,512	
Kings	2,540		4,025		6,958		2,430		3,246	6
Lake										
Madera	12,093		7,742		11,336		11,625	6	7,169	
Mariposa										
Merced	10,620	64	7,319	5	11,305	12	8,309	3	13,607	
Placer	21				1,032				713	
Riverside										
Sacramento	68		185		750		172		684	
San Joaquin	7,293	17	4,439	3	7,721		7,121	19	9,158	60
San Luis Obispo	31									
Shasta										
Solano	2,657		4,872		4,551		2,536		1,884	
Stanislaus	12,602	50	9,178	13	12,477	45	9,272	1	12,832	26
Sutter	380		418		2,526	5	399		1,854	
Tehama	1,438		655		3,506	38	772		1,518	
Tulare	7,995	58	7,678		11,765		5,407		10,228	
Yolo	3,990		4,203		5,452		3,909	2	2,887	
Yuba	164		216		345		40		245	
Grand Total	93,468	448	87,673	40	138,722	107	97,871	82	123,609	92

Source: Land IQ. California Statewide Almond Mapping - 2021. Based on data from USDA National Agricultural Imaging Program (NAIP), USGS Landsat, and other private imagery resources.

* 2018 Bearing Acreage will be finalized in November. An estimate of additional acreage has been added to the total, but not to each county.

2021 Initial Bearing and Removed Acreage Estimates by Year Planted

	2019 - 2021**		TOTAL	
	Standing	Removed	Bearing	Removed
Alameda			688	-
Butte			33,037	798
Calaveras			197	-
Colusa			59,039	1,849
Contra Costa			315	-
Fresno			252,665	7,515
Glenn			48,786	3,711
Kern		6	196,373	10,327
Kings			34,368	517
Lake			37	-
Madera			142,712	5,119
Mariposa			4	-
Merced			136,152	4,673
Placer			2,145	-
Riverside			6	-
Sacramento			1,979	-
San Joaquin			76,402	1,687
San Luis Obispo			2,213	-
Shasta			5	-
Solano			19,607	30
Stanislaus			171,773	5,302
Sutter			12,129	173
Tehama			17,082	315
Tulare			71,388	1,806
Yolo			39,150	478
Yuba			1,971	5
Grand Total	0	6	1,327,222	44,303

Estimated Removals (4/2021-09/2021)	3,500	3,500
Total Estimated Acres	1,323,722	47,803

Source: Land IQ. California Statewide Almond Mapping - 2021. Based on data from USDA National Agricultural Imaging Program (NAIP), USGS Landsat, and other private imagery resources.

** A non-bearing estimate will be provided in November.