U.S. Pistachio Future Production Projections
2019 to 2026

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Introduction

California pistachio production could exceed 1.4 billion pounds by 2026, given trees planted over the past five years, a conservative projection for new planting in the next three years, normal weather patterns, and no major interruptions to water supplies. Projections take into account that "normal" weather and water supplies are anticipated to be sub-optimal (as they have been in many of the last several years). Methodology is as follows:

Bearing Acres – Projections, starting with 2019, are equal to the previous year's bearing acres plus trees planted five year prior (trees in their 6th leaf). Thus, 2019 bearing acres equal 2018 bearing acres[1] plus new plantings in 2014 (264,095 + 18,000 = 282,095).

This formula was used in the 2013 projections exercise with disappointing results. Actual reported bearing acres for each of the years 2014 through 2018 exceeded projected acres by an average of 12,335 acres or 5.7 percent. Given that Administrative Committee for Pistachios (ACP) bearing acreage estimates are more accurate than new planting estimates, all of the acreage under-reporting is attributed to new plantings.

Nevertheless, bearing acre projections for 2019 through 2026 do not take past underestimates into account under the assumption that the undercounting of new plantings over the past five years was partially offset by the high ACP estimate for 2018, and by the removal of trees from bearing orchards because of the Pistachio Bushy Top Syndrome.

New Plantings – The projections for new plantings in 2019-2021 are 15,000 acres for each year; a number based on annual average new plantings for 2005-2018 (15,886 acres). The 2018 estimate is an outlier, compensating in part for underestimates in prior years. Uncertainties related to water availability, water prices and water use regulations could shave a few thousand acres from these forecasts.

The average annual rate of new plantings during 2005-2018 was more than 3 times the annual rate of the decade preceding 2005. However, plantings in this recent 14-year stretch varied widely, ranging from around 7,000 acres to 24,000 acres (and 30,000 in 2018) with no general increasing or decreasing trend.

Yield per Bearing Acre – Yield per acre for young bearing trees (6th leaf through 10th leaf), actual historical as well as projected, are arbitrary estimates as follows:

Leaf	- - - - Pounds per Acre - - - -		
	On-Year	*Off-Year*	*2015*
6th	400	400	180
7th	1,200	1,200	540
8th	2,000	2,000	900
9th	2,750	2,250	1,012
10th	3,300	2,700	1,215

[1] All historical data are from the Administrative Committee for Pistachios.

Estimates for 2015 are a special case because unusual weather conditions – drought plus insufficient chilling hours – caused an elevated incidence of blanks. Projected 2019-2026 yields for all immature (6th to 10th leaf) bearing acres will vary year-to-year depending on the age mix of trees in that year.

Historical yields for fully mature trees (11th leaf and older) are the residual after calculating production from younger trees. Fully mature trees tend to have higher yield averages than trees of younger age. Projected 2019-2026 yields for fully mature acres – 4,300 pounds per acre for on-years and 2,800 pounds for off-years – approximate the estimated mean yields for on-years and off-years during 2005-2018, excluding 2015. Neither on-year nor off-year yields showed an increasing or decreasing trend. Off-year yields, excluding 2015, varied much more widely from season to season than on-year yields (figure 5).

Production Projections – Production is derived from the projections for bearing acres and for yields. The projections assume that on-years and off-years will alternate year by year. History, however, tells another story. There were 13 off-years but only 10 on-years in the 23 years from 1996 (off) through 2018 (on). Thus, it is likely that two successive off-years will occur once or twice during the 8 years projected, bringing cumulative production for the 8-year projection period 400 million to 800 million pounds below the cumulative 2019-2026 production of 8.3 billion pounds indicated in the table below. It is important to note that the table below provides production, acreage, and yield for all bearing trees (6th leaf and older).

California Pistachios - Area, Yield and Production, 2005 - 2018 & Projections to 2026

Year	Production	Acres		Yield	on & off
	million pounds	*Bearing*	*New Plantings*	*Bearing lbs/Acre*	
2005	282.4	104,552	11,465	2,701	-
2006	237.5	112,532	15,842	2,110	-
2007	415.7	115,007	24,794	3,615	+
2008	278.0	118,113	18,740	2,353	-
2009	354.5	125,637	12,128	2,822	-
2010	521.8	137,102	6,730	3,806	+
2011	443.8	152,994	11,000	2,902	-
2012	551.0	177,738	13,710	3,100	+
2013	469.3	202,997	24,500	2,312	-
2014	513.6	220,527	18,000	2,329	-
2015	270.1	232,655	7,500	1,161	-
2016	896.5	239,385	10,000	3,745	+
2017	600.3	250,385	18,000	2,397	-
2018	986.7	264,095	30,000	3,736	+
2019	689.8	282,095	15,000	2,445	-
2020	1,071.6	289,595	15,000	3,700	+
2021	773.6	299,595	15,000	2,582	-
2022	1,171.1	317,595		3,687	+
2023	858.5	347,595		2,470	-
2024	1,333.8	362,595		3,678	+
2025	962.4	377,595		2,549	-
2026	1,458.4	392,595		3,715	+

Source: Administrative Committee for Pistachios and author's estimates

Figure 1

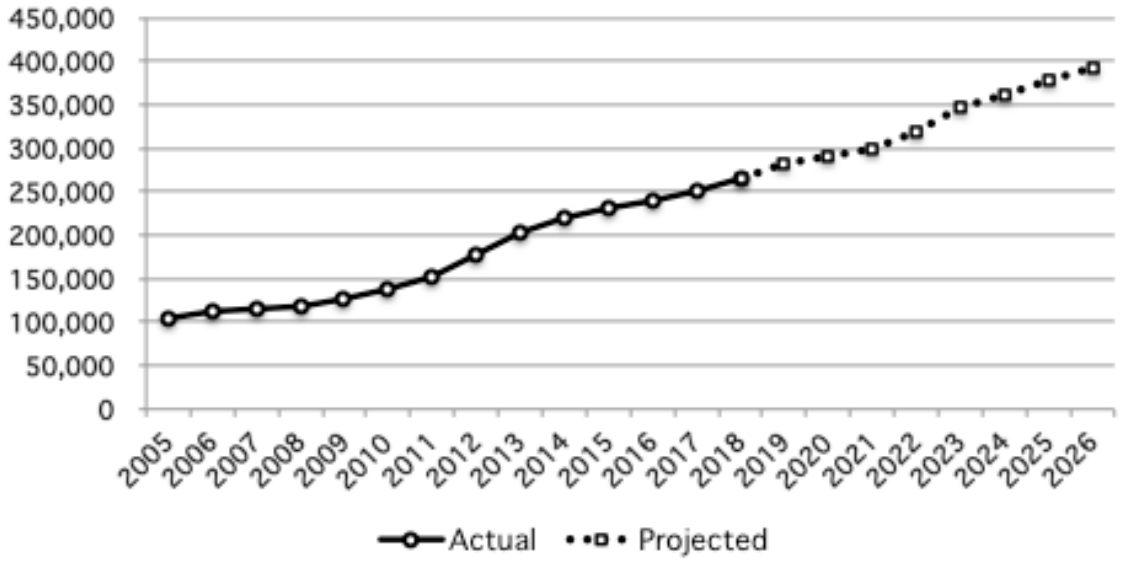


Figure 2

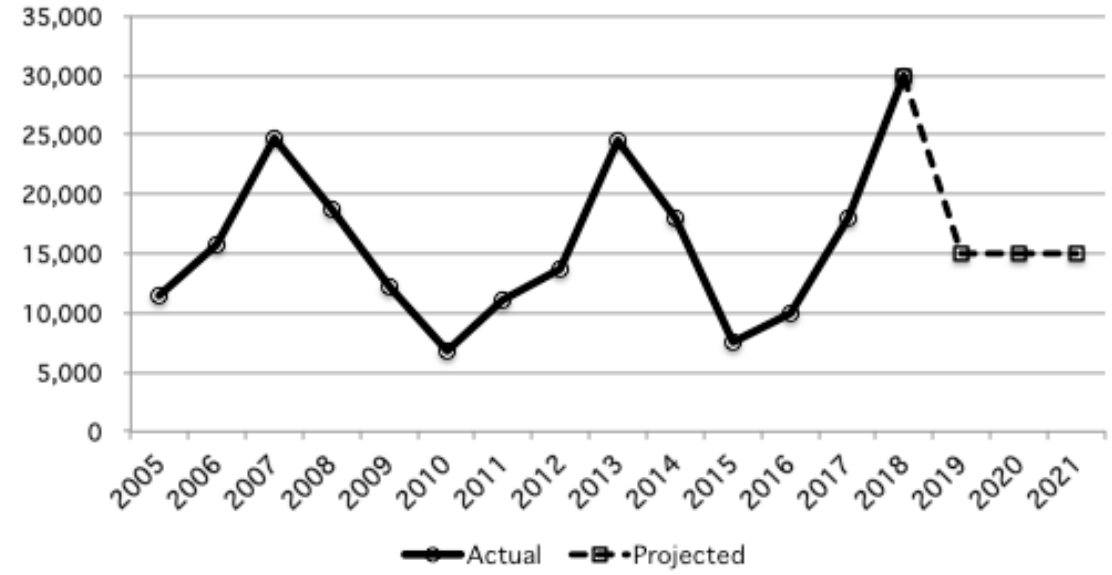


Figure 3

California Pistachios: Yield per Bearing Acre

(pounds/acre)

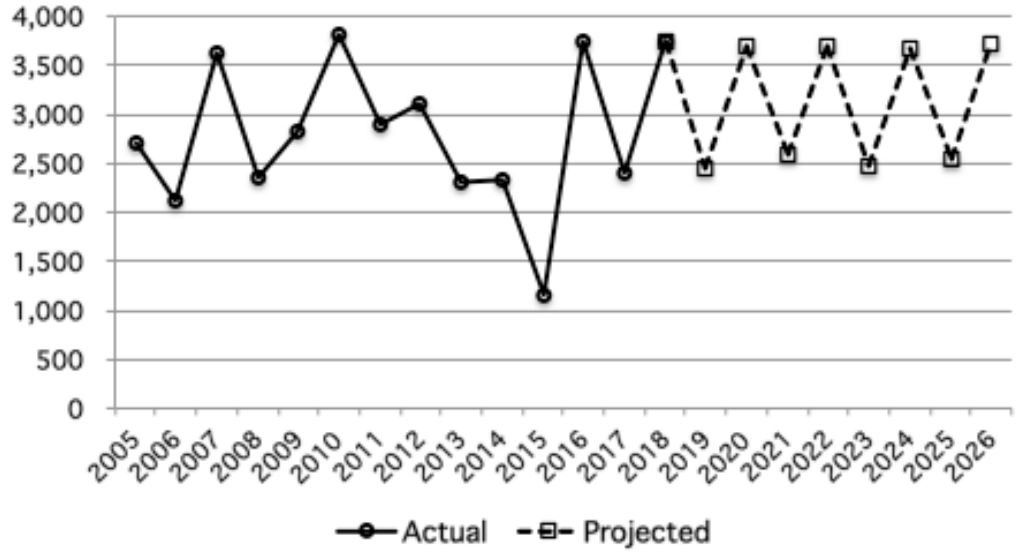


Figure 4

California Pistachios: Production

(million pounds)

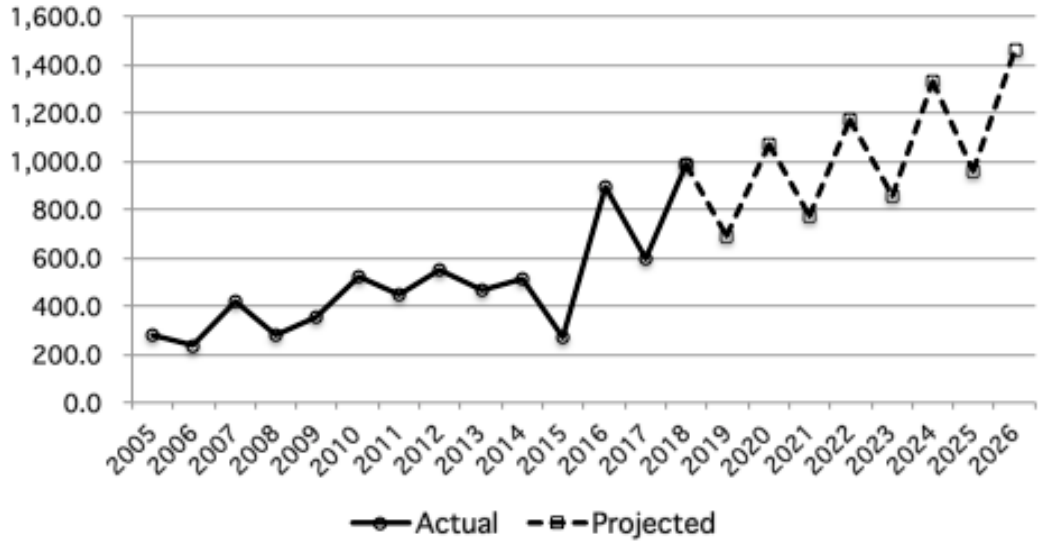


Figure 5
California Pistachios: Estimated Yields of Fully Mature Trees (11th Leaf +), On-years & Off-years
(pounds per acre)

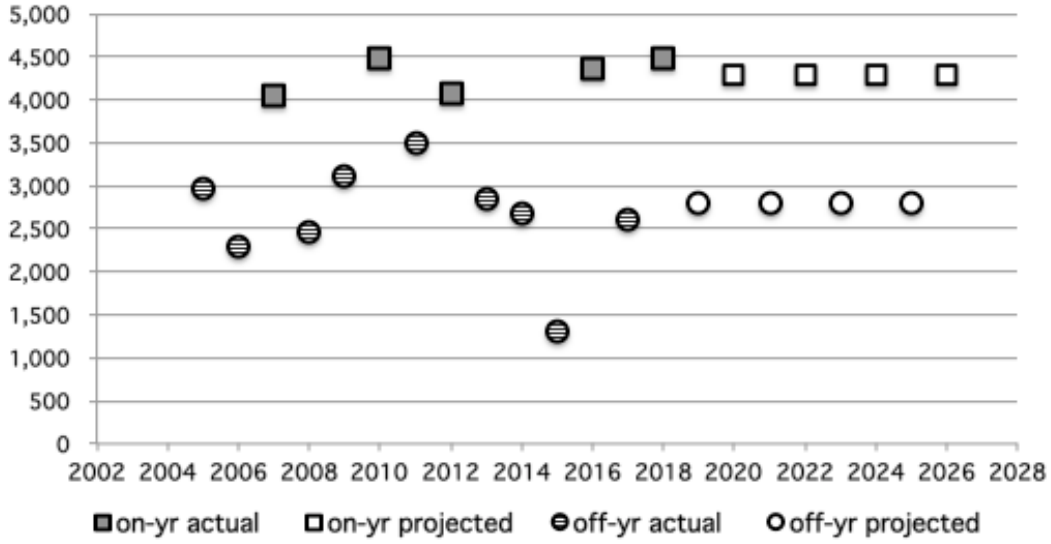
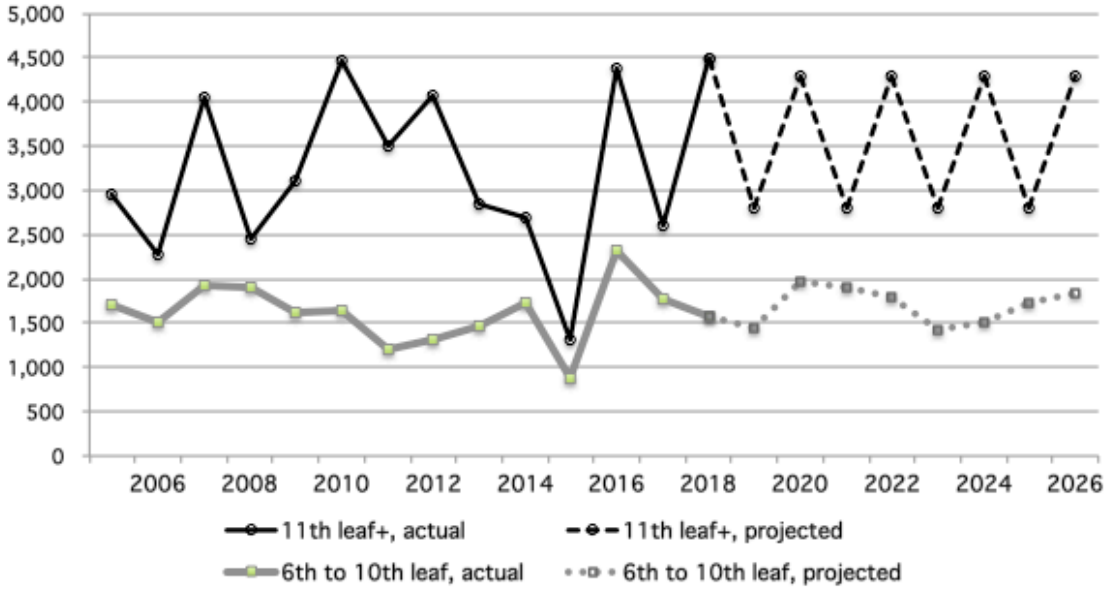


Figure 6
California Pistachios: Estimated Yields of Fully Mature Trees (11th leaf +) & Young Trees (6th -10th leaf), all years
(pounds per acre)



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