



Vacation Rentals and Home Prices

Sonoma County, California

December 2021

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Executive Summary

This study provides data and analysis to answer the question: **have more short-term rentals (STRs) in Sonoma County that are single-family homes had a measurable impact on housing supply and the price of single-family homes in Sonoma County?**

In terms of effects on single-family housing units' prices, data and studies considered in this report show little to no connection between a rise in single-family housing units offered as short-term rentals and single-family home prices:

- Those communities with restrictions on offering homes as STRs (in so-called X-zones) have experienced slightly more price ascension since 2011 than coastal communities (where there are no restrictions or permitting in offering a home as a short-term rental), though X-zone communities also have more housing units than the unrestricted areas;
- There are no obvious ways in which rising volumes of STRs are creating rising home prices in Sonoma County; and

Recent studies about housing-market effects from rising levels of short-term rentals opinions to date are mixed, but lean toward the conclusion rental prices are more likely affected than prices for homes for sale by rising volumes of STRs.

Data were gathered from the County of Sonoma (housing units and short-term rentals permitted), the Census Bureau (housing units), Zillow™ Research (home prices), the California Department of Finance (single-family housing units versus multi-family), and Sonoma County Tourism (estimates of coastal-community STRs offered in areas where no permit is needed to offer a home as a STR). The County of Sonoma (Permit Sonoma) commissioned this study.

Introduction

This study considers how single-family homes used as short-term vacation rentals (STRs) may affect housing prices in Sonoma County. This study was commissioned by Permit Sonoma. The main hypothesis to be tested is: **have more short-term rentals (STRs) in Sonoma County that are single-family homes had a measurable impact on housing supply and the price of single-family homes in Sonoma County?**

Our study considers how single-family housing units have changed in volume and their median home price since 2011 in Sonoma County. The estimated number of short-term rentals (STRs) countywide in 2021 is approximately 2,459 of approximately 138,945 single-family, detached housing units (SFH). The volume of STRs countywide increased from 2011 to 2021; the total number of single-family homes fell after 2017, but has increased since 2018 net of additional single-family homes used as STRs in Sonoma County. Single-family homes were the primary homes lost in the Tubbs Fire of 2017; housing prices were rising before the 2017 fire, then fell, then continued to rise to date (we use data through September 2021 and match all communities where data on housing units, STRs and prices exist). Fire rebuilds and new construction otherwise have helped total housing units rise in Sonoma County in net since the devastating effects of the 2017 Tubbs Fire. Estimates of vacant units by the Census Bureau and California Department of Finance include those units used as STRs. Vacant housing units in Sonoma County fell between 2011 and 2021 by 1,338 units to a total of 17,452 units in 2021. The prices of homes are regional; price data for the North Bay counties of Sonoma, Lake, Marin, Mendocino, and Napa show an obvious correlation in single-family home prices since 2011, where these counties all have different experiences with supply changes for single-family homes. For Sonoma County, there is an estimated 98 percent increase in the median price of single-family homes from 2011 to 2021, to an estimated price in 2021 of \$747,431.

We consider data on single-family housing (SFH) units overall, estimated SFH units offered as short-term rentals, and median home prices as available by incorporated city and communities in unincorporated Sonoma County to consider how changes in home prices may or may not have been affected by supply changes, including more STRs. The Tubbs Fire of 2017 provides a tragic, natural experiment to gauge how a reduction in the supply of single-family homes affects home prices. The County of Sonoma records all housing units, both single-family and multi-family housing units. Permit Sonoma tracks single-family housing units outside specific coastal areas (see more below on “Coastal Zone” communities in unincorporated Sonoma County) that are offered as vacation rentals by owners through permits approvals to do so. Zillow™ Research tracks median home prices for SFH units, and data from Sonoma County Tourism filled in estimated STRs in the coastal areas. We see below that there is little evidence that rising STR levels have effects on single-family home prices in Sonoma County.

Single-Family Homes as Short-Term Rentals

Figure 1 shows summary estimates of single-family homes (SFHs) used as short-term rentals (STRs) in Sonoma County as of June 2021. These data are a combination of Permit Sonoma data on SFH units permitted to be STRs and also data from AirDNA (courtesy of Sonoma County Tourism) for the coastal communities of Jenner/Timber Cove, Bodega Bay, and Sea Ranch that do not face restrictions in offering homes as STRs. Some communities in Sonoma County have specific restrictions in so-called “X” zones.¹

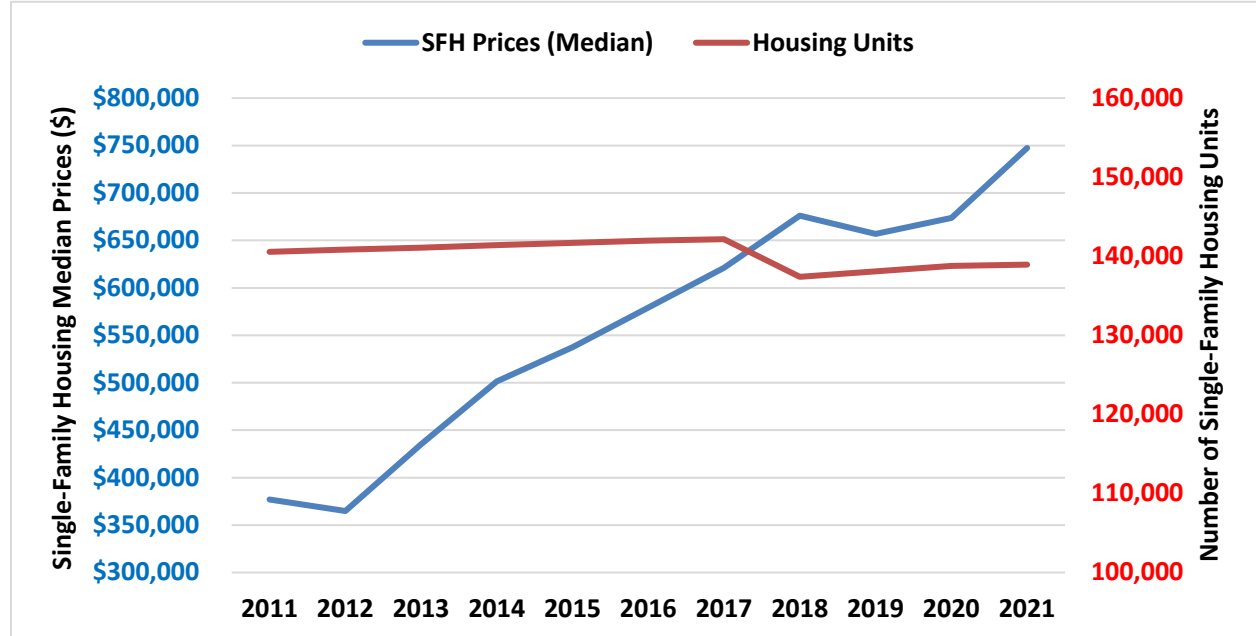
The number of single-family housing units in Sonoma County fell sharply due to the Tubbs Fire in 2017. As we see below, other North Bay counties (Lake, Mendocino and Napa) also experienced SFH-unit losses since 2015. For Sonoma County specifically, Figure 2 shows the annual median home prices for single-family homes as measured by Zillow™ Research and the California Department of Finance’s number of single-family homes in Sonoma County between 2011 and 2021.

Figure 1: Estimated Number of Vacation Homes, Areas of Sonoma County, 2021

Place	Number of Whole Home STRs
Cloverdale	15
Cotati	1
Healdsburg	163
Petaluma	19
Santa Rosa	146
Sebastopol	147
Sonoma	469
Windsor	18
Unincorporated Non-Coastal	988
Subtotal	1,962
Unincorporated Coastal	497
Total	2,459

Sources: Permit Sonoma and AirDNA (courtesy of Sonoma County Tourism)

Figure 2: Annual Single-Family Housing (SFH) Units Count and Median SFH Prices, 2011-2021



Sources: Zillow™ Research (median home prices) and California Department of Finance (Units)

Notes: Figure 1A in the Appendix shows that the Tubbs Fire effects were primarily on single-family homes

¹ Please see <https://sonomacounty.ca.gov/PRMD/Regulations/Vacation-and-Hosted-Rentals/Exclusion-Combining-District/> for more on X zones in Sonoma County.

What Figure 2's data allow is a natural experiment with how a loss of single-family housing units from the local market of potentially salable units may affect median home prices. Notice that after 2012, median home prices rose steadily in Sonoma County as the number of SFH units increased. Prices fell in 2018 after the 2017 Tubbs Fire, and then rose again. The COVID-19 pandemic and subsequent housing market conditions have provided conditions of rising demand for Sonoma County single-family units for sale. Figure 2 suggests that rising single-family home prices took place before and after a SFH-unit supply decrease.

Changes in the housing supply do not change housing prices alone. Changes in housing supply depend on new construction, natural disasters and how homes are utilized (second homes, STRs, long-term rentals of single-family homes may reduce salable housing stock). Housing demand originates from regional renters, current homeowners, and global buyers considering Sonoma County as a home. Median home prices and how we value housing market activity depend on transactions to update market conditions. For example, if no homes were demanded in January of a given year, median home prices would not change from December to January that year; completed sales of homes change stated median prices.

Let's now look at a brief literature overview on how STRs may affect housing markets.

The Literature's Approach to Short-Term Rentals and Housing Prices

The academic and professional (consulting) literature has generally found that STRs affect home **rental** prices due to reducing potential long-term rental supply versus a reduction in housing for sale; this is especially true in urban areas. The estimated effects on home prices have been mixed.

- A report with a similar mission to this EFA study was done in 2015 by EPS. This study was specific to Sonoma County. EPS started with the hypothesis that short-term rentals were rising in terms of direct competition with local hotels and motels and bed and breakfast lodging. Their study provided regulatory considerations for Sonoma County, a pre-cursor to "X"-zones;
 - EPS' study provided policy guidance, a simple data analysis and overview, with no conclusions on the relationship between rising STRs offered and home/rental prices.
- Oxford Economics (2019) considered rents and home prices across large metropolitan areas in the United States, using data across places and time ("panel" data) from 2014 to 2018 and found:
 - Rising STR listings lead to more vacant housing stock waiting for short-term rental demand;
 - Rising STR listings reduce the rental stock in a statistically-significant way;
 - No statistically-significant effects of increased STR listings on housing prices.
- King and Jenkins (2020) considers California's coastal areas and the high cost of accommodation along California's coastline, concluding that:
 - Coastal access for those at lower-income levels may be provided by short-term rentals;
 - Whole-home rentals provide flexible options for travelers and owners to rising hotel and motel prices during peak periods; and
 - Profitability for new hotel and motel properties may not be enough to entice developers.

- Barron, et al. (2021) considered how local profitability signals lead to housing-unit conversion to a short-term rental.
 - The authors generated approximately nine years of data (2008 to 2016) on Airbnb listings throughout the United States and then matched up to metropolitan statistical area (MSA) level data on rental prices, housing prices, and owner-occupancy rate of housing units;
 - Their findings suggest that one percent increase in STR listings leads to a 0.018 percent increase in rental prices and a 0.026 percent increase in house prices. However, these authors did not differentiate between shared homes and whole homes for short-term rental, simply listings in urban areas.
- Bao, et al. (2020) considered data between 2013 and 2017 and claim to study neighborhood characteristics as a way to understand more completely the dynamics of a larger density of STR units in an area.
 - Bao, et al. (2020) shows that as the population density rises, the effects of more Airbnb density are large and more significant than areas with a less-dense population.

This literature is still emerging and is likely to mature alongside of continued home-sharing platform use such as VRBO and Airbnb. Three general conclusions can be drawn from the literature as of 2021:

- Short-term rental properties affect rental prices more than home prices;
- The effects of short-term rentals on markets depends on the concentration of home ownership and also the concentration of visitors that provide incentives to convert homes to short-term rentals versus other use options; and
- Broader housing market trends have larger effects than the entry of short-term rentals on median home prices.

STRs and Housing Prices

Figure 3 shows data for the number of whole homes as short-term rentals in 2021 as a percentage of total housing units for Sonoma County's nine cities and the unincorporated areas. County of Sonoma counts approximately 2,459 single-family homes operating as short-term, whole-home rentals as of 2021, with approximately 1,485 of these units are in unincorporated Sonoma County:

- 497 units are estimated to be in the "coastal" zone (Bodega Bay, Jenner/Timber Cove, Sea Ranch);
- 623 units are estimated in Forestville, Guerneville, Monte Rio, Cazadero, and Occidental; and
- 272 units are in Kenwood, Glen Ellen and Agua Caliente just north and west of the city of Sonoma in unincorporated Sonoma County.

Estimates of vacant units by the Census Bureau and California Department of Finance include those units used as STRs. Vacant housing units in Sonoma County **fell** between 2011 and 2021 by 1,338 units to a total of 17,452 units in 2021. California Department of Finance estimates Sonoma County **lost** (due primarily to the Tubbs Fire in 2017) 1,614 single-family homes from 2011 to 2021; single-family homes **decreased** from 140,559 to 138,945 from 2011 to 2021. What Figure 3 does is show annual data on single-family housing units, STRs that are whole homes as tracked by Permit Sonoma, the net SFH units

after considering STRs, the countywide percent of SFH units that are STRs, and the SFH unit median home price estimates.

Figure 3 shows how median, single-family home prices move together regionally in the North Bay counties and the state of California overall. In Sonoma County, some areas have restrictions on use of single-family homes as STRs (“X” zones), while areas of Sonoma County covered by the Coastal Commission may engage in STR conversion without a permit as long as TOT payments are made; any local ordinance in Sonoma

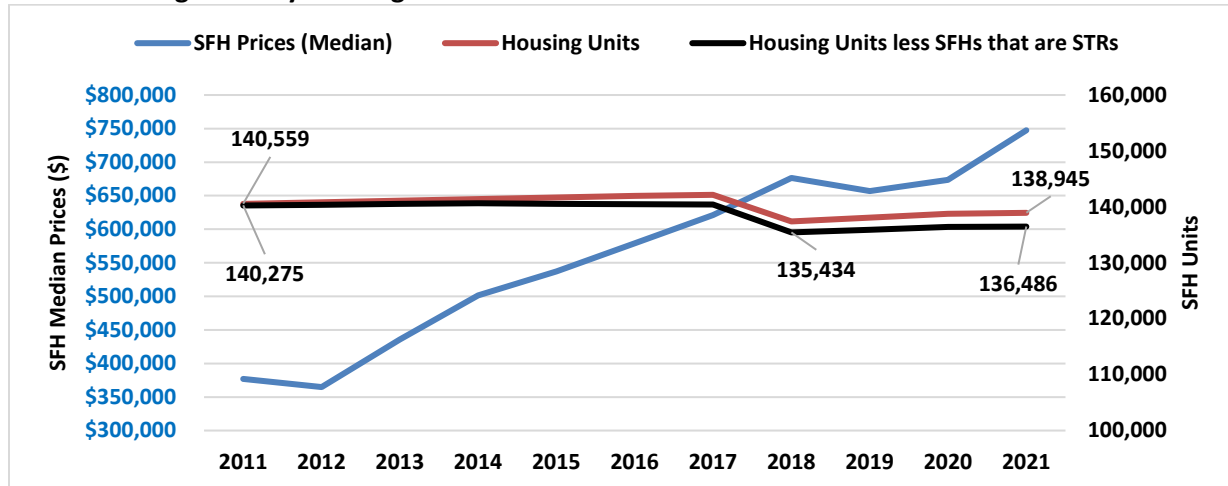
Figure 3: Number of Single-Family Homes (SFH) as Short-Term Rentals (STRs) offered in Sonoma County, 2011-2021

Year	Official SFH Count Sonoma County	STR Estimate	Net SFH	% STR of SFH	Sonoma County Median SFH Price
2011	140,559	284	140,275	0.2%	\$376,967
2012	140,823	437	140,386	0.3%	\$364,808
2013	141,095	586	140,509	0.4%	\$435,381
2014	141,417	772	140,645	0.5%	\$501,218
2015	141,689	1,172	140,517	0.8%	\$537,321
2016	141,957	1,496	140,461	1.1%	\$579,313
2017	142,151	1,721	140,430	1.2%	\$621,010
2018	137,394	1,960	135,434	1.4%	\$676,177
2019	138,077	2,166	135,911	1.6%	\$656,685
2020	138,763	2,352	136,411	1.7%	\$673,705
2021	138,945	2,459	136,486	1.8%	\$747,431

Sources: California Department of Finance, Permit Sonoma, AirDNA, Zillow™ Research

County would need Coastal Commission approval to have a new ordinance apply in that geographic area. Figure 4 considers Figure 2’s data combined with Figure 3’s data to change the “net” single-family homes in Sonoma County based on Permit Sonoma data on those single-family homes that have permits to offer their entire home as a short-term rental. Notice there is a difference over the 2011 to 2021 period in terms of rising STR levels but still a net increase in single-family homes from 2017 to 2021 after taking new STRs into account (the black line in Figure 4).

Figure 4: Single-Family Home Prices in Sonoma County, Single-Family Housing (SFH) Units and SFH less Estimated Single-Family Housing Units as Short-Term Rentals.



Sources: California Department of Finance, Permit Sonoma, AirDNA, and Zillow™ Research.

Notes: Figures 2A and 3A in Appendix 1 shows the evolution of single-family housing units in North Bay counties that have and have not been shocked by losses due to fires between 2015 and 2020, where prices have trended up regardless of net, single-family housing supply changes (new construction offsetting some losses).

Vacation Rentals and Home Prices 2021

Figure 5's data show that within Sonoma County, no clear pattern exists for communities with more "density" (percentage of single-family homes offered as STRs) versus those with less; those with X-zones show relatively higher levels of price growth since 2011 than coastal areas with no restrictions on homes offered as short-term rentals.

Figure 5: % Point Change in Vacation Rentals of Total Single-Family Homes to % Change in Median Home Prices, Cities, Towns and Places in Sonoma County, 2011-2021, Sorted by Median Home Price Change with Coastal and "X" zone communities identified

Place	2021 % SFH that are STRs of Total SFH	SFHs as STRs	% Change Median Prices 2011-21	Place	2021 % SFH that are STRs of Total SFH	SFHs as STRs	% Change Median Prices 2011-21
Fulton	1.1%	2	116.3%	Cloverdale	0.5%	15	90.6%
Kenwood	13.1%	89	115.8%	Sebastopol	1.7%	147	89.6%
Glen Ellen*	14.0%	168	112.3%	Occidental	2.2%	29	86.7%
Rohnert Park	0.4%	28	109.0%	Graton	2.4%	4	86.4%
Windsor	0.3%	19	106.7%	Bodega	1.0%	1	85.5%
Monte Rio	13.4%	115	104.0%	Bodega Bay**	12.0%	165	83.3%
Cotati	0.07%	1	103.9%	Healdsburg*	3.7%	179	77.6%
Petaluma	0.1%	19	100.3%	Sea Ranch**	13.0%	228	76.5%
Santa Rosa*	0.3%	146	100.3%	Cazadero	7.4%	66	74.9%
Forestville	3.9%	103	97.2%	Jenner/Timber Cove**	24.6%	104	63.6%
Guerneville	11.2%	310	96.6%	Valley Ford	3.1%	1	61.9%
Sonoma*	4.9%	469	96.4%	Geyserville	5.2%	23	58.9%
Penngrove	0.8%	11	94.5%	Sonoma County	1.8%	2,459	98.3%

Sources: Permit Sonoma, Census Bureau, California Department of Finance, * = communities with "X" zones, ** = coastal communities

Conclusions

When two data sets move together over time, there is correlation. It is critical to understand the subtle but important difference between correlation and causation. Causation happens when the variability of one variable is explained by another, but not the other way; there is a one-way relationship statistically. Policy makers want causation, but getting it statistically is difficult in practice. The data shown here to describe changes in single-family home prices and the quantity of single-family homes used as short-term rentals suggest there is little correlation and no causality as STRs rise in volume to increasing housing prices for Sonoma County from 2011 to 2021.

Our study shows that single-family housing units have changed in volume and their median home price continued to rise in trend from 2011 to 2021 (the latest data on home prices as of this writing used is September 2021) for Sonoma County. The estimated number of short-term rentals (STRs) countywide in 2021 is approximately 2,459 of approximately 138,945 single-family, detached housing units (SFH). Single-family homes were the primary homes lost in the Tubbs Fire of 2017; housing prices were rising before the 2017 fire, then fell, then continued to rise to date.

Median home prices for single-family, detached homes in Sonoma County increased by 98 percent from 2011 to 2021 on an annual, average basis (to September 2021, the median home price for the year 2021 is approximately \$747,431 for Sonoma County). Those communities with restrictions on offering homes as STRs (in so-called X-zones) have experienced slightly more price ascension since 2011 than coastal communities (where there are no restrictions), but the X-zone communities also have more housing units than the unrestricted areas. In short, there are no obvious ways in which rising volumes of STRs are creating rising home prices in Sonoma County. The prices of homes are regional; Appendix 1 shows figures with price data for the North Bay counties of Sonoma, Lake, Marin, Mendocino, and Napa that show an obvious correlation in single-family home prices since 2011, where these counties all have different experiences with changes in single-family housing units based on losses from natural disasters and new construction.

In terms of effects on single-family housing units' prices, data considered in this report show little to no connection between a rise in single-family housing units offered as short-term rentals and single-family home prices.

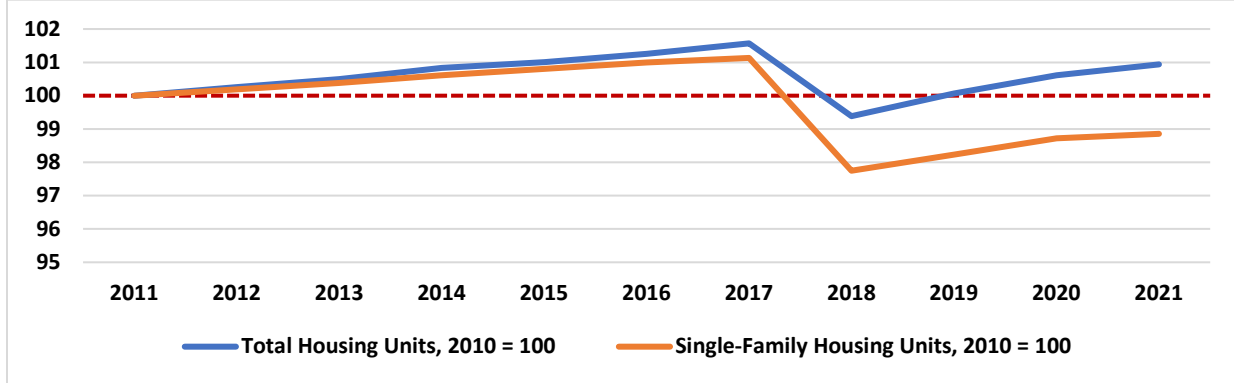
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Appendix 1: Additional Tables and Figures

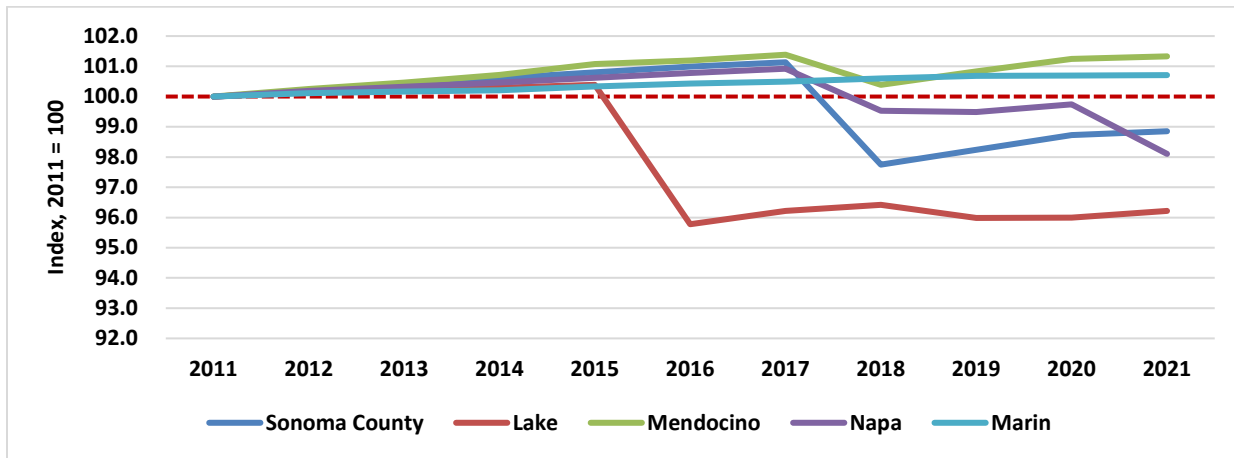
Figure 1A shows how Sonoma County housing units lost during the Tubbs Fire were primarily single-family housing units lost. Figures 2A and 3A show regional housing unit and price change respectively.

Figure 1A: Sonoma County, Entire County, Single-Family Housing Units, 2010-2021, Index 2011 = 100



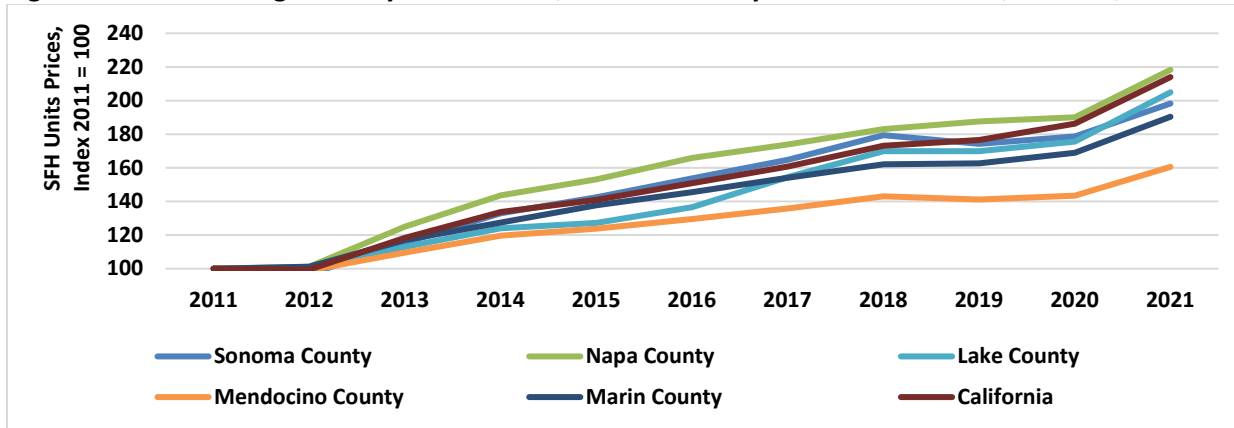
Source: California Department of Finance (DOF), Data include incorporated and unincorporated areas

Figure 2A: Single-Family Homes Countywide, Sonoma County and Selected Areas, 2011-21, Index 2011 = 100



Sources: California Department of Finance and EFA, these data include the entire county's data for each include county.

Figure 3A: Median Single-Family Home Prices, Sonoma County and Selected Areas, 2010-21, Index 2011 = 100



Sources: Zillow™ Research and EFA, these data include the entire county's data for each include county.

Appendix 2: Map of Sonoma County Places



Source: County of Sonoma