Company: Southern California Gas Company (U 904 G)/San Diego Gas & Electric Company (U 902 M)
Proceeding: 2019 General Rate Case
Application: A.17-10-007/008 (cons.)
Exhibit: SCG-229/SDG&E-227

SOCALGAS/SDG&E

REBUTTAL TESTIMONY OF NEIL K. CAYABYAB

(CORPORATE CENTER - INSURANCE)

JUNE 18, 2018

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

TABLE OF CONTENTS

SOCALGAS/SDG&E REBUTTAL TESTIMONY OF NEIL K. CAYABYAB (INSURANCE)

I. SUMMARY OF DIFFERENCES

TOTAL O&M - Constant 2016 ($000)			
	Base Year 2016	**Test Year 2019**	**Change from SCG/SDG&E Test Year Request**
SOCALGAS/SDG&E	143,545	164,830	-
ORA	143,545	164,830	-
TURN	143,545	162,100	(2,730)
CFC	143,545	163,050	(1,780)
UCAN	143,545	155,845	(8,985)
FEA	143,545	128,640	(36,190)

TOTAL SoCalGas O&M - Constant 2016 ($000)			
	Base Year 2016	**Test Year 2019**	**Change from SCG Test Year Request**
SOCALGAS	36,183	38,560	-
ORA	36,183	38,560	-
TURN	36,183	36,995	(1,565)
CFC	36,183	36,780	(1,780)
UCAN	36,183	38,560	-
FEA	36,183	26,961	(11,598)

TOTAL SDG&E O&M - Constant 2016 ($000)			
	Base Year 2016	**Test Year 2019**	**Change from SDG&E Test Year Request**
SDG&E	107,362	126,270	-
ORA	107,362	126,270	-
TURN	107,362	125,105	(1,165)
CFC	107,362	126,270	-
UCAN	107,362	117,285	(8,985)
FEA	107,362	101,678	(24,592)

II. INTRODUCTION

This rebuttal testimony regarding Southern California Gas Company's (SoCalGas) and San Diego Gas & Electric Company's (SDG&E) (hereinafter "the Companies" or "the Utilities') request for insurance addresses the following testimony from other parties:

- The Office of Ratepayer Advocates (ORA), as submitted by Ms. Lindsay J. Laserson (Exhibit ORA-21), dated April 13, 2018.
- The Federal Executive Agencies (FEA), as submitted by Mr. Ralph C. Smith (Exhibit FEA-01), dated May 14, 2018.
- The Utility Consumers' Action Network (UCAN), as submitted by Mr. Brandon Charles (Exhibit UCAN/Charles), dated May 14, 2018
- The Utility Consumers' Action Network (UCAN), as submitted by Mr. Robert Sulpizio (Exhibit UCAN/Sulpizio), dated May 14, 2018.
- The Utility Reform Network (TURN), as submitted by Mr. William P. Marcus (Exhibit TURN-03), dated May 14, 2018.
- Consumer Federation of California Foundation (CFC), as submitted by Mr. Tony Roberts (Exhibit CFC-06), dated May 14, 2018.

Please note that the fact that we have not responded to every issue raised by others in this rebuttal testimony does not mean or imply that SoCalGas/SDG&E agree with the proposal or contention made by these other parties. The forecasts contained in SoCalGas/SDG&E's direct testimony are based on the best available information at the time of testimony preparation.

Forecasting insurance premiums has become extremely challenging in California. Given current insurance market conditions, the Sempra Energy corporate insurance department expects increasing insurance cost volatility, particularly with respect to liability insurance. Insurance premiums are calculated using several factors, many of which are not within our control. Examples of factors outside of our control are worldwide catastrophic losses including wildfires, hurricanes, and floods that bring with them significant global insured losses that can negatively impact our insurance premiums.

The Companies' general excess/wildfire liability and workers' compensation insurance programs renew on June 26, 2018, and are generally on a one-year renewal cycle. At this point, the insurance department is finalizing its renewal discussions and negotiations with retail and reinsurance insurers. These negotiations have occurred over the last several months with

numerous global insurance companies. In general, the feedback from insurers is that they have been re-evaluating their positions due to the overall financial landscape in California, particularly with respect to loss concerns related to the 2017 California wildfires. Based on this feedback, the Companies are expecting liability insurance costs to increase from 2017 with total wildfire liability premiums exceeding the forecasted amounts currently included in my direct testimony.

SDG&E is *not* proposing to revise its TY 2019 forecast at this time but may seek leave from the California Public Utilities Commission (Commission) to do so at a future date.[1] The unforeseen circumstances driving insurance premium increases higher than our original forecasts emphasize the need for the Commission to adopt our proposed two-way balancing proposal – the Liability Insurance Premium Balancing Account (LIPBA) - as discussed in more detail below.

A. ORA

ORA issued its report on insurance costs on April 13, 2018.[2] The following is a summary of ORA's position(s):

- ORA does not oppose the Companies' forecast of insurance costs.
- ORA does not oppose the Companies' proposal to establish the LIPBA, but recommends that it only be applicable to the level of coverage requested in this General Rate Case (GRC). If the Companies wish to purchase additional coverage, ORA recommends an application be filed requesting additional recovery.

B. FEA

FEA submitted testimony on May 14, 2018.[3] The following is a summary of FEA's position:

[1] SDG&E also mentioned the possibility of revising its insurance forecast in its. See, April 6, 2018, Supplemental Tax Testimony of Charles Manzuk, Ex. SDG&E-49 at p. 2.

[2] April 13, 2018, ORA Report on the Results of Operations for San Diego Gas & Electric Southern California Gas Company Test Year 2019 General Rate Case Corporate Center (Laserson), Ex. ORA-21.

[3] May 14, 2018, Direct Testimony of Ralph C Smith, CPA Addressing the Application of San Diego Gas & Electric Company (U 902M) for Authority, among other things, to Update its electric and Gas Revenue Requirement and Base Rates Effective on January 1, 2019 and Related Matter, on behalf of the Federal Executive Agencies (FEA), Ex. FEA-1.

- FEA recommends that the Commission reject SDG&E and SoCalGas' proposed LIPBA because liability insurance costs are a normal cost of doing business and are not totally beyond the utilities' control.
- FEA recommends using the last recorded year insurance costs (2017) as the basis for the 2019 test year (TY) liability insurance expenses.

C. UCAN / Charles

UCAN witness Charles submitted testimony on May 14, 2018.[4] The following is a summary of UCAN's position(s):

- UCAN supports Commission adoption of a LIPBA for SDG&E (but not for SoCalGas and only for wildfire insurance).
- To the extent that SDG&E is exposed to excess costs related to liability insurance premium increases that are outside of the utility's control, the Company has raised legitimate concerns regarding the need for a mechanism to address these costs.
- UCAN proposes, however, that the LIPBA be restructured to provide greater Commission review.

D. UCAN / Sulpizio

UCAN witness Sulpizio submitted testimony on May 14, 2018.[5] The following is a summary of UCAN's position(s):

- UCAN does not oppose the SDG&E's proposal to establish the LIPBA, but recommends a five-year average of SDG&E's 2012-2016 wildfire costs as the starting point.
- UCAN also recommends that in any future reasonableness review of the LIPBA, SDG&E make a showing of the alternatives it considered.

[4] May 14, 2018, Direct Testimony of Brandon Charles Addressing on San Diego Gas & Electric Company's 2019 General Rate Case Phase 1 Application, on behalf of the Utility Consumers' Action Network (UCAN), Ex. UCAN (Charles).

[5] May 14, 2018, Direct Testimony of Robert Sulpizio Addressing on San Diego Gas & Electric Company's 2019 General Rate Case Phase 1 Application, on behalf of the Utility Consumers' Action Network (UCAN), Ex. UCAN (Sulpizio).

E. TURN

TURN submitted testimony on May 14, 2018.[6] The following is a summary of TURN's position(s):

- TURN does not take exception to the total cost of insurance for the types of coverage it reviewed (it did not review wildfire insurance), but proposes two allocation changes.
- TURN contends that the Directors' and Officers' (D&O) liability insurance allocation was incorrectly calculated.
  - TURN contends that the multi-factor allocation also should be revised to reduce excess liability and some other miscellaneous insurance costs.

F. CFC

CFC submitted testimony on May 14, 2018.[7] The following is a summary of CFC's position(s):

- CFC recommends a $1.8 million reduction of the Companies' 2019 test year Excess Property insurance premium forecast, from $8.91million to $7.13 million.

III. REBUTTAL TO PARTIES' PROPOSALS

A. Liability Insurance Premium Balancing Account (LIPBA)

1. ORA

ORA does not oppose SDG&E's and SoCalGas' proposed LIPBA (or our forecast of costs) but recommends that the Companies file a new application if additional coverage is needed.[8] Our concern with ORA's recommendation is that the Companies would be exposed to increased risk during the significant period of time it could take to pursue Commission approval

[6] May 14, 2018, Prepared Direct Testimony of William Perea Marcus Addressing the Report on Various Results of Operations Issues in Southern California Gas Company's and San Diego Gas and Electric Company's 2016 Test Year General Rate Cases, on behalf of The Utility Reform Network (TURN), Ex. TURN-03.

[7] May 14, 2018, Prepared Testimony of Tony Roberts Addressing RE: SDG&E 2019 General Rate Case Application A-17-10-007; RE: SCG 2019 General Rate Case Application A-17-10-008 Property Insurance, on behalf of the Consumer Federation of California Foundation (CFC)., Ex. CFC-06.

[8] Ex. ORA-21 (Laserson) at 2:13-21.

of additional coverage through a new application. For example, current insured loss estimates from the 2017 California wildfires indicates that additional limits should be evaluated because the frequency and severity of wildfires is increasing.[9] For that reason, we are exploring Insurance Linked Securities as a potential source of new additional wildfire capacity, as outlined in more detail in our UCAN/Sulpizio response below.

2. FEA

FEA recommends rejection of SDG&E's and SoCalGas' proposed LIPBA. FEA contends that liability insurance costs are "a normal cost of a regulated utility and are not totally beyond the utility's control [and that] [t]he Company has the ability to shop around each year to obtain the most economical price and options." FEA argues that "the company experienced increases in insurance due to wildfires in the past and was able to manage its expenses in the future."[10] FEA also asserts that SDG&E has not demonstrated a unique problem with regulatory lag that requires singling out these expenses from the overall revenue requirement.

We strongly disagree with FEA's recommendation. As noted above, the Companies' general excess/wildfire liability insurance premiums renew on June 26, 2018. At this point, the insurance department is finalizing its renewal discussions/negotiations with retail and reinsurance insurers, but the feedback we have received from insurers is that they have been re-evaluating their positions due to the overall financial landscape in California and in particular loss concerns related to the 2017 California wildfires. Based on this feedback, the Companies are expecting liability insurance costs to exceed the forecasted amounts. For example, we anticipate SDG&E's 2018 wildfire liability insurance premiums to increase by approximately 30% to 35%, which may also impact SDG&E's future 2019 wildfire liability insurance premiums. While SDG&E is *not* proposing to revise its TY 2019 forecasts at this time, it may seek leave from the Commission to do so at a future date.

To provide a bit more context of the challenges our insurance department has faced this year, as part of our recent and still ongoing 2018 general excess and wildfire liability renewal, we met with over 90 different insurance companies located in New York, London, Bermuda,

[9] California Department of Forestry & Fire Protection, *Top 20 Most Destructive California Wildfires* (January 12, 2018), *available at* http://www.fire.ca.gov/communications/downloads/fact_sheets/Top20_Destruction.pdf.

[10] Ex. FEA-1 (Smith) at 31:10-13.

Munich, and Zurich to review our risk mitigation strategies. Many underwriters complimented our risk mitigation efforts, but also expressed concerns with the California legal environment (particularly with respect to Inverse Condemnation), their overall potential exposure to the 2017 catastrophic losses including wildfires, floods, and Hurricanes, and their experience that claims costs in California are higher than other states,[11] all of which present significant issues for them.

According to Allianz, the average length of wildfire season in the Western region of the United States has increased from 5 months in 1970 to 7 months today and the average number of large wildfires (greater than 1,000 acres) has increased from ~140 (1980 to 1989) to ~250 (2,000 to 2012) with 2017 being the "Worst California Fire Season in History."[12] Allianz goes on to report that five of the most destructive fires occurred in 2017 in California and estimates full damages could be as high as $180 billion. Potential mudslides that can result from a wildfire are creating additional insurer concerns. Allianz's preliminary assessment of the economic impacts of the Montecito mudslide shows residential property damages could cost up to $204 million to fully repair or rebuild.[13] Weather forecasts also are one of the factors they consider in their underwriting procedures. As an example, Renaissance Re (Ren Re) recently issued California Wildfire Outlook summary,[14] which forecasts "higher than normal potential for wildfire for portions of Southern California and the interior valley region into the summer and early fall."

Given this risk perception, and the accompanying market fluctuations in the cost of liability insurance, it is reasonable to assume our insurance premiums and needed levels of coverage will continue to be impacted due to factors beyond our control, which supports our request for a LIPBA. As noted, we expect a 30-35% increase, which, contrary to FEA's

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[11] Marsh Workers' Compensation and General Liability Heat Map as attached in Appendix A.

[12] Allianz, *Burning Issues, California Wildfire Review*, available at http://www.agcs.allianz.com/insights/white-papers-and-case-studies/burning-issues-california-wildfire-review/ as attached in Appendix B.

[13] Increasing wildfire frequency/severity is not just limited to California/United States. According to Aon Benefield[13], in Europe, 2017 marked the largest extent of land burned by wildfires dating back to 1980 and for the first time in measurement history, fires consumed more than one million hectares of land across that continent. Portugal was the worst effected country with economic losses due to wildfires totaling almost $1.2Bn with local insurance sector declaring 2017 as the costliest natural disaster in the country's history. The Aon report goes on to list several other notable fires in Chile, South Africa, and Canada, as attached in Appendix C.

[14] Renaissance Re, *California Wildfire Outlook*, (May 2018) as attached in Appendix D.

assertions, shows a significant problem with regulatory lag that justifies singling out these expenses. The LIPBA represents a reasonable solution to address such problems. Please see the Rebuttal testimony of Norma G. Jasso (Exhibit SDG&E-241) for details on the LIPBA.

3. UCAN

a. UCAN - Charles

Witness Charles submitted testimony on behalf of UCAN on May 14, 2018.[15] In its testimony, UCAN explains that "[t]o the extent that SDG&E is exposed to excess costs related to liability insurance premium increases . . . that are outside of the utility's control, I agree that it has raised legitimate concerns regarding the need for a mechanism to address these costs."[16] However, UCAN would restructure the proposed LIPBA such that:

- It would apply only to SDG&E (but not to SoCalGas);
- It would apply only to wildfire liability insurance costs;
- Balances between 0-25% greater than authorized revenue requirement would be subject to a Tier 3 advice letter; and
- Balances greater than 25% of authorized revenue requirement would be subject to an application.

SDG&E and SoCalGas disagree with UCAN's recommendations. Limiting the LIPBA to just SDG&E and wildfire fails to recognize that the liability insurance premiums affect both companies. Such a limitation also ignores the fact that liability insurance premiums are subject to uncontrollable factors and are therefore difficult to forecast with reasonable amount of certainty for reasons previously stated. Insurance market volatility could become worse in the future, especially if there's another significant insured loss or conversely a new alternate form of capacity becomes available that reduces insurance costs in the future. In addition, SDG&E and SoCalGas oppose UCAN's proposed tiered review process for the reasons set forth in the rebuttal testimony of Norma Jasso (Exhibit SDG&E-241).

b. UCAN – Sulpizio

In his testimony, UCAN witness Sulpizio states that the "proposed LIPBA appears to be the best available tool," but recommends using a five-year average of SDG&E's 2012-2016

[15] EX. UCAN (Charles).

[16] Ex. UCAN (Charles) at 91.

wildfire liability and property reinsurance costs (approximately $80 million) as the starting point.[17] UCAN also recommends that in any future reasonableness review of the LIPBA, SDG&E make a showing of the alternatives considered to conventional insurance.[18]

SDG&E disagrees with UCAN's proposal to use as the baseline amount for the LIPBA a five-year historical average of our wildfire liability and reinsurance costs. Mr. Sulpizio admits that "[t]he probability that Wildfire Liability costs will rise (if coverage is available) is *beyond dispute* in light of 2017 Northern California wildfires." (emphasis added). Therefore, using a historical average instead of SDG&E's 2019 forecast (or a to-be-updated 2019 forecast) would not be reasonable because it would understate the current and future costs.

UCAN also recommends that in any future reasonableness review of the LIPBA, SDG&E make a showing of the alternatives considered to conventional insurance. But this is something our corporate center insurance department has been pursuing for several years now. As such, this requirement is not necessary. However, we agree with Mr. Sulpizio that alternatives to conventional insurance options have the potential to become economical as insurance premiums continue to rise. In my testimony below, I summarize some of the activities our insurance department has pursued over the last several years in an effort to lower our premiums.

Blind Bid Pricing Strategy

In 2015, our insurance department implemented a blind bid pricing strategy to our liability insurance programs. Generally, large liability insurance programs are not insured by a single insurer. Instead, these programs often are comprised of several "layers" that build upon each other to create a total insurance program. In theory, participants in the lower layers charge a higher premium as they have a higher probability of a potential loss compared to participants in layers above. Because of that, traditionally many insurance carriers have required receipt of the underlying pricing so they can base their pricing as a percentage of that price; many insurers also require their pricing to be no less than the layers above. This reduces the ability to achieve better overall pricing because increases in lower layers are magnified as layers above will likely also request corresponding increases. Conversely, upper layer insurers may require rates greater than underlying to renew coverage. In this instance, rates below and above that layer would increase

[17] Ex. UCAN (Sulpizio) at 14-15.

[18] *Id*. at 15.

as a result given the requirement that pricing in the above layers not be higher. In the past, market competition had mitigated the impact of this approach because alternative carriers could be found. However, given the increasingly limited number of insurance companies willing to provide utility insurance, particularly in California,[19] the traditional pricing structure model increases insurance carrier leverage as more economical alternatives may not be available.

We implemented our blind bid pricing strategy to mitigate the above concerns and increased our ability to achieve improved pricing overall. This blind bid pricing strategy requires each insurance carrier to provide quotes that are based on their evaluation of our risk at their respective attachment point. As part of that, any policy condition that requires disclosure of underlying or overlying layer pricing was removed. This strategy removes the potential for a single insurance carrier to impact pricing to the whole program, unlike what we had experienced under the traditional pricing model outline above. This approach helped us achieve an overall decrease in liability insurance premiums by approximately 13% in 2015 compared to 2014.[20]

Alternative Risk Transfer Mechanisms Explored

In his testimony, Mr. Sulpizio also recommends that the Companies consider the use of Captives and Insurance Linked Securities (ILS) as alternative forms of wildfire insurance.[21] Again, as summarized below, these are approaches our corporate center insurance department has been investigating.

For example, in 2016, our insurance group evaluated the use of a Captive to potentially provide coverage for general excess and wildfire liability. What we found was that the proposed annual captive premiums were *more than double* the equivalent 2015 actual insurance premiums. As such, the Captive was not economical, and traditional insurance was pursued in 2016. Use of Captives could be economically viable if premiums continue to rise.

The insurance department also has been exploring ILS as an alternative form of wildfire insurance. ILS has never solely been used for wildfire liability insurance. There are several additional administrative items and costs that are not normally present in a traditional insurance

[19] October 6, 2017, Direct Testimony of Neil K. Cayabyab (Corporate Center – Insurance), Ex. SCG-29/SDG&E-27 at p. 15:14-19.

[20] October 2017, Workpapers to Prepared Direct Testimony of Neil K. Cayabyab on Behalf of SDG&E, Ex. SCG-29/SDG&E-27-WP p. at 31.

[21] Ex. UCAN (Sulpizio) at 7-12.

program transaction. For example, potential ILS investors require wildfire risk modeling to help them quantify the potential risk, which is then used to support corresponding premiums. This modeling is performed by a third party at cost to the potential insured and must be included as part of the submission to potential capital markets. This is done to help ILS investors quantify and understand the risk as they are not insurers and do not have access to the same information. Also, a new entity must be established to access ILS market capacity and various policy agreements and disclosures must be drafted. All of these offering issues require support from third party contractors, including outside counsel, administrators, auditors and brokers. This effort also requires support from Sempra and SDG&E internal resources that includes legal, tax, treasury and accounting, in addition to insurance.

Given those significant complexities, an ILS alternative will not be available in time for our June 26, 2018 renewal. However, barring any unforeseen issues, our goal is to have something in place as additional wildfire insurance capacity within the next several months. We believe that securing this option this year will increase market competition, which could help lower overall wildfire insurance costs in 2019 and future years, especially if there's another material event in the future

Use of Multi-Year Insurance Products

In the discussion of ILS options in his testimony, Mr. Sulpizio suggests that multi-year insurance products can be beneficial because annual renewals "offer[] no assurance of continuity of either coverage or cost."[22]

General industry practice is to negotiate and renew liability insurance premiums on an annual basis. Such an approach, however, can expose an insured to increased volatility as significant adverse events, such as the 2017 California wildfires, can negatively impact future renewals.[23]

In response to this possibility, and as part of our 2017 liability renewal process, our insurance department successfully negotiated and secured 3-year agreements for approximately 50% of our total wildfire liability insurance program (subject to specific policy terms and

[22] Ex. UCAN (Sulpizio) at 9.

[23] In my direct testimony, I explained how the September 2015 Butte wildfire in Pacific Gas and Electric Company's service territory impacted our 2016 premiums. See, Ex. SDG&E-27 (Cayabyab) at p. NKC-14.

conditions). The majority of this coverage is from our wildfire property damage reinsurance program – approximately 80% of that program is on a 3-year term. Given the challenges as outlined in my testimony and resulting from experience relating to our 2016 renewal,[24] we moved forward with this strategy as a way to mitigate the risk of our wildfire insurance premiums increasing significantly due to non-Sempra related wildfires. We also considered continuity of insurance coverage and cost in our evaluation of long term agreements. While it is not possible to know the exact amount of savings we have achieved or will achieve, it is reasonable to assume (based on expected 2018 wildfire insurance renewal results) that 2018 and 2019 wildfire insurance costs would be much higher absent those multi-year agreements. However, current market conditions indicate renewing those multi-year agreements will be challenging when they expire in 2020, which could result in more premium volatility.

B. Other Parties' Proposals

1. TURN

a. Allocation of D&O Insurance Premiums

TURN claims that the Sempra corporate center did not calculate the allocation of D&O insurance premiums correctly. TURN contends that the correct methodology is to allocate 50% of the insurance costs first to Global/Retained and then allocate the remaining costs using the multi-factor basic methodology.[25]

Contrary to TURN's assertion, our current methodology *does* accurately assign 50% of the D&O costs to the shareholders (non-regulated businesses and retained) and 50% to the utilities. TURN has provided no rationale as to why further allocation is necessary. Under TURN's approach, 62% would be allocated to shareholders, not 50%. The Commission should reject TURN's proposed D&O insurance reallocation. D&O insurance is a standard cost of doing business, is reasonable, and should be recovered in revenue requirement. There is no convincing evidence to suggest any further reduction.

b. Modification of insurance allocation factors

TURN proposes to reduce SDG&E's test year insurance costs from $126,270,000 to $125,105,000 and SoCalGas' test year insurance costs from $38,560,000 to $36,994,000. In

[24] SCG-29/SDG&E-27 (Cayabyab) at 14:19-24.

[25] TURN-03 (Marcus) at 70-71.

Table 53 of its testimony,[26] TURN outlines its proposed adjustment based on revised allocation methods for Excess liability insurance, D&O Insurance, and All Other Insurance. TURN's proposed revised multi-factor basic allocation appears to be based on the addition of Oncor. TURN incorrectly assumes Sempra's excess liability insurance program provides coverage for Oncor. This is not accurate as our policy explicitly excludes coverage for Oncor. TURN also proposes a $50,000 reduced allocation to SDG&E and $69,000 reduction to SoCal Gas for "All Other Insurance." TURN offers no explanation as to the basis for the reduced allocation to the "All Other Insurance" or how they calculated those allocation adjustments. Based on the above, SoCalGas and SDG&E recommend that the Commission reject TURN's premium reallocation proposal.

2. CFC

CFC recommends decreasing the Companies' excess property insurance forecast by $1.78 million, from $8.905 million to $7.128 million.[27] The Commission should reject CFC's flawed recommendation, which has no basis.

First, CFC suggests that the Companies' request for excess property insurance is somehow related to SDG&E's request to recover costs associated with the 2007 wildfires in Application (A.) 15-09-010, which the Commission denied in D.17-11-033. Contrary to CFC's allegation, the Companies' request in this GRC proceeding for approval of a 2019 test year forecast for excess property insurance has nothing to do with the types of costs at issue in A.15-09-010. In fact, our excess property insurance – from our insurance carrier Oil Insurance Limited (OIL) - does not provide *any* coverage for wildfire liability. As such, there is no basis for CFC's recommendation.

Second, CFC argues that the Companies' excess property insurance forecast is partially driven by the Aliso Canyon incident. In particular, CFC suggests that OIL's change in its "experience modification factor" designation for the Companies (from 1.0 to 1.25) somehow translated into a 25% increase in premiums. This is not an accurate assumption.

As outlined in my direct testimony, OIL is a mutual insurance company providing coverage for members engaged in energy operations. The scope of operations for each member

[26] *Id* at 72.

[27] CFC-06 (Robert) at 1.

ranges from oil and gas to utility companies located in various countries. OIL uses a formula to calculate individual member premiums that includes a variety of factors (in addition to the experience modification factor) such as business sector assets, deductible levels, insurance program structure, and overall OIL membership losses. Many of these factors are dependent on overall OIL membership performance, in additional to Company performance. Interestingly, our 2016 insurance premiums decreased slightly despite an increase in both gross assets and experience modifier. Conversely, our premiums increased in 2017 despite no change in experience modifier from 2016 to 2017. Below is the table outlining our OIL premiums going back to 2012 with corresponding gross assets and experience modifier.

OIL Premiums						
Year	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
OIL Premium	6,077,241	5,725,598	5,762,447	5,005,070	4,940,933	6,192,269
Gross Assets	30,563,236	32,707,574	34,993,146	36,906,924	39,683,816	45,318,438
Experience Modifier	1.0	1.0	1.0	1.0	1.25	1.25

In summary, as set forth above, SoCalGas and SDG&E recommend that the Commission reject CFC's proposed disallowance. SDG&E's 2007 wildfire losses from 2007 have no connection to the Companies' 2019 excess property insurance request and CFC incorrectly assumes that OIL's experience modifier of 1.25 directly translated to a 25% increase in premiums.

3. FEA

FEA recommends reducing the Companies' 2019 test year forecasts for liability insurance, including wildfire insurance, to the 2017 recorded amounts. FEA asserts that such an approach is appropriate because the 2017 recorded amounts are "the most current" or "the more recent" "known and measurable amount[s]."[28]

[28] FEA-01 (Smith) at 97,100.

SoCalGas and SDG&E strongly disagree with FEA's forecasting recommendation. In this instance, adoption of such an approach would be punitive. As discussed above, we already know that SDG&E's 2018 wildfire premiums will *exceed* our forecast due to the devastating fires in California that took place after we submitted our application and testimony on October 6, 2017. As such, FEA's recommendation for the Commission to adopt a revenue requirement significantly *below* forecasted is very problematic.

In addition, as explained in this rebuttal testimony and in my direct testimony, insurance premiums can fluctuate from year to year based on various factors, many of which are out of our control. This is why the Companies have advocated for adoption of the LIPBA. In summary, the Commission should reject FEA's proposal to use 2017 actuals as a proxy for the Companies' 2019 test year request.

IV. CONCLUSION

In summary, SoCalGas and SDG&E respectfully request that the Commission adopt our proposed 2019 test year insurance forecast and the Companies' proposed LIPBA.

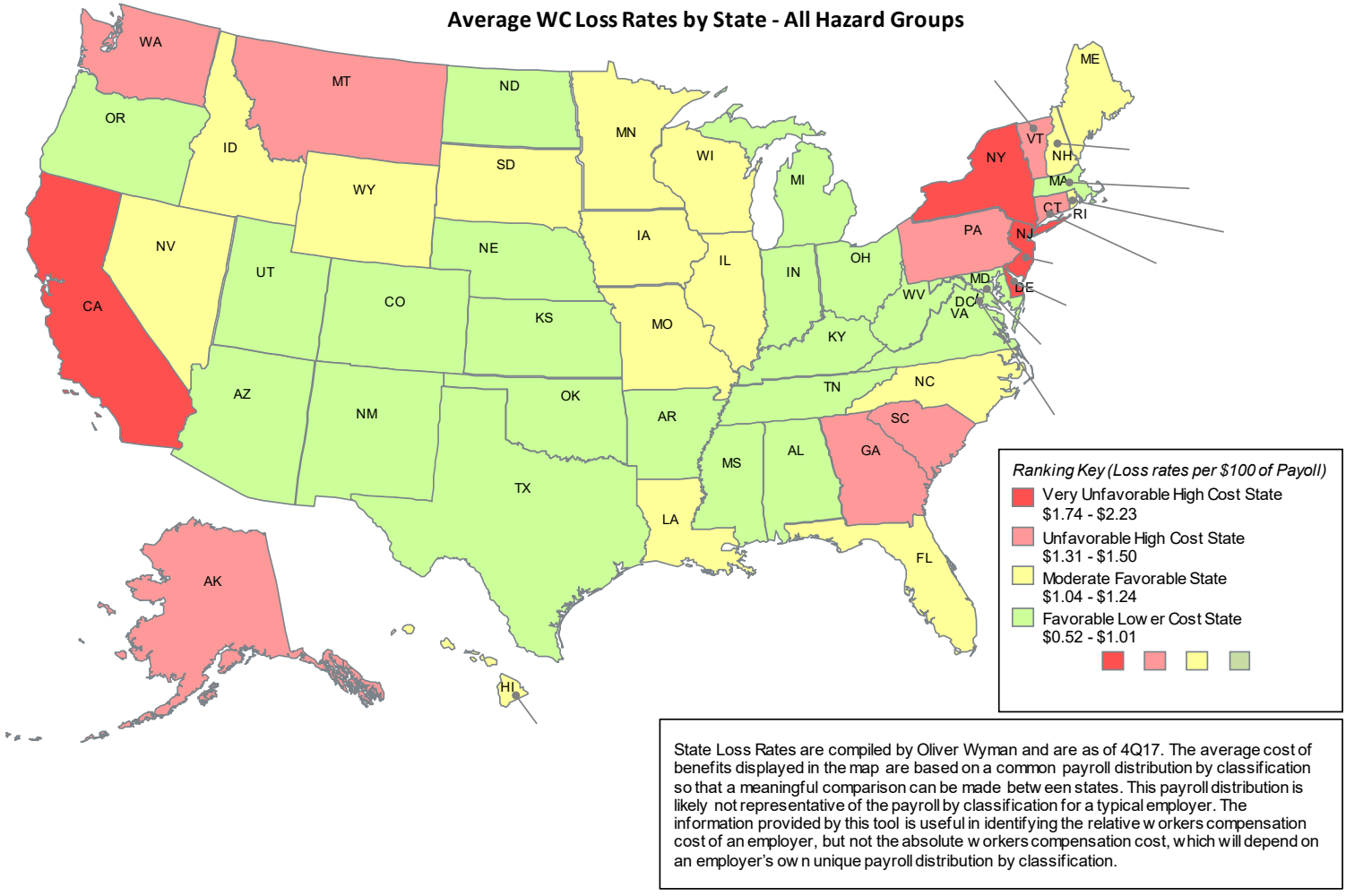
This concludes my prepared rebuttal testimony.

APPENDIX A

Marsh Workers' Compensation and General Liability Heat Map

Casualty Benchmarking – WC Loss Rate Heat Map

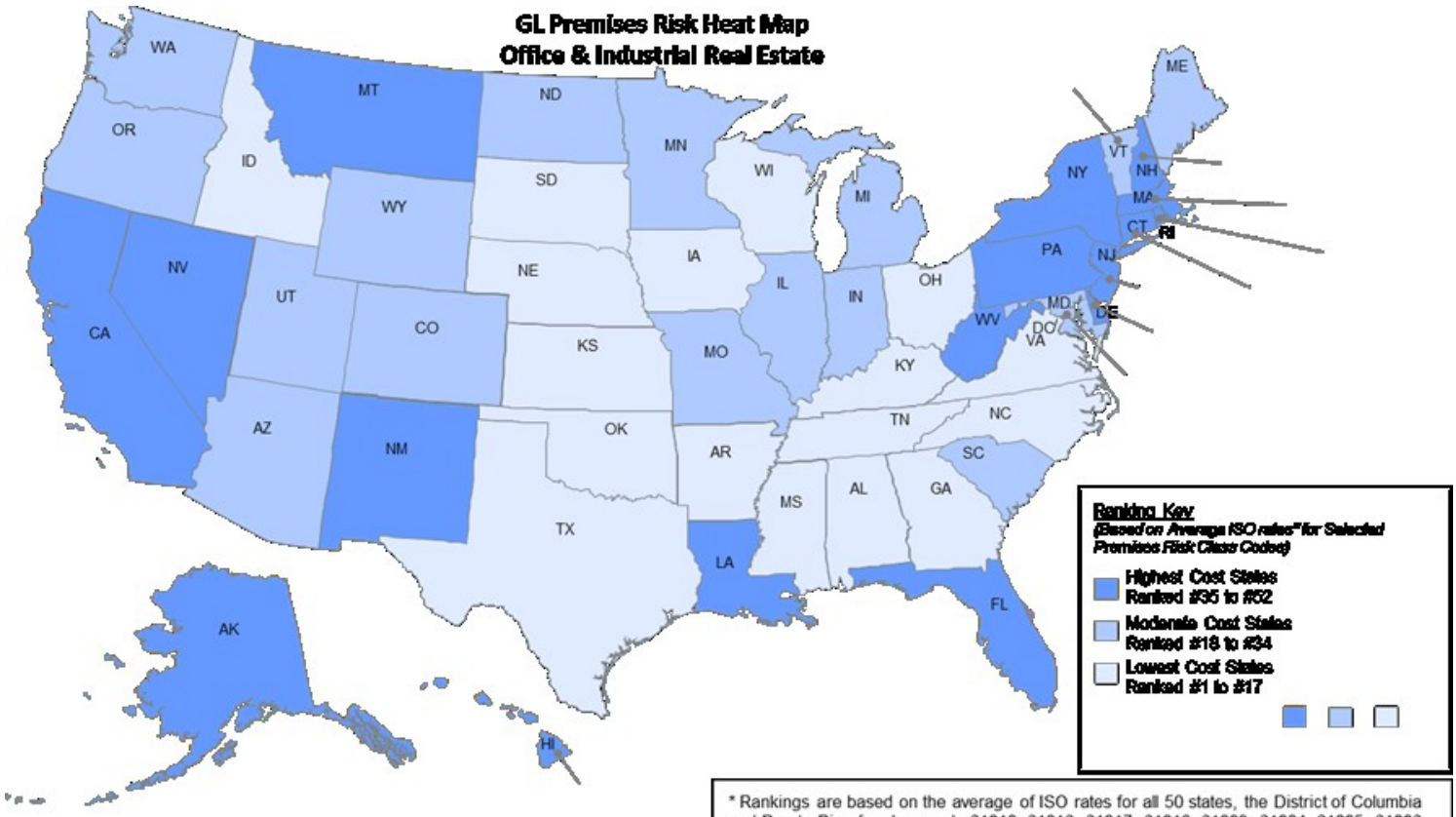
- Marsh has a Workers Compensation Heat Map tool. This tool shows that CA ranks in the Highest band of loss cost states based on Average State Loss Rates compiled by Oliver Wyman.



State Loss Rates are compiled by Oliver Wyman and are as of 4Q17. The average cost of benefits displayed in the map are based on a common payroll distribution by classification so that a meaningful comparison can be made betw een states. This payroll distribution is likely not representative of the payroll by classification for a typical employer. The information provided by this tool is useful in identifying the relative w orkers compensation cost of an employer, but not the absolute w orkers compensation cost, which will depend on an employer's ow n unique payroll distribution by classification.

Casualty Benchmarking – GL Loss Rate Heat Map

- Marsh has a General Liability Heat Map tool. This tool shows that CA ranks in the Highest band of loss cost states based on Average ISO rates for selected premises risk class codes.



* Rankings are based on the average of ISO rates for all 50 states, the District of Columbia and Puerto Rico for class code 61212, 61216, 61217, 61218, 61223, 61224, 61225, 61226 and 61227. It is important to note that there may be considerable variance between venues within any given state. For example, ISO rates are generally higher in urban areas than in rural areas.

APPENDIX B

Allianz California Wildfire Review

BURNING ISSUES
CALIFORNIA WILDFIRE REVIEW

Fortify Against Increasingly Destructive Wildfire Seasons

Photo: iStock

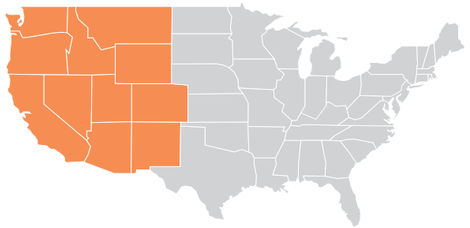
Allianz

A growing catalog of natural catastrophes threaten California's wine industry and agribusiness, and despite unprecedented sequential wildfire perils, conflagration and increasing weather volatility, Allianz's network of experts partner to strengthen these industries. These proactive strategies and innovative technologies secure longevity and progress, despite ongoing volatilities.

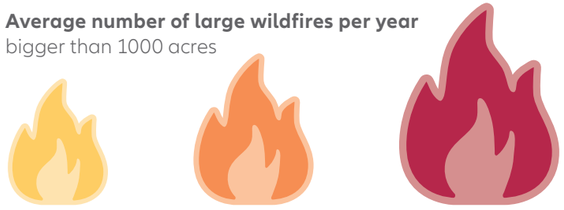
Weather volatility is driving up temperatures and increasing wildfire risks. Temperatures in the Western U.S. are expected to increase by 2.4° to 6.5°F by mid-century. The size of the area burned each year, the number of wildfires and the length of the wildfire season is also growing. In the early 1970's the average length of the wildfire season was five months. Today, it lasts more than seven. The scale of these fires has increased to the degree that the fires themselves are now contributing to the rise in greenhouse gas emissions.

- Unusually high rainfall the previous winter, promoting abundant new vegetation growth
- Greenhouse gas emissions cause global temperatures to rise
- Warmer temperatures cause earlier snowmelt, increase evaporation and dry out vegetation
- Drier conditions increase likelihood of wildfire, as well as, length, duration and area burned
- Fires expand rapidly, burn more area and move in unpredictable ways
- Warmer climate is increasing pest outbreaks which contribute to wildfire risk

WILDFIRES ARE INCREASING AND WILDFIRE SEASON IS GETTING LONGER IN THE WESTERN U.S.



Average number of large wildfires per year
bigger than 1000 acres

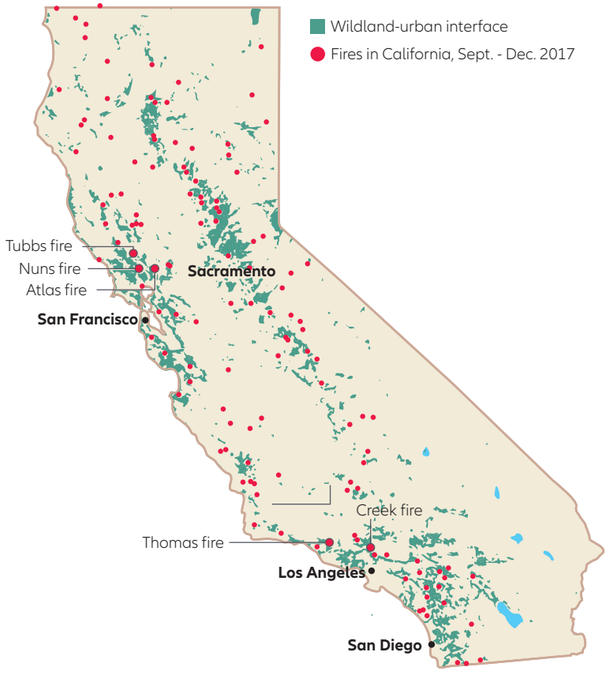


Average length of wildfire season

Early 1970s: **5 months**

Today: **7+ months**

WORST CALIFORNIA FIRE SEASON IN HISTORY



Over 9,000 wildfires ripped through California in the last months of 2017 burning 1.2 million acres of land, destroying more than 10,800 structures and killing at least 46 people.

Two major outbreaks in California led to the record-breaking season. The October event in Northern California, also known as the Northern California firestorm, comprised a series of over 250 wildfires that started burning in early October. Twenty-one of the wildfires became major fires burning at least 245,000 acres. These fires included the Tubbs Fire, the Atlas Fire, the Nuns Fire, and left 44 people dead and 185 injured. Total economic losses were estimated around $13bn of which $11bn was insured. This is by far the costliest wildfire outbreak ever recorded for the industry.

A separate major outbreak impacted Southern California and cost insurers in excess of $2.1 bn. Multiple wildfires ignited across Southern California in December 2017 with six of the fires becoming significant wildfires leading to widespread evacuations and property losses. The wildfires burned over 307,900 acres causing traffic disruptions, school closures, hazardous air conditions, and power outages; over 230,000 people were forced to evacuate. In terms of area, one fire — the Thomas Fire — was the largest in modern California history, spanning some 281,893 acres.

WILDFIRES IN CALIFORNIA SHATTER RECORDS

Costliest in US history:

$16BN

Most acres burned in California in the last 5 years:

1,248,606 acres

Worst air pollution in the Bay Area: Air quality index reached

486*

Biggest wildfire in modern California history: **Thomas Fire**

281,893 acres burned

Comprehensive expenditures (inc. fire suppression, insurance and recovery):

$180BN

* Air quality is considered "very unhealthy" when the index reaches 201

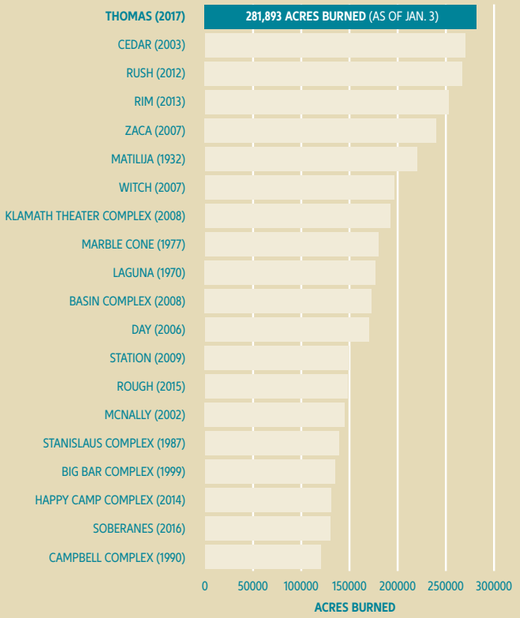
Photo: iStock

Five of California's most destructive wildfires on record occurred in 2017. In fact, 2017 is the costliest year on record for insurers with total U.S. wildfire peril totaling $16bn in losses. The full damage in California is estimated to be as high as $180bn in costs stemming from fire suppression to insurance and recovery expenditures.

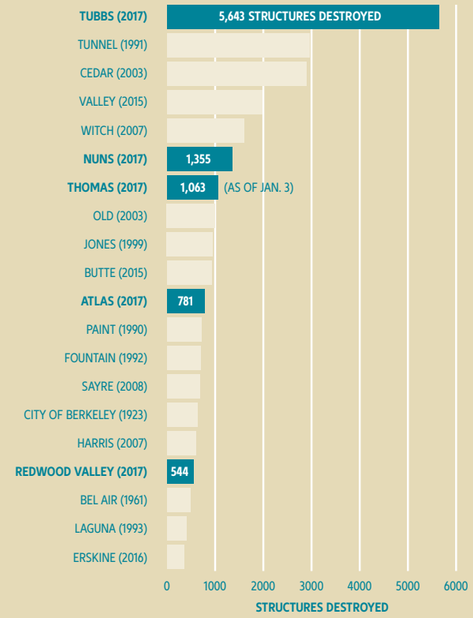
California may not see a reprieve this year. For the first time, the National Interagency Fire Center's Predictive Outlook for 2018 is forecasting above normal large fire potential due to the persistence of dry fuels, frequent offshore winds and generally unfavorable weather.

Photo: iStock

LARGEST FIRES IN CALIFORNIA HISTORY



MOST DESTRUCTIVE FIRES



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AFTERMATH: MUDSLIDES AND FLOODS

After record breaking fires, came floods and deadly mud and debris slides. The rains and flooding struck Santa Barbara County in early January, 2018. Most of Montecito had just narrowly escaped the largest single fire in California history, the Thomas Fire, which burned vegetation and melted wax and resins found naturally in California's soil. This melted wax creates a water repellency (hydrophobic) layer causing topsoil loss and severe debris flows. As hard rains hit the repellency layer, it gains momentum careening down mountain sides and destroying all in its path. Many had to be rescued from their roofs while some properties completely disappeared after a 300-foot wide stream of mud and heavy debris ripped through them. The debris slide left 20 people dead, destroyed at least 65 homes and damaged more than 460 others.

In addition, the wreckage forced a shutdown of U.S. 101, the only major freeway between Santa Barbara and points east. For some businesses, the forced closure of major freeway commerce routes highlighted very real business interruption exposures. The rest of the community's infrastructure also was damaged. Some streets were cracked in half, and authorities closed bridges and overpasses because they were unstable. A preliminary assessment of the economic impacts of the Montecito mudslide shows residential property damages could cost up to $204 million to fully repair and/or rebuild.

The mudslide peril in Santa Barbara County continued into spring, as heavy rains caused mud and debris flow endangering communities still recovering from the January devastation.

Photo: Shutterstock

Photo: Shutterstock

LIVING WITH WILDFIRE

"With tens of thousands of acres of thick chaparral brush, a hot, dry Mediterranean climate, and millions of people who might either accidentally or intentionally light fires, California is the most flammable place on earth,"

- Ray Ford, Santa Barbara Independent

ADDITIONAL CONTRIBUTING FACTORS OF THE 2017 CALIFORNIA WILDFIRES:

- Growing residential areas, (i.e., Santa Rosa grew 13% between 2000-2010 and fires claimed 5% of those new homes)
- Santa Ana and Diablo winds
- Increased fire suppression/fewer controlled burns
- Steep terrain/topography
- Vegetation spacing/landscaping
- Flammable vegetation (eucalyptus trees) and invasive grasses (wild oats, red brome and foxtail)

Wildland-Urban Interface (WUI)

The U.S. West Coast is regularly confronted with the risk of conflagration if a wildfire is sparked. An estimated 3.6 million residential properties in California are situated within wildland-urban interface (WUI) areas, with more than one million of those residences highly exposed to wildfire events, according to a 2010 Federal study.

However, the Tubbs wildfire spread into the Coffey Park neighborhood that was situated outside WUI areas. This disaster highlights wildfire vulnerability of urban environments across the state and the importance of continually mitigating wildfire exposure to protect people, homes, and businesses.

AGRIBUSINESS AND GLOBAL PROSPERITY

Natural Catastrophes and Climate Change both ranked in the top ten of global risks in the 2018 Allianz Risk Barometer, the annual corporate risk survey based on insight from more than 1,900 risk management experts from 80 countries. From hurricanes to wildfires, heat waves and droughts to prolonged floods, 2017 was a record year for natural disasters with approximately $330bn in overall losses from natural catastrophes and around $135bn in insured losses. Climate disruptions are increasing in volatility throughout the world, impacting many sectors and industries. Among one of the hardest hit is agribusiness – specifically wineries – which depend on stable soils and a consistent climate to deliver a viable product. Raging wildfires, searing temperatures and flooding rains will change the business.

- Wineries, dependent on stable soils and a consistent climate, are especially volatile to wildfires, drought, floods, increasing temperatures and other byproducts of a weather volatility
- Problems due to climate can range from irrigation difficulties to disease to soil erosion due to excessive rainfall, flooding or prolonged heat
- Some in the wine industry predict that parts of California, France, Spain, Portugal, Australia and South Africa will become too hot and dry to produce quality wines by 2050
- Winery owners and operators must prepare for volatile weather and unusual geological events when building risk management programs

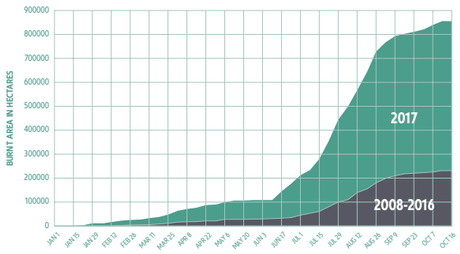
According to Jason Funk, senior climate scientist with the Union of Concerned Scientists (UCS), the trend is that wildfires are burning more area around the world. Projections by the UCS suggest that wildfires could get four, five and even six times as bad as they currently are within this century.

"The areas where wildfires are taking place are always areas that [have become] drier and hotter, and where spring has come earlier," said Funk. Drier conditions and higher temperatures increase not only the likelihood of a wildfire to occur, but also the duration and the severity of the wildfire. When wildfires break out, they expand faster and burn more area as they move in unpredictable ways. *"They really take off and get out of control more frequently than in the past,"* he said.

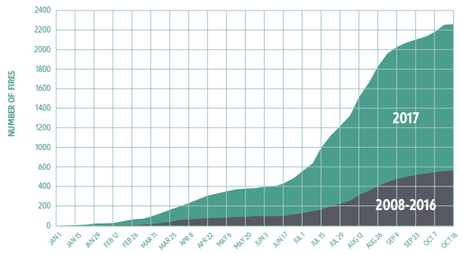
The number of forest fires in the EU more than doubled in 2017, according to figures obtained by Euronews, affecting an area twice the size of Luxembourg. There were over 1,600 blazes – a huge increase over the annual average of 639 from the previous eight years.

Experts warn more forest fires will rage more frequently in the future engulfing new areas. Portugal, Italy, Croatia, South Africa, Australia, New Zealand, Greenland, and Chile were hit amid high temperatures and lower rainfall in 2017.

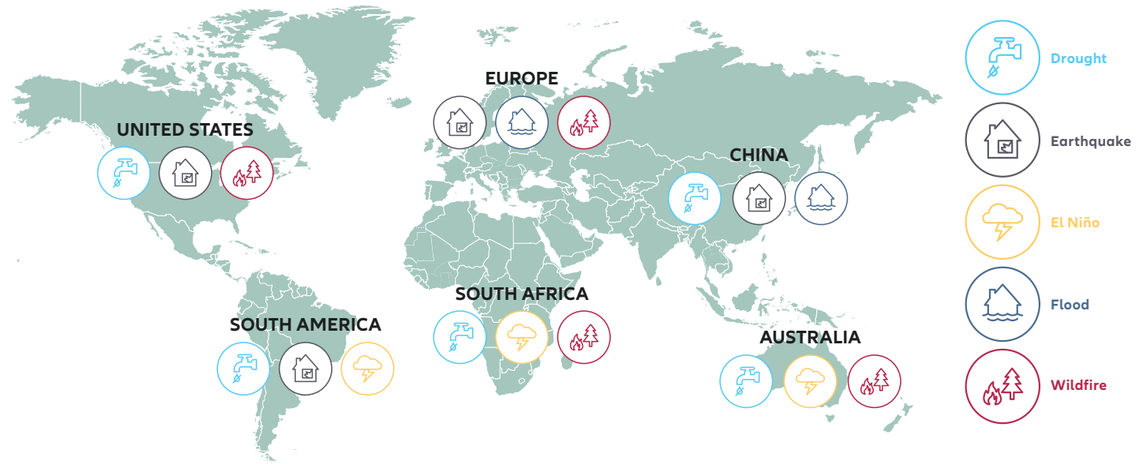
HECTARES BURNT BY FOREST FIRES IN THE EU
(2017 VS 2008-2016)



THE NUMBER OF EU FOREST FIRES
(2017 VS 2008-2016)



MITIGATING CLIMATE AND CATASTROPHE RISKS IN THE WORLD'S MAJOR WINE REGIONS



CLIMATE CHANGE NOTES: IMPACT ON THE WORLD'S LEADING WINE REGIONS

United States
1. Loss of suitable land for production due to lack of water and excessive heat
2. Rising seas could threaten coastal California and low-lying areas of Oregon and Washington
3. Oregon and Washington could become the "new Napa"; British Columbia, Yukon and Yellowstone could produce Pinot Noir

South America
1. Possible shortening of the growing season on late-ripening Cabernet Sauvignon
2. Focus on moving vineyards to higher, cooler elevations
3. Harvest time could be pushed back further as heatwaves last longer

South Africa
1. Warming and drying of the Western Cape may threaten wineries with persistent drought
2. Many regions now suitable for viticulture could be unsuitable by mid-century
3. Shorter, warmer winters may affect grape quality, inviting complex vine diseases

Europe
1. Disrupted gulf stream: Bordeaux and coastal Spain/ Portugal may cool; Southern England could warm to levels seen in the Champagne region of France
2. Spain's interior may become warmer and dryer, threatening wine production significantly
3. Mediterranean coastline, including France and Italy, may be completely inhospitable to grape production by 2050; wine regions move across English Channel towards North and Baltic seas

Australia
1. Most of Australia is expected to dry and warm significantly, forcing planting of new varietals
2. Murray River area in Southern Australia may be untenable for grape production by mid-century
3. Cooler climates like in Tasmania will become wine producing meccas

China
1. China may be the climate change winner, as areas previously untenable for wine production will become more suitable
2. Some of the best land for potential wine production in Central China is occupied by endangered animals like the panda bear
3. Inner Mongolia may become a viable wine region by mid-century

Source: Allianz Global Corporate & Specialty

WILDFIRE AND CALIFORNIA'S $58BN WINE INDUSTRY

The fires that ravaged Northern California leave the area's renowned wine industry with damage that will be felt long after the final flames burn. At least six area wineries sustained significant or total losses. Though the majority of grapes had already been picked for the season, the smoke effects on those remaining is still unclear.

California's wine industry, which contributed almost $58bn to the state economy in 2016, is looking for new ways to mitigate wildfire losses. *"A significant amount of acreage will likely be out of commission for a while,"* said Phil Lynch, a spokesman for Brown-Forman Corp., which owns Sonoma-Cutrer vineyards and markets Korbel champagne. *"If it's only smoke damage, it's one season. If it's fire damage, it'll be three or four seasons."*

According to Stephen Rannekleiv, a beverage analyst at Rabobank International, California's coast is the most valuable wine-producing region in the country. The lion's share of grapes in the state are grown in the San Joaquin Valley, where Cabernet Sauvignon grapes go for about $400 a ton. By contrast, the same fruit from Napa Valley usually costs closer to $7,000 a ton, and can sell for as much as $50,000.

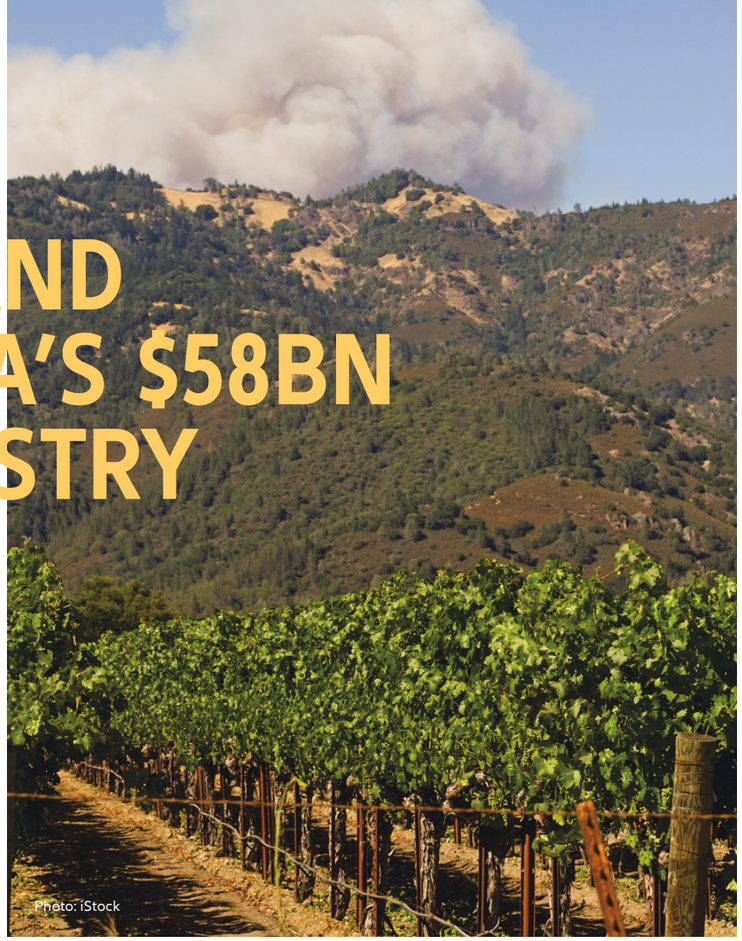
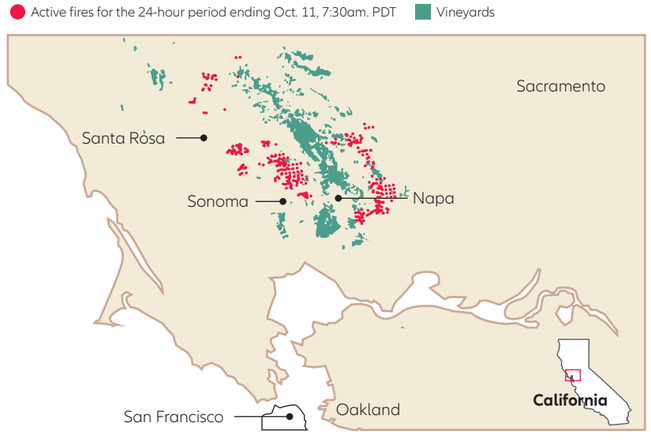


Photo: iStock

Fires Burn Through California Wine Country



The more lasting damage may come from popular misconceptions that smoke has ruined the vintage. *"Almost all of the 2017 fruit was in the wineries, so it will be unaffected,"* said Carole Meredith, one of California's most preeminent viticulturists. *"For a few who picked during or after the fire, of course smoke taint is the big concern. Even if they don't actually have it, they will have to fight the perception that they have it. And all the wine producers in Napa and Sonoma are going to have to overcome the false perception that the 2017 vintage has been ruined. That will take a lot of effort."*

Photo: iStock

"One of the unique coverages we offer at Allianz, is that we value lost wine at its selling price in the event of a natural disaster —a coverage which extends to in-process, library, and staged release wines, as well as harvested fruit. Wine leakage is also covered at fair valuation to ensure the fruits of your labor don't end up down the drain."

Dennis Mah, Winery Practice Lead, Allianz

FROM GRAPE TO GLASS – THE ROLE OF WINERY INSURANCE

Sensational storms and catastrophic events are attention grabbing, but the reality is wine has been grown, bottled, distributed and enjoyed around the world for centuries across climates and despite catastrophes. Just as winemakers appreciate how they can harness their natural surroundings to make award winning wines, winery owners and operators must be prepared to tackle volatile weather and geological events head on when building their risk management programs.

"The first step for any winery, from a boutique vineyard to a production powerhouse, is to partner with insurance professionals and companies that understand the specialized nature of winery operations," states Amoli Patel, Global Head of Agribusiness at Allianz. "Insurers have the capacity to protect wineries in a world where volatility is the new standard. Additionally, appropriate limits for a winery package policy helps alleviate concern over shifting winds and rainfall."

Allianz Global Corporate & Specialty insures the winemaking process "from grape to glass", including wineries and associated operations. Clients include vintners (boutique to conglomerate), wine merchants, distributors, restaurateurs, hoteliers and others involved in the growing, distributing and selling of wines. Allianz's Winery Practice Team recognizes that each winery is unique and in need of a stable and diversified insurer to provide expertise and strategic coverage that give winemakers peace of mind, even as weather becomes more unpredictable.

ALLIANZ'S PROACTIVE MEASURES SAVE CLIENTS' PROPERTY

Allianz protects a number of commercial clients in Napa and Sonoma counties, specifically wineries. In this region, significant assets were concentrated in areas with dense topography, vegetation and valuable structural exposures.

After the Northern California fires ignited on October 8, 2017, Allianz engaged Consumer Fire Products, Inc. (CFPI) as a preferred vendor to offer innovative fire protection services. CFPI is a brigade of trained fire professionals dedicated to wildfire property protection. Their trucks are equipped with state-of-the-art equipment, including an environmentally safe foam system that is applied to combustible material creating a thermal barrier to protect property when fire is an imminent threat. The company coordinates closely with local incident command and has the ability to travel within the active fire zones.

Over 22 Allianz insured locations were patrolled by CFPI to manage the exposures and take precautionary measures such as clearing brush, relocating flammable materials away from combustible construction, and spraying buildings/foliage with biodegradable, inert fire-retardant foam when warranted. In one case, CFPI identified a structure where foliage at the eave of a wood frame roof rested next to the forested area alongside of the structure. Foam spray was applied and protected nearly $30mn in property value.

Ted Bystrowski of Malloy Imrie & Vasconi Insurance Services, LLC, said, *"Allianz was the only carrier I am aware of who was proactive in having some form of in-event response for commercial clients. This value-added service provided much needed peace of mind for local winery owners/operators during this significant wildfire catastrophe."*

FIGHTING FIRE WITH FOAM

Irene Rhodes, founder and CEO of Consumer Fire Products, Inc. united her backgrounds in engineering and firefighting to create a system that automatically sprays a biodegradable protective foam onto structures when a wildfire is nearby. Rhodes has 30 years experience responding to wildfires and she says the 2017-2018 season was unprecedented. *"It was a 200 year event. Drought, warmer trends, 100% ember fire combustion rates, and 1% humidity were all contributing factors,"* Rhodes said. *"There was just so much fuel from the quick growth in the spring — enough fuel to burn 40,000 to 50,000 acres in under 6 hours — that's a lot of flash fuel."* Rhodes noted the fires were more terrain than wind-driven and the number one mistake property owners make is vegetation on properties. *"Eighty-five percent of homes burn due to ember intrusion,"* Rhodes says. *"Even if you have a stone structure with a tile roof, shrubs near a window can heat the glass and break the window. This allows embers to get into the structure and it burns from the inside."*

In response to the 2017 wildfire season, CFPI is foaming structures earlier and shortened how long the foam systems take to lock onto a fire. *"We monitor things closely and stand ready to dispatch, even at night,"* Rhodes said. *"It used to cool down at night, but with no humidity and sundowner winds, we remain ready even after everyone else goes home."*

"We took risk prevention and mitigation to the next level by hardening clients' defenses and preserving property in partnership with policyholders", added Scott Steinmetz, Global Head of Allianz Risk Consulting MidCorp, *"This is the first time we've utilized this form of an in-event mitigation service on such a large scale, and we're looking into how this kind of innovative approach can be tailored to meet the needs of clients exposed to various natural perils."*

AFTER THE FIRES

Following any disaster, two actions are most important for clients: communication and financial help. In all cases, Allianz made immediate contact with policyholders and maintained frequent contact until adjusters were able to access the areas. As soon as access was permitted, several adjusters were on the scene making inspections. On two larger loss clients, Allianz met the insureds off-site to get the assessment process started earlier, even before they could access the areas.

Photos courtesy of CFPI

Another important action was to quickly advance funds and assist in analyzing and facilitating client needs. Examples included finding temporary locations to operate from and modifying existing undamaged structures. In the case of one winery, Allianz paid for modifications to an existing structure to accommodate a tasting room that was destroyed. Paying a winery's employees to help with clean-up was another way Allianz helped a client get back to business without outside assistance.

"To expedite the claims process," said Steven Kennedy, Regional Head of Property, Engineering and Energy Claims for North America, *"inventory should be up to date, complete with photos, and business records should be duplicated and stored off-site for easy access."*

PREPARE! PREPARE! PREPARE!

There are basic actions businesses can implement to limit the damage to their property in advance of wildfire, explains Scott Steinmetz, Global Head of Allianz Risk Consulting MidCorp. Here are five tips he suggests to prepare for a wildfire:

1. **Prepare a written wildfire response plan** and educate your people: Hold a preparedness discussion to ensure everyone knows the important steps to take to prepare for wildfire conditions and the organization's communication plan in the event of a wildfire.
2. **Maintain your property**: Keep debris and combustible material from accumulating on roofs, gutters and around the structure.
3. **Enclose the bottom of elevated decks** and do not store combustible materials below the deck or under low roof/eave structures.
4. **Cover attic and crawl space vents** with metal mesh screens to reduce entry points for wind-driven embers (minimum 1/16" mesh size per California Building Code Chapter 7A).
5. **Create defensible space** up to 100 feet from the structure that serves as protection between the structure and wildfire.

NEW STANDARDS OF EXTREME

2017 was a year of historic weather and climate disasters in the United States.

The country experienced **16 separate billion-dollar disasters** that included **one drought**, **unprecedented California wildfires**, **eight severe storms** and **three record-breaking hurricanes**.

Between 1980 and 2017 the annual average of events was 5.8. **The average for the five most recent years (2013-17) was 11.6.**

Photo: Shutterstock

REBUILDING WINE COUNTRY

Allianz's Inland Marine Division is active and prepared to insure construction projects for wineries that sustained damage during the fires, and to offer coverage for operations once they are up and running again.

"We are a leader in Inland Marine insurance," said Susan McCaffrey, Inland Marine West/Midwest Product Lead. *"Our underwriters are highly experienced in working on construction and installation projects and have a proven track record in finding creative ways to address even the toughest situations. We are here from rebuild to reboot – for all our clients, new and existing."*

Strategic rebuild programs include:

Builders Risk – Builders Risk insurance provides real estate developers, contractors, subcontractors, architects and property owners with protection against damage to buildings while they are under construction, renovation or repair. The policy covers property on site or in transit.

Installation Floaters – Installation Floaters protect machinery and equipment to be installed at a job site or project. Our experience with this coverage runs the gamut from residential air conditioning systems and radar systems to commercial office developments and underwater agricultural installations. Protection covers property awaiting and during installation, in transit or in temporary storage away from the job site.

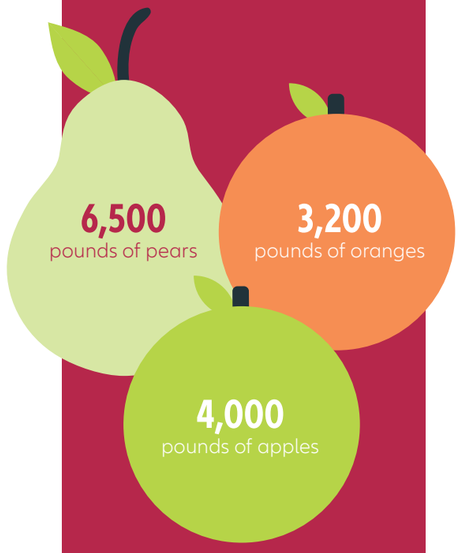
Riggers Liability – Riggers Liability covers the legal liability of contractors acting as riggers for the property of others in their care, custody and control.

Construction Block – The Construction Block policy eliminates the need for individual Builders Risk/Installation Floater policies to cover each project. It is written on a blanket basis with no coinsurance and provides coverage for all client projects until the insured's interest ceases.

From roots to retail, boutique to big name estate wineries, Allianz has the coverage, expertise and industry insight to meet clients' evolving needs. For details visit **agcs.allianz.com**.

ALLIANZ VOLUNTEERS GIVE BACK TO WILDFIRE VICTIMS

Thirty-six Northern California AGCS colleagues helped the Redwood Empire Food Bank in Santa Rosa bag produce for victims of the wildfire. They spent hours bagging 13,700 pounds of fruit (equivalent to 11,415 meals) including:



Linda Murphy, West and Midwest Zone Executive, said, *"As a business, taking care of our customers in their time of need is the foundation of what we do. How we come together as a team to support our employees, clients and community beyond the insurance policy means so much and made for a terrific day of giving back."*

FOR MORE INFORMATION, PLEASE CONTACT:

Dennis Mah
Winery Team Lead
+1.916.730.5219
dennis.mah@agcs.allianz.com

OTHER EXPERTS FEATURED IN THIS ARTICLE:

Steven Kennedy
Regional Head of Property, Engineering and Energy Claims, North America
+1.312.224.3322
steven.kennedy@agcs.allianz.com

Linda Murphy
Zone Executive, West & Midwest
+1.213.394.3149
linda.murphy@agcs.allianz.com

Susan McCaffrey
Inland Marine Zone Lead, West & Midwest
+1.213.394.3148
susan.mccaffrey@agcs.allianz.com

Scott Steinmetz
Allianz Risk Consulting
Global Head of MidCorp ARC
+1.415.233.0256
scott.steinmetz@agcs.allianz.com

Amoli Patel
Global Head of Agribusiness
+1.312.441.2162
amoli.patel@agcs.allianz.com

REFERENCES

Allianz Global Corporate & Specialty, *Over-exposed – vineyard volatility amid a changing climate*, 2017

Allianz Global Corporate & Specialty, *Allianz Risk Barometer*, 2018

Aon, *Weather, Climate & Catastrophe Insight Annual Report*, 2017

Bloomberg, *Wildfires wreak havoc on California's $58 billion wine industry*, October 10, 2017

Climate.gov, *2017 U.S. billion-dollar weather and climate disasters: a historic year in context*, January 8, 2018

CNN, *The wildfires in California just keep shattering records this year*, December 26, 2017

Deutsche Welle, *How climate change is increasing forest fires around the world*, June 19, 2017

Euro News, *Climate change blamed as EU's forest fires more than double*, October 16, 2007

KSBY-TV, NBC Affiliate, *Report shows economic impact of Montecito mudslide*, March 7, 2018

LA Times, *Why the 2017 fire season has been one of California's worst*, October 13, 2017

Marsh & McLennan Companies, *Climate Resilience Handbook*, 2018

Predictive Services, *National Significant Wildland Fire Potential Outlook*, April 1, 2018

Santa Barbara Independent, *Learning to live with wildfire*, June 28, 2007

The Washington Post, *Weeks after wildfires, California wine country is 'as beautiful as ever' – and hurting for visitors*, November 2, 2017

The Washington Post, *The grim scope of 2017's California wildfire season is now clear. The danger's not over*, January 4, 2018

Union of Concerned Scientists, *Western Wildfires & Climate Change*, 2013

www.fire.ca.gov

For more information contact:
agcscommunication@agcs.allianz.com

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APPENDIX C

Aon Annual Report Weather Climate 2017 - WF

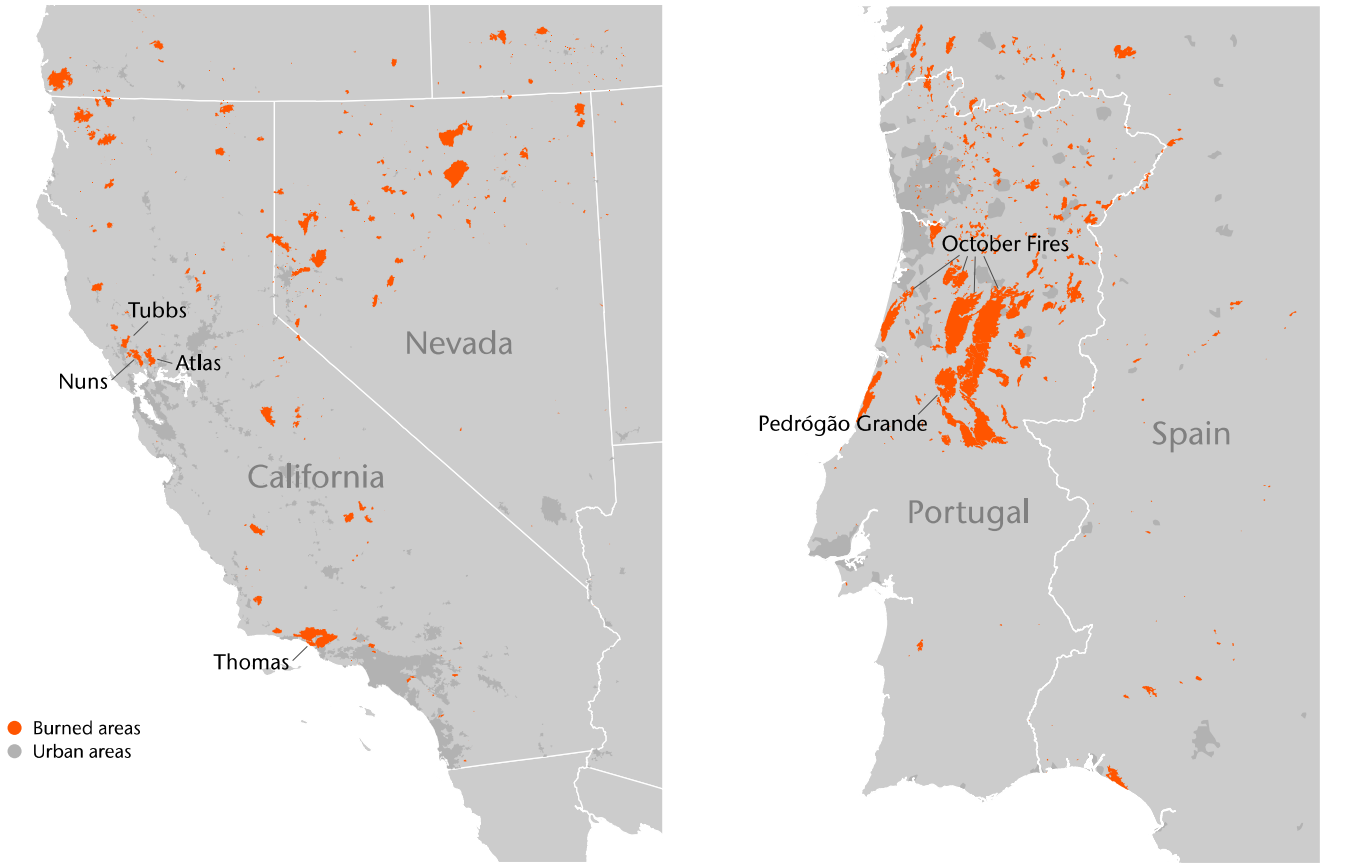
Peril Focus: Wildfire

The wildfire peril had its costliest year on record for the insurance industry in 2017, with global losses nearing USD14 billion. Overall economic losses were even higher at more than USD21 billion.

2017 was marked by two major outbreaks in California that led to the destruction of more than 10,000 structures alone. The October event in Northern California left at least 44 people dead and 185 others injured around the Napa Valley region. Total economic losses were estimated around USD13 billion of which USD11 billion was insured. This was by far the costliest wildfire outbreak ever recorded for the industry. A separate major outbreak impacted Southern California in December that cost insurers in excess of USD2.1 billion. Further wildfires throughout California and the Western United States during the summer and early autumn months prompted economic losses in excess of USD2.0 billion.

Europe recorded the largest extent of land burned by wildfires on satellite record, which dates back to 1980. For the first time in measurement history, fires consumed more than one million hectares of land across Europe. The worst affected country was Portugal where two significant outbreaks in June and October caused a combined death toll of 111, the highest on record. Economic losses due to wildfires totaled almost USD1.2 billion and the local insurance sector declared the 2017 fires the costliest natural disaster in the country's history with payouts exceeding USD295 million. It is worth noting that wildfires burned a remarkable 6.1 percent of Portuguese national territory in 2017.

Exhibit 22: Wildfire Extents in California and Portugal



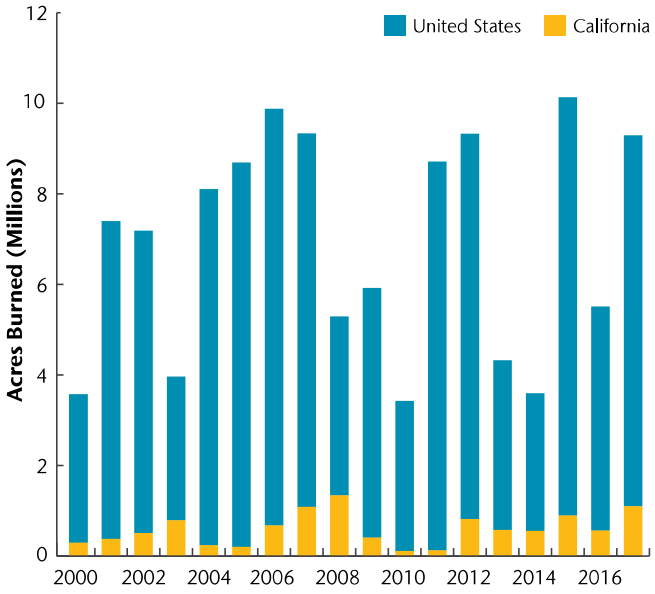
Source: GeoMAC, EFFIS & Aon Benfield

NKC-C-2

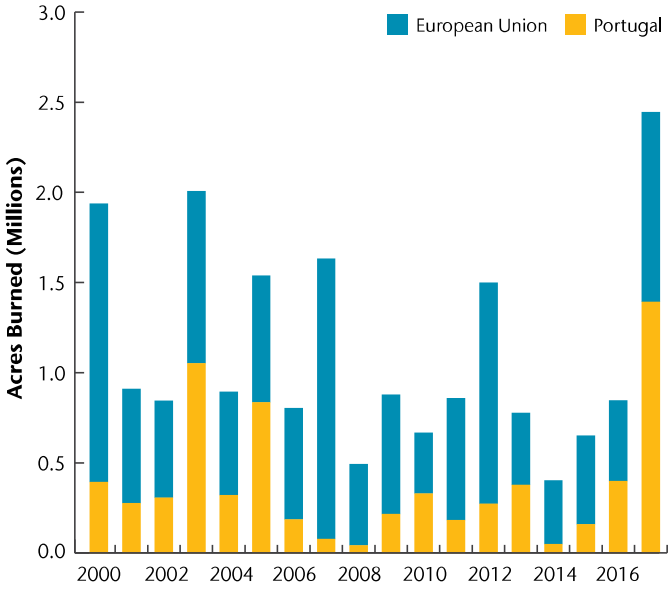
The third largest extent of land burned by wildfire in at least half a century was recorded in the United States in 2017. California, one of the largest annual contributors, accounted for nearly 13 percent; however the vast majority of the nationwide financial impact was concentrated in the Golden State. This was due to destructive fires that impacted densely populated regions, including Sonoma, Napa, and Mendocino Counties in Northern California. The Thomas Fire that impacted Southern California became the largest Californian fire in modern history. Among the notable causes of this year's outbreaks were strong Santa Ana winds and prolonged drought conditions.

The scope of the national tragedy in Portugal was marked by historical records being broken in terms of fatalities, financial impact, and areas burned. Unlike the other four major southern European countries, Portugal fails to mitigate the impact of wildfires in the long term. According to data from EFFIS, Portugal annually accounted for nearly 13 percent of land burned by wildfires in the European Union in the 1980s, 22 percent in the 1990s, 29 percent in the 2000s and the country's share averages at nearly 35 percent since 2010. This trend can be attributed to several interacting factors, including Portugal's position in the path of strong Atlantic winds, rising temperatures and prolonged droughts due to a warming climate and ineffective strategies in fire mitigation. Among the most prominent factors is widespread planting of eucalyptus trees. Although being very important for the local paper industry, it is generally considered being highly flammable.

Exhibit 23: Wildfire Acres Burned (United States & the European Union)



Source: NFIC & Aon Benfield



Source: EFFIS & Aon Benfield

Elsewhere in 2017, wildfires of note occurred in central Chile during January and February. South Africa recorded the costliest insurance event in history, when the Knysna fires in June destroyed hundreds of homes and payouts reached USD275 million. Multiple summer fire events in Canada's British Columbia left a combined economic cost of nearly USD250 million.

APPENDIX D

Ren Re WPC California WF Outlook May 2018

RenaissanceRe

California Wildfire Outlook

May 2018

Executive Summary

Leading into the 2018 California wildfire season, the expectation is for higher than normal potential for wildfire for portions of Southern California and the interior valley region into the summer and early fall.

- In general, precipitation across California has been below normal during the winter months, maintaining moderate to severe drought in the south.
- The lack of precipitation will likely limit grass, shrub, and chaparral growth, limiting finer fuels available to burn during the summer months.
- We expect an ENSO transition toward weak El Niño during the late summer/fall months.
  - This would lead to increases in precipitation during the fall/winter period.
  - A faster or more aggressive El Niño development may trigger an early return to the winter rainy season.
- Strong local winds, such as Santa Ana winds, are an important ingredient in many wildfires. Unfortunately, they are impossible to predict at long lead times.

Discussion

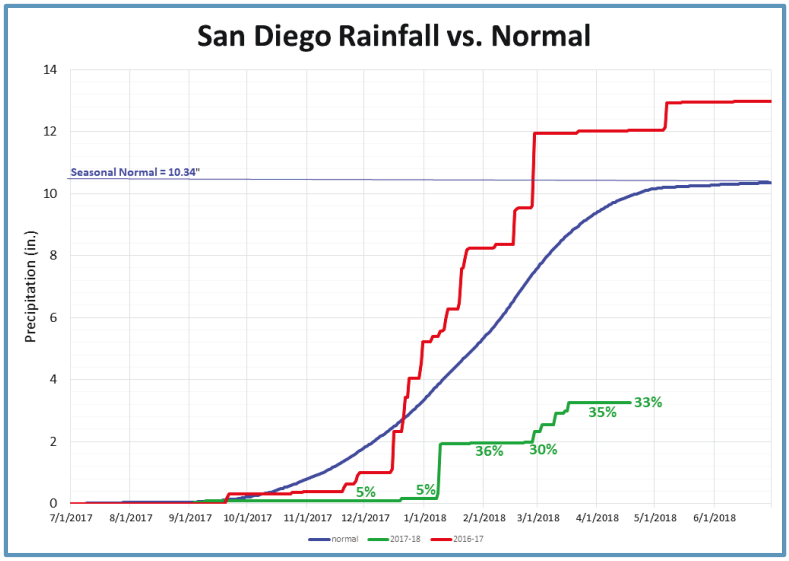
The 2017 California wildfire season was the most destructive wildfire season on record. All totaled, wildfires consumed over 1,381,405 acres (5,590.35 km^2) and damaged or destroyed over 10,000 structures. Heavy rainfall in the winter and spring months led to significant grass, shrub, and chaparral growth (see the left panel in Figure A1 in the Appendix). This freshly grown vegetation died in the record setting summer and fall high temperatures, creating an abundance of fine fuels that could burn readily and quickly.

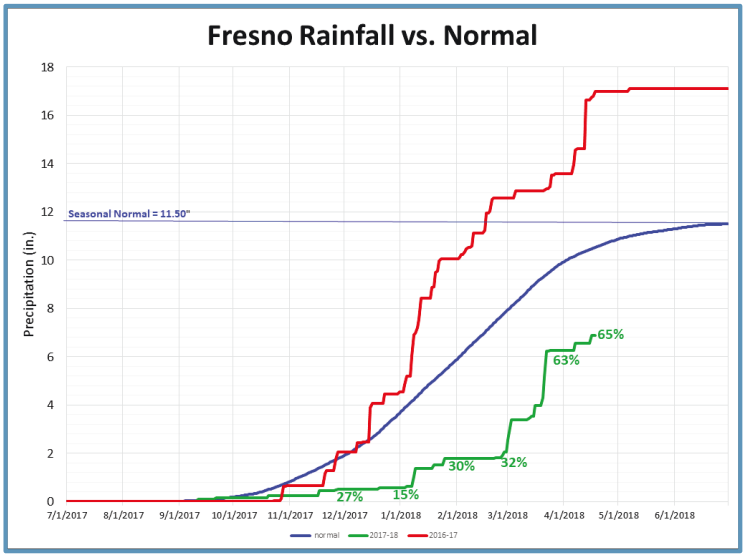
In contrast to 2017, rainfall during the winter and spring of 2018 has been below normal across the state. Figure 1 compares the accumulated rainfall from July through late April for four stations from south to north – San Diego, Los Angeles, Fresno, and Sacramento. Each location has experienced a below normal level of rainfall (green line) compared to average. As a counterpoint, the rainfall from 2017 (red) is also included on the plots. Given the limited rainfall, portions of California are experiencing drought conditions.

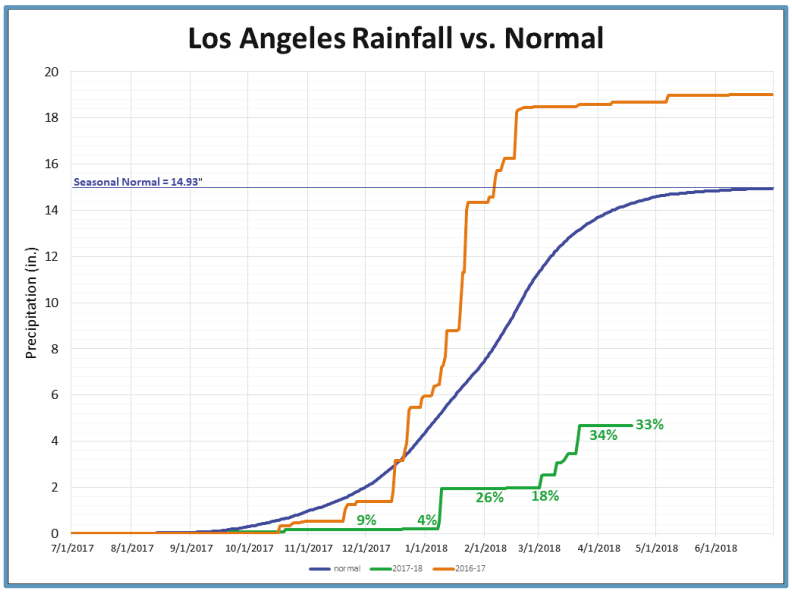
In addition, the snow depth across the Sierra Nevada mountains is below normal. Several locations received less than half of their normal snowfall. Lower snow accumulations portend an early snow melt and a premature start to the fire season.

The most recent outlook from the US Drought Monitor (Figure 2) shows that most of Southern California is within a moderate to extreme drought. To the north, abnormally dry conditions exist within the interior valley regions up to the Oregon border. While Northern California has experienced a drier than average winter and spring in total, April precipitation was above normal in most locations. This may explain why much of Northern California is not experiencing a drought at this time.

California Wildfire Outlook







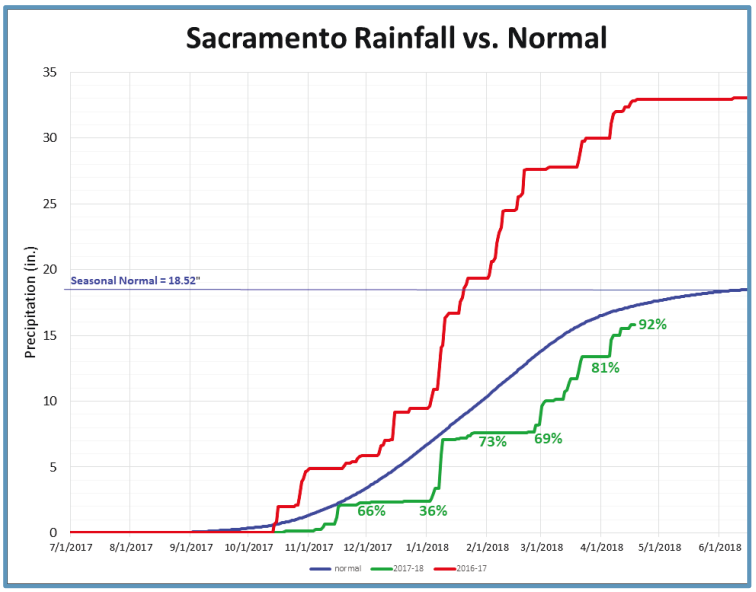


Figure 1: Time-series of accumulated rainfall from July 1, 2017 to May 1, 2018 (green). The blue line is the climatological rainfall at each location. The green percentages represent the percent of normal rainfall in 2018. The red line shows the rainfall that occurred in 2017 for comparison.

Source: http://ggweather.com/water

California Wildfire Outlook

The lack of rain during the spring of 2018 suggests that the California landscape will not experience the excessive vegetative growth as was observed the previous year. Given the limited growth, we expect a lower fine fuel load during the fire season compared to 2017 (see Appendix). However, the areas of California that did not experience wildfire over the last several years will have an accumulation of fuels that may increase the potential for large wildfires in those areas.

Long-range forecasts from numerical weather prediction models suggest warmer and drier than normal conditions across California from May through September. Taken together, these conditions will encourage the continued drying of fuels across California and further contribute to the development of conditions suitable for wildfire development.

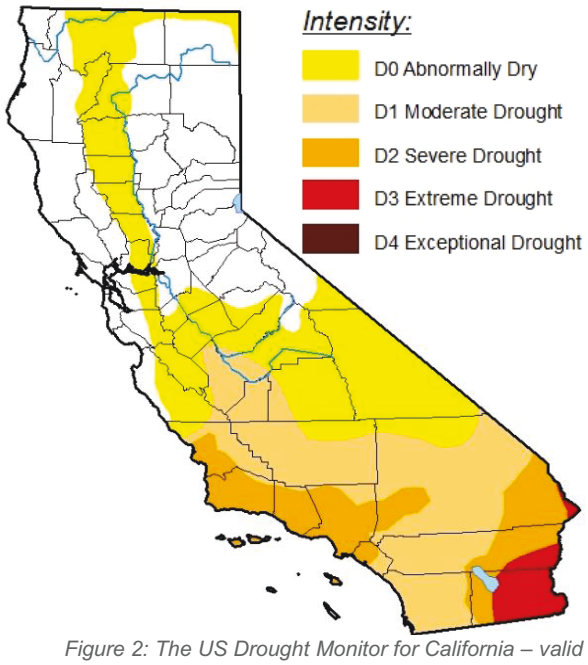


Figure 2: The US Drought Monitor for California – valid 1 May 2018. The severity of the drought conditions is shown by the shading. Source: http://droughtmonitor.unl.edu

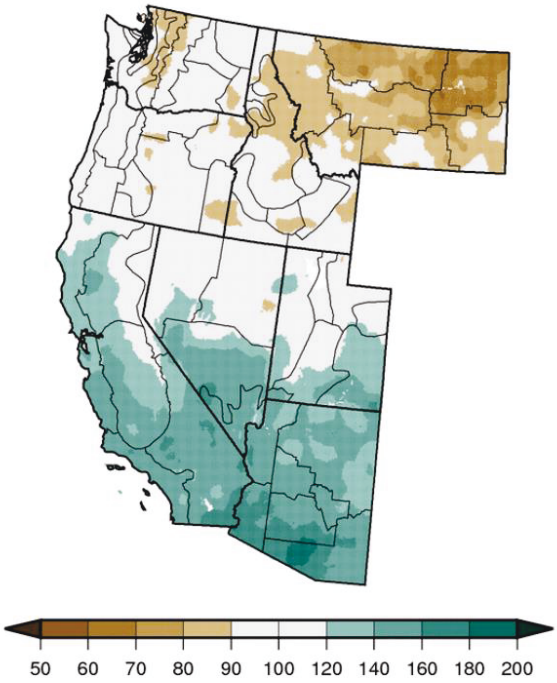


Figure 3: Precipitation percent of average during El Niño years. Green shading represents an increase compared to climatology. Brown shading represents a decrease compared to climatology..

During the 2018 wildfire season, we anticipate a transition from the current La Niña conditions towards El Niño by late summer and early fall. Some forecast models suggest a more aggressive transition toward El Niño conditions during this time period. Although there is some evidence for higher rainfall seasons in Northern California related to the El Niño / Southern Oscillation (ENSO), the largest impact is in the south, where significantly more rainfall is expected when an El Niño develops prior to the winter (Figure 3). If this relationship holds, it may promote an early return of the winter rainy season and therefore a shortened wildfire season.

Temperature and precipitation both contribute to producing the necessary conditions and fuels required for wildfire development and maintenance. However, the primary factor for the rapid expansion of fires once ignited is wind. It is unfortunately impossible to predict local wind features, like the Santa Ana winds, three to six months prior to the fire season. That said, local wind events are part of California weather and are likely to occur during the fire season.

California Wildfire Outlook

Summary

With below normal rainfall across California this past winter and spring and the expectation of warmer and drier than normal conditions through the summer and early fall months, the WPC California wildfire outlook calls for an elevated risk of wildfire in 2018 for portions of Southern California and the interior valley region into the summer months and early fall.

Long-range forecasts indicate that it is likely that drought conditions across Southern California will become more severe through the summer and fall months. At this time, only a small portion of Northern California is considered abnormally dry. However, given predicted warmer and drier than normal conditions through the summer, the area impacted by drought is expected to increase.

In 2017 the largest and most damaging fires occurred late in the season between October (Wine Country fires) and December (Thomas Fire, Southern California). During 2018, the development of El Niño conditions by late summer or fall could trigger the return of rainfall to the area, effectively shortening the fire season and greatly reducing late season wildfire risk.

Appendix: Vegetation Conditions

Vegetation growth and health can be critical to understanding the current and upcoming fire season risk. Enhanced winter and spring rainfall promote enhanced vegetation growth that dies off during the dry summer season, producing abundant finer fuels available for fire ignition and spread. 2017 was a good example of this scenario when we saw well above normal winter/spring rainfall across the entire state. On the contrary, 2018 is quite different, particularly in the south. The winter rains began late and more significant rainfall events were limited through April (Figure 1). Figure 4 below shows a comparison of the vegetative health between 2017 (left) and 2018 (right). Fine fuel growth this year will generally be below average.

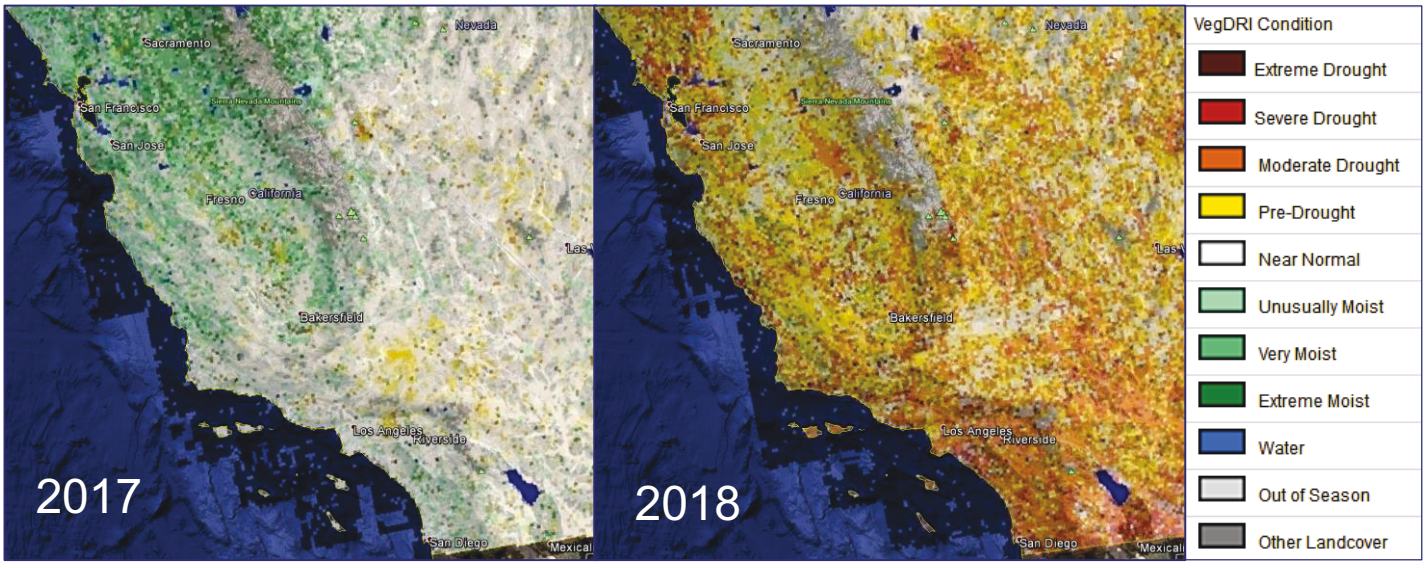


Figure A1: End of April Vegetative Drought Response Index (VegDRI). 2017 is depicted on the left and 2018 on the right. Source: https://earthexplorer.usgs.gov/

APPENDIX E - GLOSSARY OF TERMS

A.	Application
CFC	Consumer Federation of California Foundation
The Companies	SDG&E and SoCalGas
D&O	Directors' and Officers
FEA	Federal Executive Agencies
GRC	General Rate Case
ILS	Insurance Linked Securities
LIPBA	Liability Insurance Premium Balancing Account
O&M	Operations and Maintenance
OIL	Oil Insurance Limited
Oncor	Oncor Electric Delivery Company
ORA	The Office of Ratepayers Advocates
SCG, or SoCalGas	Southern California Gas Company
SDG&E	San Diego Gas & Electric Company
TURN	The Utility Reform Network
TY	Test Year
UCAN	Utility Consumers' Action Network
The Utilities	SDG&E and SoCalGas