

Update to the Verisk Wildfire Model for the United States

An update to Verisk's Wildfire (WF) model for the United States is scheduled to be released in June 2024 as a part of our suite of products. Verisk is presenting early insights to anticipated industry loss changes in this document to better inform your immediate risk management decisions or capital needs. A more in-depth discussion of the changes will be provided at the time of release in the formal release documentation.

Verisk has completed a comprehensive update of the model, which last underwent broad improvements in 2018, incorporating both more recent data and improved modeling techniques. There are many upgrades to the model, of which some highlights include:

- Greatly improved weather and climate to fire relationships, of which one important outcome is a view of the risk that is representative of the near present climate in the western United States. Our research, supported by the Verisk Climate Advisory Council, has found clear relationships between fire activity and climate change and those relationships are reflected in this model update.
- Significant enhancements to the fire spread model, especially in the Wildland Urban Interface (WUI), used to develop the events within the stochastic catalog. The model also now allows the use of structures as fuel, which improves the behavior of fire spread in urban areas.
- Use of data from more recent fire seasons, both hazard and loss related, and updated fuel information to inform the model. The fuel information has been supplemented with insights from Verisk's Fireline®.
- Explicit modeling of the risk due to smoke outside of the perimeter of a wildfire. Loss contributions due to smoke can vary greatly depending on the fire size and amount of exposure downwind during an event. At an industry level, between 2% and 15% of the AAL by state is driven by smoke losses.
- Updates and improvements to underlying assumptions of the built environment, which include recent building code changes.
- An enhanced ability to input and use wildfire mitigation features to assist with individual location and account underwriting. These features are guided by the Wildfire Prepared Home Designation program by the Insurance Institute for Building and Home Safety (IBHS).

Based on an assessment done by Verisk, while total industry gross losses will increase across the 13-state model domain, the improvements to the weather – fire relationships can manifest themselves as a variation in both the direction and magnitude of the changes in specific geographies.

The following table shows the overall expected change to industry gross losses [aggregate average annual loss (AAL), occurrence and aggregate-based loss at return periods] using the 100,000-year stochastic catalog for the total model domain, the domain exclusive of California, and 5 key loss producing states. Low return periods are generally from 10 year to 200 years, and high return periods are generally from around 200 years to 1000 years.

	Residential Lines				
Geography	AAL	Occurrence		Aggregate	
		Low RP	High RP	Low RP	High RP
Entire Model Domain	↑65%	↑35%-60%	↑30%-60%	↑40%-55%	↑30%-45%
California	↑25%	↑20%-60%	↑30%-60%	↑20%-35%	↑25%-35%
Domain Excluding California	↑145%	↑55%-80%	↑60%-70%	↑70%-130%	↑60%-70%
Arizona	↑40%	↓25%-↑40%	↓20%-25%	↓30%-↑45%	↓30%-40%
Texas	↓10%	↓25%-60%	↓60%-80%	↓45%-↑10%	↓45%-75%
Washington	↑130%	↑30%-120%	↑25%-30%	↑30%-135%	↑20-35%
Colorado	↑190%	↑170%-200%	↑170%-220%	↑165%-225%	↑175%-220%

	Commercial Lines				
Geography	AAL	Occurrence		Aggregate	
		Low RP	High RP	Low RP	High RP
Entire Model Domain	↑140%	↑50%-85%	↑45%-85%	↑80%-120%	↑55%-85%
California	↑85%	↑40%-95%	↑50%-95%	↑65%-75%	↑45%-70%
Domain Excluding California	↑200%	↑50%-70%	↑50%-70%	↑75%-170%	↑75%-80%
Arizona	↑80%	↓25%-↑65%	↓25%-35%	↓30%-↑90%	↓25%-40%
Texas	↑75%	↓50%-↑40%	↓50%-65%	↓20%-↑100%	↓15%-45%
Washington	↑145%	↓5%-↑100%	↓5%-↑15%	↑15%-130%	↑10-15%
Colorado	↑310%	↑200%-340%	↑200%-225%	↑215%-405%	↑210%-225%

	Auto				
Geography	AAL	Occurrence		Aggregate	
		Low RP	High RP	Low RP	High RP
Entire Model Domain	↑60%	↑50%-135%	↑115%-145%	↑55%-75%	↑75%-80%
California	↑40%	↑40%-140%	↑140%-175%	↑30%-80%	↑80%-90%
Domain Excluding California	↑85%	↑50%-65%	↑45%-65%	↑45%-80%	↑40%-50%
Arizona	↑10%	↓35%-↑5%	↓30%-35%	↓45%-↑10%	↓40%-50%
Texas	↓35%	↓40%-65%	↓65%-80%	↓25%-55%	↓55%-75%
Washington	↑55%	↓5%-↑40%	↓5%-0%	↓5%-↑50%	↓15%-0%
Colorado	↑165%	↑140%-180%	↑180%-260%	↑155%-180%	↑180%-260%

To illustrate some of the variation within a state, below is the same change to gross industry losses for Southern and Northern California. For the purposes of the below table, Southern California is defined as the counties of Imperial, Kern, Los Angeles, Orange, Riverside, San Bernardino, San Diego, San Luis Obispo, Santa Barbara and Ventura, and Northern California is the remainder of the state.

	Residential Lines				
Geography	AAL	Occurrence		Aggregate	
		Low RP	High RP	Low RP	High RP
Southern California	↑15%	↑10%-70%	↑30%-70%	↑5%-40%	↑30%-40%
Northern California	↑50%	↑5%-10%	↑5%-20%	↑20%-35%	↑20%-30%

	Commercial Lines				
Geography	AAL	Occurrence		Aggregate	
		Low RP	High RP	Low RP	High RP
Southern California	↑65%	↑35%-100%	↑70%-100%	↑45%-80%	↑50%-80%
Northern California	↑110%	↑35%-65%	↑65%-70%	↑65%-95%	↑65%-75%

	Auto				
Geography	AAL	Occurrence		Aggregate	
		Low RP	High RP	Low RP	High RP
Southern California	↑30%	↑35%-155%	↑155%-190%	↑20%-90%	↑85%-100%
Northern California	↑55%	↑15%-60%	↑60%-80%	↑35%-55%	↑50%-70%

These values have been generated by analyzing the 2022 Industry Exposure Database in both the current and updated models, before the application of take-up rates and without demand surge, to isolate model changes. Due to the extent of the updates to the model and the high- resolution nature of this peril, changes to individual portfolios and accounts can vary greatly from what is seen in industry data.

Verisk plans to release these changes via an update to the Verisk Wildfire Model for the United States in 2024 in our Touchstone and Touchstone Re platforms. In the meantime, please note we will not be able to provide further refined guidance on these changes or recommendations on how to adjust the current model.