GC FireCell℠
PARAMETRIC WILDFIRE
COVERAGE INNOVATION

GC FireCell provides customized coverage based on wildfire information published in real time by NASA’s FIRMS¹ using a high-resolution parametric model.

<table>
<thead>
<tr>
<th>Key Features &amp; Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fast</strong></td>
</tr>
<tr>
<td><strong>Transparent</strong></td>
</tr>
<tr>
<td><strong>Flexible</strong></td>
</tr>
<tr>
<td><strong>Customizable</strong></td>
</tr>
<tr>
<td><strong>Broad Application</strong></td>
</tr>
</tbody>
</table>

¹FIRMS: Fire Information for Resource Management System
## GC FireCell Determines Payouts in Two Simple Steps

### Step #1

Guy Carpenter, or the agreed calculation agent, extracts the physical event parameters from the reporting agency in accordance with the GC FireCell contract.

### Step #2

Using the latitude and longitude of the event’s reported fire observations, we determine whether one or more virtual stations covered in the transaction have been affected. We calculate the payout by adding the limits assigned to the affected virtual stations.

## Key Properties of GC FireCell

<table>
<thead>
<tr>
<th>COVER TYPE:</th>
<th>Parametric wildfire</th>
</tr>
</thead>
<tbody>
<tr>
<td>PERILS COVERED:</td>
<td>Wildfire and any cascading perils</td>
</tr>
<tr>
<td>COVERED LOSSES:</td>
<td>Any loss (including property) and time element</td>
</tr>
<tr>
<td>CLAIM PERIOD:</td>
<td>Pays within weeks, with one year for justification of loss</td>
</tr>
<tr>
<td>LIMITS:</td>
<td>Typically, USD 5 to USD 25 million via (re)insurance, higher limits available, potentially including insurance-linked securities (ILS) but dependent and variable upon geography, structure and pricing</td>
</tr>
<tr>
<td>MARKETS:</td>
<td>Global reinsurance companies and capital markets funds</td>
</tr>
<tr>
<td>MECHANISM:</td>
<td>High-res cat-on-a-grid</td>
</tr>
<tr>
<td>GEOGRAPHIC AVAILABILITY:</td>
<td>Global</td>
</tr>
<tr>
<td>REPORTING AGENCY:</td>
<td>NASA Fire Information for Resource Management System (FIRMS)</td>
</tr>
<tr>
<td>REPORTING PARAMETERS:</td>
<td>Geo-coordinates of the center of a fire pixel (pixel flagged as containing fire by FIRMS)</td>
</tr>
<tr>
<td>CUSTOMIZATION:</td>
<td>Any portfolio</td>
</tr>
</tbody>
</table>
How It Works: GC FireCell Structuring & Response

Structuring

- GC FireCell defines the area of coverage, usually starting with a set of polygons that describe the exposures.
- GC FireCell uses a grid with a resolution of 0.001 decimal degrees (about 100 meters) to represent exposures with a set of “virtual stations.”

Response

- GC FireCell associates a fire pixel (circle) to each satellite observation with a radius proportional to the instrument resolution.
- The stations within the footprint of those fire pixels produce a payout equal to their assigned limit.

Stations closer to exposures have higher limits

Limits are smoothed to make the transaction more responsive, adding a buffer zone of coverage

NASA and NOAA satellites report observations of fire incidences in near real time

The limits for virtual stations within the footprint of the observations are aggregated to produce a payout
California (Gondola) Case Study

On July 3, 2002, the Gondola Wildfire started in South Lake Tahoe, CA

FireCell Cover

A GC FireCell parametric cover was placed to respond to loss-causing events in a rectangular area of coverage in South Lake Tahoe, CA. This coverage included 8,900 virtual stations regularly distributed across the area.

Tracking the Event

A wildfire started on July 3, 2002, burning 600+ acres and threatening more than 550 structures. FIRMS provided 15 satellite observations (fire pixels) for this event.

Loss Estimate

Ultimately, 1,272 of the 8,900 virtual stations fell within the footprint of the fire pixels. The payout of the GC FireCell cover was the sum of the limits associated with the affected stations.

Payment

Within weeks from the date of the event, the agreed payment is received by the client.
Australia (Catarrh Creek Fire) Case Study

On March 9, 2019, the Catarrh Creek Fire started in New South Wales, Australia

Near Real Time
FIRMS satellite wildfire observations are available within approximately 3 hours of data acquisition and reviewed periodically.

Continuous Monitoring
FIRMS continuously monitored this event, providing an accurate reflection of what occurred in near real time. As the footprint progresses, GC FireCell tracks the payout.

1 NPWS Fire Perimeter: New South Wales National Parks and Wildlife Service
2 MODIS: Moderate Resolution Imaging Spectroradiometer
3 VIIRS: Visible Infrared Imaging Radiometer Suite
**Contact us**

If you are interested in learning more about GC FireCell or would like to organize a live demonstration of the platform, please contact any of the following specialists:

**Guillermo E. Franco, Ph.D., A.Re.**  
Managing Director, Global Head of Catastrophe Risk Research  
Guillermo.E.Franco@guycarp.com  
+1 917 836 6856

**David M. Lightfoot**  
Managing Director, Global Strategic Advisory, Global Accounts and Latin America & Caribbean  
David.M.Lightfoot@guycarp.com  
+1 917 937 3195

**Richard J. Foster**  
Managing Director, Seattle Production  
Richard.J.Foster@guycarp.com  
+1 206 383 1724

**Robert Reader**  
Managing Director, North America Treaty Broking  
Robert.Reader@guycarp.com  
+1 949 278 8259

**Sarah Yearwood**  
Senior Vice President  
Sarah.Yearwood@guycarp.com  
+1 206 499 5719

**Cory Anger**  
Managing Director, GC Securities  
Cory.L.Anger@guycarp.com  
+1 917 937 3281

---

**Guillermo E. Franco, Ph.D., A.Re.**  
Managing Director, Global Head of Catastrophe Risk Research  
Guillermo.E.Franco@guycarp.com  
+1 917 836 6856

**David M. Lightfoot**  
Managing Director, Global Strategic Advisory, Global Accounts and Latin America & Caribbean  
David.M.Lightfoot@guycarp.com  
+1 917 937 3195

**Richard J. Foster**  
Managing Director, Seattle Production  
Richard.J.Foster@guycarp.com  
+1 206 383 1724

**Robert Reader**  
Managing Director, North America Treaty Broking  
Robert.Reader@guycarp.com  
+1 949 278 8259

**Sarah Yearwood**  
Senior Vice President  
Sarah.Yearwood@guycarp.com  
+1 206 499 5719

**Cory Anger**  
Managing Director, GC Securities  
Cory.L.Anger@guycarp.com  
+1 917 937 3281

---

**About Guy Carpenter**

Guy Carpenter & Company, LLC is a leading global risk and reinsurance specialist with more than 3,400 professionals in over 60 offices around the world. Guy Carpenter delivers a powerful combination of broking expertise, trusted strategic advisory services and industry-leading analytics to help clients adapt to emerging opportunities and achieve profitable growth. Guy Carpenter is a business of Marsh McLennan (NYSE: MMC), the world’s leading professional services firm in the areas of risk, strategy and people. The company’s 83,000 colleagues advise clients in over 130 countries. With annual revenue of nearly $20 billion, Marsh McLennan helps clients navigate an increasingly dynamic and complex environment through four market-leading businesses including Marsh, Mercer and Oliver Wyman. For more information, visit www.guycarp.com and follow Guy Carpenter on LinkedIn and Twitter @GuyCarpenter.

---

Guy Carpenter & Company, LLC provides this report for general information only. The information contained herein is based on sources we believe reliable, but we do not guarantee its accuracy, and it should be understood to be general insurance/reinsurance information only. Guy Carpenter & Company, LLC makes no representations or warranties, express or implied. The information is not intended to be taken as advice with respect to any individual situation and cannot be relied upon as such. Statements concerning tax, accounting, legal or regulatory matters should be understood to be general observations based solely on our experience as reinsurance brokers and risk consultants, and may not be relied upon as tax, accounting, legal or regulatory advice, which we are not authorized to provide. All such matters should be reviewed with your own qualified advisors in these areas.

*Securities or investments, as applicable, are offered in the United States through GC Securities, a division of MMC Securities LLC, a US registered broker-dealer and member FINRA/NFA/SIPC, Main Office: 1166 Avenue of the Americas, New York, NY 10036. Phone: (212) 345-5000. Securities or investments, as applicable, are offered in the United Kingdom by GC Securities Ltd., which is authorized and regulated by the Financial Conduct Authority, 12 Endeavour Square, London, E20 1JN. Reinsurance products are placed through qualified affiliates of Guy Carpenter & Company, LLC. MMC Securities LLC, MMC Securities (Europe) Ltd. and Guy Carpenter & Company, LLC are affiliates owned by Marsh McLennan. This communication is not intended as an offer to sell or a solicitation of any offers to buy any security, financial instrument, reinsurance or insurance product.*

Readers are cautioned not to place undue reliance on any historical, current or forward-looking statements. Guy Carpenter & Company, LLC undertakes no obligation to update or revise publicly any historical, current or forward-looking statements, whether as a result of new information, research, future events or otherwise. The trademarks and service marks contained herein are the property of their respective owners.

©2022 Guy Carpenter & Company, LLC. All rights reserved.