AbsoluteClimo Announces New Products, Monumental Updates, Partnership with Liberate AI for Healthcare

Singapore (5 June 2023) - AbsoluteClimo today announces new products and monumental updates to our holistic global climate and machine learning prediction modeling system. The products and updates will help the world make significantly better decisions and manage climate related impacts such as disasters, "chronic" climate changes, financial, economic, and human health including a groundbreaking new partnership with Liberate AI for healthcare.

Building on our foundation of over a decade of R&D in numerical climate modeling, machine learning, financial engineering and operational forecasting starting in the 1980s, today's announcements have been under development for years and advance the state-of-the-art with new world firsts and best practices, available now. G◉TCHA™ is our rigorous, stable, well calibrated and proven global climate model – developed independent of climate models or code run by governments or universities – which generate consistently skillful (accurate) forecasts, a world first backed by an unrivaled success-based business model.

- **Announcing Clim◉Health™ and Partnership With Liberate AI For Healthcare**
  - Today AbsoluteClimo announces our Clim◉Health™ family of products. Clim◉Health's roots started with G◉TCHA's air quality and harmful algal bloom (water) forecasts in 2017 followed in November 2020 by our global pandemic climate-epidemiology model for predicting influenza and the spread (R_0) of viruses such as West Nile and Yellow fever.
  - Clim◉Health helps humanity worldwide make better healthcare decisions when it comes to climate-driven health risks such as allergies, asthma, vector borne diseases carried by mosquitoes e.g., Dengue fever and Zika, and risks related to changes in phenology such as climate stresses on insect populations, species migration impacts e.g. Lyme disease, and food security i.e, related to changes in bee populations and pollination **(Figure 1)**.
  - Hundreds of millions of people worldwide suffer from allergies and asthma, sometimes acute requiring visits to hospital emergency rooms during climate induced severe air pollution episodes **(Figure 2)**.
  - As the planet warms, warmer air can hold more water vapor which elevates dew points and heat indices, leading to heat related health casualties and fatalities **(Figure 3)**.
  - Rising heat indices also increases energy demand for air conditioning which stresses power utilities as the world attempts to transition to green energy (Clim◉Energy).

- Clim◉Health includes a state-of-the-art skillful forecast modeling system of climate-linked environmental cancers spanning 70 years (from 40 years ago to the next 30 years), providing medical researchers and health care practitioners with changes in cancers linked to longer term climate change such as lung cancers and skin cancers.
- Clim◉Health is gridded and derived from many of G◉TCHA's 80+ total climate elements
- Clim◉Health uses machine learning on related health and medical data sets.
- Clim◉Health, like Clim◉Cats and the rest of the Clim◉ product family, can be customized for bespoke solutions suitable for specific public and private health applications.

"*The pressure on health services globally is increasing rapidly. One major contributor to public health and as a result primary care and hospital demand pressures is the impact of climate.*

Liberate AI is a leader in the development of AI tools for enabling Precision Health at scale. By partnering with AbsoluteClimo, we will be able to improve our predictions for identifying "At Risk" patients, which will power early interventions and improve patient outcomes.

Reliable Climate Predictions are a very important addition to our AI predictive capabilities. We are delighted to partner with AbsoluteClimo in this area."

Belinda Roelofs
Chief Executive Officer
Liberate AI

"*Our new and enhanced products, and landmark partnership with Liberate AI for improving healthcare, helps us to continue fulfilling our mission of bettering life on Earth by helping people impacted by climate variability and change*," said Melissa Barrington, Climatologist, Physical Meteorologist, and Co-Founder of AbsoluteClimo.

"*We are not only able to make the connection of climate to business across a broad spectrum as we have always done, we can now touch each person in the world impacted by health-related concerns like allergies, viruses and beyond. Feeding AI tools and machine learning with more high quality data such as health, insurance losses and climate risks allows us to pinpoint hot spots around the world more accurately so that we can have a longer lead time to offset the perils as our climate is changing. We are excited to partner with Liberate AI as we continue to build and expand our products and services*," added Melissa.

- **Announcing Clim◉Insurance™:**
  - AbsoluteClimo today announces our first Clim◉Insurance product: consistently skillful climate-driven annual property insurance premiums risk forecasts, starting with up to five years forecast lead time. Clim◉Insurance leverages G◉TCHA's new finer 4 km^2 grid resolution, available today for the United States (expanding worldwide later this year).
  - Similar to Clim◉Cats where insured losses forecasts are normalized for other factors such as inflation, population and exposure changes, Clim◉Insurance accounts for additional financial and economic factors.
  - Clim◉Insurance property insurance premiums risk forecasts will benefit real estate investors, owners, and banks with skillful probabilistic predictions of annual changes to insurance premiums for the first time.
  - Clim◉Insurance is derived from many of G◉TCHA's new 23+ climate elements (80+ total) including gridded major earthquake predictions not provided by other climate models.

- **Major Earthquakes, Volcanoes and Hurricane Landfalls Worldwide**:
  - AbsoluteClimo today announces G◉TCHA's expansion providing skillful forecasts of major earthquakes **(Figure 4)** and volcanic eruptions on a worldwide grid with lead times of up to five years worldwide. This world first is made possible by AbsoluteClimo's inner Earth core thermodynamic machine learning modeling.
  - AbsoluteClimo today announces its new Volcanic Explosivity Index product **(Figure 5)**.
  - AbsoluteClimo today announces our hurricane (typhoon) landfall forecasts are now available on a worldwide grid, a significant expansion beyond bespoke corridor landfall forecasts for our clients such as insurance-linked securities (ILS) funds and reinsurers.

"*The (re)insurance industry has sought tools to assist it to improve its understanding of the available data and to better price the risk that it faces from its clients. AbsoluteClimo has presented us with a suite of new and enhanced tools that allow insurers to better focus on the risks of climatic impacts at a more refined scale and its added insights on volcanic and health activity will lead to product innovation in this area. This is beneficial for our clients, improving their risk identification and management, and for the health of the global (re)insurance sector.*" said Bryan Joseph, Partner of Vario Partners LLP in London.

- **Long Term Climate Change:**
  - AbsoluteClimo's products have been available as probabilistic forecasts of climate change, including tail risk, over longer periods of time, up to 30 years.

- Today's announcement brings across many of our 80+ climate elements and much of the Clim◉ product family into the longer term climate change decision making time horizon.
- AbsoluteClimo's probabilistic climate change forecasts are based on a real dynamical and AI prediction model (not "what if" scenarios aka large scale guesstimates).
- Clients across a range of industries impacted by climate, including ESG (Environmental, Social and Corporate Governance), benefit from AbsoluteClimo's rigor and prowess for making short, medium and long term decisions with confidence, from months and seasons to years and decades.

- **Clim◉Cats™ / Clim◉ Products Gridded:**
  - Clim◉Cats™, unveiled in early 2019 as the world's first climate catastrophe risk and financial models linked to AbsoluteClimo's skillful climate physics predictions, is a suite of probabilistic products and bespoke solutions empowering especially our re/insurance industry clients with tail risk modeling and machine learning to improve underwriting and help the industry "*reinstall trust*" in its ability to provide sustainable cover where needed.
  - Clim◉ gridded products, including Clim◉Cats, are derived from G◉TCHA which is the integral foundation to our forecasts. Clim◉ gridded products further aid our clients to foresee the where and when of future climate-driven risks and opportunities.

- **G◉TCHA:**
  - After its debut in 2016 as the world's first consistently skillful (accurate) and well calibrated global climate model – completely independent of climate models or code run by governments or universities – G◉TCHA has been expanded and improved for enterprise decision making applications including across a spectrum of human health.
  - G◉TCHA's climate elements increase from 57 to more than 80, including:
    - Gridded forecasts worldwide of: major earthquakes **(Figure 4)**, landfall locations for tropical storm systems, significant volcanic explosions **(Figure 5)**, catastrophic losses (economic and insured), and non-catastrophic financial losses.
    - Damage Assessment Risk Tool (DART), an easy to use global gridded index to quickly focus on areas of interest like a dart 🎯 and foresee expected total risk changes from all climate hazards, annually out to 5 years **(Figure 6)**
    - Gridded U.S. property insurance premiums risk forecasts (worldwide later this year);
    - Human health including allergies (e.g., tree pollen, ragweed, mold), Lyme disease, and environmental cancer changes influenced by climate dynamics;
  - G◉TCHA resolution: 4km x 4km higher resolution, run at scale, bests the previous 25km x 25km resolution (available now for the United States and worldwide later this year);

See also the **Appendix** accompanying this announcement.

About AbsoluteClimo LLC

AbsoluteClimo's (absoluteclimo.com) mission is bettering life on Earth (◉) by helping people impacted by climate variability and change. AbsoluteClimo LLC, founded in 2016 is a Hawai'i headquartered world leading climate forecasting and risk management company created and operated by pioneering reputable climatologists, meteorologists and seasoned entrepreneurs with accomplished scientific and business industry track record including NASDAQ/NMS listing and successful M&A. We serve business verticals in energy, agriculture, water resources, tourism, human health, financial services including re/insurance, insurance-linked securities, pensions, superannuations, private equity and the ESG / sustainable investments markets. We occasionally provide guest lectures on climate risk and insurance at the University of Hawai'i at Mānoa Shidler College of Business and thought leadership presentations and panels at events worldwide. Say "aloha" to us at: info@absoluteclimo.com

Appendix

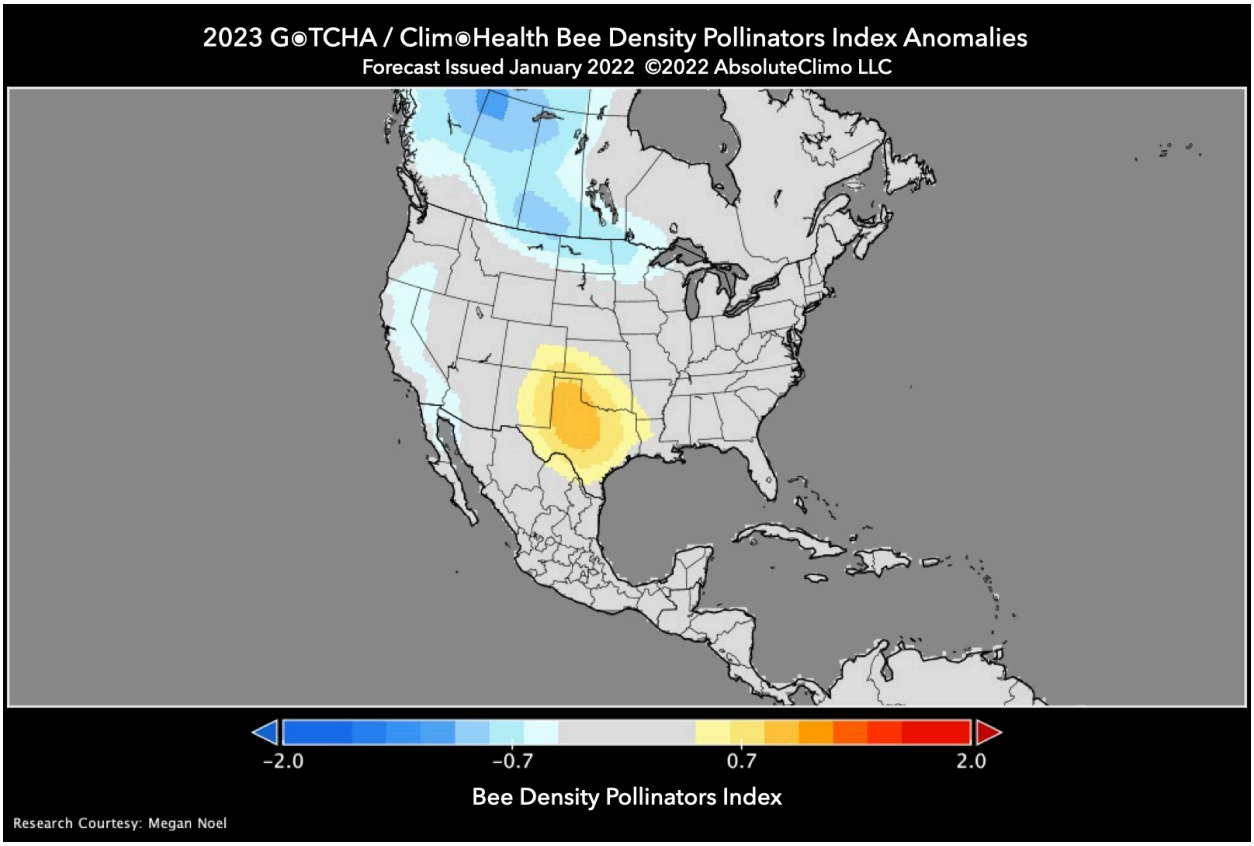

Figure 1. Climate (change) dynamics impact the phenology of plant and animal species worldwide including pollinating insects such as bees. Pollinating bees play a critical role in food chains and human food security. Depicted above is AbsoluteClimo's G◉TCHA & Clim◉Health year ahead ensemble mean annual forecast for 2023 of pollinating bee density anomalies (indexed), focused on the U.S. and Canada. Bee pollination density is forecast to worsen in 2023 (blue colored anomalies) in western Canada due to stresses placed on bees from the climate system, while some pollinating bee density improvement is forecast in the southern U.S. plains states. G◉TCHA models 80+ climate elements worldwide and teams up with Clim◉Health for machine learning to index and forecast bee density worldwide with consistent skill, a world first and valuable new contribution to humanity. Tail risk forecasts of bee density are also available upon request.

Climate-driven bee density phenology research by Megan Noel, AbsoluteClimo intern (2022, 2023) Dayton Regional STEM School.

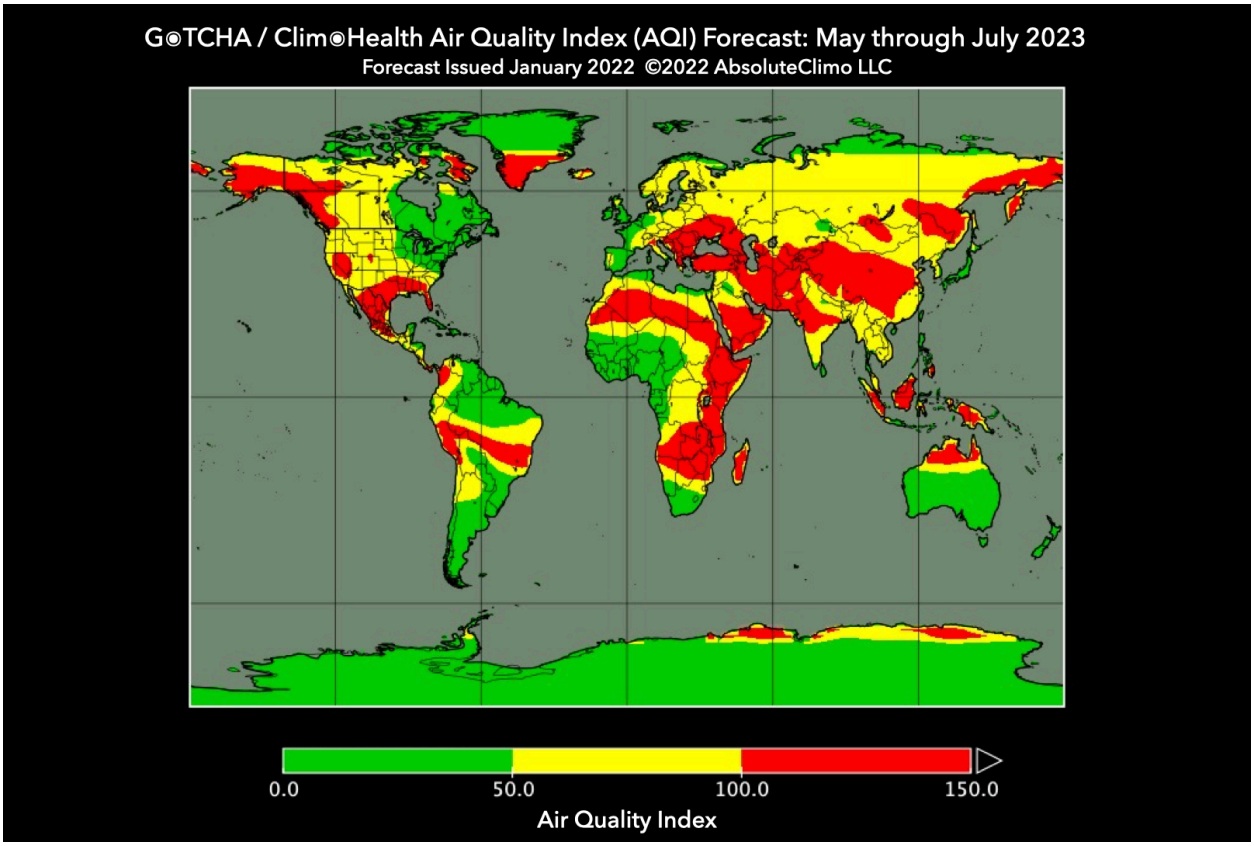

Figure 2. Climate (change) dynamics impact the quality of the air we all breathe. Severe air pollution (from a variety of sources including fires) and compounding climate elements such as air stagnation (wind) at the surface and aloft, surface air temperatures (heat and cold stress), and surface heat indices driven by elevated dew points – in an increasingly warming world – can adversely impact human's sinuses, asthma and respiratory diseases such as chronic obstructive pulmonary disease (COPD) including emphysema and chronic bronchitis, and cardiopulmonary diseases. Depicted above is AbsoluteClimo's G◉TCHA & Clim◉Health ensemble mean worldwide forecast issued in January 2022 for the period of May through July 2023, of the Air Quality Index (AQI). The AQI is a world standard index. AQI index values ranging from 0 to 50 (green) is considered good air quality, 51 to 100 (yellow) is moderate air quality which some people may be sensitive to, and > 100 (red) is considered unhealthy. Air quality also impacts tourism. In April 2023, CNN Travel (via Reuters) reported "*Northern Thailand's air pollution becoming a tourism issue*" due to horrendous air quality obstructing the visibility of scenic mountainous views. G◉TCHA models 80+ climate elements worldwide and teams up with Clim◉Health for machine learning to forecast AQI worldwide with consistent skill, a world first. Tail risk forecasts of AQI are also available upon request.

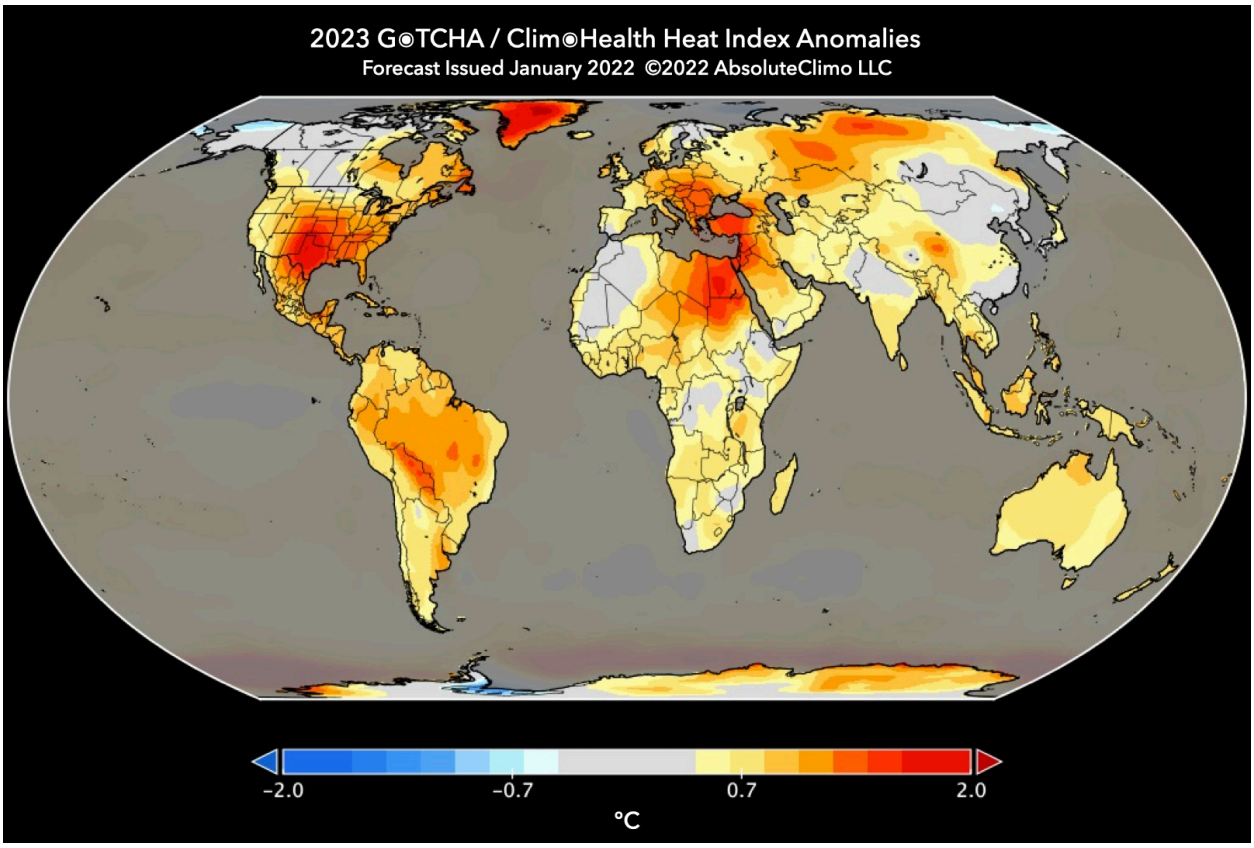

Figure 3. As the planet warms, warmer air can hold more water vapor which potentially elevates dew points and heat indices leading to increasing risk of heat related health casualties and fatalities worldwide. Depicted above is AbsoluteClimo's G◉TCHA & Clim◉Health year ahead ensemble mean annual forecast for 2023 of global heat index anomalies forecasting above normal heat indices in many areas. For warmer climate areas of the U.S., Europe along with Southeast Asia including Indonesia, positive heat index anomalies forecast indicate to expect even more uncomfortable warm seasons this year. For much of Australia, expect late 2023 to become more miserable than normal. G◉TCHA models 80+ climate elements worldwide and teams up with Clim◉Health for machine learning to forecast heat indices and heat index anomalies worldwide with consistent skill, a world first and valuable to human healthcare. Tail risk forecasts of heat indices are also available upon request.

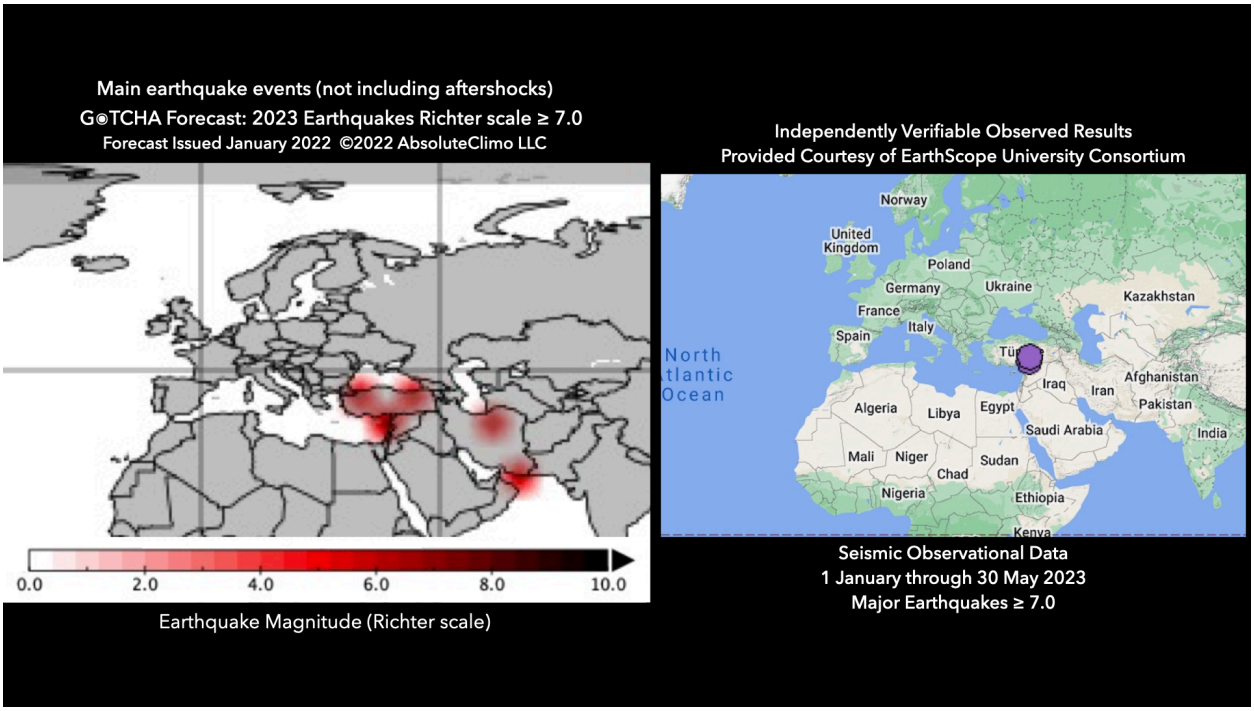

Figure 4. Depicted above, left: AbsoluteClimo's G◉TCHA's year ahead gridded ensemble mean annual forecast for 2023 accumulated total major earthquake events (main events, not including aftershocks), at Richter scale ≥ 7.0. This year G◉TCHA forecast a concentration of very large earthquakes in the West Asia region especially for Turkey (Türkiye) and Syria. More specifically, for 2023 for the Turkey (Türkiye) and Syria region, G◉TCHA & Clim◉Cats forecast 230% above normal (annual) activity of 7.0+ earthquakes (main events not including aftershocks). Depicted above, right: seismic observational data (EarthScope University Consortium*) from January 1st through May 30th 2023, Richter scale ≥ 7.0, showing very large earthquake activity in the Kahramanmaraş region of Turkey (Türkiye) near Syria from the Kahramanmaraş Earthquake Sequence of 6 February 2023 (a 7.8 main event followed by a large 7.5 aftershock). Major earthquake forecasts are available from AbsoluteClimo on a worldwide grid. Tail risk forecasts of major earthquakes, including earthquake related casualties, economic and insured losses, are also available from AbsoluteClimo's Clim◉Cats for bespoke regions of the world as customized solutions. AbsoluteClimo's numerical forecast modeling is probabilistic and consistently skillful (accurate) – a world first, unrivaled.

*Source of observed earthquake data depicted: EarthScope University Consortium. All seismic data were downloaded through the EarthScope Consortium Wilber 3 system (https://ds.iris.edu/wilber3/) or EarthScope Consortium Web Services (https://service.iris.edu/), including the following seismic networks: (1) the AZ (ANZA; UC San Diego, 1982); (2) the TA (Transportable Array; IRIS, 2003); (3) the US (USNSN, Albuquerque, 1990); (4) the IU (GSN; Albuquerque, 1988).

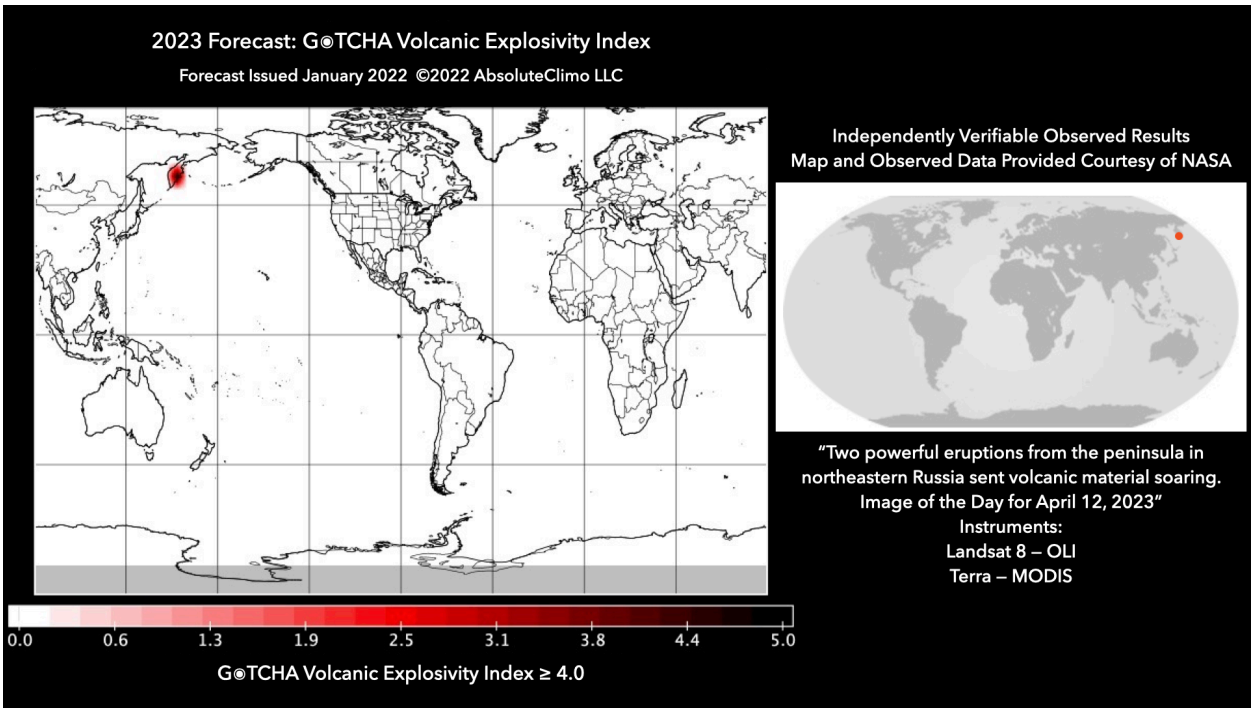

Figure 5. Volcanic eruptions, especially powerful stratospheric penetrating eruptions, are an important part of the dynamic climate (change) system which government and university climate models do not forecast. Depicted above is AbsoluteClimo's year ahead worldwide ensemble mean annual forecast for 2023 of accumulated major volcanic explosivity, at large index values ≥ 4.0. G◉TCHA correctly predicted a year in advance major volcanic explosive activity on Russia's Kamchatka Peninsula. In April NASA reported anomalous eruptions: "*Far less common is for the Kamchatka Volcanic Eruption Response Team (KVERT) to report on two major explosive eruptions that blast volcanic material clear into the stratosphere within the same week. That is what happened in mid-April 2023, when both Bezymianny and Shiveluch (sometimes spelled Sheveluch) roared into action.*"

Source of observed volcanic activity depicted: NASA, specifically NASA's Earth Observatory.

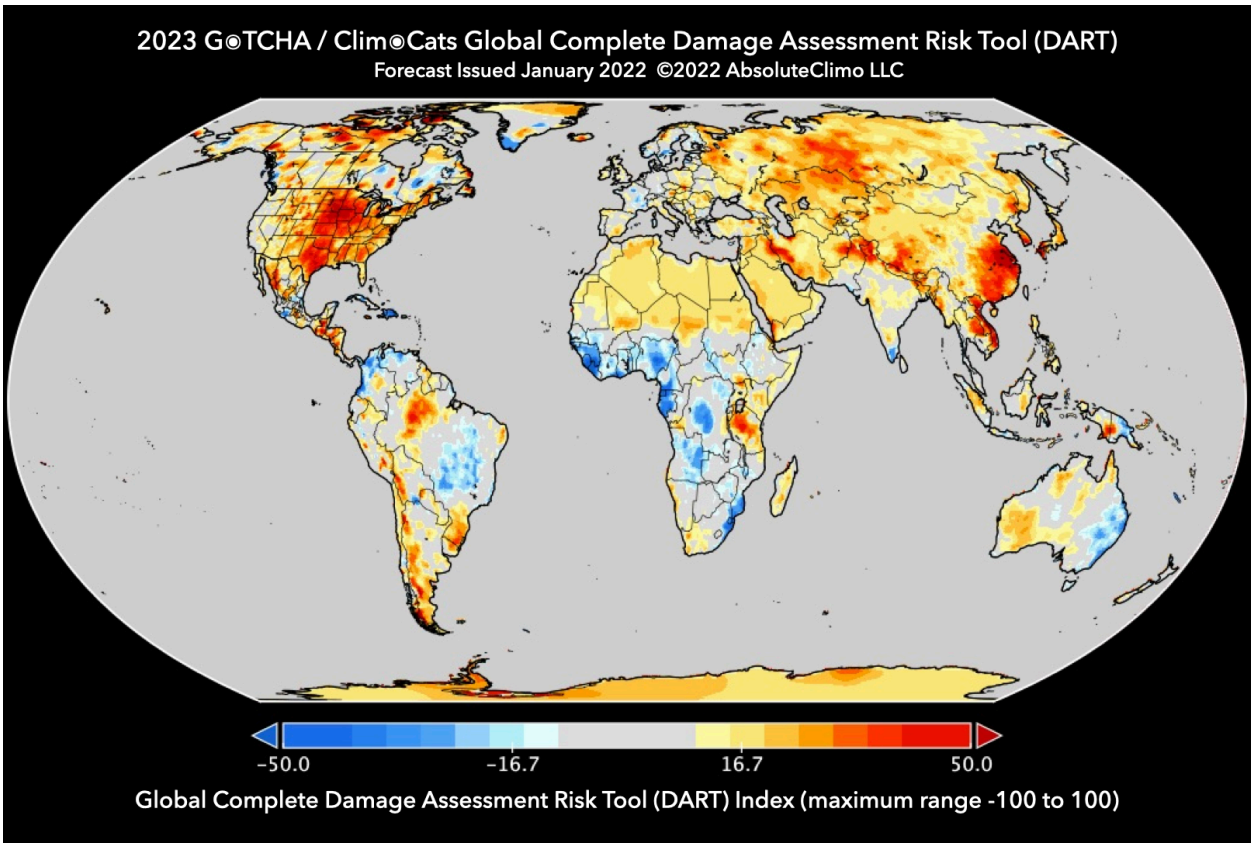

Figure 6. Depicted above is AbsoluteClimo's G◉TCHA & Clim◉Cats new global complete Damage Assessment Risk Tool (DART) which allows clients to assess the complete risk from all climate hazards at any given 25 km grid point from excessive heat, cold, tornadoes, floods, hurricanes, earthquakes, volcanoes, snow, wind, hail, lightning, etc all combined for the first time on the climate-scale. DART empowers our clients to quickly focus on their area(s) of interest like a dart 🎯 to foresee the total risk change from normal on an annual scale out to 5 years. The index ranges from -100 to +100. An index value of -100 means no risk is expected, a value of +100 means total risk from every element is expected and a value of zero (0) means commonly expected risk. This year AbsoluteClimo forecasts high DART indices to occur from south and east China into portions of Southeast Asia, parts of Russia and eastern Europe. A large part of the U.S. mainland and western Canada are also forecast to have rough time this year. G◉TCHA models 80+ climate elements and teams up with Clim◉Cats for machine learning. Individual forecasts comprising the complete DART are also available. DART tail risk forecasts are also available from AbsoluteClimo for bespoke regions of the world as customized solutions. AbsoluteClimo's numerical forecast modeling is probabilistic and consistently skillful (accurate) – a world first, unrivaled. AbsoluteClimo does not use or depend on any third party climate models or climate change scenarios (scenarios are merely "what if" large scale global averages and guesstimates, not forecasts).