

AbsoluteClimo Announces Another Year of Verified Success Directionally Correct 2023 Standout Climate & Finance Forecasts

An Accruing Forecast Track Record Second To None

HONOLULU (4 January 2024) - AbsoluteClimo announces another year of directionally correct standout climate and finance forecasts for 2023 (Table 1 and Figures in the accompanying Appendix). December 7th 2023 Swiss Re issued a press [release*](#) citing "2023: Hurricanes, floods, wildfires and earthquakes" including the Turkey / Syria earthquake and Maui, Hawai'i wildfires among last year's standout natural catastrophe events.

AbsoluteClimo's 2023 Forecasts Ex-Ante	Lead Time	2023 Observed Ex-Post	Verified
Maui & Hawai'i islands Annual Insured Wildfire Loss Risk Ensemble Mean Forecasts: 85% Above Normal Insured Loss Maui 60% Above Normal Insured Loss Big Island	> 3 years	*Swiss Re estimate: \$3.5Bn USD costliest insured loss event ever for the state of Hawai'i	✓
Turkey / Syria Region Earthquake Main Shock Events Risk ≥ 7.0 Richter Scale Ensemble Mean Forecast: 230% Above Normal Annual Risk	> 1 year	6 February 2023 7.8 Main Earthquake *Swiss Re estimate: \$6B USD insured losses	✓
Kamchatka Major Volcanic Eruptions (VEI ≥4) Ensemble Mean Forecast (Figure 1)	> 1 year	Kamchatka Peninsula Eruptions 4/2023 VEI=4	✓
U.S. Hurricane Landfalls Ensemble Mean Forecast: 1 hurricane	> 1 year	1 hurricane landfall (Idalia)	✓
U.S. Hurricanes Insured Losses Below Normal Ensemble Mean Forecast: \$11.17Bn	> 1 year	Hurricane Idalia insured final losses expected to be ≈\$1-2Bn	✓
U.S. Hurricanes Below Normal Insured Tail Risk Losses	> 1 year	Munich Re Q3 benefits from mild North Atlantic hurricane season	✓
Hong Kong Typhoon Economic Losses Above Normal Risk & Massive Tail Risk Ensemble Mean Forecast: \$583M loss	> 5 years	Typhoon Saola biggest in HK in 5 years, claims top \$500Mn USD	✓
Northeastern Italy Floods (April - June) 1% Chance Tail Risk	> 1 year	tail flood event	✓
North India Floods (July) 5% Chance Tail Risk	> 3 years	tail flood event	✓
Floods & economic losses (see Figures 2 & 3)	> 1-3 years	floods and losses	✓

TABLE 1. FORECAST VERIFICATION: ABSOLUTECLIMO'S 2023 FORECASTS VS EX-POST RESULTS.

Founded in 2016, our long, growing proven track record of consistently skillful climate and financial forecasts continues to accrue worldwide for both catastrophic and non-catastrophic outcomes impacting a range of industries and enterprises. AbsoluteClimo's skillful forecast models operate on time scales from monthly, seasonal, annual, multi-annual out to 30 years.

Earthquake, Volcano Forecast Cutting Edge Differentiator: For Asset Owners, Investors, Lenders, (Re)Insurers

AbsoluteClimo uniquely forecasts major earthquakes and volcanic explosivity. These phenomenon are absent from other climate (change) models, climate change scenarios and related risk scores. Major earthquakes are of material concern including to some **pension** portfolios. Large earthquakes (with or without tsunamis) and volcanic explosions can put some energy projects at risk such as hydro and nuclear power plants – a risk which **sustainability** project planners, **asset owners**, public and private **lenders of credit**, **investors**, and **(re)insurers** need to consider **ex ante** with dynamical forecasts.

Last year we [unveiled](#) our **Volcanic Explosivity Index** (VEI) product. For 2023 worldwide, at one year lead time, our climate model expected major volcanic explosion activity (VEI \geq 4.0) to occur only on Russia's Kamchatka Peninsula: a forecast which has [verified perfectly](#) (Figure 1).

Hurricane Idalia: A marginal Category 3 Florida Landfall

There were limited-to-no in situ observations (anemometers on the ground) to verify hurricane Idalia was a Category 3 (or greater) hurricane at Florida landfall. Observations were in support of a Category 1/2 hurricane over land. Most information, as Idalia approached and made landfall, called for major losses including statements like "*Losses from Hurricane Idalia could reach \$20 billion*". Losses were later gradually reduced. Final insured losses from Idalia are expected to [likely](#) range from \approx \$1B-\$2B USD in-line with AbsoluteClimo's projections made in early 2023.

Floods and Related Financial Losses Worldwide: Risk and Tail Risk Predicted

AbsoluteClimo forecast the risk and tail risk with directionally accuracy of several standout flood events, and losses, worldwide in 2023: Northeastern Italy in May (at > 1 year lead time [link](#)), Northern India in July (at > 3 year lead time ([link](#))), devastating eastern Africa floods of October and November at > 2 year lead time (Figure 2), and annual economic flood losses risk for southwestern Mexico at 1 year lead time (Figure 3).

2023 Global Average Warm Temperature: Multiple Climate Elements Involved

Swiss Re's release* also stated: *"Rising temperatures are further increasing the risk of severe droughts and wildfires. With 2023 expected to be the warmest year on record, the effects of climate change are becoming apparent."* General statements on climate and climate change can potentially be misunderstood as an oversimplification. Besides potentially implied anthropogenic (greenhouse gas GHG) forcings with respect to "climate change" linked to "rising temperatures", last year a **strong** El Niño developed with an atmospheric warming response (the Southern Oscillation). 2023 also continued to experience a **very significant** lingering positive stratospheric water vapor anomaly generated by the underappreciated and seemingly forgotten mid-January 2022 Hunga Tonga-Hunga Ha'apai submarine volcanic eruption – **the largest volcanic eruption of the 21st century thus far**. Water vapor is a greenhouse gas which can linger in the stratosphere for years.

Many elements are at play in the complex non-linear climate system, including [biological](#) [see also University of Hawai'i 26 April 2023, "**Secrets to Southern Ocean's critical role in slowing climate change revealed**"], besides merely global average air temperatures, precipitation or emissions. AbsoluteClimo's global climate model includes **80+ climate elements**, much more than global climate change scenarios focusing on five or fewer climate elements. AbsoluteClimo modeling focuses on impact based elements which have direct and indirect impacts on humans and the economies around the world.

In our October 25th 2023 guest lecture – invited by the Department of Finance at the University of Hawai'i at Mānoa Shidler College of Business – and in our December 21st 2023 news [release](#), AbsoluteClimo was the first to show the real key meteorological drivers of the August 8th-9th 2023 local gusty mountain downslope winds on Maui and the Big Island of Hawai'i contributing to the wildfires. Contrary to many weather and climate experts, hurricane Dora was a **red herring** with negligible wildfire influence. AbsoluteClimo demonstrated the dry air aloft originating over the western U.S and especially California between approximately 3,000 to 10,000 feet (914 to 3048 meters) surged southwest to Hawaii around a large and strong high pressure in the northern Pacific Ocean.

Climate Change and Asset Classes

Last February AbsoluteClimo contributed to the Climate Change and Asset Classes panel at the [Pension Bridge](#) ESG Summit. Last June we [announced](#) major product updates including ClimoInsurance, ClimoHealth and our partnership with [Liberate AI](#) for healthcare. Last July Aon (NYSE: AON) and AbsoluteClimo [announced](#) our multi-year collaboration to advance climate modeling for climate-based perils.

Appendix

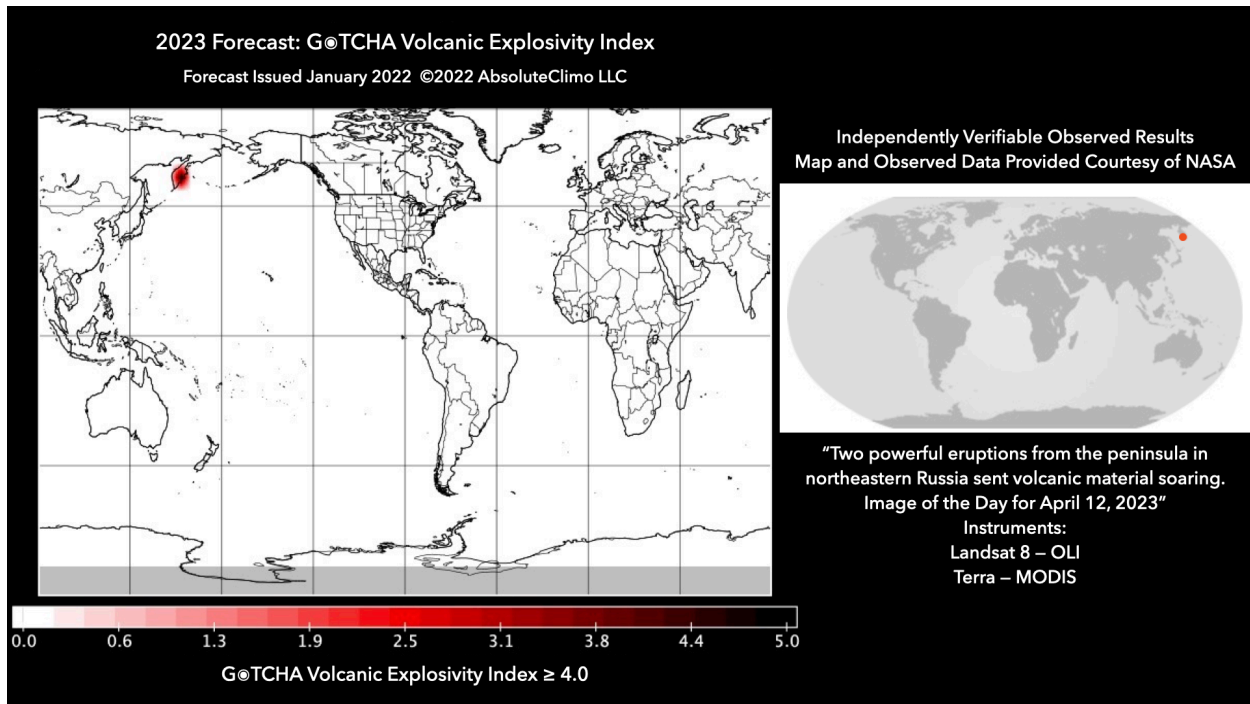


Figure 1. Volcanic eruptions, especially powerful stratospheric penetrating eruptions, are an important and overlooked part of climate (change) system dynamics which government and university climate models do not forecast, also absent from oversold climate change scenarios (IPCC, NGFS, et al) and related overpromised risk scores.

Depicted above in Figure 1 is AbsoluteClimo's worldwide ensemble mean annual forecast for 2023 of accumulated major volcanic explosivity, at large Volcanic Explosivity Index (VEI) values ≥ 4 . Our global climate model, GOTCHA, correctly predicted for 2023 (at one year lead time), major volcanic explosion activity (4+ VEI) worldwide expected to occur on Russia's Kamchatka Peninsula. Ex post, this has verified as a near perfect forecast. The only volcanic explosions in 2023 with VEI of 4 or greater occurred on the 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.

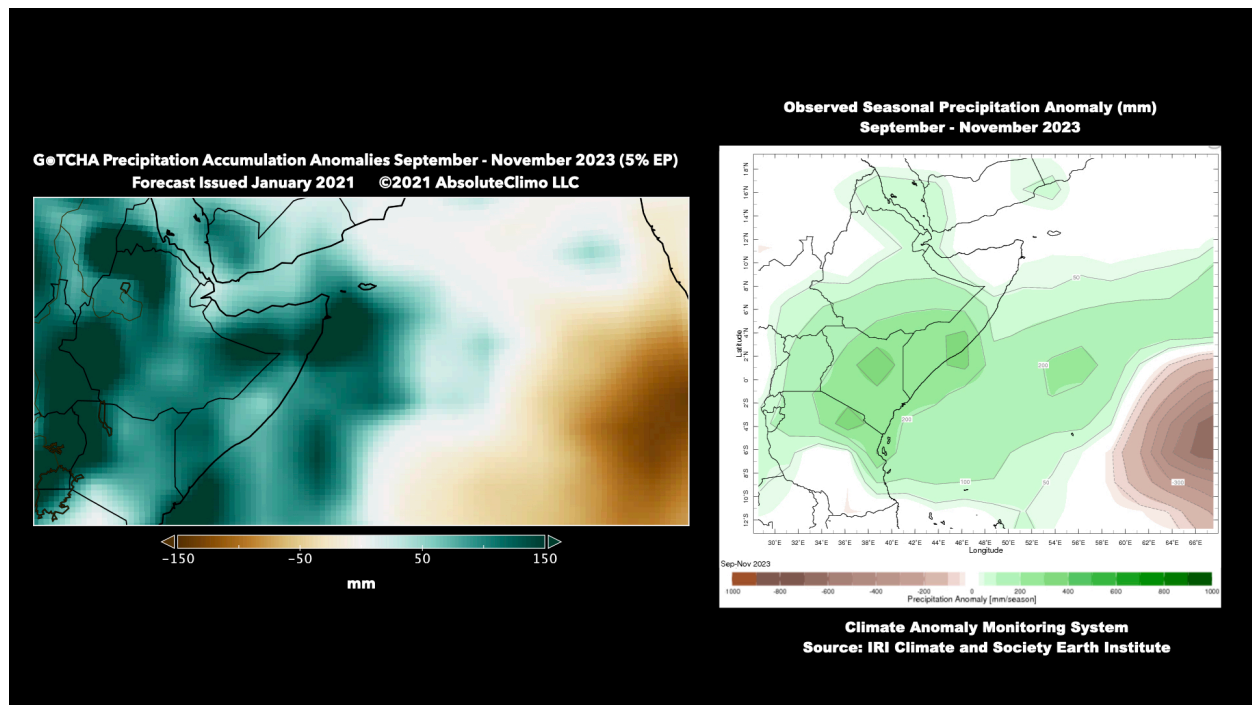


Figure 2. Left: AbsoluteClimo’s 5% probability of exceedance forecast of precipitation anomalies (in millimeters) September through November 2023, at 25 km² resolution issued January 2021. Right: ex-post observed precipitation anomalies (in millimeters) provided by the International Research Institute (IRI) for Climate and Society at Columbia.

Depicted above in Figure 2, left is our September through November 2023 precipitation anomaly forecast issued in January 2021 which correctly predicted the accumulated risk and tail risk of flooding which occurred over a section of eastern Africa during the time frame. Late last year NASA [reported](#): **“Devastating Flooding in East Africa”** and stated, **“Heavy rainfall led to extensive flooding in *Somalia, Ethiopia, and Kenya* in October and November 2023. The floods came in the wake of the most prolonged drought on record, which left millions of people food insecure between 2020 and 2023. *Since October 1, flooding has killed more than 100 people and displaced more than 700,000, according to the United Nations Office for the Coordination of Humanitarian Affairs.*”**

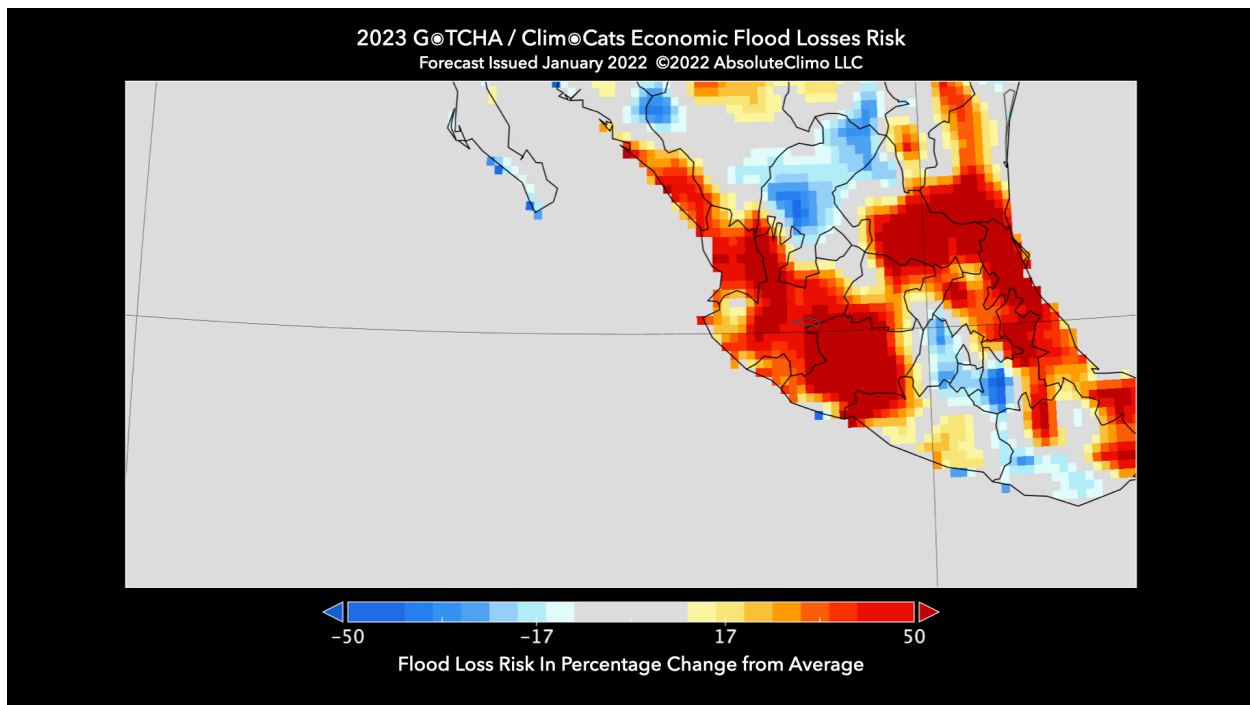


Figure 3. Depicted above is AbsoluteClimo’s GOTCHA & ClimoCats 2023 annual forecast, at 1 year lead time, of Economic Flood Losses Risk in percentage change from average, focusing on southwestern Mexico. In late October 2023 hurricane Otis made landfall west of Acapulco with landslides and flooding resulted from heavy rain in the southwest Mexico region contributing to the expected above normal flood losses. Swiss Re’s aforementioned news release* estimates hurricane Otis will likely be the costliest insured event in Mexico.

About AbsoluteClimo LLC

Founded in 2016, AbsoluteClimo’s (absoluteclimo.com) mission is bettering life on Earth (©) by helping people impacted by climate variability and change. AbsoluteClimo LLC, 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 finance and investing 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. AbsoluteClimo Press Contact Kathryn Chen: kathryn.chen@absoluteclimo.com.