

Communicating the Economic Impact of Climate Change with Satellite Imagery



Geospatial intelligence can play a fundamental role in communicating the economic cost of climate change in the 21st century. With more availability of spatial resolution, the environmental effects of global warming are becoming more noticeable from remote sensing techniques. Earth observation satellites are increasing the transparency between industry, policymakers and environmentalists, providing high-quality ammunition for environmental activists.

While melting glaciers, sea level rise and extreme weather are regarded as the Earth's 'tears' being shed in response to climate change, this actually doesn't go far enough. Although we may not realize it, climate change has a far greater influence on our daily

lives.

Imaging satellites

Imaging satellites help mitigate the effects of climate change through more environmental accountability. As surface temperatures rise and fall, patterns emerge in human activity, natural resource use and environmental degradation. With the mobilization of near-real-time sub-30cm resolution and machine learning capabilities, climate change can be monitored with unprecedented insight.

As humans welcome more heatwaves, the geospatial industry can begin correlating incremental surface temperature fluctuations with the financial and economic impact as symptoms of global warming. Satellite-derived artificial intelligence helps assess the impact of climate change on costs relating to parking, construction, traffic delays, the price of and demand for fuel, water, the environment and much more. For every single-digit rise or fall in extreme temperature levels, machine learning algorithms extract caveats invisible to the naked eye underneath ones and zeros of pixelated imagery.

By observing the movement of machines and cars in near real time, we build and partition extreme weather databases to correlate anomalistic patterns of activity in geospatial datasets. Data analytics companies can assess the effects of climate change on the costs of courier delivery systems, national tourism, mining and agriculture. As commercial operations run at a loss of hundreds of billions of dollars, geospatial intelligence (GEOINT) can reveal the cost burden from reduced consumer demand in restaurants, malls, shops, event management and more.

While global warming contributes to more volatile health effects and imbalanced circadian rhythms of ecosystems, industries and business that are affected by heatwaves due to working outdoors may prefer to operate in cooler conditions during the evening and overnight. With rising daily temperature changes above 20°C (36°F) in surface temperature, analysts may correlate night-time construction and activity with urbanization and development. However, it is also a manifestation of rising temperatures.

[Synthetic aperture radar](#) (SAR) may be one of the most scalable methods to monitor communities that are diverting operations to more optimal temperature ranges in order to mitigate unnecessary financial expenditures due to heat and cold. It may provide insight into the adoption of night-time activity trends, outdated vehicles and more heat-tolerant machinery.

Monitoring the cost of greenhouse emissions

GEOINT helps monitor the costs of greenhouse emissions on coral reefs, forest health ecosystems, and the spread of disease. As homo sapiens become more affected by abnormal weather, nocturnal routines and less outdoor activity, geospatial communities can aid health industries in forecasting the time estimations, health influence and disease tolerance.

It is important to share inefficient uses of time and money emanating from rising temperatures and extreme weather. This knowledge can help us to establish industry standards that require companies to share the economic impact of climate change. Predictive analytics and enhanced availability of GEOINT can more accurately predict the damage and costs of the greenhouse effect. By incentivizing and incorporating climate data science positions, companies can begin democratizing the costly outcome from periods of extreme heat and cold. For it is the responsibility of each of us to share how climate change is influencing our passion, industry and future. With this knowledge, the intelligence community is challenged to take on a larger role in the preservation of planet Earth.

