efficiently crunched a computationally expensive algorithm, saving months of work. The map itself is now a public resource on Earth Engine, and Weiss and his team are using it to produce better forecasts of malaria outbreaks.

MORE THAN PRETTY PICTURES

The growing fleet of satellite companies is serving up an increasingly diverse menu of data and images. Around 20 companies worldwide now offer or plan to offer Earth-observing capabilities. These firms, which have conventionally served military and private-sector clients in finance, agriculture and other arenas, are increasing their overtures to scientists.

In 2017, satellite company DigitalGlobe in Westminster, Colorado, provided scientists with high-resolution images worth around $6 million through its DigitalGlobe Foundation, according to the foundation's president, Kumar Navulur. For some researchers, the company's super-sharp satellite-borne cameras have enabled previously difficult or impossible studies. Sarah Parcak, for example, an archaeologist at the University of Alabama at Birmingham, has used DigitalGlobe imagery to discover hidden sites in Egypt and elsewhere, and to track looting incidents.

Satellogic, a company in Buenos Aires founded in 2010, has promised to make hyperspectral data — information-rich imagery derived from light in dozens of wavelength bands — available to any scientist who wants them. No public satellite currently collects such data, which many scientists prize for its usefulness in applications such as detecting drought stress in plants and exploring for minerals. The company says that it has shared hyperspectral data with around two dozen researchers; Roy says he got access to some data for his Louisiana research after an e-mail exchange.

The satellite company Planet, based in San Francisco, California, images the globe daily, the side of each pixel in an image representing between 3 and 5 metres on the ground. The company makes data available to scientists through its research and education programme, which offers free data for up to 10,000 square kilometres a month to scientists who apply.

Institutions can also take out subscriptions for larger data volumes. Planet has provided imagery to more than 1,600 researchers from more than 70 countries, according to Joseph Mascaro, the company's director of academic programmes. The company's frequent images enabled Andreas Kääb, a geoscientist at the University of Oslo, to track melting glaciers in near-real time in Tibet, which showed that weather and climate change caused the glaciers to suddenly collapse (A. Kääb *et al. Nature Geosci.* **11**, 114–120; 2018). In 2016, he had warned the Chinese government of an impending avalanche in Tibet on the basis of signals he had detected in Planet's images.

Kääb's research has benefited not just from the imagery itself but also from access to company staff, he says. "We typically write to Joe [Mascaro] and he connects us to someone from the team," Kääb says. "I feel to some extent I am part of the game, part of the process."

Using commercial data can have downsides. Companies such as DigitalGlobe and Satellogic typically take pictures that paying customers request, so scientists might find that no data are available for their area or time of interest. Government restrictions can also limit data availability. Mascaro and Navulur are prohibited by US law from sharing extremely high-resolution imagery of certain countries such as Israel, and cannot share data with anyone in Iran or North Korea. Blumenstock once found that Planet imagery he wanted for a project in Afghanistan was unavailable owing to an unspecified reason. Identifying individual people or vehicles is impossible, Navulur says; this alleviates some privacy concerns, although pictures can be sharp enough to make out houses and other structures. (Of course, for large areas of the world, so is Google Maps' public imagery.)

KNOW YOUR NEEDS

Use of commercial images can also be restricted. Scientists are free to share or publish most government data or data they have collected themselves. But they are typically limited to publishing only the results of studies of commercial data, and at most a limited number of illustrative images.

Many researchers are moving towards a hybrid approach, combining public and commercial data, and running analyses locally or in the cloud, depending on need. Weiss still uses his tried-and-tested ArcGIS software from Esri for studies of small regions, and jumps to Earth Engine for global analyses.

The new offerings herald a shift from an era when scientists had to spend much of their time gathering and preparing data to one in which they're thinking about how to use them. "Data isn't an issue any more," says Roy. "The next generation is going to be about what kinds of questions are we going to be able to ask?" ■

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CORRECTION

The Careers feature 'Behind the scenes' (*Nature* **556**, 525–527; 2018) erred in its description of the winning photo. Callie Veelenturf was measuring pH, conductivity and temperature after the turtle had laid her eggs, not taking samples beforehand.

PUBLISHING

Unequal authorship

An analysis of more than 10 million scientific and medical studies published between 2002 and 2018 suggests that male authors will continue to outnumber female authors for at least the rest of this century. The findings, published in *PLoS Biology*, examined articles in science, technology, engineering, mathematics and medicine (L. Holman *et al. PLoS Biol.* **16**, e2004956; 2018). Female authors were particularly scarce in the fields of physics, computer science, maths and surgery. For example, women accounted for just 13% of prestigious last-author spots in physics studies. That percentage has crept upwards by about 0.1% a year since 2002, suggesting that if current trends hold, authorship in physics studies could reach equality in roughly 260 years. The gender disparity in authorship was especially pronounced in papers from Japan, Germany and Switzerland, whereas the most gender-equitable countries were in South America, Africa and elsewhere in Europe. "Without novel interventions, these fields are likely to remain gender-biased for many decades," says lead author Luke Holman, an evolutionary biologist at the University of Melbourne in Australia. "Despite recent gains, we still have far to go."

CONDUCT

Drop harassers

An online petition is calling for the US National Academy of Sciences (NAS) to revoke the membership of scientists who commit sexual harassment or assault. The move brings fresh attention to a troubling issue. As of 23 May, the petition, created by neuroscientist BethAnn McLaughlin of the Vanderbilt Kennedy Center in Nashville, Tennessee, had gained 2,289 signatures. "I'm impressed by the response," McLaughlin says. "It speaks to the fact that time's up in academia." Comments on the petition point to other non-scientific organizations that have revoked membership for misconduct. In February, the US National Science Foundation (NSF) announced that it would require universities and institutions to disclose the identities of NSF-funded researchers who have been disciplined for harassment. The NAS takes harassment and assault "very seriously", says Jennifer Walsh, a spokesperson for the National Academies of Sciences, Engineering, and Medicine. A 22 May statement by the presidents of each of the three academies says that a dialogue has started about the standards of professional conduct for membership.