

News in focus

wild populations and also because hybrids can be affected by high rates of miscarriage and birth defects, says Banes. While re-examining the samples from the 2011 paper, the team realized that one of the sequences thought to be Sumatran (*Pongo abelii*) was actually Tapanuli (*Pongo tapanuliensis*), a third species of orangutan that was described only in 2017 (ref. 4).

Unfortunately, the 2011 paper had wrongly assigned the Tapanuli genome to Baldy, a male orangutan, rather than its actual owner, a female orangutan named Bubbles (both are now dead).

Although Baldy has no living descendants, Bubbles has several offspring at zoos around the world, all of which are Sumatran–Tapanuli hybrids. Zookeepers will now have to decide whether to stop breeding Bubbles' descendants to avoid further hybridization, says Vincent Nijman, an anthropologist at Oxford Brookes University, UK.

'Bigger concerns'

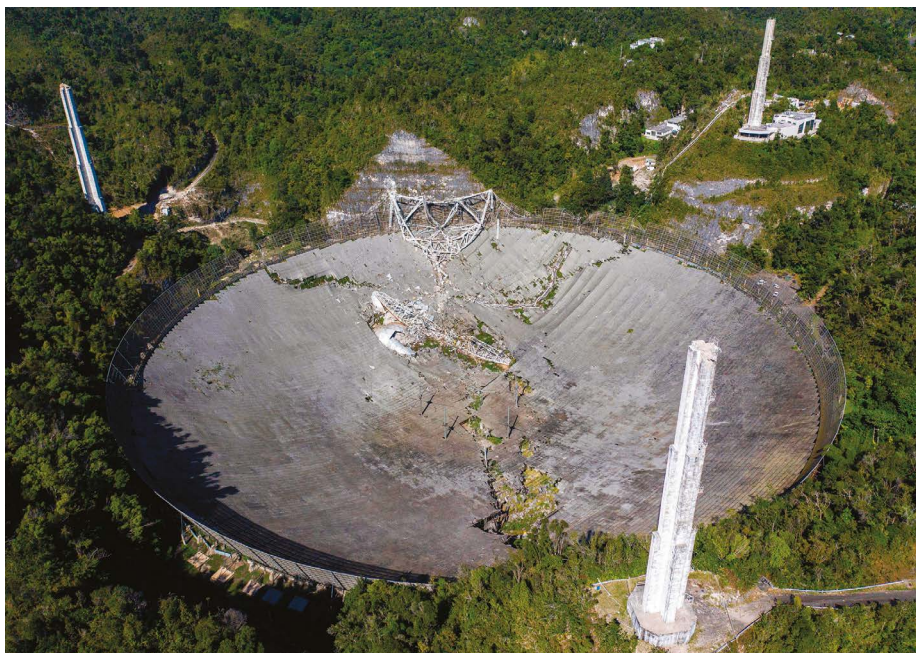
However, Nijman also argues that the errors will have little effect on orangutan conservation as a whole. Zoos often bill their animals as a back-up for endangered species, but conservationists are much more focused on the thousands of orangutans in the wild that are threatened by deforestation. "I think we have bigger concerns than some mixed-up samples," says Erik Meijaard, a conservation scientist at Borneo Futures, a conservation consultancy company based in Bandar Seri Begawan, Brunei.

Michael Krützen, an evolutionary geneticist at the University of Zurich in Switzerland, agrees that although the errors are "annoying", their impact on downstream research is probably minimal.

A spokesperson for *Nature* declined to comment on why the errors in the 2011 paper were not caught by peer review, citing concerns about confidentiality. (*Nature's* news team is editorially independent of its academic-publishing operation.) "However, we would like to stress that we take our responsibility to maintain the accuracy of the scientific record very seriously," they wrote in an e-mail. "If issues are raised about any paper we have published, we will look into them carefully and update the literature where appropriate."

Banes says that it's important not to blame individual scientists for such errors, not least because it could discourage efforts to correct mistakes in future. "I think any scientist could have made these mistakes," he says. "But if we all jump out and say, 'oh my god, how could they have been so stupid?', no one is ever going to correct anything. That shame is detrimental to science."

1. Locke, D. P. et al. *Nature* **469**, 529–533 (2011).
2. Banes, G. L. et al. *Sci. Data* **9**, 485 (2022).
3. Locke, D. P. et al. *Nature* **608**, E36 (2022).
4. Nater, A. et al. *Curr. Biol.* **27**, 3487–3498 (2017).



RICARDO ARDUENGO/AFP VIA GETTY

The Arecibo Observatory's 305-metre-wide telescope dish was destroyed in late 2020.

RENOWNED ARECIBO TELESCOPE WON'T BE REBUILT

The US National Science Foundation has decided to open an educational centre at the site instead.

By Alexandra Witze

After a world-famous radio telescope at the Arecibo Observatory in Puerto Rico collapsed two years ago, many scientists hoped that the US National Science Foundation (NSF), which runs the facility, would eventually build a new one to replace it. Instead, the agency has announced that it will establish an educational centre for science, technology, engineering and mathematics (STEM) at the site. The revised plan might wind down or drastically alter the remaining research being done at Arecibo.

"It's heartbreaking," says Héctor Arce, an astronomer at Yale University in New Haven, Connecticut, who is from Puerto Rico and has worked on Arecibo advocacy efforts. "To many, it seems like yet another unjust way of treating the colonial territory of Puerto Rico."

The NSF says that it is following community recommendations in not rebuilding the large telescope and instead focusing on education. "We are not closing Arecibo," says Sean Jones, head of the NSF's Directorate of Mathematical and Physical Sciences. "We think this new approach and new centre will be catalytic in many areas."

The agency announced its plans on 13 October in a call for proposals. It is asking for ideas about setting up and running an educational centre at Arecibo, at a cost between US\$1 million and \$3 million a year for five years, starting in 2023. That money might or might not include the funds needed to operate the research facilities at Arecibo that are still in use, such as a 12-metre radio antenna and a lidar system that uses lasers to study Earth's atmosphere.

The situation "could be worse", says Abel Méndez, an astrobiologist at the University of Puerto Rico at Arecibo. But "it could be much, much better".

"It is devastating to know that that's their ultimate decision," says Desireé Cotto-Figueroa, an astronomer at the University of Puerto Rico at Humacao. "Especially despite all the efforts made by the staff and scientists of the Arecibo Observatory and by the general scientific community to keep it working as the research centre of excellence that it has always been with the observing facilities that are left."

One key question is how the Arecibo site will draw students and teachers if there is little active research to participate in. "Yet the NSF calls for proposals for a world-class

educational institution,” says Anne Virkki, a planetary scientist at the University of Helsinki. “How does anyone do that without the world-class scientists, engineers and instruments?”

The NSF says that this is precisely what it is asking for ideas about. The new centre could support ongoing work in astronomy and planetary science, or it could focus on other areas of research, such as the biological sciences, says James L. Moore III, the head of the NSF’s education and human-resources directorate. “Here’s an opportunity to reimagine what the possibilities could be,” he says.

A historical site

The Arecibo Observatory has long been a powerhouse of STEM education in Puerto Rico because of its renowned telescope and place in astronomical history. Students who trained there have gone on to become astronomers and planetary scientists in many countries.

The 305-metre-wide radio telescope that collapsed in 2020 had a key role in many scientific fields for more than half a century, including the search for extraterrestrial life, the discovery of the first exoplanets and of gravitational waves, and the study of near-Earth asteroids and of fast radio bursts.

The NSF has run the observatory since the 1970s, working with a series of contractors. It has been trying to wind down investment in Arecibo since 2006, to shift funding to newer astronomical facilities. Advocates rallied and research continued, but the observatory faced fresh challenges in 2017, when Hurricane Maria damaged much of the facility, and in early 2020, when a series of earthquakes caused more damage.

Then came the collapse of the large dish. One of its crucial supporting cables had failed in August 2020, and after another snapped in November that year, the NSF decided that the telescope was too structurally unsound to repair.

Research has continued at the observatory’s smaller facilities. Currently funded projects using those instruments will be able to finish up, Jones says, and scientists can ask to continue using them under the scope of the educational centre.

The lidar facilities include a potassium laser that studies the temperature of the layers of Earth’s atmosphere. The 12-metre dish antenna is used for a range of research, including mapping the Sun for space-weather studies, and timing the spin rate of some rapidly revolving collapsed stars known as pulsars.

Many scientists who work with Arecibo instruments are now scrambling to decide how to wind down their research projects. Under the proposed plan, the site will no longer be called the Arecibo Observatory, becoming instead the Arecibo Center for STEM Education and Research.

Do soaring energy costs mean we are using less?

Behavioural scientists want to know how much energy people are conserving, and how long new habits will last.

A hard winter is fast approaching in Europe. With inflation already straining household budgets in many countries, the war in Ukraine is constricting oil and gas supplies just as demand is expected to rise during the cold winter months. The effects could be devastating, particularly for people who already live in poverty. There is evidence that some have started conserving energy in response. But how much will they cut back — and how long will new habits last?

Behavioural scientists are gearing up to study these questions. “It’s a very important and interesting time for energy conservation,” says Mark Andor, a behavioural economist at the RWI — Leibniz Institute for Economic Research in Essen, Germany. “There is a lot of research going on at the moment.”

Early evidence suggests that belt-tightening has begun. An August survey about the cost-of-living crisis by the

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UK Office for National Statistics (see go.nature.com/3te3tdk) found that people there are already cutting back on gas and electricity use, notes Lorraine Whitmarsh, an environmental psychologist at the University of Bath, UK. A study in Germany reported a 6% decrease in natural-gas consumption in March and April (O. Ruhnau *et al.* Preprint at Econstor <http://hdl.handle.net/10419/261082>; 2022), and consumption was down by 29% in the country during the first full week in October, relative to the same week in 2021.

Short-term fix

Studies of past energy-price shocks, such as the 1970s oil crisis, suggest that consumers tended to focus more on immediate cost cutting and less on longer-term investments in energy-sparing appliances and infrastructure, such as efficient heating

systems or improved insulation, says Whitmarsh. So far, few data are available to show the extent to which people are turning to such investments during the current crisis. But Andor notes that the ability to make such changes could be limited. Heat pumps, for example, are in short supply in Germany, as are people with the expertise to install them.

Researchers are also keen to explore what measures might nudge people to conserve energy. Past research has established that simply getting direct feedback on energy usage from a meter can improve conservation by 5–15% (see go.nature.com/3tt4tuq). In 2020, a randomized controlled trial showed that adding appliance-level detail can improve savings by another 5% over aggregate household data (see go.nature.com/3vihjar). Detailed data probably help to dispel misconceptions about which appliances are using the most energy, says Andor. “I have the feeling that consumers are afraid of the prices,” he says. “But they are a little lost.”

Behavioural economist Madeline Werthschulte at the ZEW — Leibniz Centre for European Economic Research in Mannheim, Germany, would like to collaborate with natural-gas suppliers to learn more about the kinds of incentive — such as modest financial rewards for reducing gas usage — that could spur consumers to conserve more.

Will habits fade?

If past price spikes are any guide, new energy-conservation habits fade quickly, says Whitmarsh. “Consumers do cut back on energy, but when prices go back to normal again, their habits rebound,” she says. “There isn’t very much that endures.”

This time, it is possible that growing awareness of the impacts of climate change could change this pattern, she adds. For example, people who have been thinking of conserving energy for climate reasons might see the cost-of-living crisis as an impetus to make changes, and maintain them for longer than they would have done in the past.

Even so, energy conservation often requires sacrifice, and can be difficult to maintain. “I do not expect that this sticks for an average consumer,” says Andor. “People like comfort.”

By Heidi Ledford