Retraction

The authors of the Report “Secondary siRNAs result from unprimed RNA synthesis and form a distinct class” (1) have been made aware of duplications in Fig. 2D and supplementary figures S1C and S3C. We attempted to find the original data from 2007, but all authors have left the Hubrecht Institute, where the work was performed, and the data could not be located. Although other data in the paper were consistent with the conclusions supported by Fig. 2D and figs. S1C and S3C, all data were taken into account in the review of the paper, and the loss of these figures weakens the conclusions. Therefore, in the spirit of full transparency, we have decided to retract the paper.

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REFERENCES AND NOTES
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Eroded protections threaten U.S. forests

Despite record-breaking mega-fires in 2020 (1), the U.S. Department of Agriculture (USDA) recently removed the 2001 Roadless Rule protection for 9.37 million acres of Tongass National Forest in Alaska (2). The intact and fire-resistant Tongass temperate rainforest is home to valuable biodiversity and functions as an important carbon sink, making it vital in combatting both global extinction risk and climate change (3, 4). In light of catastrophic fires and rapid climate change, the government needs to rigorously and transparently evaluate costs and benefits before repealing any environmental protections.

Ending the rule prohibiting roads in the Tongass exposes 165,000 acres of old-growth rainforest to logging (2) and leaves the remaining rainforest vulnerable to degradation from road-building and potential mining and fossil fuel extraction (5, 6). Industrial expansion has ecological repercussions through increased emissions, diminished carbon sequestration, and reduced fire resistance (6) as well as potential downstream socio-economic effects for local fishery and tourism industries (7). The Roadless Rule repeal was opposed by several local tribes and 96% of the quarter million letters submitted by the public (2, 7).

The repeal will also enable an economically unviable timber program that has cost U.S. taxpayers more than half a billion dollars in losses since 1980 (8).

The government’s decision to erode protection of Tongass National Park sets a precedent to roll back protections for other remaining intact forests (9) that provide critical carbon storage, protection against species extinction, and refuge against the effects of climate and fire-season intensification (2, 3, 10). Instead of forcing taxpayers to subsidize an ecologically and financially shortsighted initiative, activities such as native reforestation should be implemented. Strategic reforestation, particularly after fires, can provide short- and long-term benefits for the environment, society, and economy by increasing carbon storage (11), reducing erosion, providing habitat for displaced wildlife, and supporting the long-term sustainability of industries like tourism and carbon farming (12). In the face of global climate change and intensifying fire seasons, the U.S. government should be seeking to fortify rather than repeal evidence-based protections in a way that supports ecological, social, and economic objectives.

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Space debris puts exploration at risk
Humans have now lived aboard the International Space Station (ISS) for 20 years (1). As we look toward the next 20 years, we must address the dangers that space debris poses to both manned missions and crucial satellites. National policy-makers and international organizations must develop actionable rules and regulations that preserve our ability to explore space.

With tens of millions of pieces of space junk rocketing around our planet at thousands of kilometers an hour, debris is a substantial threat to our expanding networks of satellites and even the ISS itself (2–4). The European Space Agency (ESA) puts much of the blame on the failure to properly dispose of expiring satellites (2). The recently signed Artemis Accords similarly point to the value of “end-of-mission planning and implementation [and... ] post-mission disposal” in reducing debris (5). With the rapid expansion of the satellite orbital population—many of which are relatively cheaply produced with comparatively high failure rates (6)—this problem will likely get much worse before it gets better.

Unfortunately, Cold War cooperation led to rules designed primarily for nation states, not for the corporations that are now launching literally thousands of new satellites. Meanwhile, the nation states have mostly neglected to implement the necessary local space regulations that would promote the long-term sustainability of equitable space exploration. This tragedy of the commons will damage the space environment and eventually impair commercial space endeavors. Space debris threatens efforts ranging from the emerging mini-satellite mega-constellations that aim to democratize internet access to space tourism. In a worst case scenario, orbital debris could start a self-sustaining cascade of destruction that would litter the Low Earth Orbit with enough debris to make it effectively unusable (7).

To maintain a sustainable space environment, all states and their nationals must take responsibility for reducing the creation of new space debris. Both nations and private corporations should design more reliable satellites that are less likely to malfunction, deorbit satellites before they become inoperable and hazardous, and promote the emerging private-sector industries that are collecting defunct satellites and repairing and refueling older satellites. Developing public-private collaborations can enhance the tracking of even small man-made particles zooming around in orbit.

The United Nations’ Committee on the Peaceful Uses of Outer Space (COPUOS) may be the appropriate forum to accomplish these goals. COPUOS can provide both the desperately needed development of norms, the required regulatory support, and the necessary scientific and technical expertise to direct these efforts. During the past 20 years, astronauts on the ISS have conducted space-based research representing the work of scientists from more than 100 countries (7), and science diplomacy has often prefaced cross-boundary collaboration on Earth. We must preserve the amazing opportunities space exploration provides by developing better sustainable practices before it is too late.

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