WHAT TO HOPE FOR EVERY MONTH OF 2019 FOR TROPICAL FORESTS AND CLIMATE CHANGE

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Hope springs eternal. 2018 was an upsetting year for climate change. Hurricanes battered the Philippines and North Carolina and forest fires ravaged California. The Intergovernmental Panel on Climate Change warned against warming the planet by even 1.5 °C and called for massive and rapid transformations of energy and land-use. Despite these warnings global carbon dioxide emissions jumped 2.7% to an all-time high. But there is a lot to hope for in 2019 related to tropical forests as a solution to climate change. Here's a month-by-month roundup: **January: United States Government restores climate funding.** Last November, American voters ended two years of one-party rule in Washington. When the new House majority takes office in January I'm hoping they'll use their "power of the purse" to restore funding for clean energy, earth observation, and the Green Climate Fund. Details of a proposed "Green New Deal" are sparse but I'm glad some proponents recognize the importance of forests and wetlands. I'm hoping this jolt of new enthusiasm for climate on the Congressional left will spread to the center and right. It's encouraging to see bipartisan carbon pricing bills resurfacing in Congress, as well as the expansion of carbon pricing in seven states. **February: Airlines turn to forests to meet carbon-neutral growth pledge.** In 2016 many of the world's airlines pledged not to increase net emissions from international flights from 2021 onward. This "carbon-neutral growth" target is to be achieved partly by cutting emissions but also through offsets. It's now up to the Montreal-based International Civil Aviation Organization to decide which offsets will be acceptable. ICAO is scheduled to set out criteria in February and then vet proposals from specific programs' units throughout the summer. I hope they thread a needle by including forest-based offsets but only if standards are high—e.g. national or state-level reductions rather than project-level credits like those left over from the Clean Development Mechanism. **March: Proceeds from Colombia's carbon tax support forest conservation.** In December, 2016, Colombia put a $5 tax on every ton of carbon dioxide. A quarter of the proceeds go into a "Sustainable Colombia Fund" for protecting ecosystems, coastlines, and water sources. By March the Fund is expected to open a call for proposals. I'm looking forward to seeing this fund put to work protecting and restoring forests in the country with the fifth-largest area of tropical forest. Colombia's carbon tax also offers another innovative way to support forest conservation: companies can reduce their carbon tax liability by buying offset credits from forest conservation or other climate projects. **April: California Air**

Resources Board endorses a Tropical Forest Standard. California has long tantalized forest and climate supporters with the possibility that its cap-and-trade program could begin accepting carbon credits from tropical forest states that reduce deforestation. In November the California Air Resources Board considered taking a big step in this direction by endorsing a California Tropical Forest Standard. Endorsing the standard wouldn't lead directly to offsets, but it would set a high bar for the quality of emission reductions from tropical forest conservation that could be bought and sold by others. The draft Standard received many public comments, including letters of support from Jane Goodall and more than 120 prominent scientists. Yet at a public meeting in Sacramento, the Air Resources Board once again demurred, tabling the decision until April. I'm hoping the Board will endorse the Standard then. **May: the International Space Station maps forests in 3-D.** Up until now, high-resolution measurements of the carbon stored by forests have been limited to relatively small regions that can be flown over by airplanes. But that's about to change as forest-monitoring lasers will soon be mounted on the International Space Station. A SpaceX rocket carrying the instruments to the ISS launched successfully in December and they should start sending back three-dimensional measurements of tropical and temperate forests by May. My hope is that this big step in reliable measurement of forest carbon stocks will lead to a giant leap for forest finance. **June: Carbon Fund payments help Democratic Republic of the Congo protect globally important peat forests.** The Democratic Republic of Congo not only has the second-most tropical forest after Brazil, it also has the largest area of tropical peatland outside of Indonesia. Keeping Congo's carbon-rich peat forests from going up in smoke should be a high international funding priority. Last September Congo and the Forest Carbon Partnership Facility Carbon Fund signed an "emission reductions payment agreement" that would provide up to $55 million if—and only if—deforestation stays low in the peat-rich province of Mai Ndombe. I hope Congo's first-of-its-kind agreement with the Carbon Fund leads to low-emission rural development with local benefits, and that the Carbon Fund will sign similar agreements with other tropical regions when it meets in June in Paris. **July: Companies and states agree to sustainable sourcing partnerships.** More than 400 of the world's biggest companies resolved in 2010 to achieve zero net deforestation by 2020. But follow-through on these commitments by the companies in the Consumer Goods Forum has been slow. A big challenge for sustainable supply-chain initiatives has been the difficulty of monitoring deforestation across millions of individual farms from which beef, soy, palm oil, and other commodities are sourced. One potential solution is for companies to source their products from states or provinces that curtail deforestation—a jurisdictional approach. It's encouraging to see sustainable sourcing partnerships between companies and jurisdictions beginning to form. I'm hoping to see more such partnerships come to fruition by

July. **August: Peru's palm oil industry vows to grow without deforestation**. A decade ago Peru was among a small group of tropical countries with "high forest cover and low deforestation." But from 2001 to 2017 the rate of forest loss in the country with the fourth-most tropical forest more than tripled. Palm oil is a small but rapidly growing contributor to deforestation in Peru, joining cattle ranching, cocoa, coca, and gold mining. The palm oil industry in Peru has big plans to keep growing, but a broad-based coalition would like this expansion to happen on cleared lands rather than at the expense of forests as in Indonesia and Malaysia. I'm hoping the Peruvian palm oil industry will publicly commit to deforestation-free production in 2019 before the Expo Amazónica trade fair in Iquitos in August. **September: India's finance commission extends fiscal transfers for forests**. In 2014 India's Finance Commission made the groundbreaking decision to include forest cover in the formula that determines how much tax revenue each of India's 29 states receives annually. As a result, $6-12 billion per year now flows into states' general budgets on the basis of their forest cover, potentially providing a massive incentive to protect and restore forests. This is the world's largest intergovernmental fiscal transfer for forests, and one of the most exciting and innovative as well. In September the tax-revenue devolution formula comes up for renewal and I'm hoping the Finance Commission keeps forests in the formula. **October: Ecuador accesses first results-based payments from the Green Climate Fund.** Ecuador is one of three countries to have completed all four UNFCCC pre-requirements for reducing emissions from deforestation (REDD+). This makes it eligible to access a portion of the $500 million allocated by the Green Climate Fund for results-based payments for REDD+. Ecuador claims 29 million tons of emission reductions achieved from 2009-2014 relative to 2000-2008 levels. I'm hoping the Green Climate Fund will approve an agreement with Ecuador to pay for its emission reductions, if not at its spring board meeting in February, then by its fall board meeting in October. **November: Brazil's forests dodge a Bolsonaro-shaped bullet.** Brazil is the biggest climate success story of the last decade. It cut Amazon deforestation by 80% between 2004-2012 and kept it in a holding pattern since then. Those globally significant gains are threatened if President-Elect Bolsonaro acts on his violent anti-environmental and anti-indigenous campaign rhetoric. But as my colleagues describe, forest conservation can achieve wins even in the Bolsonaro era by demonstrating the benefits of standing forests to farmers. A concrete example of this could be if Brazil applies its more than 3 billion tons of uncompensated REDD+ emission reductions toward helping farmers market their crops as carbon neutral. When Brazil's world-class PRODES deforestation data is released in November, I'll be hoping that strong civil society partnerships and positive incentives for farmers have contained Bolsonaro's threats to be more bark than bite. **December: At the United Nations climate summit in Chile countries step up their**

pledges—and finance. Ever since the successful Paris agreement in 2015, UN climate negotiations have had lower stakes and drawn less attention. Climate diplomats have turned their attention to ironing out the details of the Paris "rulebook." That lull comes to an end this year as two 2020 deadlines approach: countries' five-year updates to their national climate pledges, and rich countries' $100 billion-per-year target for funding mobilization. Let's hope 2019 sees stronger climate action from all countries, matched by the funding to make it happen. **Honorable Mention: Indonesia's drop in deforestation survives another fire season.** The last two years have seen forest loss rise to record highs across the tropics. One big exception was in Indonesia where forest loss dropped nearly 50% from the previous year. But past drops in Indonesia's deforestation following El Niño years have proven ephemeral. Will this one last? The World Meteorological Organization predicts a weak El Niño in 2019, which will put Indonesia's fire-prevention efforts to the test. I'm hoping Indonesia's deforestation rate will continue to fall. As you can see, there are many things to hope for in 2019 for tropical forests and climate. Please join us at Earth Innovation Institute in hoping—and working—to make them happen. *With thanks to input from Maggie Comstock, Maria DiGiano, Maria Adelaida Fernandez Muñoz, Daniela Goehler, Scott Goetz, Bruno Guay, Alex Lotsch, Chris Meyer, Anit Mukherjee, Dan Nepstad, and Gustavo Suarez de Freitas, and with inspiration from Nancy Birdsall's annual development wish list.*

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