



# How about some good climate news for a change?

**The biggest opportunities – and the biggest risks – we face lie in the actions we take to protect and restore the ecosystems that sustain life on Earth.**

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Man-made emissions are the main cause of climate change, and we need to cut them as fast as possible. But most of the solutions being touted will take decades to make a real difference. Too often we ignore the fastest, cheapest, and easiest ways to fight global warming at massive scales: Protecting, restoring, and better managing the natural world.

By focusing narrowly on cutting man-made emissions – mainly from burning fossil fuels – the climate community promotes a “gloom and doom” narrative that flies in the face of science, empirical evidence, and common sense.

It goes something like this: World leaders need to sign a treaty limiting global warming to 1.5°C, cut their countries’ emissions in half by 2030, and get us to “net zero” by 2050, thereby stabilizing GHG concentrations in the atmosphere and cooling the planet.

No large country has ever reduced its emissions, which are up nearly 60 percent worldwide since negotiations began. Do you really believe we can predict the climate 30

years out, estimate “safe” levels of warming, then steer the economy to balance out GHG emissions and removals?

Time for a reality check.

Using advanced analytics, supercomputers, and AI we can now monitor the weather in real-time anywhere on Earth. So how is it possible to predict the climate in 2050 when we can't accurately forecast the weather 10 days from now? If mankind is so powerful we can control the climate, then why can't we make it rain in the desert, prevent floods, or stop the next hurricane?

The truth is that, even if we slashed all man-made emissions to zero tomorrow, it would do nothing to stop runaway global warming. Contrary to what you hear, we are out of time.

Then what's the good news?

**The biggest opportunities – and the biggest risks – we face lie in the actions we take to protect and restore the ecosystems that sustain life on Earth.**

**Starting now.**

**If we refocus our energies on improving planetary health – including phasing out toxic petrochemicals – we can make a big difference fast.**

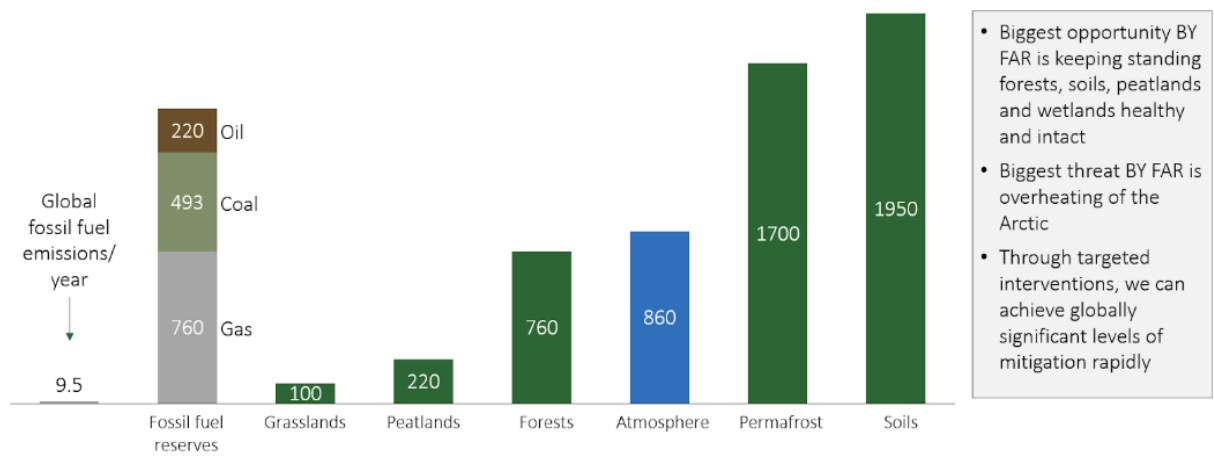
*Let's start with carbon.*

Only 40 to 45% of man-made CO<sub>2</sub> ends up in the atmosphere. Nearly 60% get absorbed by terrestrial and marine ecosystems—mostly forests, soils, and wetlands (including peatlands, coastal wetlands, and permafrost). Keeping these ecosystems healthy and intact is by far the fastest way to combat global warming at mega-scales.

Fossil fuel emissions release 9.5 gigatons of carbon each year. Gross emissions from deforestation are roughly 5.5 gigatons, and carbon removals by terrestrial carbon sinks are 7.5. If you include agriculture, one of the most GHG-intensive industries there is, changing the ways we use and manage land is by far the fastest way to reduce emissions while counteracting some of the worst effects of climate change.

Terrestrial ecosystems store trillions of tons of carbon. Permafrost and soils contain four times more carbon than the entire atmosphere. If we don't act urgently, these threatened ecosystems could release 20 to 30 times more CO<sub>2</sub> than burning fossil fuels does in a year.

**ALL carbon needs to stay “in the ground”, not just fossil fuels**  
Carbon stocks (GtC midpoint estimates)



**Source: The Global Carbon Project 2021 (estimated midpoint ranges) Goldstein A., et al “Protecting irrecoverable carbon in Earth’s ecosystems.” (2020) Nature Climate Change Vol. 10, 287-295**

Cutting down healthy forests sets off a downward spiral. Roughly 70% of the carbon dioxide released goes into the atmosphere for up to 1,000 years. At the same time, we lose the ongoing CO<sub>2</sub> removals those forests would have provided. More often than not, the land gets converted into high-GHG uses, e.g., human development, agriculture, logging, or fossil fuel production.

Planting trees does little to stop climate change. It's the bigger, older trees we need to protect. One percent of trees contain 50 percent of forest carbon. If a forest is growing, no matter how old, it's absorbing and storing CO<sub>2</sub>, and lots of it!

Not only can healthy ecosystems halt carbon dioxide and methane emissions at large magnitudes, they also provide myriad other benefits: global cooling, clean air and water,

food, jobs, and biodiversity. They protect us against floods, soil erosion, droughts, extreme weather, and zoonotic diseases like Ebola, HIV, and COVID-19.

The great news is that simultaneous breakthroughs in technology and know-how make it possible to scale up nature-based climate solutions (NCS) at rapid speeds. We can target interventions with near-surgical precision, then model, measure, and track their impacts over time. We already know what to do, where to do it, and how to do it, using a technology proven to work for hundreds of millions of years.

Even modest changes in the status quo can make an enormous difference over 30- to 50-year timeframes.

Most of the opportunity lies in 9 extractive industries – cattle, palm oil, soy, timber, and mineral extraction among them – and 10 countries. When it comes to saving forests, the Amazon, Congo Basin, and Indonesia get most of the headlines. But there is far more carbon, in total and per acre, in temperate and boreal ecosystems located in Canada, the U.S., Russia, and China. Many are under serious threat.

### Protecting intact ecosystems – especially forests – crucial to stopping global warming

Estimated global carbon stocks by ecosystem, based on geographic extent and average carbon content per hectare

Ecosystem	Estimated global carbon content (Gt C) <sup>a</sup>	Recent loss rate (percentage area per year) <sup>c</sup>	
Mangroves	7.3	0.13	Vulnerable ecosystems could emit 30X more CO <sub>2</sub> than annual fossil fuel emissions
Seagrasses	5.0	0.95	
Marshes	5.6	0.25	
Boreal forests	283	0.18	Temperate and boreal ecosystems contain significantly more carbon than tropical ecosystems (740 vs. 370 GtC)
Temperate broadleaf forests	133	0.35	
Temperate conifer forests	66	0.28	
Tropical dry forests	14	0.58	
Tropical moist forests	295	0.45	
Boreal peatlands	181	0.00	
Temperate peatlands	9.3	0.00	
Tropical peatlands	30	0.60	
Temperate grasslands	39	0.14	
Tropical grasslands	30	0.14	
Montane grasslands	27	0.14	

<sup>a</sup> Typical carbon density is the sum of typical values for aboveground, belowground and soil organic carbon to depths of 30cm (upland mineral soils) or 1m (waterlogged peat and coastal systems).  
<sup>b</sup> The geographic extent of peatlands captured above overlaps with other ecosystems: 56% of the peatland area overlaps with forests and 21% overlaps with grasslands, and 10% undrained croplands of areas of mixed land-use<sup>31</sup>.  
<sup>c</sup> Forest and mangrove loss rates are based on a 2000-2012 timeframe; loss rates in other ecosystems are not tracked as closely and are based on different timeframes (see Supplementary Table 1)  
 Note: 1Gt of carbon = 3,664 Gt CO<sub>2</sub> if released into atmosphere

Source: Goldstein A., et al “[Protecting irrecoverable carbon in Earth’s ecosystems.](#)” (2020) Nature Climate Change Vol. 10, 287-295

No need to drain peatlands to grow palm oil, burn down rainforests to raise cattle, or log old-growth forests for wood. Greening supply chains and renegotiating trade agreements – as hundreds of corporations and many countries have done – can make this happen FAST.

Land-use decisions mostly get made at the local level by individuals, communities, companies, and local authorities.

Anyone can act now to keep our high-priority ecosystems vibrant and healthy.

Just remember: **Before you plant a tree, save a forest!**