



Space Intelligence
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ECOREGION REPORT

Amazon

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Authors and Contributors

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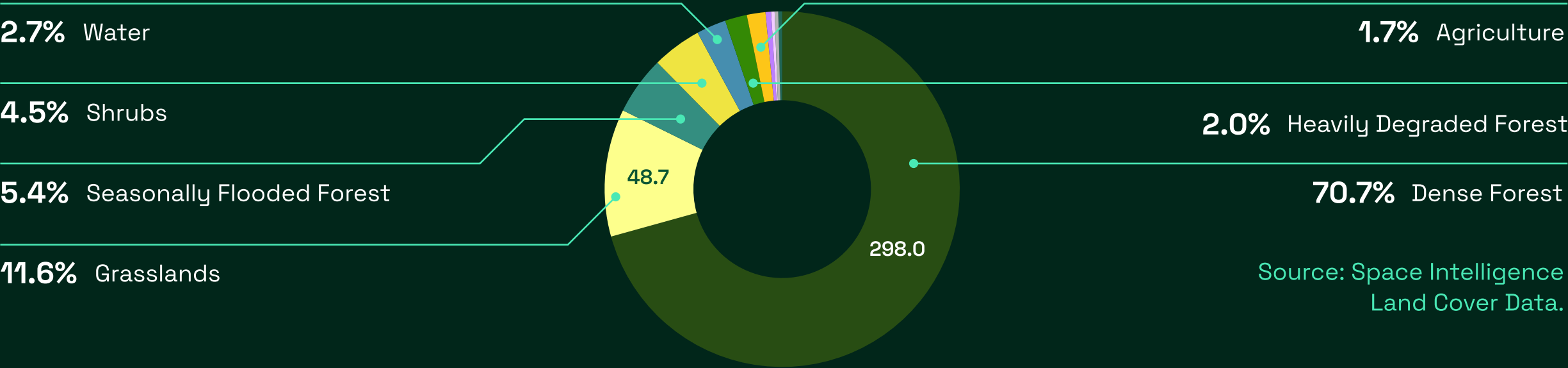
July 2025

Lungs of the Earth

The Amazon is arguably the most well-known rainforest on Earth - and Brazil’s portion, its largest biome, covers about **60%** of the entire Amazon, spanning **422 million hectares**. It holds over half of the Amazon’s above-ground biomass, storing an estimated **32.1 billion metric tons of carbon**.¹

Stretching across multiple northern states, the Brazilian Amazon includes a wide range of ecosystems and plays a critical role in regulating global climate, water cycles, and biodiversity. In 2025, the region will host COP30 in Belém, drawing international attention to the urgent need to protect and restore this biome.

Land cover distribution in the Amazon, 2024 (Mha)



Source: Space Intelligence Land Cover Data.

Biome type:

Moist tropical rainforest

Dominant unconverted vegetation:

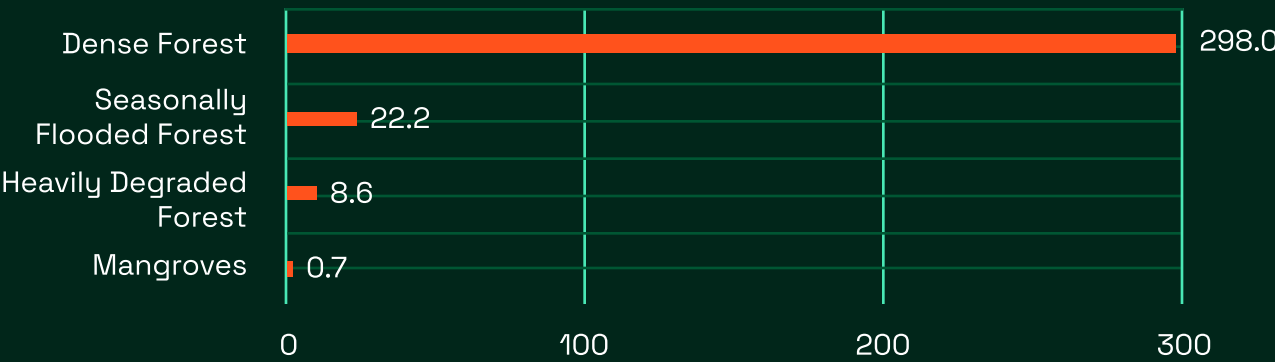
Terra firm rainforest, varzea floodplain forests, and igapo forests

Geographic range:

Northern Brazil and portions of Bolivia, Peru, Colombia, Ecuador, Venezuela, Guyana, Suriname, French Guiana

Forest cover distribution in the Amazon, 2024 (Mha)

Source: Space Intelligence Land Cover Data



Amazonia



- Agriculture
- Bare and Built
- Coffee, Cocoa and other Tree Crops
- Dense Forest
- Grasslands and Pasture
- Mangrove Forest
- Flooded Forest
- Heavily Degraded Forest
- Palm and Bananas
- Plantation Timber
- Shrublands
- Water

Source: Space Intelligence Land Cover Brazil Data, 2024

Stronghold of biodiversity

The Amazon holds an estimated **390 billion** individual trees from **~16,000 species**,² in addition to **over 400 amphibians, 427 mammals and 1300 birds**.³ This report could not possibly list them all, so here are some highlights.

Amazonian tapir

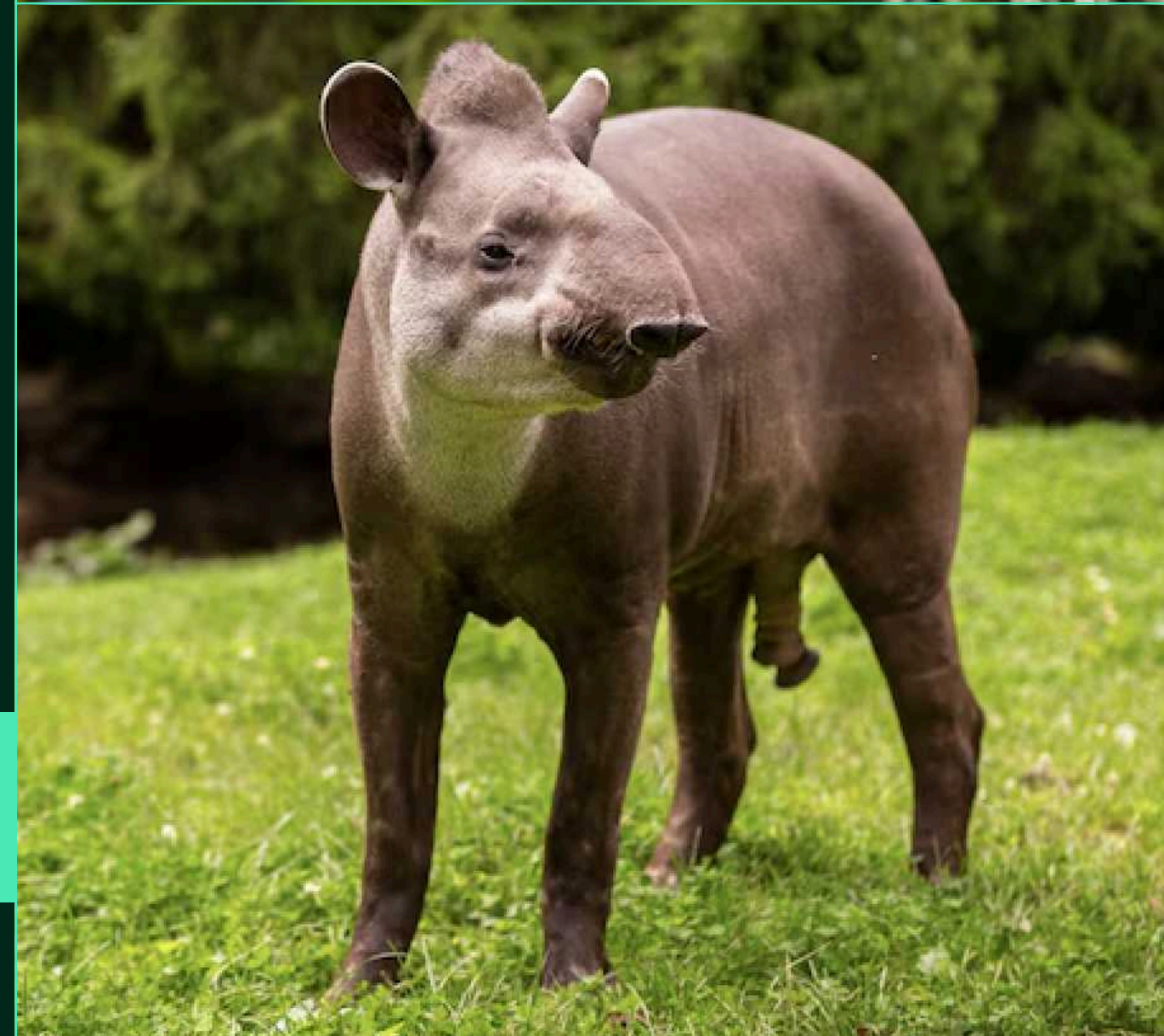
Tapirus terrestris are vulnerable animals that are the largest terrestrial mammals in Brazil. Their population faces threats from deforestation, habitat fragmentation, and illegal hunting.⁴

The pale-throated three-toed sloth

Bradypus tridactylus has the highest population density in Manaus, Brazil, with urban expansion and agriculture threatening its population.⁵

Brazil nut

Bertholletia excelsa is the Amazon's most valuable non-timber product, harvested from the wild and rarely fruiting in disturbed forests.⁶



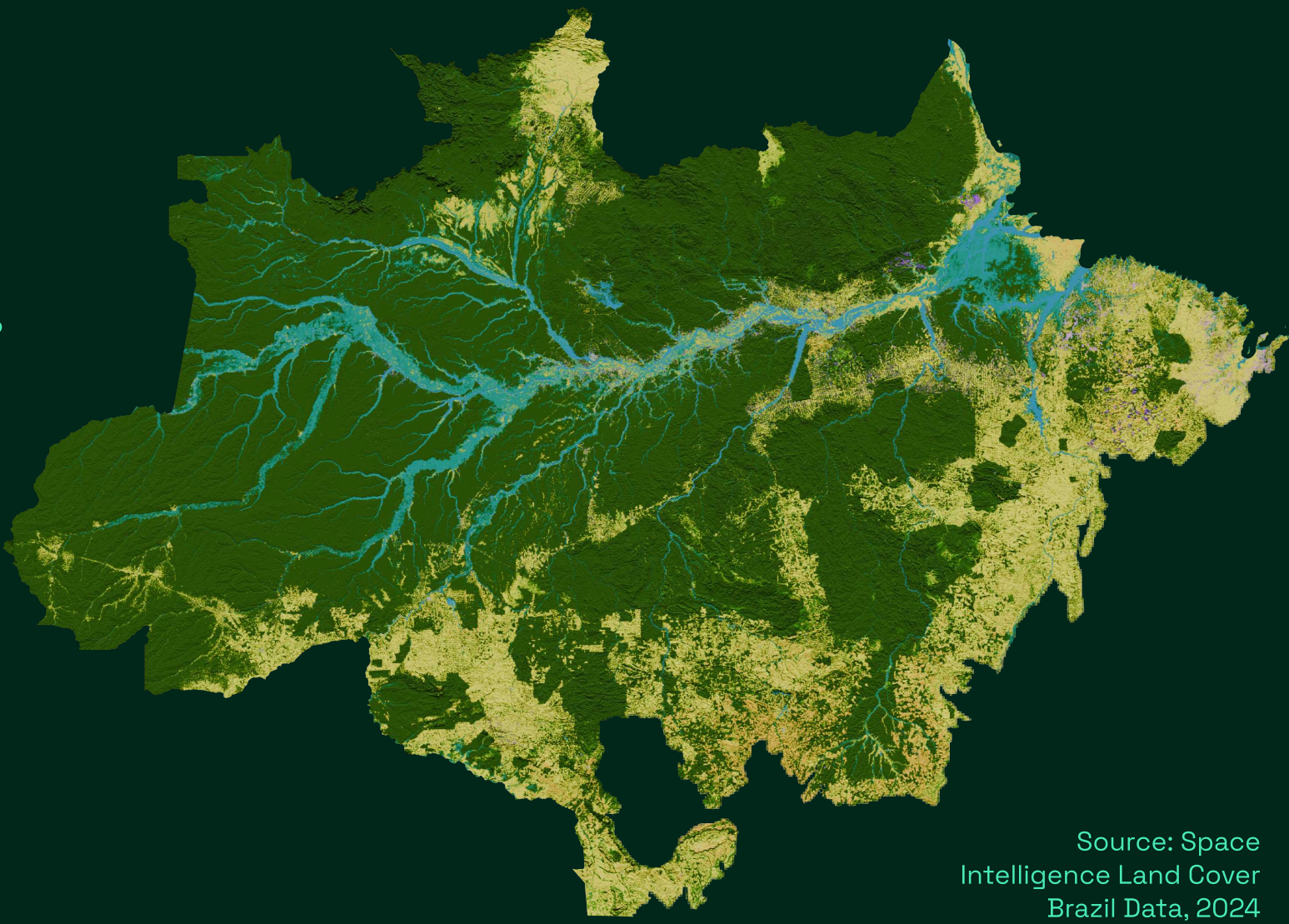
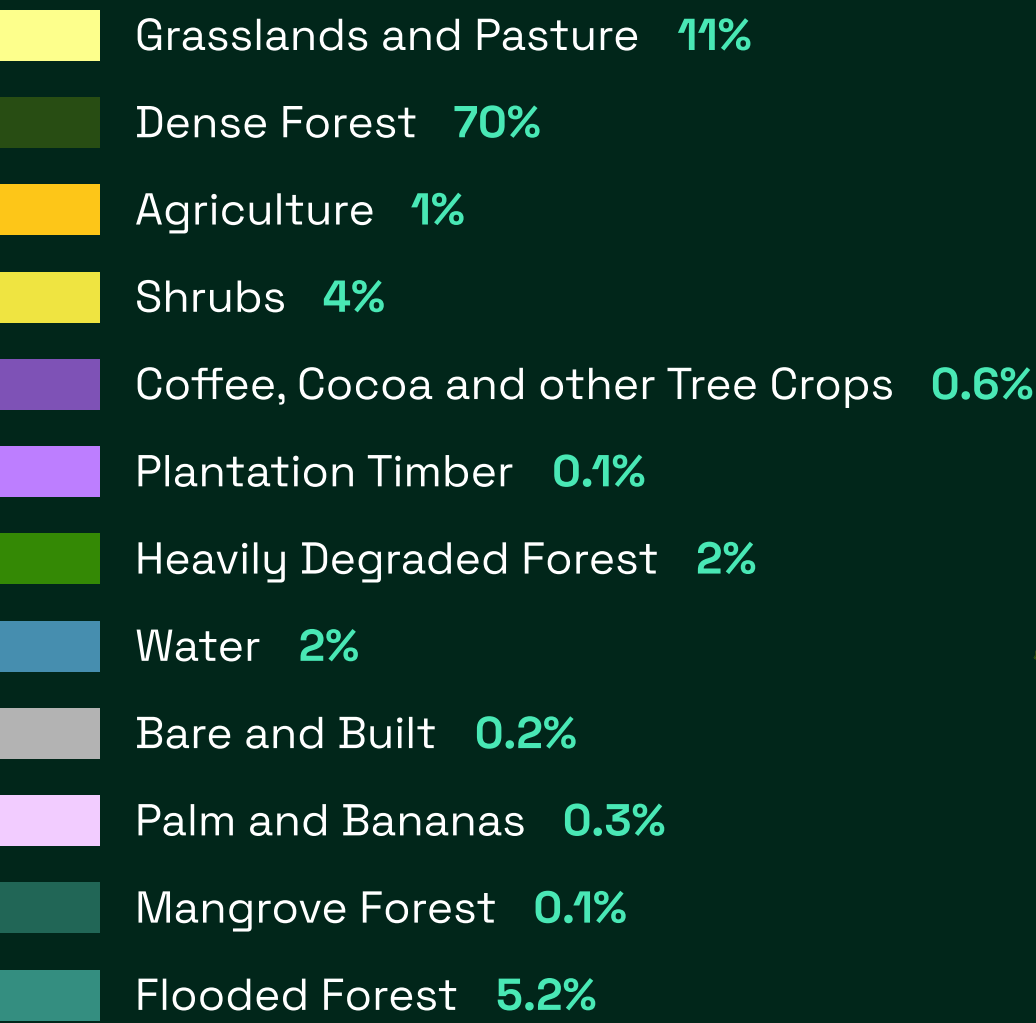
Land use changes in the Amazon, 2015-2024

The Amazon biome has suffered severely from clearance over recent decades, as new roads, immigration, and capital, have allowed its conversion to agriculture and pasture. From 2015 to 2024, the Amazon’s land cover has shifted significantly, with a large decline in forest area and a corresponding increase in non-forest land uses. Forest area decreased from **339.3 Mha** in 2015 to **329.65 Mha** in 2024, which represents a nearly **3% loss** of natural forest. Non-forest areas expanded from **82.25 Mha** to **91.89 Mha** over the same period.

This transformation is primarily driven by the conversion of dense forest to open forest, shrubland, agriculture, and grasslands:

- **Heavily Degraded Forest increased by 3.59 Mha**
- **Shrubs increased by 3.18 Mha**
- **Agriculture expanded by 3.03 Mha**
- **Grasslands increased by 2.95 Mha**

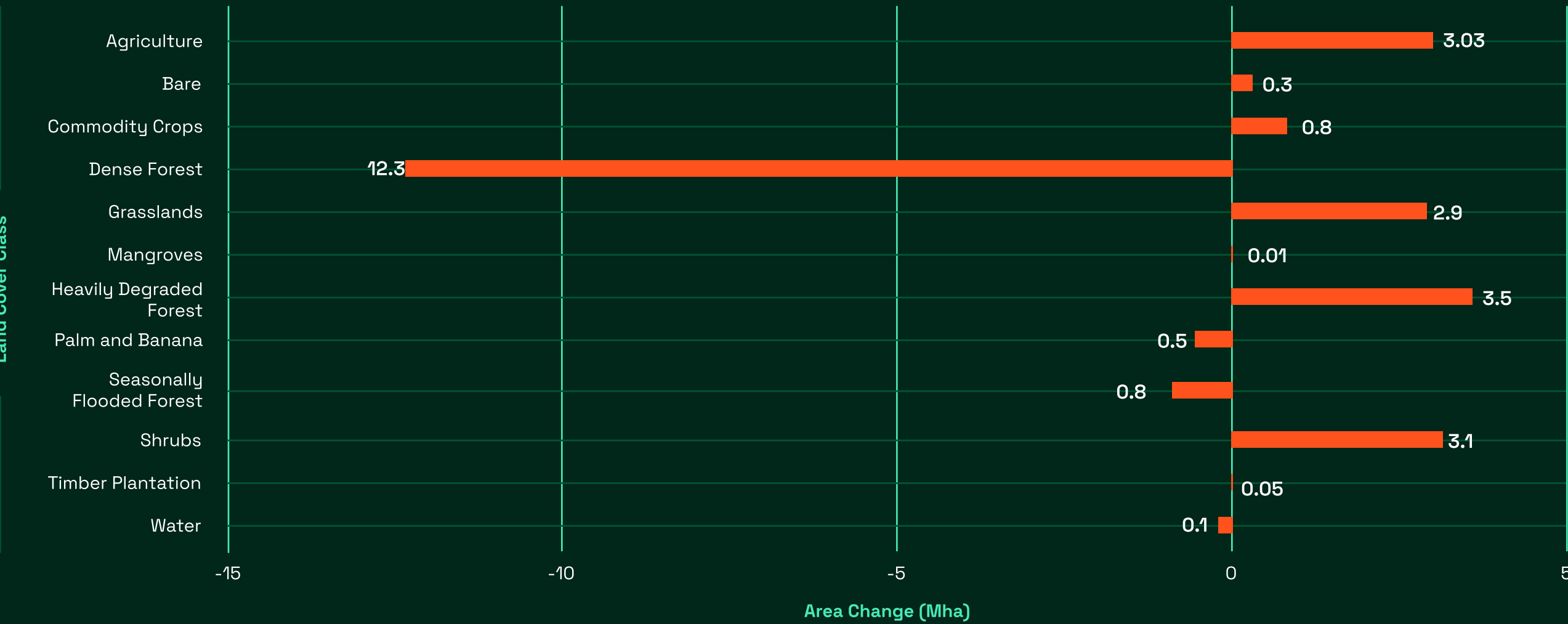
Total ecoregion area:	Dense forest (2024):
422 Mha	298 Mha
Total forest area (2024):	Heavily Degraded Forest (2024):
329.6 Mha	8.6 Mha



Source: Space Intelligence Land Cover Brazil Data, 2024

Area Change by Land Cover Class in the Amazon (2015-2024)

Source: Space Intelligence Land Cover Data



Deforestation and regrowth

According to our maps, Amazonia has the lowest annual deforestation rate among Brazil’s biomes, averaging **0.39%** between 2015 and 2024. This rate has increased over time, rising from **0.34%** (2015–2020) to **0.45%** (2020–2024). However, there is some evidence it has **decreased** towards the end of this time period. While still well below the next-lowest rate of **0.61%** in the Caatinga, the Amazon continues to experience the highest total forest loss in absolute terms.

Between 2015 and 2024, the region lost **12.39 million hectares** of dense forest, along with **0.85 million hectares** of seasonally flooded forest. Today, the Amazon is losing **3,605 ha of forest a day** which is equivalent to roughly **~2,000 trees/min** (at **800 trees/ha**).

Most of this loss is caused by conversion to pasture and grasslands, alongside the expansion of road and transport infrastructure across the region.⁷

0.34%

Annual deforestation rate (2015 – 2020)

0.45%

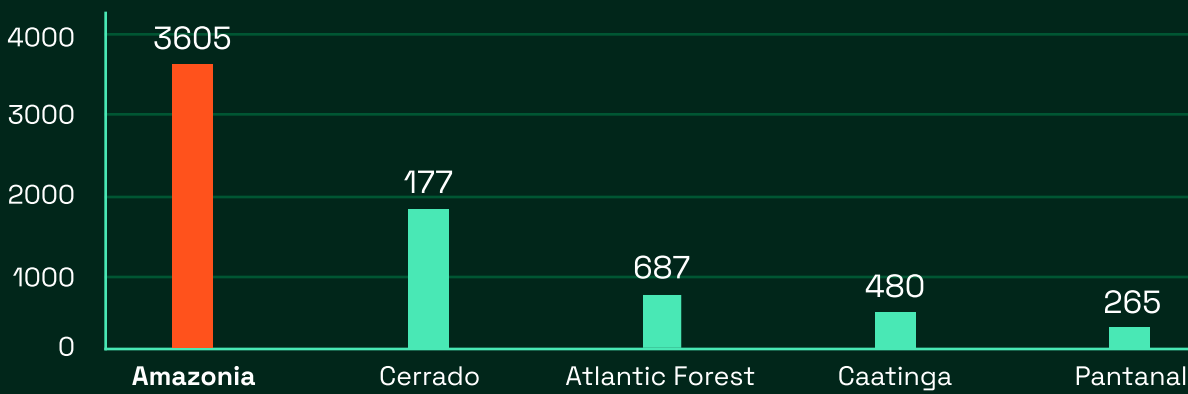
Annual deforestation rate (2020 – 2024)

↑ 24%

Change in rate

Forest lost per day, per biome, 2024 (ha)

Source: Space Intelligence Land Cover Data



0.39%

Annual deforestation rate (2015 - 2024)

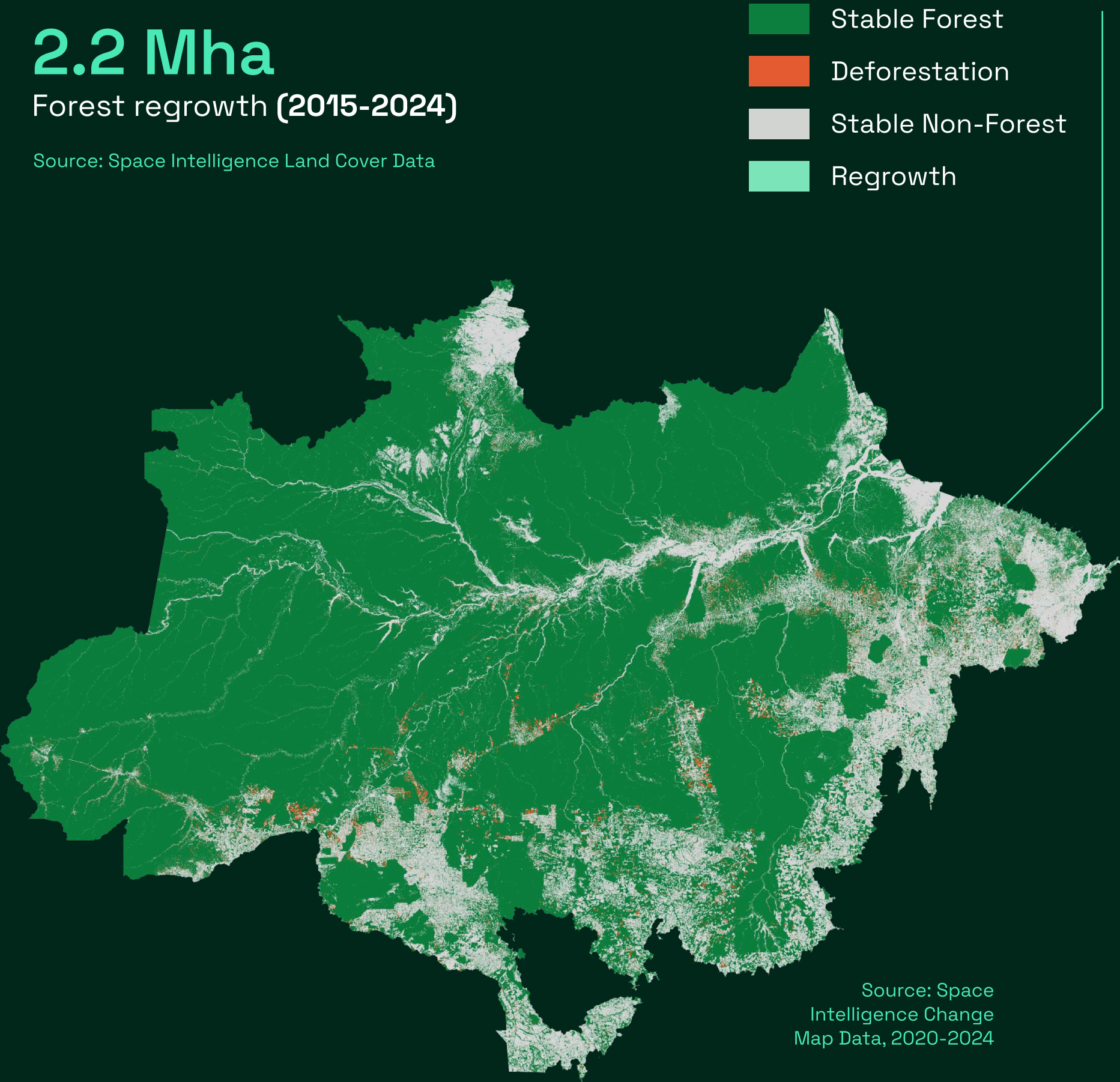
11.8 Mha

Gross forest loss (2015 – 2024)

2.2 Mha

Forest regrowth (2015-2024)

Source: Space Intelligence Land Cover Data



Protecting and restoring the world’s largest rainforest

Deforestation in the Amazon is responsible for over **1.3 billion metric tons of carbon emissions annually** - that’s nearly **3 times** as much as Brazil’s total annual emissions from fossil fuel burning.⁸ **Over 90%** of that could be addressed through conservation, as there is an enormous opportunity to protect what remains of the rainforest either through voluntary carbon market methodologies or through compliance markets like Article 6.

Both **REDD+** and, given increasing deforestation in recent years, **ARR** projects will be essential in the years ahead. Protecting the world’s largest rainforest and restoring degraded areas must remain a global priority if we are serious about stabilising the climate and preserving one of the planet’s most vital ecosystems.

Annual sequestration potential:

Source: Space Intelligence Land Cover Data

1.316 billion tCO₂e

REDD+

49.1 million tCO₂e

ARR

Average sequestration rate
(over 20 years for ARR):

ARR: 10-20 tCO₂e/ha/yr

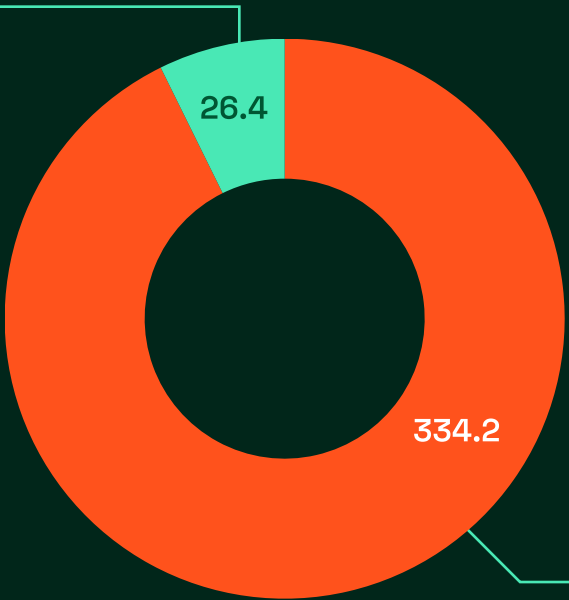
Areas available for ARR and REDD+ in the Amazon (Mha)

Source: Space Intelligence Land Cover Data

7.3%

ARR

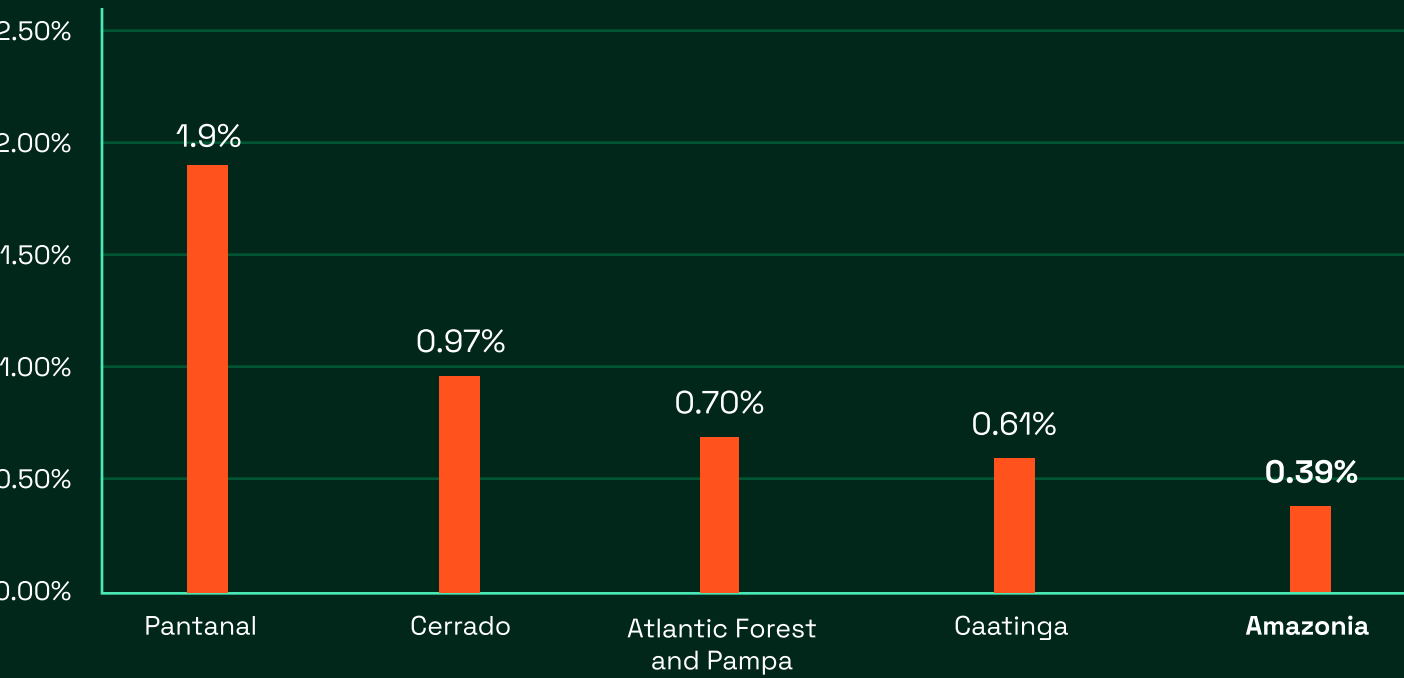
Source: Space Intelligence
Land Cover Data.



92.7%
REDD+

Annual deforestation rates per biome

Source: Space Intelligence Land Cover Data



Rio Madeira

Verra VCS ID: 2878

The Rio Madeira Project protects **over 52,000 hectares** of forest across four private properties in two Brazilian states. Beyond forest conservation, it supports two local schools, promotes bioeconomy initiatives, and encourages sports activities, directly benefiting **337 people**. As part of its implementation, the project conducted a fauna assessment that identified **more than 200 species**, including **162 birds**, **22 mammals**, **12 amphibians**, and **7 reptiles**, highlighting the region’s rich biodiversity and the importance of ongoing protection.

52,274

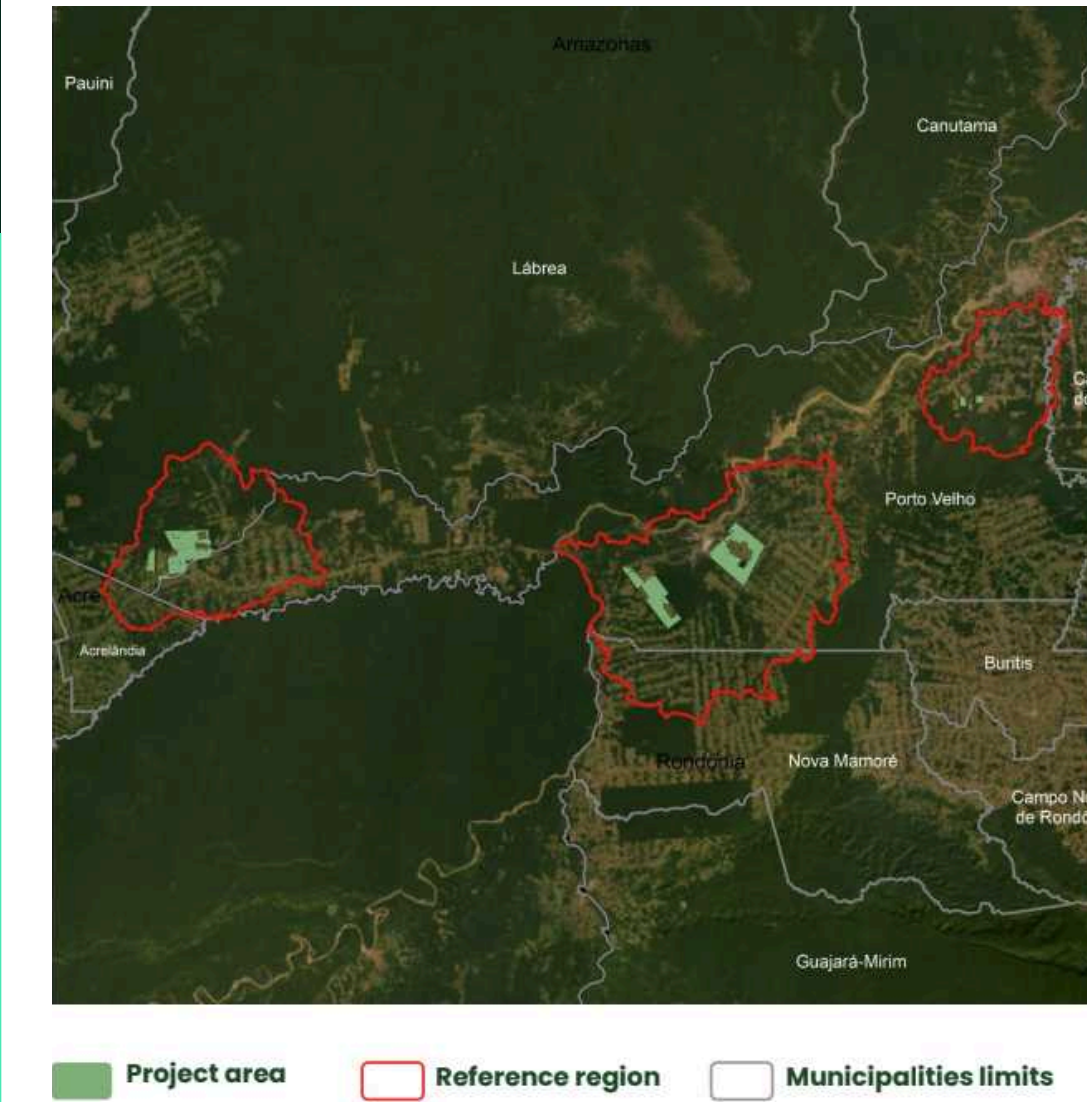
Hectares of forests protected

337

People directly supported

13 million tCO₂

benefit projected over 30 years



Location: Porto Velho (State of Rondônia) and Lábrea (State of Amazonas)
Project type: REDD AUD
Years operational: 2019-now

Summary Snapshot

2.2 Mha

Forest Gain (2015-2024)

11.8 Mha

Forest Loss (2015-2024)

3605 ha/day

Daily Deforestation
(2023 - 2024)

The Amazon’s Carbon Potential

26.4 Mha

Eligible Area for ARR

49.1 million tCO₂e

Annual Carbon Potential for ARR

334.2 Mha

Eligible area for REDD+

1.3 billion tCO₂e

Annual Carbon Potential for REDD+

0.39%

Annual Deforestation Rate
(2015-2024)

References

- ¹ <https://news.mongabay.com/2024/09/clearest-picture-yet-of-amazon-carbon-density-could-help-guide-conservation/>
- ² ter Steege, H., et al. 2013. Hyper-dominance in the Amazonian tree flora. Science 342: 1243092.
- ³ da Silva, J.M.C., Rylands, A.B. and Da Fonseca, G.A.B. 2005. The Fate of the Amazonian Areas of Endemism. Conservation Biology, 19: 689-694. <https://doi.org/10.1111/j.1523-1739.2005.00705.x>
- ⁴ <https://www.amazonteam.org/meet-the-amazon-tapir-the-rainforests-gentle-giant/>
- ⁵ https://xenarthrans.org/species/sloths/pale-throated_sloth/
- ⁶ <https://www.rainforest-alliance.org/species/brazil-nut-tree/>
- ⁷ <https://infoamazonia.org/en/2023/03/21/deforestation-in-the-amazon-past-present-and-future/>
- ⁸ <https://www.iea.org/countries/brazil/emissions>

Authors and contributors



Prof. Ed Mitchard
Co-founder & Chief Scientist

Professor Ed Mitchard has spent ~20 years using satellite data to map the changing carbon stocks of the world’s forests and peatlands. As a professor at Edinburgh University, he published over 100 scientific papers and measured >15,000 trees across 13 countries. He has been deeply involved in the evolution of carbon standards, including Verra’s VCS and the Plan Vivo Standard.



Jocelyne Wardley
Ecologist

Jocelyne Wardley is a tropical ecologist with over four years of experience in ecology and conservation. For the past two years, Jocelyne has worked for Space Intelligence, helping to create various maps across the tropics, including being the lead ecologist on the Brazil mapping. Before this, he has worked for the likes of World Agroforestry, Lions Guardians, and Ol Pejeta Conservancy.

About Space Intelligence

Space Intelligence is a NatureTech company enabling zero deforestation and mass restoration of biodiverse forests globally by providing the highest quality nature mapping data.

We combine our extensive expertise in remote sensing, data analytics, and forest ecology to provide highly accurate and comprehensive baseline reporting and dMRV solutions for forest carbon project developers and investors.

Our approach is rooted in science, with our co-founders leveraging over 30 combined years of academic and on-the-ground research to develop our products, which are used and trusted by some of the largest nature-based market participants, including Everland, Forest Carbon, Wildlife Conservation Society, and Verra.

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Invest and Offset with Confidence - Backed by Audit-Grade Data

Our geospatial, ecology, and carbon standards expertise underpin our suite of tools and services for carbon project developers and portfolio builders.

With pre-processed data available across Brazil, we have the data, expertise, and agility to help you originate, due diligence, or monitor NbS projects to support Brazil’s carbon capture and storage potential.

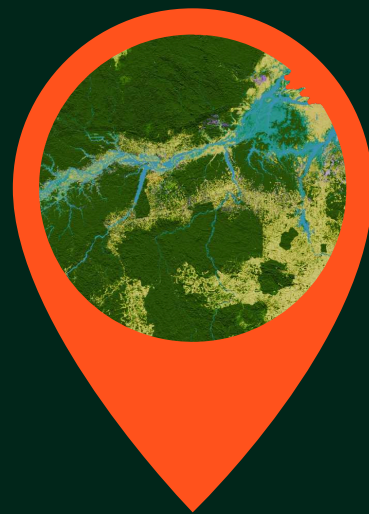
Project Verification



Maximise credit integrity with our support in baseline creation + MRV across avoidance and removals projects, including VM0047 dynamic baseline creation.

[Download our sample report \(VM0047 baseline\) →](#)

Rapid Area Screening (In beta)



Quickly find eligible areas for your ARR or REDD+ projects

[Enquire about the Beta program →](#)

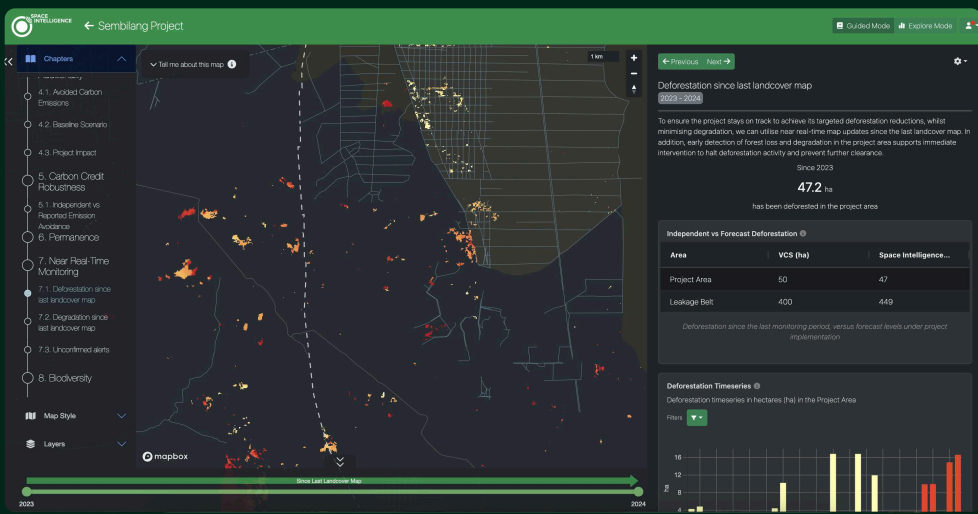
Pre-Feasibility Report



Assess your project’s carbon potential from the outset under VM0048 methodology

[Download the sample report →](#)

Project Monitoring



See project impact and monitor small scale canopy loss in near-real time

[Take the tour →](#)