Evaluate the potential impact of changes in the carbon budget on a tropical rainforest that you have studied.

Evaluate, “potential” “impacts” “changes!!!” “carbon budget” “ON A T.R”

The carbon budget refers to the balance of exchanges between the four major stores of carbon: hydrospheric, atmospheric, cryospheric and biospheric. As it stands, the current carbon budgets shows a net gain of 4.4PgC per year in the atmospher (IPCC). Co2, being the most important anthropogenic greenhouse gas, rising levels of it alongside other GHGs such as methane in post-industrial times are fuelling fears of climate change through atmospheric warming. Such warming is and will have a significant impact on the amazon rainforest.

Change - Tress removed, Process - canopy gone, Biological store, to atmosphere, decompisoitn?? carbon budget flash flooding more likely to wash nutrients how does changing carbon budges impact a tropical rainforest?

Name the potential impact, name the change in the cabron budget, is is a positive/negative feedback? flows, processes, transfers, ues allthese words Change = Disruption to Biospheric Store, Process = Deforestation Rate of 20,000 Impact: Spatial, Temporal: 20% land lost over 50 years, rate of slowing down?

Pastoral cattle ranching which directly covers 15% of deforested, 60% in atmosphere from a biospheric store, cows respire contrasted by tree which photosynthesis and sequester carbon. slash and burn cretes, dark soils, as normaly higher temps increased rates of decomposition and uptake of plants mean that natural soil cant sustainable suport. Monoculture leaches nutrients from soil. after 2 years soil is unusable, a new plot needs to be burned for.

relatively small contributions to increased carbon dioxide come from deforestation and other land-use change, although the net effect of terrestrial biosphere fluxes is as a sink – approximately an absorption of 2PgC per year

the average increase in atmospheric carbon dioxide from 2003 to 2021 corresponded to 48% of the carbon dioxide emitted by human activity with the remaining 52% removed by the oceans and the terrestrial biosphere.

Figure 1. The carbon budget.

Carbon budget futures

The amzon rainforest in south america, lieing withing the equatorial climate zone covering an area of some 8.2 million km2 mainly i brazil, at present this rainforest acts as a carbon sink and absorbs around 35% of the worlds annual co2 emisisons and produces more than 20% of the world’s oxygen. It contains the greatest biodivesity on earth, providing a habitat for more than half the worlds estimated 10 million species of plans animals and

insects.
Predicte impacts of climate change, caused by changes in the cabron budget on this region include the following, firstly an increase in temperature of 2-3c by 2050, which is likely to reuslt in increased rates of evapotranspiratin and a more vigourous hydrological cycle. sea temperatures are exptected to warm too, praticularly in the pacific ocean, this will have a knock on effect o the el nino southern oscialation, which is likely to occur more fruequently

Secondly a decrease in precipiatin durin gthe dry season which can last up to four months of the year is expcected. Reduced rainfall and prolonged drought are features of an el nino year and these could therefore be experienced more frequently, it is also possile that there will be more intense rainfall during the wet season.

Thirdly, there will be changes to the nature of the vegetation here. Sea levels are currently rising by some 5mm per annum along the delta of the amazon, increased erosion and flooding are likely to have a substantial impact on low-lying areas and will ddestroy the coastal mangrove foress. Upwards of 40% ofplant species may become unviable in the amazon rainforest by 2080, large areas of the evergreen tropical rainforest may be succeeded by mixed forest and savanna grassland vegetation. as the dry season lengthens, trees will have mroe time to dry out so there is likely to be an increased incidence of wild forest fires. this would add to co2 emissions.

By 2050, forest die-back because of changing vegetation succession and fire is predicted to result in the amazon regioin becooming a net source of carbon dioxide, rather than a carbon sink, by the year 2050, exacerbating the rate of atmospheric warming. ok jhttps://dredfern.substack.com/p/the-amazon-rainforest-and-the-carbon-f3://dredfern.substack.com/p/the-amazon-rainforest-and-the-carbon-f3e MY NOTES:

slash and burn is common in 75% of reported deforestation, lockedc arbon in bioogical store realeased into atmospheric store wever, without the previous dense canpoy which only permitted 1-3% of light, increased co2, the removal of trees dramatically alters the micro climate of one canopy on evapo transpiration 600 gallons of water annualy such that a large scale removal can reduce precipitatin, which if evapotranspiration exceeds precipitation, droughts may occur and the frequency of natural forest fire is likely to increse -> THIS IS Ao2, the bit about forest fires, research ao1 ao2 ao3. Carbon dioxide (CO_2) is the most important anthropogenic greenhouse gas (GHG), and rising levels of carbon dioxide and other GHGs, such as methane, in post-industrial times are fuelling fears of climate change through atmospheric warming. Such warming is and will have a significant impact on the Amazon rainforest.

Secondly, a decrease in precipitation during the dry season (which can last up to four months of the year) is expected. Reduced rainfall and prolonged drought are features of an El Nino year and these could therefore be experienced more frequently. It is also possible that there will be more intense rainfall during the wet season.

Thirdly, there will be changes to the nature of the vegetation here. Sea levels are currently rising by some 5mm per annum along the delta of the Amazon. Increased erosion and flooding are likely to have a substantial impact on low-lying areas and will destroy the coastal mangrove forests. Up to 40% of plant species may become unviable in the Amazon rainforest by 2080. Large areas of the evergreen tropical rainforest may be succeeded by mixed forest and savanna grassland vegetation. As the dry season lengthens, trees will have more time to dry out so there is likely to be an increased incidence of wild forest fires. This would add to CO2 emissions.

By 2050, forest die-back because of changing vegetation succession and fire is predicted to result in the Amazon region becoming a net source of carbon dioxide, rather than a carbon sink, by the year 2050, exacerbating the rate of atmospheric warming.

Conclusion: Relay title, impacts are severe - No longer safeguard amazon from, no longer a sink? - LR, optimisitc signs, p.impacts can be dampened byLula, treres less competition growing bigger, crack downs on illegal slash n burn, Over recent decades tropical forests worldwide have absorbed one fifth of global fossil fuel emissions. amazon rainforest is therefore changing. One fifth of it has been destryoed by human activtiy unrelated to the carbon budget.aluable role that rainforests play in the world’s climate - they store huge amounts of carbon, so keeping it out of the atmosphere.