

Name:

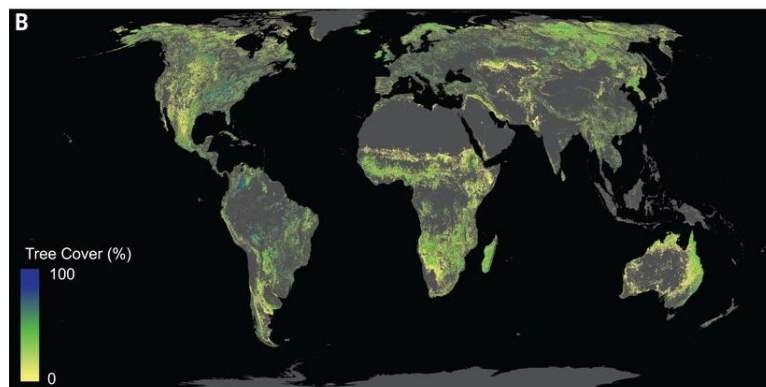
Mini-Quiz 3

BIOL 4301/6301

September 21, 2023

- 1** In 2019, Bastin et al. (full citation below) posited that the Earth could hold an additional 0.9 billion hectares of trees. The authors then used carbon cycle equations for NPP to suggest that this could result in an increase in carbon stored on land by 205 Gt (see Figure 1 below). The authors argue could drastically offset human emissions (300 Gt to date). However, this paper has been criticized for not considering other carbon cycle and non-carbon cycle impacts to ecosystems. Use the back of this page to create a systems diagram to explore what these impacts might be. From your diagram, do you support reforesting the Earth; why or why not?

Figure 1. Potential increase in global tree cover



This map shows the potential increase in global tree cover that could be observed with a mass reforestation of the Earth. Note the spatial distribution of where the tree cover increase would need to occur.

Bastin J-F, et al. 2019. The global tree restoration potential. *Science* 365: 76 – 79.