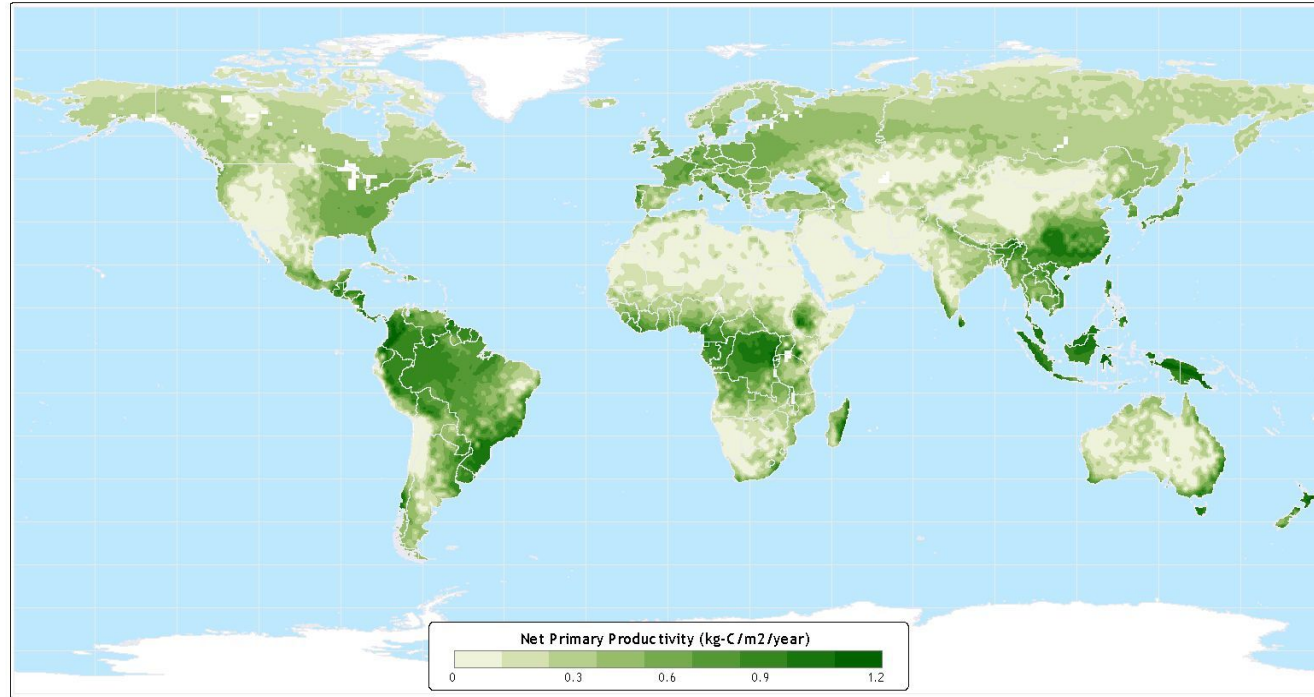


## 3.3 Nutrient Limitations

Primary Productivity:  
the rate at which  
organic matter is  
made available by  
the growth of  
producers  
(expressed as  
biomass)

### Net Primary Productivity



Data taken from: IBIS Simulation  
(Kucharik, et al. 2000)  
(Foley, et al. 1996)

**Atlas of the Biosphere**  
Center for Sustainability and the Global Environment  
University of Wisconsin - Madison

**Limiting nutrient**: a single nutrient (like N or P) is scarce within an ecosystem and limits the growth of organisms



Ecosystems that receive excess amounts of limiting nutrients will become imbalanced.

**Algal blooms**: the excess growth of algae in freshwater systems which can lead to decreases in oxygen

[Nutrient Pollution EPA](#)