

limits the amount of organic carbon that primary producers introduce into food webs and the amount of energy available to support trophic pyramids. For this reason, the long-term maintenance and functioning of ecosystems require that organisms actively cycle not only carbon but also nitrogen, phosphorus, and other elements critical for life.

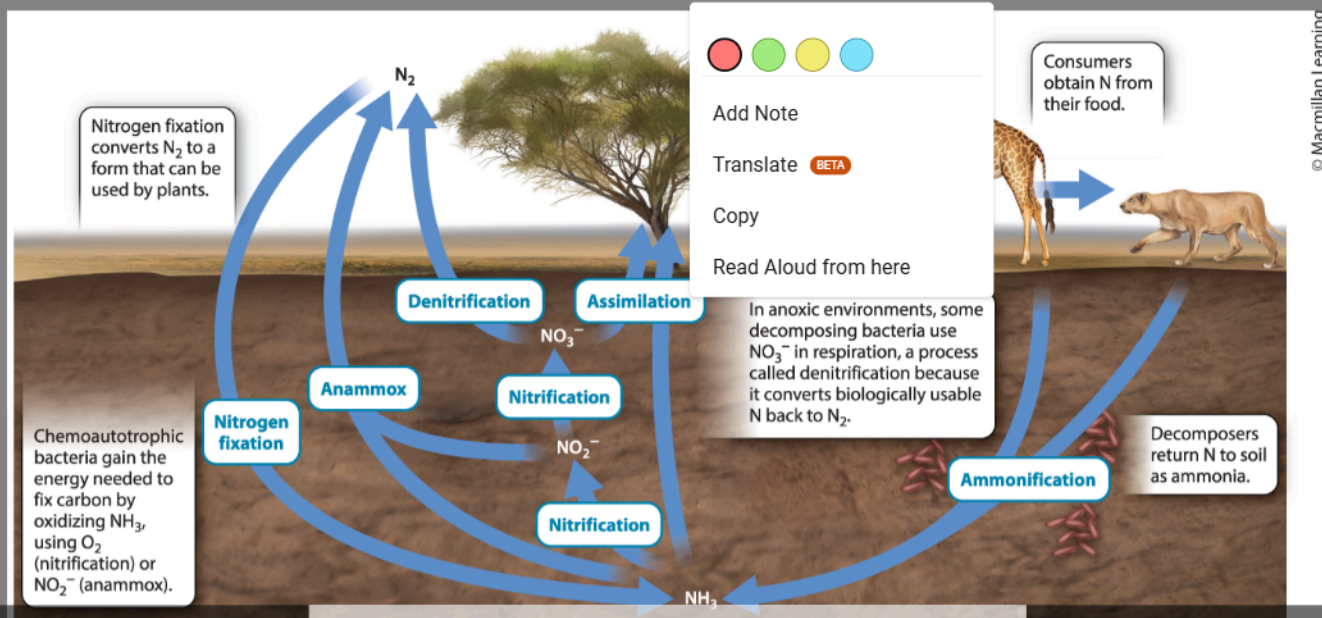
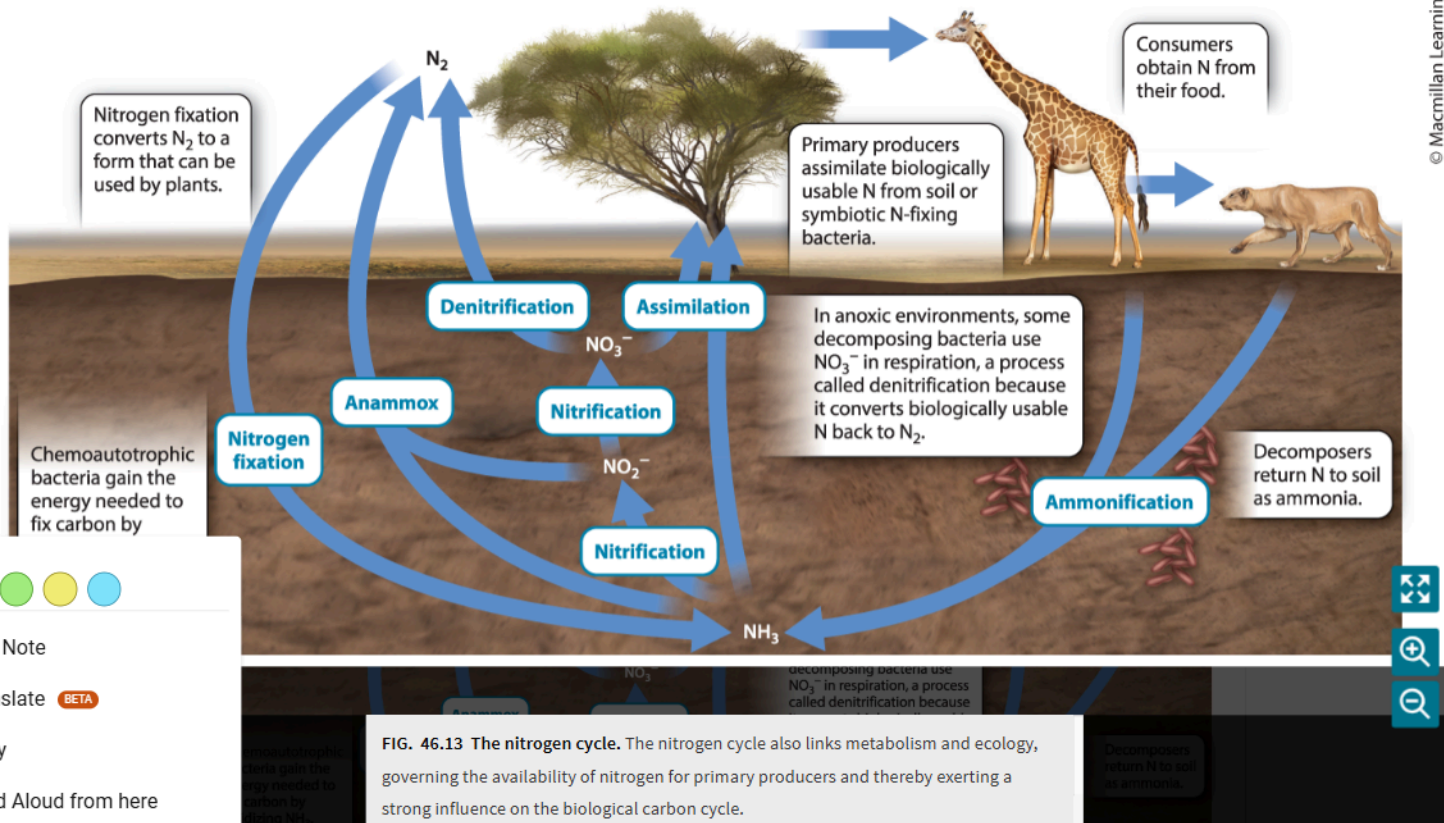


FIG. 46.13 The nitrogen cycle. The nitrogen cycle also links metabolism and ecology, governing the availability of nitrogen for primary producers and thereby exerting a strong influence on the biological carbon cycle.

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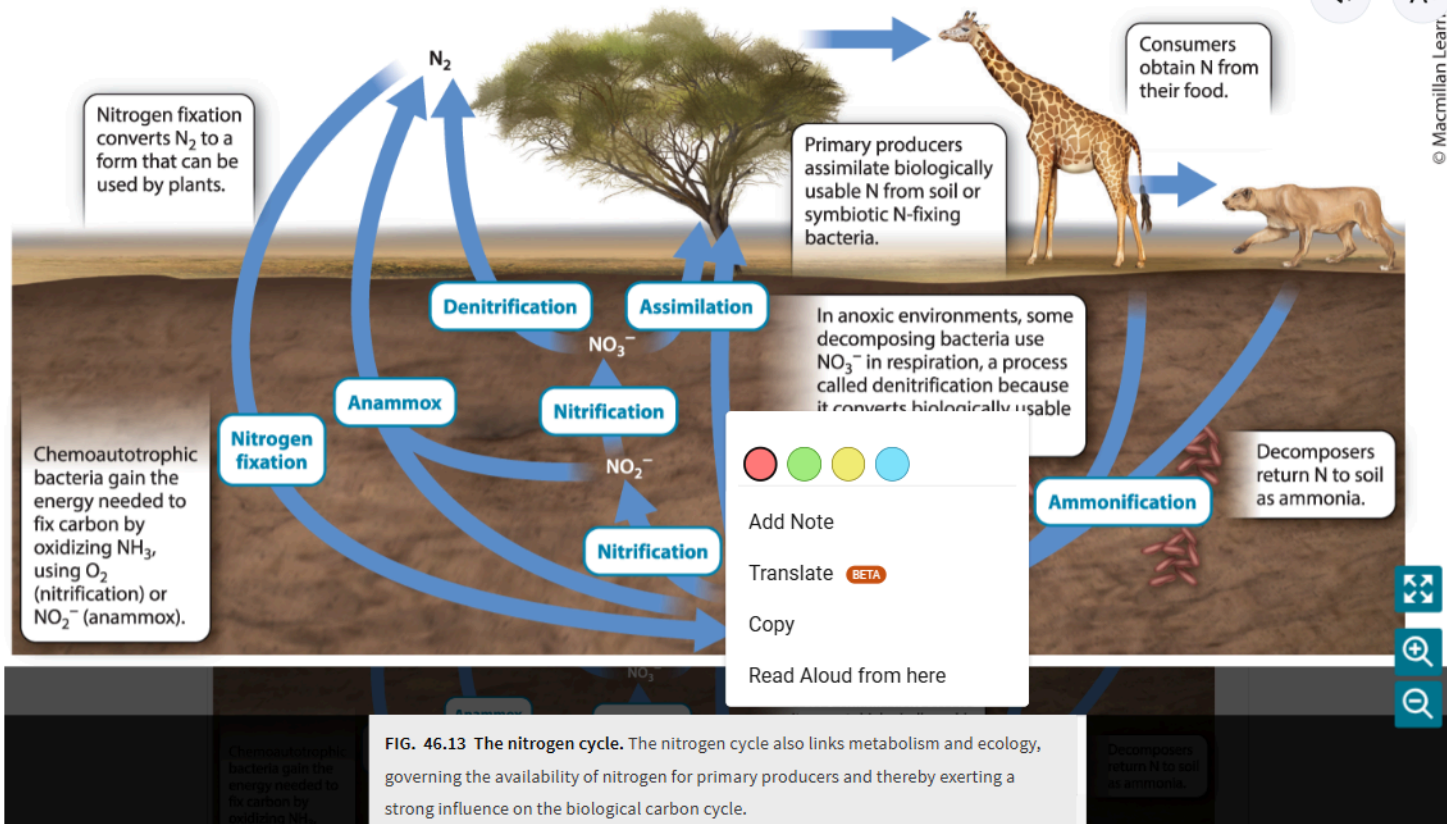


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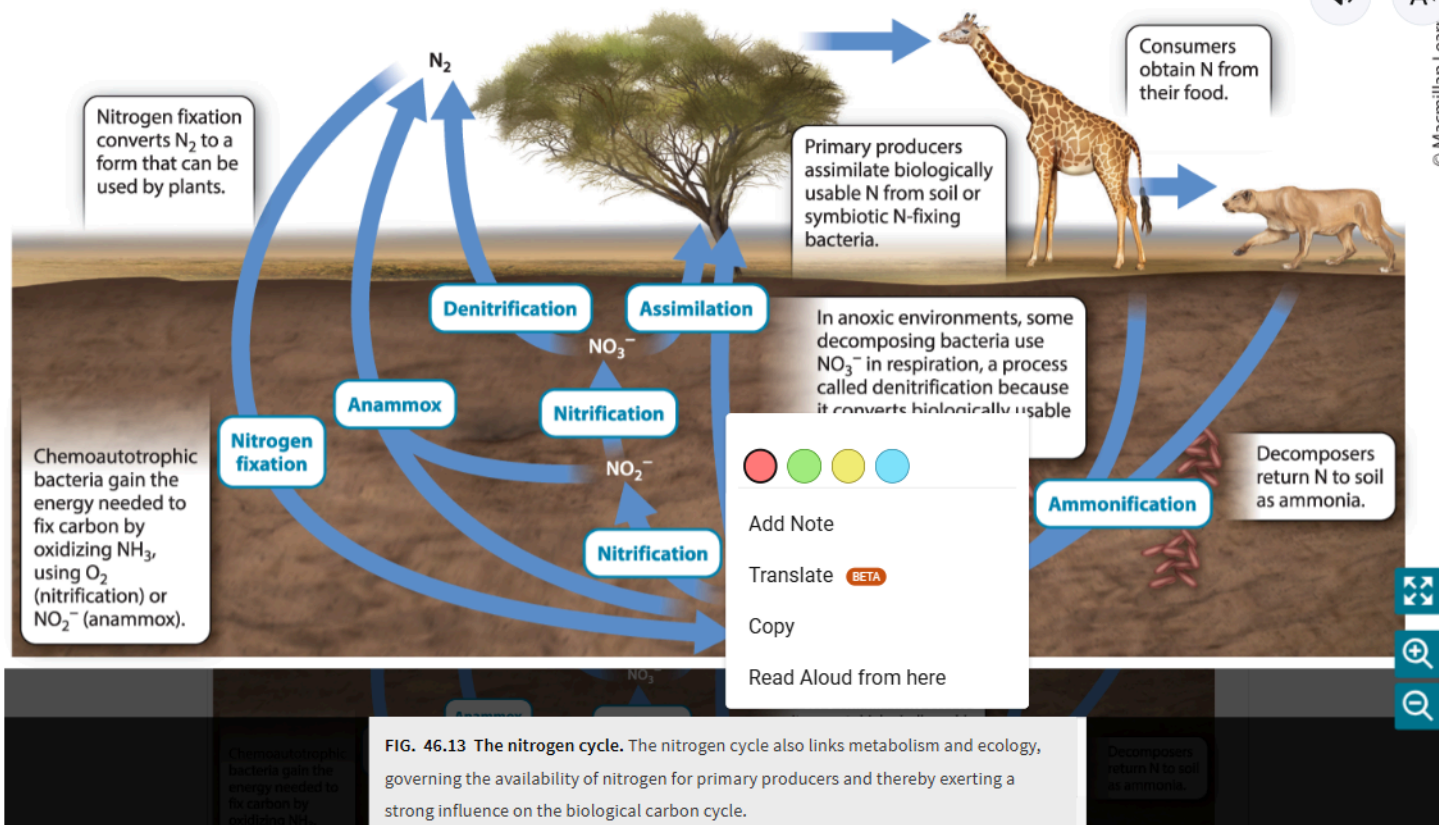


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