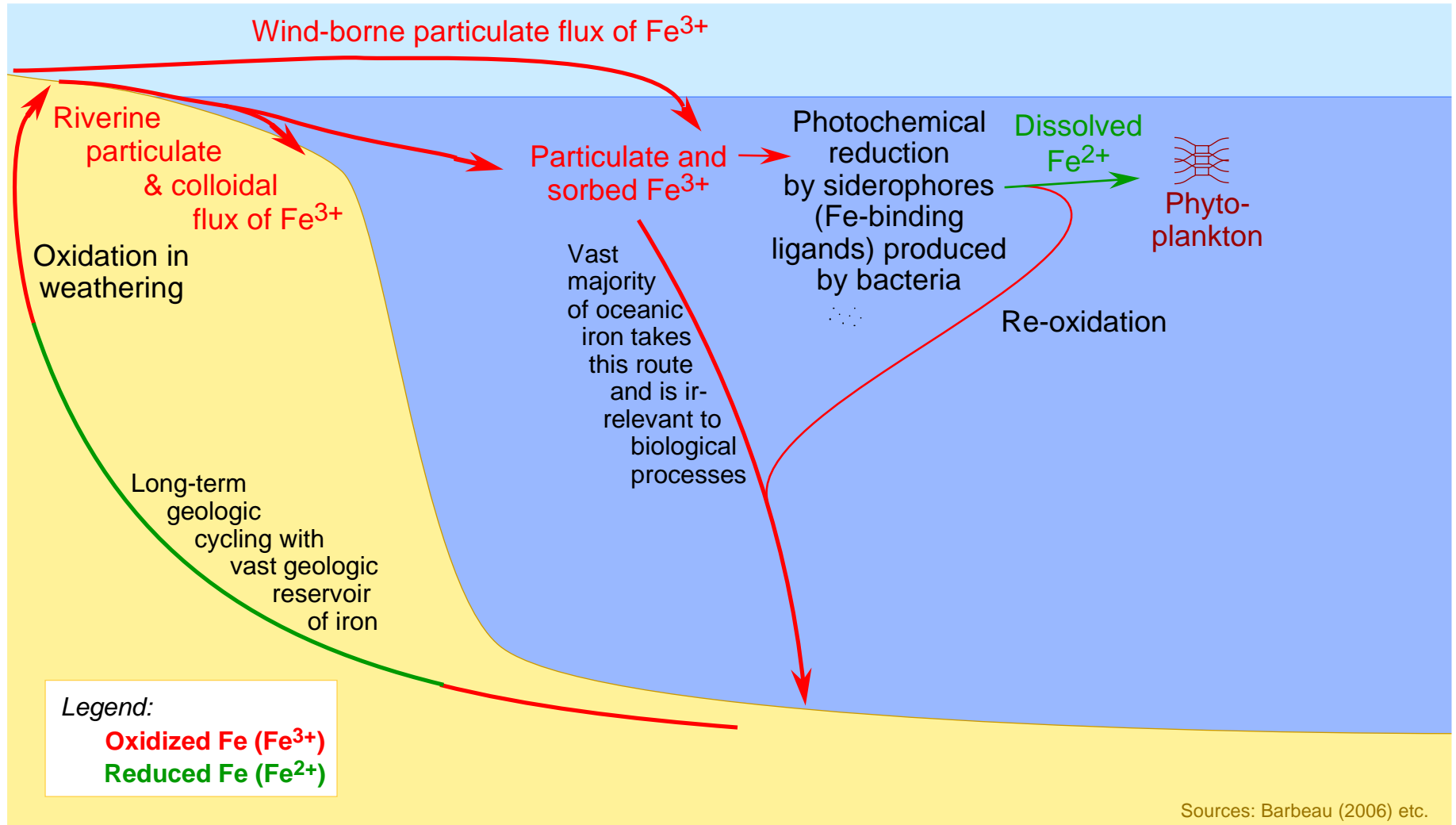


Marine nutrient cycles IV: Iron



This is one of a series of pages presenting simple schematic cycles of nutrients in the oceans. The other pages are concerned with nitrogen, phosphorous, and silicon.

Critical thoughts:

Fe is useful to photosynthesizers only as Fe^{2+} , which is very scarce in the ocean. Fe^{3+} is insoluble and settles readily in or on solids. The wind-borne flux of Fe is enhanced by barren land areas (e.g., deserts and peri-glacial environments) susceptible to erosion by wind.

Differences from other cycles:

Unlike N, P, and Si, Fe is not recycled at depth and so is not resupplied to surface waters by upwelling. Reduction, rather than oxidation, is required to make Fe available to photosynthesizers. Recycling of Fe from organisms is trivial compared to oceanic content of Fe.

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