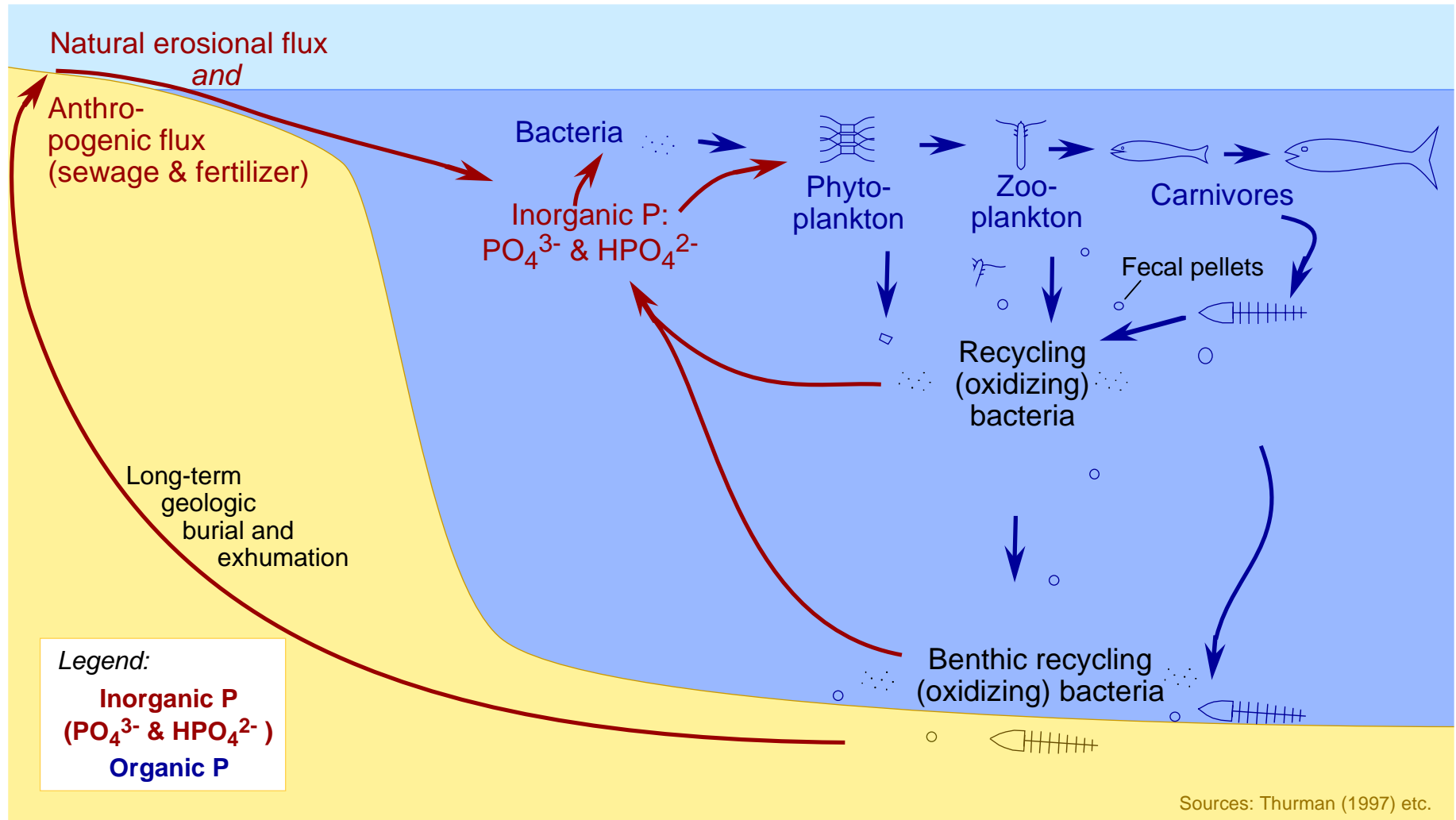


## Marine nutrient cycles II: Phosphorous



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

### Critical thoughts:

As with N, photosynthesizers can only use P in its inorganic forms (e.g., phosphate ( $\text{PO}_4^{3-}$ )).

As with N, recycling bacteria at depth return P to its inorganic forms.

As with N, recycling of P at depth makes upwelling critical to biological productivity.

### Differences from other cycles:

Unlike N, no atmospheric reservoir of P.  
 Compared to N, faster recycling of P higher in water column makes upwelling less critical.  
 Some loss of P to sediments, and thus  
 Some erosional flux from rivers to oceans.