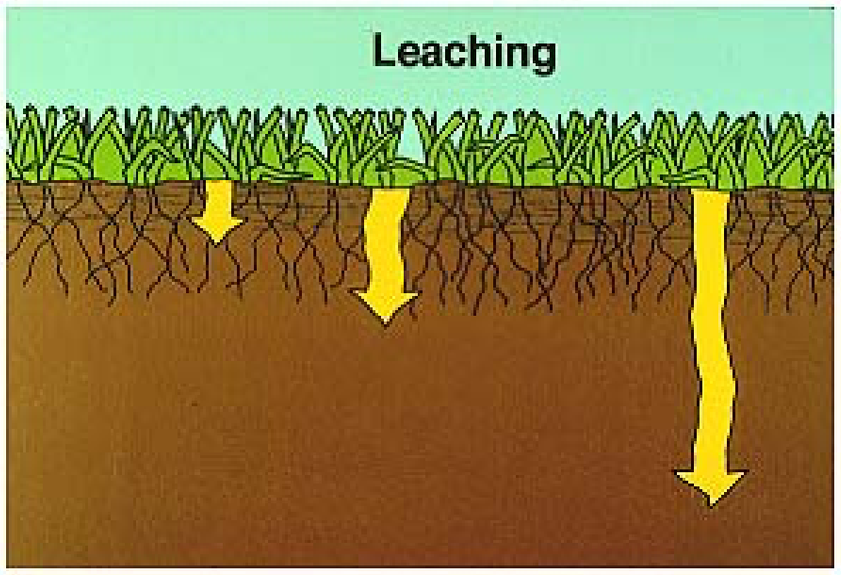
Phosphorus Cycle

- Phosphorus is the basic composition of DNA and one of the main components of bones.
- Phospahate PO^4 acts as a fertilizer.

Vocabulary

Erosion	Wearing away of rocks due to wind and water
Proliferation	Growth of plankton and algae
Leaching	Extracting certain minerals from a carrier into a liquid

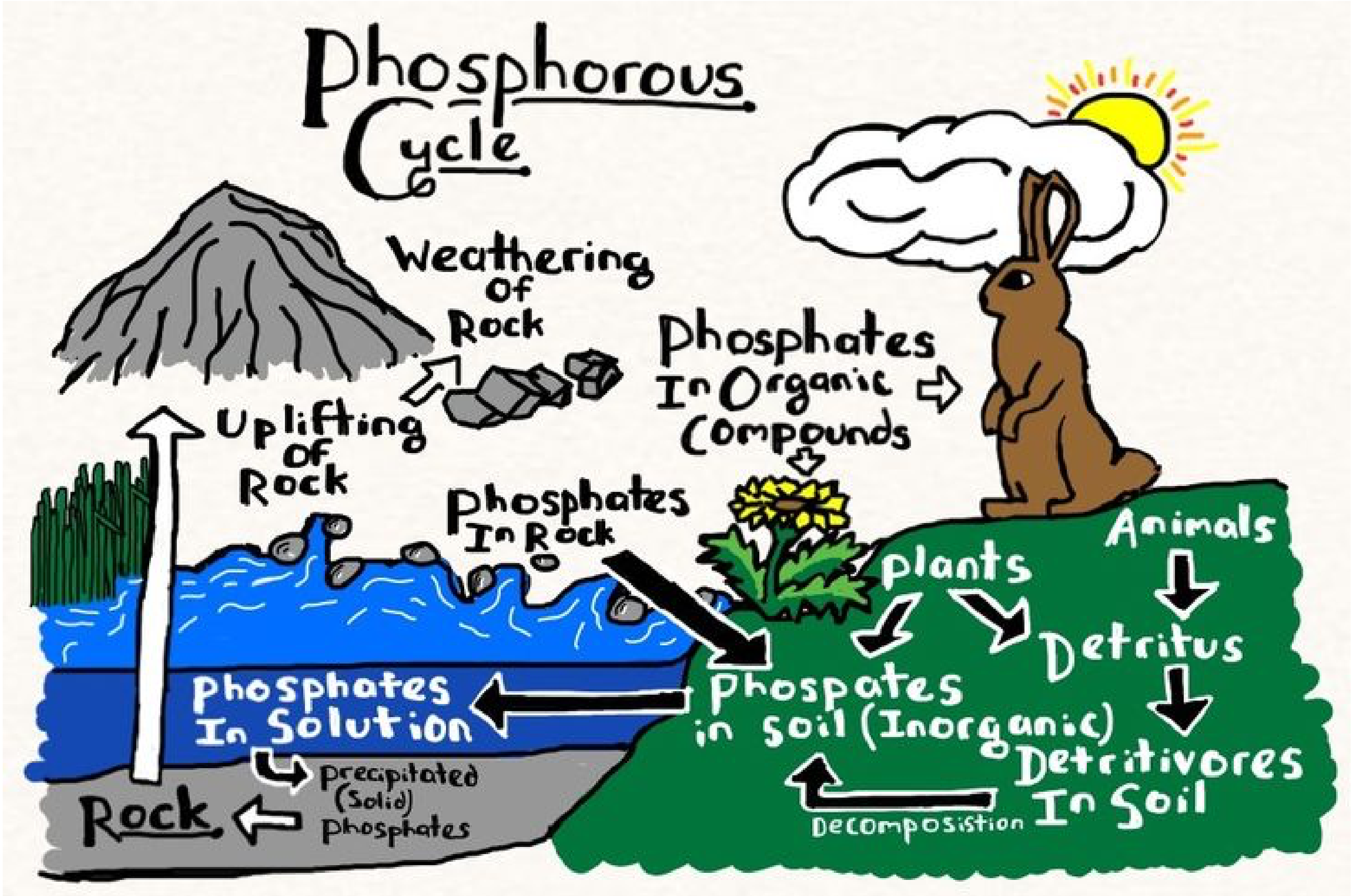


The Phosphorous Cycle in 65 seconds.mp4

Steps in cycle

1	Erosion of phosphorus rocks, produces PO^4
2	Absorption of PO^4 by plants- animals eat plants
3	Decomposition- PO^4 in urine, poop and dead animal returned to soil.
4	PO^4 gets to oceans and causes growth of plankton - proliferation
5	PO^4 also sinks to bottom and becomes sediment which will turn PO^4 back to P and new rock will be produced

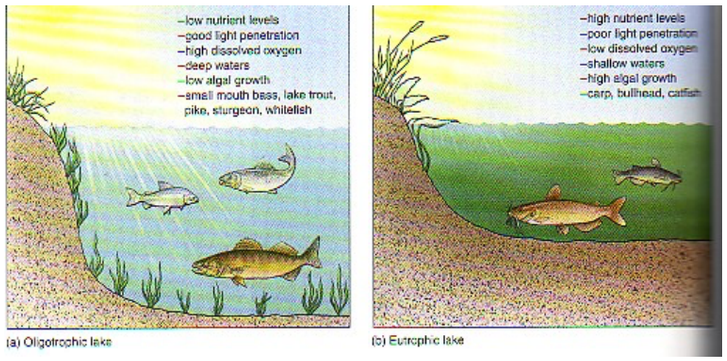
Phosphorous Cycle



Negative from phosphates

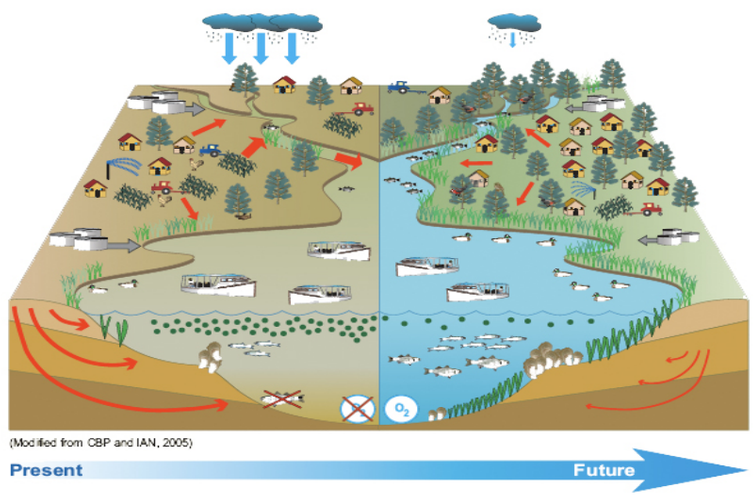
Eutrophication Eutrophication.mp4

Excess fertilizer (PO^4) reaches bodies of water and causes the overproduction of algae and plankton. This prevents sunlight from penetrating the water, producers in ocean can no longer perform photosynthesis.



Eutrophication _ Eco

· Nitrates from fertilizers can be converted N^2O which is a factor in climate change and reduces the ozone layer.



EnviCat® N20 - catalysts against the climate killer nitrous oxide.mp4

Past Exam Questions

1. Fertilizers are widely used in agriculture. Farm 1 only uses potassium chloride, KCl, to fertilize the land. Farm 2 applies only potassium dihydrogen phosphate, KH^2PO^4, as a fertilizer. Both farms are located on the opposite side of a large lake. Since farming can have an effect on the lake ecosystem, measurements have been taken over the past several years to record the changes in the depth of the lakeshore.
    a- Explain which farm will not contribute to the effect of eutrophication.
    b- Explain which side of the lake will become shallower more quickly after several years of fertilizer usage.

2. The accelerated eutrophication of lakes is a concern in several regions of Québec. One town in Québec passed by-laws requiring lakefront property owners to:
    a) Plant more shrubs and trees along the shoreline.
    b) Stop using chemical fertilizers on their lawns and gardens.

Explain how the requirements of the by-law listed above could help prevent accelerated eutrophication.