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What are Tipping Points?

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Scan to know more!

Ecosystems are exposed and can endure gradual changes in environmental conditions. The way an ecosystem responds to such changes depends on several factors, including their resilience. If an ecosystem is resilient, some perturbations would not change its equilibrium state (Fig. 1). However, there are some rapid changes which affect the entire system, moving their equilibrium state to a new contrasting one. When such a threshold is over-passed, we are talking about <u>tipping points.</u>

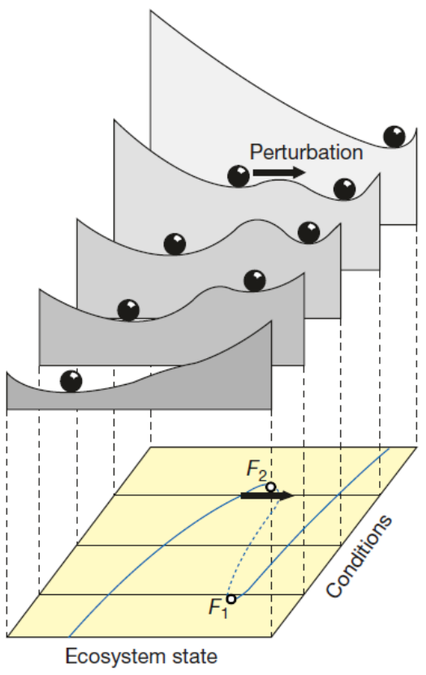
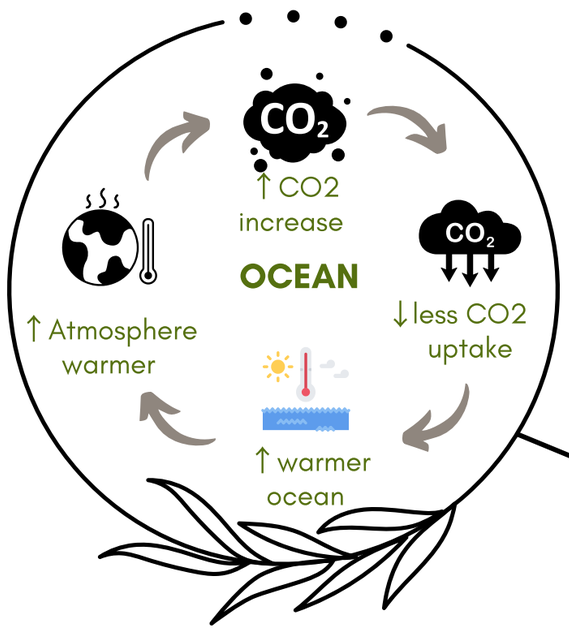
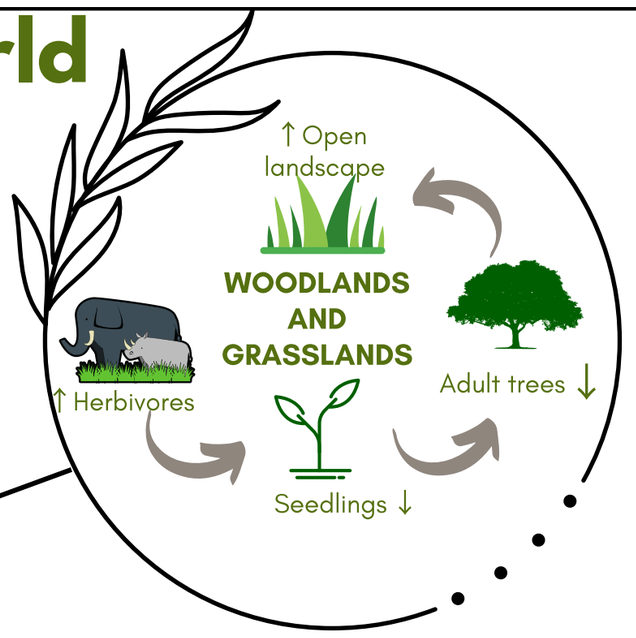


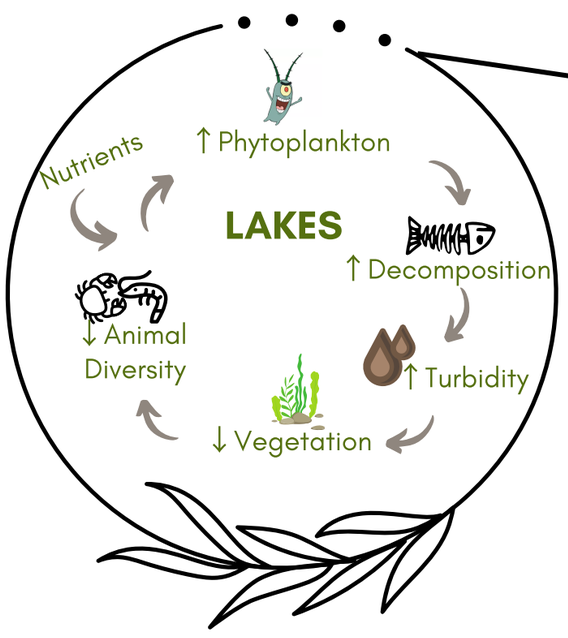
Fig. 1

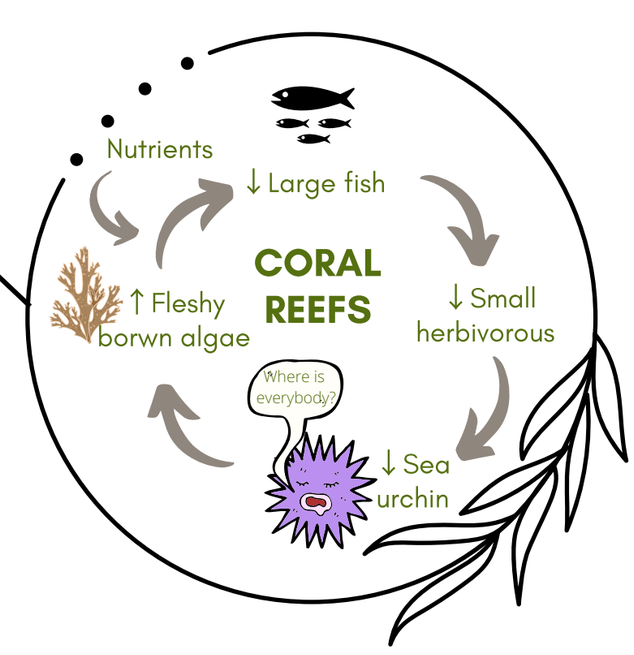
Fig. 1: Fig 1. The bottom plane shows the equilibrium curve. F2 represents the bifurcation point of the system. An increase in conditions beyond this point can change the system into a new state. Now imagine you are trying to push a ball over the hill. If the hill is so steep, You will have to push harder and harder, but if you cross the summit, the ball will go away by itself. The hills represent the resilience of the ecosystems to endure conditions without changing their states.

Tipping points around the world









Remember! Many systems have tipping points which are difficult to forecast and hence the shifts that may happen within them. Ecosystem shifts can cause extensive ecologic and economic resources losses and restoring them to a desired state may need drastic intervention and have heavy cost to society. Therefore the major goal should be reducing the risk of unwanted shifts affecting ecosystem resilience.

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