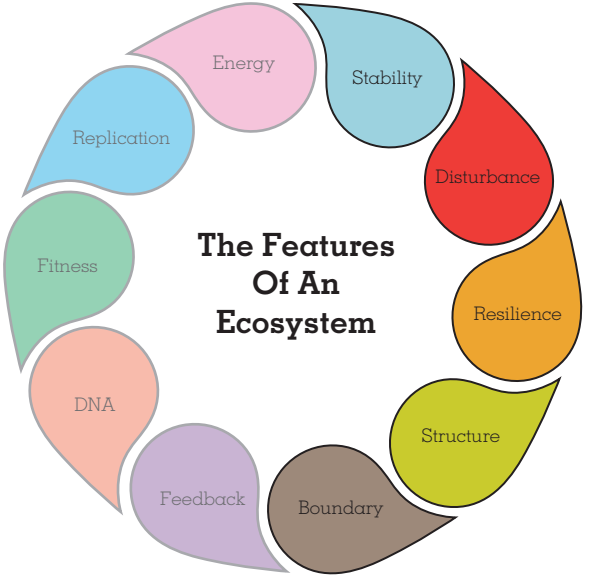


The Features Of An Ecosystem

next

The Features Of An Ecosystem

An Ecosystem is a community of living organisms within a physical environment and the primary organization of life. The living and physical components are linked through nutrient cycles and energy flows.

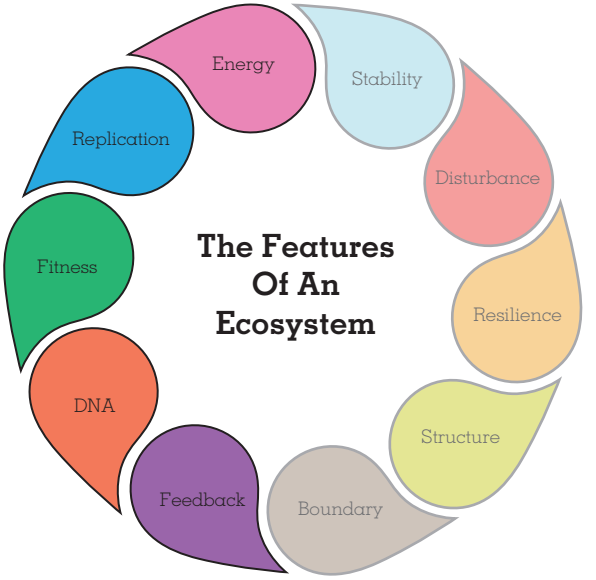
Stability and Dynamics
Stability is key to the sustainability of dynamic systems. The structure and function of a healthy ecosystem should remain relatively stable, even in the face of disturbance. Stress will alter the ecosystem, but it should be able to bounce back.

Disturbance and Equilibrium
An ecosystem can never be directed, only disturbed. Ecosystems will choose which disturbances to notice and how to respond. Equilibrium is the steady state, in which its composition and identity remain generally constant despite fluctuations in physical conditions.

Resilience and Resistance
Higher diversity strengthens stability and improves resistance and resilience in the face of disruptive events. The ability to remain at equilibrium despite disturbances is called resistance. Resilience is how readily an ecosystem returns to equilibrium after being disturbed.

Structure
Information flow of an ecosystem provides the biological platform for successful reproduction and evolution and is key in the success and speed of the evolutionary process.

Boundary
Ecosystem boundaries are the organizing rules that define its scope. A boundary is considered a constraint, allowing different parts to support and co-exist within the system.



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Feedback Loops
Feedback is the primary means of control and is critical to effective functioning and adaptation. Feedback Loops allow the use of information and learning to alter outputs and adjust. Positive feedback amplifies the outputs while negative feedback opposes them. Delays in feedback significantly impact an ecosystem and can diner its adaptability.

DNA
DNA is the smallest definable entity that determines the identity and uniqueness of an ecosystem and will determine the replication and evolution of the ecosystem.

Fitness (Adaptive Capacity)
Evolution of an ecosystem depends on its fitness and optimal conditions for new or further growth. Creativity and adaptability express itself through the spontaneous emergence of novelty (innovation) at critical points of instability to capitalize on opportunities.

Replication (Scale)
In ecosystems reproduction is a stimulus to growth. Understanding which mechanisms are in place for successful replication, and the subsequent modifications (design) required to trigger evolution and diversity, is a multiplier effect that ensures maximum impact.

Energy (Information)
Energy comes from the external sources, creating the essential fuel for activity and growth.