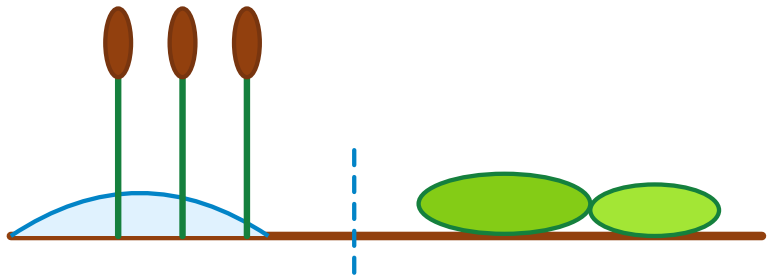
Biology 20

Unit B: Ecosystems and population change

Local ecosystems and limiting factors

Cattails stop where the water stops

- Cattails ring the slough and fade out within a few metres of dry prairie.
- Grass covers the upland where the cattails are absent from the stand.



The cattail edge is the habitat boundary

Abiotic and biotic limits

- Abiotic factors include moisture, temperature, light, soil, oxygen, and nutrients.
- Biotic factors include competitors, predators, and parasites.
- A limiting factor is the condition that most restricts distribution or population size.

Key terms

limiting factor

An abiotic or biotic condition that restricts where a species lives or how large its population grows.

abiotic factor

A physical or chemical condition, such as temperature, moisture, light, oxygen, or soil nutrients.

biotic factor

A living influence, such as a competitor, a predator, or a parasite.

range

The geographic area where a species is found.

A limiting factor sets the habitat edge

- Cattails require saturated soil, so moisture limits their upland range.
- Trout require cold, oxygen-rich water, so temperature and oxygen limit warm ditches.
- Competitors and predators limit abundance even when the abiotic setting is suitable.



Measurement precision

- Write the reading and the plus-or-minus precision of the tool.
- Compare two sites with the same tool before you claim a difference.

Rebuild a disturbed patch

- A reclamation plan names the limiting factors the disturbance created.
- The plan chooses plants that match the moisture and soil that remain.

Limits and tools

- Give one abiotic and one biotic limiting factor for a local species.
- Explain how tool precision changes a conclusion.

Names make the field list usable

- The next lesson assigns binomial names and kingdom-level nutrition.
- Human changes to biodiversity use the limits you measured.

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