

Trophic levels and ecological pyramids

Define a trophic level.

Trophic levels and ecological pyramids

Name trophic levels 1 to 5 in order.

Trophic levels and ecological pyramids

What does a pyramid of numbers show?

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What does a pyramid of biomass show?

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Why can a pyramid of numbers be inverted?

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Give an advantage of a pyramid of biomass over a pyramid of numbers.

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What does a pyramid of energy show?

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Give an advantage of a pyramid of energy over pyramids of numbers or biomass.

Producers, primary consumers, secondary consumers, tertiary consumers and quaternary consumers.

The position of an organism in a food chain, food web or ecological pyramid.

The mass of living material at each trophic level.

The number of organisms at each trophic level.

It takes the size of the organisms into account and is usually pyramid-shaped.

One large producer, such as a tree, can support many small consumers. Numbers ignore the size of organisms.

It is always pyramid-shaped and shows the rate of energy flow over time.

The energy flowing through each trophic level in a given area over a period of time, such as kJ per m² per year.

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Why is energy transfer between trophic levels often not efficient?

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Write the equation for efficiency of energy transfer.

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Why do food chains usually have fewer than five trophic levels?

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Why is it more energy efficient for humans to eat crop plants than livestock fed on crops?

Efficiency (%) = energy transferred to the next level ÷ energy available at the previous level × 100.

Parts are not eaten, some is lost as faeces and urine, and respiration transfers energy as heat to the environment.

There are fewer trophic levels, so less energy is lost, and more people can be fed from the same land.

Energy is lost at each level, so too little remains to support another level.