Ecology

International Baccalaureate · IB Diploma · Environmental Systems and Societies · HL · Vocabulary in context

Word	Example
species /ˈspiːsiːz/	Lions and tigers are different **species**.
population /ˌpɒpjʊˈleɪʃn/	All the rabbits in a field form a **population**.
community /kəˈmjuːnɪti/	All the plants and animals in a pond form a **community**.
ecosystem /ˈiːkəʊsɪstəm/	A pond is an **ecosystem**.
habitat /ˈhæbɪtæt/	A pond is the **habitat** of frogs.
niche /niːʃ/	Each species has its own **niche**: its role and what it eats.
fundamental niche	A species' **fundamental niche** is everywhere it could live with no competitors.
realised niche	Competition squeezes a species into a smaller **realised niche**.
dichotomous key /daɪˈkɒtəməs kiː/	Use a **dichotomous key** to name the leaf.
abiotic factor /ˌæbɪˈɒtɪk ˈfæktə/	Temperature is an **abiotic factor**: it is not living.
biotic factor /baɪˈɒtɪk ˈfæktə/	Predators are a **biotic factor**: they are living.
range of tolerance /reɪndʒ ɒv ˈtɒlərəns/	Fish die outside their **range of tolerance** for temperature.

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exponential growth /ˌekspəˈnenʃl grəʊθ/	A population that doubles every year shows **exponential growth**.
sigmoid curve	A **sigmoid curve** is S-shaped: it levels off when food runs short.
limiting factor /ˈlɪmɪtɪŋ ˈfæktə/	On a dark day, light is the **limiting factor** for photosynthesis.
carrying capacity /ˈkærɪɪŋ kəˈpæsɪti/	Food supply limits the island's **carrying capacity** for rabbits.
negative feedback /ˈnegətɪv ˈfiːdbæk/	**Negative feedback** brings body temperature back to normal.
density-dependent factor	Disease is a **density-dependent factor**: it spreads faster in crowded groups.
density-independent factor	A storm is a **density-independent factor**: it affects small and large groups alike.
competition /ˌkɒmpəˈtɪʃn/	Two plants are in **competition** for light.
predation /prɪˈdeɪʃn/	A fox eating a rabbit is an example of **predation**.
herbivory	Caterpillars eating leaves show **herbivory**.
parasitism /ˈpærəsɪtɪzəm/	A tick feeding on a deer is **parasitism**.
mutualism /ˈmjuːtʃuːəlɪzəm/	Bees and flowering plants benefit from **mutualism**.
disease /dɪˈziːz/	Flu is a **disease**.

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keystone species /ˈkiːstəʊn ˈspiːsiːz/	A **keystone species** has a big effect on its ecosystem.
reproductive strategy	Laying many small eggs is one **reproductive strategy**.
survivorship curve /səˈvaɪvəʃɪp kɜːv/	A **survivorship curve** shows how many animals are still alive at each age.
random /ˈrændəm/	Decay is **random**: we cannot say which nucleus decays next.
systematic /ˌsɪstəˈmætɪk/	Take **systematic** samples every 5 metres along the shore. 5 metres
quadrat /ˈkwɒdræt/	Count the daisies inside the **quadrat**.
transect /trænˈsekt/	We put quadrats along a **transect** from the shore to the woods.
population density /ˌpɒpjʊˈleɪʃn ˈdensɪti/	Count rabbits per hectare to find **population density**.
percentage cover	Estimate the **percentage cover** of grass in the square.
frequency /ˈfriːkwənsi/	Grass **frequency** is the share of squares that contain grass.
capture–mark–release–recapture	**Capture–mark–release–recapture** estimates how many beetles live in an area.
Lincoln index	The **Lincoln index** uses marked animals to estimate population size.

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species richness /ˈspiːsiːz ˈrɪtʃnəs/	A forest with ten kinds of tree has higher **species richness** than one with six.
species diversity	**Species diversity** depends on how many species there are and how even their numbers are.
Simpson's reciprocal index	A higher **Simpson's reciprocal index** means more diversity.
producer /prəˈdjuːsə/	Grass is a **producer**.
photosynthesis /ˌfəʊtəʊˈsɪnθəsɪs/	Plants make sugar by **photosynthesis**.
consumer /kənˈsuːmə/	A rabbit is a **consumer**.
decomposer /ˌdiːkəmˈpəʊzə/	A fungus is a **decomposer**.
respiration /ˌrespɪˈreɪʃn/	**Respiration** releases energy from glucose.
food chain /fuːd tʃeɪn/	A **food chain** shows who eats whom.
trophic level /ˈtrəʊfɪk ˈlevl/	Rabbits are at the second **trophic level**.
food web /fuːd web/	A **food web** links many food chains.
pyramid of numbers	A **pyramid of numbers** shows how many living things are at each level of a food chain.
pyramid of biomass	A **pyramid of biomass** shows the mass of living things at each level.
pyramid of productivity	A **pyramid of productivity** shows the energy flow at each level.

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ecological efficiency	**Ecological efficiency** is the share of energy passed to the next level.
biomagnification /ˌbaɪəʊˌmægnɪfɪ'keɪʃn/	In **biomagnification**, poisons build up at each step of a food chain.
productivity /ˌprɒdək'tɪvɪti/	Forest **productivity** is how fast new plant material grows.
gross primary productivity /grəʊs 'praɪməri ˌprɒdək'tɪvɪti/	**Gross primary productivity** is all the energy plants capture in photosynthesis.
net primary productivity /net 'praɪməri ˌprɒdək'tɪvɪti/	**Net primary productivity** is what is left after plants use some energy in respiration.
gross secondary productivity	**Gross secondary productivity** is the food energy that animals take in.
net secondary productivity	**Net secondary productivity** is the energy animals have left for growth.
maximum sustainable yield	The **maximum sustainable yield** is the biggest catch that can be taken every year.
biogeochemical cycle	The carbon cycle is a **biogeochemical cycle**.
sink /sɪŋk/	A growing forest is a carbon **sink**.
source /sɔːs/	A leaf is a **source**: it makes sugar for the rest of the plant.
residence time	Water has a long **residence time** in deep groundwater: it stays for years.

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ocean acidification /'əʊʃn əˌsɪdɪfɪ'keɪʃn/	Carbon dioxide dissolving in the sea causes **ocean acidification**.
nitrogen fixation /'naɪtrədʒn fɪk'seɪʃn/	**Nitrogen fixation** turns nitrogen gas into useful compounds.
Haber process /'heɪbə 'prəʊses/	The **Haber process** makes ammonia.
assimilation /əˌsɪmɪ'leɪʃn/	Plants use **assimilation** to build proteins from nitrogen they take in.
ammonification /ˌæməˌnɪfɪ'keɪʃn/	In **ammonification**, decomposers release ammonium from dead plants and animals.
nitrification /ˌnaɪtrɪfɪ'keɪʃn/	**Nitrification** turns ammonium into nitrate.
denitrification /diːˌnaɪtrɪfɪ'keɪʃn/	**Denitrification** returns nitrogen gas to the air.
eutrophication /juːtrəfɪ'keɪʃn/	**Eutrophication** happens when fertiliser runs into a lake.
weather /'weðə/	Today's **weather** is wet and windy.
climate /'klaɪmət/	The desert has a hot, dry **climate**.
tricellular model	The **tricellular model** shows three loops of moving air in each half of the Earth.
inter-tropical convergence zone	Warm, wet air rises at the **inter-tropical convergence zone**, near the equator.
biome /'baɪəʊm/	A desert is a **biome** with little rainfall.
zonation	**Zonation** makes bands of different plants along the shore.

Word	Example
succession /səkˈseʃn/	In **succession**, the plants in an area change over time.
seral stage	A **seral stage** is one step in a succession.
primary succession /ˈpraɪməri səkˈseʃn/	**Primary succession** begins on bare rock without soil.
secondary succession /ˈsekəndəri səkˈseʃn/	**Secondary succession** begins where soil remains after disturbance.
pioneer species /paɪəˈnɪə ˈspiːsiːz/	A **pioneer species**, such as moss, is the first to grow on bare ground.
climax community /ˈklaɪmæks kəˈmjuːnɪti/	A **climax community** is the stable final stage of succession.
plagioclimax	Grazing keeps a grassland as a **plagioclimax**, stopping it from becoming forest.
clade /kleɪd/	A **clade** is a group made of one ancestor and all of its descendants.

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