

SEA WATER BACTERIA

Pre-reading

1. What is microbial biodiversity, biosphere, biomass? Can you pronounce these words correctly?

2. What is the difference between a virus and a bacterium? Complete the chart and then compare.

CHARACTERISTICS	BACTERIUM	VIRUS
unable to replicate without a host cell		
prokaryotic		
unicellular		
usually having a cell wall		
lacking chlorophyll		
intracellular		
parasites		
microscopic living organism		
reproduces by cell division (fission) or by forming spores		
ultramicroscopic infectious agent		
a piece of nucleic acid (DNA or RNA) wrapped in a thin coat of protein		
replicates only within the cells of living hosts		

3. How many types of different bacteria can one litre of seawater contain? Have a guess.

Reading

Part A

4. Read Part A of the text and find the answers to the following questions

What is the aim of the whole project?

What are the latest findings? Are they identical with their previous estimates?

How were the findings obtained?

Where were the results published?

5. Language focus

What is the expression for counting of a population?

Find a verb with the same meaning.

What do the verbs *allow for*, *probe*, *constitute* mean?

Parts B and C

6. Information gap.

Work in pairs. One part of your text (B or C) is incomplete. You have to ask your partner (C/B) about the piece of information that is missing. Create one direct question and one indirect. Write the questions.

Examples: *direct question - What is your name?*

indirect question - I wonder what your name is.

Part C: Rare biosphere

7. Make a definition of *gene pool*.

8. Language focus

Find the synonyms for *make it possible* (Parts A, B).

Find the antonym of *scarce* in the text? (Part C).

Translate the sentence: *They could easily have been overlooked by previous studies.*

There are two expressions having the meaning *uncommon, unusual* – find them in the text

Major ecological changes: what is a synonym of *major*.....

what is an antonym of *major*.....

Look for the words that express uncertainty, doubt. (Parts C, D)

9. True/false

The new findings confirmed the former estimates.

PNAS means Proceedings of Natural Academy of Sciences.

The 454 tag sequencing technique enables to identify the rare background population.

The project will scale minimum 1200 marine sites.

10. Formulate the key idea of the text in one sentence.

biomass	/'baɪəʊmæs \$ 'baɪou-/
biodiversity	/baɪəʊdaɪ'vɜːsɪtɪ, -dɪ- \$ baɪəʊdaɪ'vɜːr-, -dɪ-/
biosphere	/'baɪəsfiə \$ -sfɪr/
catalogue (n)	/'kætəlog \$ -lɔːg, -lɑːg/
census	/'sensəs/
snippet	/'snɪpɪt/

snippet a small part, piece, or thing; *especially* : a brief quotable passage, kousek
allow for – umožnit

gene pool = [species](#) or a [population](#) is the complete set of unique [alleles](#) that would be found by inspecting the genetic material of every living member of that species or population. A large gene pool indicates extensive [genetic diversity](#), which is associated with robust populations that can survive bouts of intense [selection](#). Meanwhile, low genetic diversity (see [inbreeding](#) and [population bottlenecks](#)) can cause reduced [fitness](#) and an increased chance of [extinction](#).

When many alleles exist for a given gene or [locus](#), a population is said to be [polymorphic](#) with respect to that gene or locus. When no variation exists, it is labelled [monomorphic](#).

gene pool – genofond (atlas.cz)

gene pool [countable]

HB all of the genes available to a particular species

mi□crobe /'maɪkrəʊb \$ -krəʊb/ [countable]

HB an extremely small living thing which you can only see if you use a microscope. Some microbes can cause diseases (long)

vi□rus /'vaɪərəs \$ 'vaɪrəs/

1 [uncountable and countable]HBM a very small living thing that causes infectious illnesses:

☛ children infected with the Aids virus

☛ a virus infection

co□er□cive /kəʊ'zɪsɪv \$ kou'zɪr-/ formal donucovací

using threats or orders to make someone do something they do not want to do:

☛ coercive measures to reduce absenteeism

—coercively adverb

a. census - to make a complete list of all the things in a group:

probe1 /prəʊb \$ prəʊb/ [intransitive and transitive]

1 to ask questions in order to find things out, especially things that other people do not want you to know

probe into

☛ I don't want to probe too deeply into your personal affairs.

- ☛ Police probed claims that he had sold drugs.
 - 2 to look for something or examine something, using a long thin object:
 - ☛ Jules probed the mud gingerly with a stick.
- snímat, sondovat, prozkoumat

pri□ma□ry1 S3 W2 /'praɪməri \$ -meri/

- 1 [usually before noun] most important [= main]:
- ☛ Our primary concern is to provide the refugees with food and healthcare.
 - ☛ Many of the villagers rely on fishing as their primary source of income.
- primary purpose/aim/objective
- ☛ Their primary objective is to make money.
 - ☛ Personal safety is of primary importance.
- 2 [only before noun]SES especially British English relating to the education of children between five and eleven years old [= elementary AmE; ↔ secondary]:
- ☛ a primary teacher
 - ☛ primary education
 - ☛ teaching at primary level
- 3 happening or developing before other things:
- ☛ a primary tumour
 - ☛ Counselling was given as a primary therapy for depression.

con□sti□tute W3 /'kɒnstɪtʃu:t \$ 'kɑ:nstɪtu:t/

- 1 [linking verb, not in progressive] to be considered to be something:
- ☛ Failing to complete the work constitutes a breach of the employment contract.
 - ☛ The rise in crime constitutes a threat to society.
- 2 [linking verb, not in progressive] if several people or things constitute something, they are the parts that form it:
- ☛ We must redefine what constitutes a family.
- 3 [transitive usually in passive] formal to officially form a group or organization:
- ☛ The Federation was constituted in 1949.

tag1 /tæg/

- 1 **small piece of paper etc** [countable]D a small piece of paper, plastic etc attached to something to show what it is, who owns it, what it costs etc
name/identity/price tag
- ☛ All the staff wore name tags.
- dog tag
- 2 **game** [uncountable]DG a children's game in which one player chases and tries to touch the others
- 3 **electronic object** also electronic tag [countable] British English a piece of equipment that you attach to an animal or person, especially someone who has just left prison, so that you always know where they are
- 4 **TD computer** [countable] a computer code attached to a word or phrase in a computer document in order to arrange the data in a particular way
- 5 **name** [countable] a word or phrase which is used to describe a person, group, or thing, but which is often unfair or not correct:
- ☛ His speed earned him the tag of 'the runner'.

rare S3 W2 /reə \$ rer/ comparative rarer, superlative rarest

1 not seen or found very often, or not happening very often [\neq common; \leftrightarrow unusual]:

👉 This species of plant is becoming increasingly rare.

major

[usually before noun] very large or important, when compared to other things or people of a similar kind [\neq minor]

major role/part/factor etc

👉 Britain played a major role in the negotiations.

👉 There are two major political parties in the US.

👉 The government's major concern is with preventing road accidents.

👉 Smoking is one of the major causes of cancer.

👉 the major developments in computer technology

👉 a major road