**Lesson: Restoring the Earth**

**Level:** B2-C1

**Lesson Text Source:** <https://www.ted.com/talks/susan_graham_a_new_way_to_restore_earth_s_biodiversity_from_the_air>

By Susan Graham

**WARM UP** (5 min)

* Have you ever planted a tree? Or grown a home garden?
* How do you contribute to preserve the environment (if applicable)?

**1. Before you watch!** (10 min)

**1.1.** **Pronunciation** (5 min)

**Directions:** *All of the following words derived from Latin roots. You can then easily infer the meaning, but… are you familiar with their correct pronunciation? Under your teacher’s supervision, make sure you can say these words accurately.*

* hectare (n.) /ˈhɛk-tɛr/
* degraded (v.) /dɪ-ˈgreɪ-*r*ɪd/
* restore (v.) /rɪs-ˈtɔr/
* enormous (adj.) /ɪ-ˈnɔr-məs/
* ecosystem (n.) /ˈiːkəʊ-sɪs-təm/
* ecology (n.) /ɪ-ˈkɑ-lə-yyi/
* biodiverse (adj.) /ˌba-ɪəʊ-daɪ-ˈvɜr-sɪ-tɪ/
* catastrophic (adj.) /ˌkæ-təs-ˈtrɑ-fɪk/
* accelerate (v.) /ækˈsɛləˌreɪt/
* plague (n.; v.) /pleɪg/
* eradicate (v.) /ɪˈrædɪˌkeɪt/
* complexity (n.) /kəmˈplɛk-sɪ-ti/

**1.2.** **New Words and Expressions (5 min)**

**Directions:** Get familiar with the meaning of the following words before watching the lesson video.

* expertise (n.) /ˌɛks-per-ˈtiz/: expert skill or knowledge.
* facsimile (n.) /fæk-ˈsɪ-məli/: an exact copy or manuscript
* drone (n.) /droun/: a craft operated by remote control:
* gather (v. ph.): collect, accumulate (for example, data)
* decimate (n.) /ˈdɛsɪmeɪt/: destroy a great part of
* diminish (v.) /dɪˈmɪnɪʃ/: (to cause to) seem smaller, decrease.
* thrive (v.) /θraɪv/: to prosper, grow, be successful.

**2. Comprehension** (10 min)

**2.1.** **General**

**Question:** *What is the video about? What kind of awareness is it trying to raise?*

**2.2.** **Specific**

**Direction:** *Watch again and collect the answers for the following specific question.*

* In total, how many hectares of land are changed every year?
* What does the author understand by restoration? What’s her personal view?
* How does technology serve the purpose of restoration?

3. **Video Transcript** (Pronunciation in Context) (10 min)

**Directions:** Read the video transcript aloud for pronunciation purposes. What does the author imply by the phrases **in bold**?

*Every year, humans change 10 million hectares of land,* ***and not for the better****. Right now, there are more than two billion hectares of degraded land around the world.* ***We need to fix this fast****, and technology can help. Restoration is an enormous, complex challenge.* ***It cannot be done by simply planting trees****. We need to bring native, complex ecosystems back to life, and* ***it requires deep ecological expertise****. Until now, we have been limited to poor facsimiles, like vast plantations of a single kind of tree. But drones change that by allowing us to gather data and* ***plant the right mix of vegetation quickly****, at enormous scales. And machine-learning analysis enables us to plan the planting and then monitor our restoration work.*

*For example, in Australia, we're using drone-based planting and ecology-trained AI to* ***restore thousands of hectares of land mined for coal****. Not just planting trees,* ***but bringing back biodiverse, complex ecosystems****. On a larger scale, native forests here in Australia have been decimated by catastrophic bushfires and land-clearing for agriculture.* ***This means diminished food sources and safe habitats*** *for koalas. A new project would allow us to accelerate the restoration of thousands of hectares of koala forests over the next few years.*

*With these combined technologies,* ***we're able to scale up restoration*** *from a small island to an entire continent. We can return forests to land where a mine used to be, or* ***recreate ecosystems*** *like the one we're hoping to restore on Lord Howe Island, birthplace of one of the world's largest insects. This unique island is plagued by imported species, where we're helping to eradicate the undesirable plants to allow endemic species to thrive.*

*It's not just billions of trees. It's restoring nature* ***in all its complexity and beauty****.*

*Thank you.*

**4.** **Vocabulary Building** (10 min)

**4.1. Word Families** (5 min)

**Directions:** Complete the chart with the corresponding word family, as in the example.

|  |  |  |
| --- | --- | --- |
| **VERB** | **NOUN** | **ADJECTIVE** |
| *challenge* | **challenge** | *challenging* |
|  |  | **degraded** |
|  | **restoration** |  |
|  | **plantation** |  |
| **accelerate** |  |  |
| **eradicate** |  |  |
|  | **plague** |  |
|  | **analysis** |  |
| **monitor** |  |  |
| **return** |  |  |

**4.2. Synonyms** (5 min)

**Directions:** In oral form, provide a synonym for the underlined words without affecting the sentence meaning.

* *We need to fix this fast, and technology can help.*

*Example: mend, solve, resolve*

* *Restoration is an enormous, complex challenge.*
* *It cannot be done by simply planting trees.*
* *It requires deep ecological expertise.*
* *drones change that by allowing us to gather data*
* *Machine-learning analysis enables us to monitor our restoration work.*
* *This means diminished food sources and safe habitats for koalas.*
* *A new project would allow us to accelerate the restoration of thousands of hectares.*
* *We're helping to eradicate the undesirable plants.*

**5. Speaking:** Environmental Talk (20 min)

**Directions:** *Answer the following questions in the form of oral presentations.*

**5.1. A Broader Perspective on the Environment**

* Environmentally speaking, how has the world changed since you were a child?
* What is the most important issue facing the environment today?
* Which is more important? Increasing people's standard of living or protecting the environment?
* Who do you think is more responsible for pollution, individual people or governments?
* Are companies more or less environmentally responsible now than they were in the past?
* How is pollution effecting the environment of the United States today? How about your own country?
* Do you think overpopulation is an important environmental issue?
* What can large cities do to improve their air quality? Do you think car emissions should be banned from city centers?
* Should we make the development of renewable energy sources an economic priority?
* What should we do to increase the awareness about environmental pollution?
* Do you think there are lessons to learn from nature?

**5.2.** **My Personal Contribution**

* What can you do to help prevent pollution?
* What are some things that can be recycled? What are some things which you recycle?
* Do you usually drink bottled water? Why or why not?
* In what ways do you contribute to save more water?
* Do you have any ideas on how to minimize the use of plastic bags?
* Do think global warming is real? Do you think this is an effect of pollution? Are worried about global warming?
* Are there litter laws where you live? If so, what is the penalty for littering? How often is garbage collected in your neighborhood?
* What are some things that your community is doing to help the environment (if applicable)? For instance, does your city have a smoking ban law in place?
* In general, how does your city/state make it harder or easier to save the environment?