

## Unit 2 FOREST DEATH

### Text A Acid rain

Acid rain was the great horror of the 1980s. We saw the sick and dying trees on the TV news. It was told that acid rain was killing our forests. Looking at publications from the 1980s we will see that they did not spare their readers . Acid rain was the “invisible plague” which was creating an “ecological Hiroshima”. The UN Brundtland report stated that “in Europe, acid precipitation kills forests”. Several present-day ecology books repeat the charge. A popular book published in 1989 with the title *Acid Rain: Threats to life* told us:

“An acid plague is sweeping the Earth. The rain, snow, fog, and mist have become acid because of pollution from factories and cars all over the world, and it has been converted to acid rain.

Acid rain destroys our buildings and statues but it is also threatens the natural environment.

One third of the German forests have been attacked, so the trees are either dead or dying.

4000 Swedish lakes are dead and 14,000 are in the process of dying...

In cities all over the Earth, people are being suffocated – or - dying - because the smoke cannot escape...

Acid rain has become one of the most serious threats to life here on Earth”.

Today we know that acid rain wasn't so dangerous .“Acid rain” has typically been used as a collective term for damage to forests, lakes and buildings believed to be caused by emissions of NO or sulfur dioxide. In fact all rain, even before industrialization, has been naturally acidic. The expression acid rain is associated with the extra acid that arises when NO or sulfur dioxide reacted with water create sulfuric or nitric acid.

### VOCABULARY:

To spare	Беречь, жалеть	To suffocate	Задыхаться
Plague	Чума, бедствие напасть	A bit shrill	Немного резкий
To flat out	Изощряться	To make out	Различить, жить
Precipitation	Выпадение осадков	Nitric acid	Азотная кислота
To repeat the charge	Повторить обвинение	Fog	Туман, дымка, мгла, завеса
To sweep	Уничтожать	Mist	
To convert	Преобразовывать	Sulfuric acid	Серная кислота

## EXECISE 1

Соответствуют ли следующие высказывания содержанию текста:

- Acid rain was the great horror of the 1990s.
- Acid rain was killing our animals.
- An acid plague is sweeping the Moon.
- People are enjoying because the smoke can't escape.
- NO or sulfur dioxide reacted with the water to create sulfuric or nitric acid.

## EXECISE 2

Закончите предложения:

1. "Acid rain" has typically been used as a collective term	for damage to forests.
	for fertilization.
	for pollution.

2. "Acid rain" has typically been believed to be caused by emissions	of NO or sulfur dioxide.
	of lead.
	of oil and gas.

3. The extra acid could arise when NO or sulfur dioxide reacted	with water	to create sulfuric or nitric acid.
	with oxygen	
	with lead	

4. The expression acid rain has been associated	with the extra acid.
	with moderate acid.
	with average acid.

5.	The rain, snow, fog, and mist	have become acid because of pollution from factories and cars all over the world.
	The building and statues	
	The factories and the plants	

## Text B Forest Death

In the late seventies and early eighties, areas of central Europe were observed to be suffering extreme forest death. The hardest hit areas in Bavaria had up to 40 percent sick and dying trees. A group of German scientists predicted that Europe's forests were threatened by acid rain and 10 percent of all trees were at risk. Despite fierce criticism from other scientists, the images of the sick and dying trees reached all round the world, sowing anxiety both in other European countries and in the US.

The fear of and assertions about acid rain led to numerous scientific investigations. The official American acid rain project, the National Acid Precipitation Assessment Program (NAPAP), became the world's biggest, longest and most expensive; it spanned most of a decade, involved about 700 scientists, and cost half a billion dollars. A whole series of questions were looked into in order to expose links between acid rain and forests, lakes and buildings.

We examine the results of one of NAPAP's long-term controlled experiments, in which seedlings from three species of trees were exposed to various concentrations of acid rain over a period of almost three years. The trees were cultivated in relatively poor soil in order to maximize any negative effects of the acid rain. No acid rain effect was detected on any of the three species of tree. Even with precipitation almost ten times as acidic as the average acid rain in the eastern US (pH 4.2) the trees grew just as fast. In fact many of the NAPAP's studies showed that trees exposed to moderate acid rain grew faster. Some even longer controlled experiments were carried out in Norway, and here too the conclusion was that the predicted negative effects of acid rain "could not be demonstrated." For this reason NAPAP's conclusion was that "the vast majority of forests in the U.S. and Canada are not effected by decline... Moreover there is no case of forest decline in which acidic deposition is known to be a predominant cause."

### VOCABULARY:

Hit	Известный	To detect	Обнаруживать
To predict	Предсказывать	Precipitation	Выпадение осадков
Fierce	Жесткий, лютый	Moderate	Умеренный

criticism	Критика	Seedling	Саженец
To sow	Сеять	Decline	Упадок, гибель
Assertion	Утверждение	Deposition	Осадок
To span	Длиться, простираться	Predominant	Преобладающий
To expose	Подвергать воздействию	Vast majority	Подавляющее большинство

### EXERCISE 1

Расскажите об экологической программе NAPAP. Кто принимал в ней участие? На какой период времени она была рассчитана? Какие денежные средства были затрачены на ее реализацию? Проводились эксперименты по изучению вредного воздействия чего? Какова была их продолжительность? Проводилось изучение воздействия осадков какой концентрации?

### EXERCISE 2

Ответьте на следующие вопросы: 1. Когда опасность кислотных дождей стала восприниматься как первостепенная угроза лесам? 3. В каких странах проводились исследования по изучению вредного воздействия кислотных дождей? 4. Выскажите свою точку зрения о воздействии кислотных дождей на леса, используя факты из текста.

### EXERCISE 3

Найдите эквиваленты: умеренный кислотный дождь, в начале 70-х годов, подвергаться риску, нет ни одного случая, быть основной причиной, в конце 60-х годов, продолжаться более одного десятилетия, сеющий страх.

### EXERCISE 4

Составьте фразы, соответствующие содержанию текста:

1. The National Acid Precipitation Assessment Program (NAPAP) became	the world's biggest, longest and most expensive.
	the world's smallest, shortest and cheapest.
	the world's biggest and cheapest.

2. The National Acid Precipitation Assessment Program (NAPAP) spanned	most of a decade.
	most of the century.

	most of the month.
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3. The National Acid Precipitation Assessment Program (NAPAP)	involved about 700 scientists and cost one thousand dollars.
	involved about 700 scientists and cost half a billion dollars.
	involved about 100 scientists and cost half a billion dollars.

4. The trees were cultivated in relatively	poor soil	in order to maximize any negative effects of the acid rain.
	rich soil	
	average soil	

5. The seedlings from three species	of trees	were exposed to various concentrations of acid rain over a period of almost three years.
	of animals	
	of flowers	

## EXECISE 5

Согласны ли вы с краткими выводами по содержанию предыдущего текста:

- Unfortunately, the myth of forests killed by acid rains lives in many places.
- It is stated quite casually how personal health problems are turning into public environment issues.
- It is simple to write ‘ Sulfur in the atmosphere produces acid rain. Acid rain kills forests. But not borne out by the evidence’.

### Text C Other causes of Forest Death

It has turned out that forest death never actually affected more than 0.5 percent of the overall European forest area. It also turns out that the substantial local forest death in Bavaria, Poland and the Czech Republic was due not to acid rain but to local pollution. Localized pollution has been regulated locally, unlike acid rain which crosses national boundaries. SO<sub>2</sub> emissions have been reduced 30 percent in Germany and 50 percent in both Poland and the Czech Republic. Local SO<sub>2</sub> concentrations decreased 50-70 percent over just seven years from 1989.

The growth of European forest has not been reduced, as the theories about acid rain had predicted. “During the past few decades, forest growth has strongly

increased over large parts of Europe”, concludes a Dutch study. Since the 1950s trees have begun to grow faster and faster. It is due to the fact that part of the trees fertilization requirement is provided for by nitrogen pollution.

Large-scale reports are prepared now about the health of various species of trees in Europe. The proportion of trees with heavy foliage loss and the proportion of discolored trees is measured. This proportion grew dramatically from the first reports in 1983 and led to panic. However, this was due to a change in the method of calculation.

Today, the proportion of trees showing heavy foliage loss is over 25 percent. Many people claim that our forests are in a bad state. According to frequently advanced theory, the pollution does not directly cause damage to the trees, but it weakens the trees’ resistance, making them more susceptible to insect attack, frost and drought. The effect of this pollution can be indirect and delayed. However, there is very little or no correlation between the polluted areas and the forest death.

The European Environment Agency concludes that “a causal connection cannot... be established between an input of acid deposition... and observed foliage reduction». The monitoring results show an increasing defoliation, but it may be due to the aging of the monitored tree stands.

German scientist has analyzed photographs of forest areas taken 30-60 years ago and found that the proportion of damaged trees was the same. Foliage loss is a non-specific expression that applies to numerous specific, familiar diseases.

### VOCABULARY:

substantial	Значительный	Correlation	Взаимоотношение
nitrogen	Азот	Deposition	Осадок
Foliage	Листва	Defoliation	Опадение листвы
Understandably	Понятно	Aging=ageing	Старение
Drought	Засуха	Stand	Лесопосадка, лесонасаждение
Susceptible	Восприимчивый	To urge	Подстегивать, подгонять
To weaken	Ослаблять		

### EXERCISE 1

Найдите эквиваленты: контролируемый на местном уровне, локализованное загрязнение, не имеет ничего общего, значительно увеличиться, быть обеспеченным за счет, всеобъемлющий доклад, согласно одной часто выдвигаемой теории, истинность данной теории не так легко установить, часто выдвигаемые претензии, казаться паразитическим.

## EXERCISE 2

Следующие названия абзацев текста расставьте в правильном порядке:

- Foliage loss is normal process.
- The trees continue to grow.
- The theory of acid rain damage.
- The panic reports.
- The natural death of forests.

## EXERCISE 3

Добавьте по одному предложению к каждому абзацу текста в соответствии с содержанием:

- The new methods show new results.
- Why do we consider these phenomena together?
- SO emissions have been reduced 34 percent in Bavaria.
- No more special fertilization is required.
- We carry out more detailed researches.
- This natural process is not taken into account.

## EXERCISE 4

Составьте предложения со следующими выражениями.

To increase up to ...%	Увеличить до ...%
Decrease of ...%	Уменьшение в ...%
By ...%	На ...%
The ...% increase	...% (процентное увеличение)
A guarantee for ...% of	Гарантия на ...% от
To increase it to ...%	Увеличить это до ...%

