

actionbioscience.org lesson

To accompany the peer-reviewed article by Sten Nilsson, Ph.D.:

“Do We Have Enough Forests?” (March 2001)

www.actionbioscience.org/environment/nilsson.html

Deforestation: Can We See the Forest for the Trees? (June 2002)

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Educator’s section: *p. 1-2*

Student handout 1: *p. 3*

Student handout 2: *p. 4*

Grades & Levels:

- **Handout 1:** high school (general-advanced)
- **Handout 2:** high school (advanced/AP) – undergraduate (year 1)

Time Recommendations:

- 1-2 class periods for article review and questions
- up to 2 weeks for projects

NSES (USA) Content Standards, 9-12:

- NSES 1.5. Unifying Concepts & Processes: form & function
- NSES 3.5. Physical Science: conservation of energy & increase in disorder
- NSES 4.4. Life Science: interdependence of organisms
- NSES 7.3. Science in Personal & Social Perspectives: natural resources

Lesson Objectives: Students will...

- explore the issues concerning forest resources throughout the world
- examine the problems that deforestation causes to both people and the environment
- consider social, economic, and environmental reasons why forested lands are diminishing
- find out about the forested lands in their own communities
- discuss solutions to decreasing forests and the reasons why they are often difficult to implement

Key Words Include:

biodiversity, deforestation, coniferous, forest economy, forests, fuelwood, human impacts, industrial wood, land degradation, natural resources, plantations, policy, socioeconomic

Preparation

Article Discussion:

- Have the students read the article “Do We Have Enough Forests?” by Sten Nilsson at www.actionbioscience.org/environment/nilsson.html. For the “Article Discussion” on page 2, pose the questions for whole class discussion, or have students form small groups and present their answers to the class.

Student Handouts:

- Part B of each student handout provides a list of projects that require investigation to be done individually or in teams of two or more.
- Refer students to *useful links* in the “Educator Resources” section at the end of the article. These links provide information and research ideas about forests for student activities.

For Educators: Article Discussion

About the article by Sten Nilsson, Ph.D.: “Do We Have Enough Forests?”

www.actionbioscience.org/environment/nilsson.html

Article Content Questions:

1. How do people depend on trees?
2. Where are forests most common throughout the world?
3. What is deforestation, and in what part of the world does the article say it happens most often?
4. What activities can help to ease the shortage of forestry wood?
5. Why does Dr. Nilsson say that recycling will probably not improve shortages of wood products?
6. What forest resources are affected by changes in the ways that we use land?
7. What is the biggest problem in our efforts to conserve forest products?

Extension Questions:

1. Identify some wood products or bi-products in your classroom surrounding?
2. Why do you think deforestation is most often found in tropical countries?
3. Dr. Nilsson mentioned that improving the carbon balance in the atmosphere can be helped in part by replacing fossil fuels (like coal) with wood. What do you think would be the results of that change in fuel source for the forests?
4. What kind of information do scientists need to help in conservation of forested lands?
5. What did the World Forestry Congress mean when they stated that "forests are for the people"? Do you agree? If not, what else are forests good for?
6. List things you can do in your daily life to reduce the need for forest products.
7. In the box below are actions recommended by an international organization to reduce deforestation.
 - Discuss the implications of each recommendation.
 - If you were a member of an environmental activist group, consider actions your group could take to ensure each recommendation is acted upon in your country.

1. Stop the destruction of the earth's forests: their material products and ecological services are severely threatened.
2. Use the world's rich forest resources to improve life for poor people and for the benefit of forest-dependent communities.
3. Put the public interest first and involve people in decisions about forest use.
4. Get the price of forests rights, to reflect their full ecological and social values, and to stop harmful subsidies.
5. Apply sustainable forest management approaches so we may use forests without abusing them.
6. Develop new measures of forest capital so we know whether the situation is improving or worsening.
7. Plan for the use and protection of whole landscapes, not the forest in isolation.
8. Make better use of knowledge about forests, and greatly expand this information base.
9. Accelerate research and training so sustainable forest management can become a reality quickly.
10. Make bold political decisions and develop new civil society institutions to improve governance and accountability regarding forest use.

Final Report, World Commission on Forests and Sustainable Development, April 1999

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Student Handout 1

A. ESSAYS ON THE ARTICLE

Write an essay on one of the following topics:

- In what ways are forests and forest products important to people throughout the world?
- Why are there conflicts between logging companies and environmentalists? Include recommendations for reducing these conflicts.
- Explain at least four reasons why it is important for us to limit our increasing demands for forest products.
- How are natural resources important to the survival of our species?

B. PROJECTS

1. Visual Presentations

- a) Where are the forests closest to your community? Create a map of your surrounding area showing the forested lands. Indicate which lands are protected areas.
- b) What are the different kinds of forests in the world? Create a world map showing where each kind of forest can be found.

2. Guest Speaker

Invite a manager of a local forest to come to your school and talk to your class on how they protect forests and what demands they encounter for uses of forests. Research the topic and prepare questions for the speaker, including questions about how the speaker balances conflicts of public use and forest conservation and management. If it is impossible for a guest speaker to come to your class, conduct an interview by phone or e-mail.

3. Get Involved

Find out if there is a non-government organization in your community that is concerned about forest conservation or management. Contact them for information and ask how students in your school can get involved. Report your findings back to the class.

4. Investigation

Survey your neighborhood and count the number of houses made out of wood, brick, adobe, stone, concrete, or other materials. Make a graph to show the materials used for each type of house. Discuss how the graph might be different in the near future, if forest product use continues as Dr. Nilsson predicts.

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Student Handout 2

A. ESSAYS ON THE ARTICLE

Write an essay on one of the following topics:

- What is the relationship between a nation's economy and forests?
- How much forest do *you* think we need? In answering this question, examine the conflicts between the income sources from forests and the needs to protect forests for future generations.
- What conflicts can arise between people's use of forests and animal habitat protection? Provide examples, such as the spotted owl, scrub jay, or red-cockaded woodpecker.
- What alternative materials can we use instead of wood products? Explain the benefits and disadvantages of each alternative.

B. PROJECTS

1. Forest Management

- a) Where are the forests in your region? Create a map of your region showing the location of forested lands, who manages them (e.g., federal, private), and the type of forests found in these areas.
- b) Interview a manager of one of these protected forests about how they manage the forests and what demands they encounter for its uses. Ask the manager questions about how they balance conflicts of public use and forest resource conservation. Summarize your interview for the class.

2. Get Involved

Contact a regional agency or non-government organization in your community that is concerned about forest conservation or management. Contact them for information and suggestions on how individuals can get involved. Report your findings back to the class.

3. Investigation

What are the major uses for wood in your community? Contact a local lumber company or distributor for information. Make a graph showing the proportions for each type of use. Discuss how the statistics would change in different biomes, such as in the tropics or desert.

4. Political Action

Review the information in the first section, *current forest resources*, of Dr. Nilsson's article.

- Write a policy statement for each item listed in this section.

Collect all the statements proposed by students. Compile a master list and send the recommendations to the forestry division of your regional or national government.

5. Town Meeting

A logging company has gained the rights to protected forest lands near your community, intending to clear cut the area. Choose one of the following roles and state your case at a mock town meeting about the issue:

- logger
- nature enthusiast
- environmental scientist
- small business owner in the area
- forest manager
- representative from the logging company
- area economic development manager