Introduction to Habitat Alteration

Summary
Students will be introduced to the concepts of habitat and habitat change through lecturing and guided inquiry. Students will engage in an open discussion of habitat change, view time-lapse footage of change, and identify/evaluate images of natural and human caused habitat alteration. Attention will be focused on identifying indicators and causes of habitat alteration.

Main Core Tie
Science - Biology
Standard 1 Objective 3

Additional Core Ties
Science - 3rd Grade
Standard 2 Objective 2
Science - 4th Grade
Standard 5 Objective 1
Science - 4th Grade
Standard 5 Objective 2
Science - 5th Grade
Standard 5 Objective 2
Science - Biology
Standard 1 Objective 1
SEEd - Grade 6
Strand 6.4: STABILITY AND CHANGE IN ECOSYSTEMS Standard 6.4.4

Time Frame
1 class periods of 45 minutes each

Group Size
Pairs

Life Skills
Thinking & Reasoning, Communication

Materials
Introductory powerpoint
Time lapse video of habitat alteration
Computer and projector
10-15 before and after photos of habitat alteration
Lab notebooks

Background for Teachers
This lesson is intended to be an introduction to habitats and habitat alteration and explores natural and human impact on environments. Depending on the time you spend on each activity described this lesson could take from one to three (1-3) 45 minute periods.
Student Prior Knowledge
Students need a basic understanding of energy & matter flow.

Intended Learning Outcomes
1. Use Science Process and Thinking Skills
   a. Observe objects, events and patterns and record both qualitative and quantitative information.
   b. Use comparisons to help understand observations and phenomena.
3. Demonstrate Understanding of Science Concepts, Principles and Systems
   a. Know and explain science information specified for the subject being studied.
4. Communicate Effectively Using Science Language and Reasoning
   a. Provide relevant data to support their inferences and conclusions.
5. Demonstrate Awareness of Social and Historical Aspects of Science
   a. Cite examples of how science affects human life.
6. Demonstrate Understanding of the Nature of Science
   i. Understand that science and technology may raise ethical issues for which science, by itself, does not provide solutions.

Instructional Procedures
Pose guided inquiry questions to your class that lead them to the scientific definition of habitat, habitat alteration, and disturbance. Discuss scientific definitions and that words can be value laden. (5-10 minutes)
Example questions: When I say habitat what comes into your mind? How many different habitats can you think if in the SL valley? Is habitat alteration good or bad? (it just is)
Show video of habitat alteration. Discuss what happened and why. (5 min.)
Before and After Picture Activity (15 minutes)
   Split students into groups of 3 and give each group a set of before and after pictures. (2 minutes)
   Have students identify changes that have occurred between the pictures and hypothesize the cause of the alteration. Record in journal or on a worksheet. (5 minutes)
   Have each group share observations and prepare list (on board and in journal) of changes, indicators of change, and causes of alteration. (5 minutes)
   Identify natural vs. human caused alteration in the list (overlap exists and should be mentioned). (3 minutes)
Discussion/ Lecture on biological (invasive species) and physical (river channeling) indicators of habitat alteration. (5 minutes)
Return to groups and have students determine a way to measure the degree of habitat alteration. (5 minutes)
Pair 2 groups and have them determine (and record) which groups pictured habitat underwent the most changes. How do they know? Is it clear? Etc. (5 minutes)
Use the power point activity table and discussion sections to assess student understanding of core concepts.

Assessment Plan
Students will be able to write hypothesis for changes in ecosystems and infer causes of these changes.

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