Unit C: Forest Management

Lesson 1: Identifying Forests of Afghanistan

Student Learning Objectives: Instruction in this lesson should result in students achieving the following objectives:

1. Explain the history of the forests in Afghanistan
2. Identify the different forests in Afghanistan

Recommended Teaching Time: 2 hours

Recommended Resources: The following resources may be useful in teaching this lesson:

- A PowerPoint has also been developed for use with this lesson plan
http://www.igreens.org.uk/afghanistans_forests.htm
http://www.nationsencyclopedia.com/Asia-and-Oceania/Afghanistan-FORESTRY.html
http://www.eoearth.org/article/East_Afghan_montane_conifer_forests
http://www.unep.org/bpsp/EIA/Case%20Studies/Afghanistan%20(EIA).pdf

List of Equipment, Tools, Supplies, and Facilities

Writing surface
PowerPoint Projector
PowerPoint slides
Transparency Masters
Leaves of trees

Terms: The following terms are presented in this lesson

None

Interest Approach: Use an interest approach that will prepare the students for the lesson. Teachers often develop approaches for their unique class and student situations. A possible approach is included here.

Have the students individually develop a list of the different types of trees found in the forests of Afghanistan. Have them share their lists and then lead into a discussion on the importance of forests to Afghanistan. From this discussion lead into Objective 1.

Summary of Content and Teaching Strategies

Objective 1: Explain the history of the forests in Afghanistan

(PowerPoint Slide #2)

I. Archaeological studies reveal that, at least until 2000 BCE, the territory of today's Afghanistan was partially covered with deep cedar-rich forests. Today's mountains, rivers, forests, farmlands and pastures are the backbone of the ecosystems and economy of the country.

(PowerPoint Slide #3)

   A. Currently, Afghanistan's timber has been greatly depleted, and since the mid-1980s. Afghanistan has the least forest area in the neighboring countries about 2.1% of Afghanistan land is forest.

(PowerPoint Slide #4 shows a map of the eastern forest cover in 1977 and a map below that shows forest coverage in 2002. With this map, lead into a discussion of why the students think there has been a major decrease in forests in Afghanistan.)

(PowerPoint Slide #5)

      1. Exploitation has been hampered by lack of power and access roads. Most of the remaining woodland is presently found only in mountainous regions in the southeast and south.

(PowerPoint Slide #6)

   B. The natural forests in Afghanistan are mainly of two types:
      1. Dense forests, mainly of oak, walnut and other species of nuts that grow in the southeast and on the northern and northeastern slopes of the Sulaiman ranges
      2. Sparsely distributed short trees and shrubs on all other slopes of the Hindu Kush.

(PowerPoint Slide #7)

   C. The destruction of the forests to create agricultural land, logging, forest fires, plant disease and insect pests are all causes of the reduction in forest coverage. However, the most important factor in this destructive process is illegal logging and clear-cuttings by timber smugglers.

** Have your students get into small groups and come up with a plan to increase forest population. Where can they get the supplies they need for this plan? Is it realistic? Why is this plan so important?

Objective 2: Identify the different forests in Afghanistan.

(PowerPoint Slide #8)

II. Afghanistan has evergreen and deciduous forest and trees which make up approximately 1,337,582 hectares. The major forests of Afghanistan are located in the eastern and north eastern zone of the country. There is also a percentage in the north. These are all natural forests.

(PowerPoint Slide #9 shows the land coverage of Afghanistan.)

(PowerPoint Slide #10)

    A. The eastern provinces which have forests include: Kunar, Nuristan, Nangarhar, and Laghman.

(PowerPoint Slide #11)

        1. The major forest trees of Kunar province are Cedrus deodara , Picia smethiana , Pinus wallichiana, Abies spectabilis, Pinus gerardiana. These trees make industrial wood for internal and export.

(PowerPoint Slide #12 through Power Point Slide #16 shows you pictures of each one of the trees mentioned above)

(PowerPoint Slide #17)

        2. Himalayan type Evergreen Forests in East Afghanistan

            a. Between 1200 and 2200 m the oak *Quercus baloot* dominates a forest which is up to 15 m high; it has a rich undergrowth and several tree species including almonds *Amygdalus kuramica* and *Pistacia khinjuk*.

            b. It is heavily utilized for fodder, fruits and fuelwood and large parts have been destroyed to provide fuel for the main cities.

(PowerPoint Slide #18)

            c. The remnants of *Qu.baloot* forest in the Panjshir valley, northeast of Kabul, forms the westernmost extension of the Himalayan forest belt. A few trees were even occurring near Top Dara in the Koh-e-Daman Plain near Charikar. Formerly also at the Latahband pass (some 25km east of Kabul) there were *Qu.baloot* remnants.

(PowerPoint Slide #19)

            d. In very humid places with high summer rainfall in the higher mountain belts *Qu. baloot* is replaced by *Qu. dilatata* and between 2400 and 2900 m by *Qu. semecarpifolia* . Azonal associates in river valleys are *Juglans regia, Acer turkestanicum* and *Pyrus pashia*.

(PowerPoint Slide #20)

       3. Temperate Coniferous Forests of East Afghanistan

            a. The forest belt between 2200 and 2500 m in moderately humid parts is 5-12 m high *Pinus gerardiana* woodland with local stands of *Betula*.

            b. A thorny *Cotoneaster-Sophora-Rosa* scrubland colonizes the areas after the pine has been felled.

(PowerPoint Slide #21)

            c. Between 2500 and 3100 m *Cedrus deodara* forest is found. Depending on soil and humidity the cedars may be up to 30 m high and form a very dense forest. Large parts of the *Cedrus* forest have been exploited and replaced by a stable *Artemisia* community. Logging has now reached even the western parts of Nuristan.

(PowerPoint Slide #22)

            d. In the humid areas the upper belt of the forest, up to an altitude of 3300 m, is formed by a 20-25 m high *Picea smithiana-Abies webbiana* forest, varying from valley to valley.

            e. In the dry areas a 10 m high *Juniperus seravschanica-J. semiglobosa* woodland is found. However, most areas have been cut for fuelwood and mature stands are rare.

(PowerPoint Slide #23)

            f. The herbaceous ground cover, especially along the streams is heavily grazed. It is very interesting to note, that fossil conifer needles (similar to *Pinus roxbourgii*) and many other fossil leaves from a rather humid vegetation have been found in marl sediments at the Latahband Pass probably being from about early Quaternary. This is indicating that monsoonal climate has reached much far to the west.

(PowerPoint Slide #24)

    B. Paktia, Paktika, and Khost are found in the north eastern province.

       1. The major forest trees of the Paktai are Pinus geradiana , Pinus wallichiana, Cedrus deodara , Picia smethiana , Abies spectabi ,Olea ferruginea , Quercus dilatata, Qurcus semicarpofulia and Quercus balout.

** Ask students which of these trees are also found in the eastern forests of Afghanistan.

(PowerPoint Slide #25 shows some examples of new trees that are mentioned above.)

(PowerPoint Slide #26)

    C. Major forests in Northern Afghanistan starts from Badakhshan then goes through the Badghis and ends in the Herat province.

        1. The major forest tree of the Badghis is Pistacia vera which is the most important production (Pasta nuts) of this area.

(PowerPoint Slide #27 shows an example of Pistacia vera.)

(PowerPoint Slide #28

    D. The average precipitation is 200-400 millimeters (mm). Temperatures vary from -12 degrees Celsius (ºC) to 40 ºC. The soil in the north is made up of clay substrate covered with coarse gravel, small stones or rocks, and organic detritus. South, the ecoregion has a bedrock of sedimentary limestone, and soils on the flat lands are sandy loam.

(PowerPoint Slide #29 and PowerPoint Slide #30 shows other trees found in Afghanistan.)

**If possible bring in leaves of the trees mentioned in this lesson. Have students study them. Then hold one up and have them tell you what tree the leaf came from.

Review/Summary: Use the student learning objectives to summarize the lesson. Have students explain the content associated with each objective. Student responses can be used in determining which objectives need to be reviewed or taught from a different angle. The objectives listed on PowerPoint Slide # 31 can be used as review.

Application: Students will be able to identify forests in their area as well as types of trees found in them.

Evaluation: Use the following sample test to evaluate the students' comprehension of the material covered in this lesson.

Answers to Sample Test:

Part One: Fill in the blank

1. 2.1%
2. evergreen and deciduous
3. eastern and north eastern
4. Paktika
5. 200-400
6. Kunar
7. Pistacia vera

Part Two: Short Answer

1. The major forest trees of eastern provinces are Cedrus deodara , Picia smethiana , Pinus wallichiana, Abies spectabilis, Pinus gerardiana.

2. The major forest trees of the north eastern provinces are Pinus geradiana , Pinus wallichiana, Cedrus deodara , Picia smethiana , Abies spectabi ,Olea ferruginea , Quercus dilatata, Qurcus semicarpofulia and Quercus balout

Sample Test   Name_____

Test

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Part One: Fill in the blank

1. Afghanistan has the least forest area in the neighboring countries about _____% of Afghanistan land is forest.

2. Afghanistan has _____ and _____ forest and trees which makes approximately 1,337,582 hectares

3. The major forests of Afghanistan are located in the_____ and _____ _____ zone of the country

4. Paktia, _____, and Khost provicence that have forests are found in the north eastern province.

5. The average precipitation in the forests are _____millimeters

6. The eastern provinces which has forests include: _____, Nuristan, Nangarhar, and Laghman.

7. The major forest tree of the Badghis is _____ which is the most important production of this area.

Part Two: Short Answer

1. Name 3 major types of trees found in eastern Afghanistan forests

2. Name 3 major types of trees found in north eastern Afghanistan forests