

introduction to module 2: global land vegetation computer lab exercises

The set of exercises that follow were designed to explore characteristics of land cover and vegetation dynamics using satellite data. These exercises introduce students to basic image processing skills to display and analyze AVHRR and NDVI images demonstrating basic scientific applications. Each exercise has scientific discussions explaining what the student is observing. Students will use *SEE Image*, a version of NIH Image, to display and analyze the data sets.

The password for the secured *Instructor's Guide* is available from the Goddard DAAC User Support Office (301-614-5224, 1-877-794-3147, daacuso@daac.gsfc.nasa.gov)—you will need to provide proof that you are an instructor.

The exercises are inquiry based and designed for advanced high school or college level classes. Our electronic textbook on global land vegetation contains supporting scientific information that may be used to answer and explain the distribution and dynamics of vegetation that the students will be observing. Additional background information can be found by going to the Computer Lab Resources Data section, Satellite Data Information.

getting started

Before you begin to work on these exercises you will need to perform the steps outlined in Sections 1–4 of the tutorial, *Using SEE Image With AVHRR Data*.

see image

SEE Image is a modified version of NIH Image. NIH Image and thus *SEE Image* has limited capabilities for analyses of the satellite data. Results obtained may not be suitable for scientific publication.

To use the various functions necessary for the exercises, *SEE Image* must be configured properly. If you are unfamiliar with *SEE*

Image, please work through the tutorial, *Using SEE Image With AVHRR Data*. If you are familiar with NIH Image or *SEE Image* and do not need the complete tutorial, please refer to the beginning of the Tutorial to configure your system, and have the **SEE_macros** loaded before beginning the exercises.

loading the data

For SEES Web site users, go to

<http://see.gsfc.nasa.gov/edu/SEES/>

Under Global Land Vegetation, click Computer Resources. Then click Data and click on the exercise data set you want.

When the download is complete and the archive is unpacked, which will occur automatically, you'll see three new icons on your desktop for each set of data you downloaded. Two are document icons that will have one of these file name extensions: **.sea.hqx** or **.sea**. You may trash those files. The third is a folder icon. Drag that folder into

Desktop | HD | SEE Image | Data | Veg

It's very important that you put the data in this directory because all instructions use this path.

For SEES CD-ROM users, go to

Desktop | SEES | data

then click and drag the chosen data set into the "Veg" folder as described above.

list of exercises

Exercise 1—Introduction to AVHRR Images and Creating
Global NDVI Images

Exercise 2— Seasonal Greening of the Hemispheres

Exercise 3—Vegetation Classification and Global Vegetation
Patterns

Exercise 4—Land Cover Change in the Brazilian Amazon

Exercise 5—Vegetation Dynamics in the Sahelian Zone

Exercise 6—Comparing Estimates of Global Terrestrial Primary
Production