My NASA Data - Mini Lesson/Activity

Cause and Effect: How do our forests change over time? (Student Activity)

Student Directions

Review the video, Secret Life of Forests (1984-2011), and answer the following questions.


Identifying cause and effect relationships can help us make predictions about the function of natural systems and their impact on the world. These relationships, whether simple or complex, are vital for forecasting weather and predicting Earth events in new contexts.

Forests are constantly changing. The Landsat satellite program, operated jointly by NASA and the U.S. Geological Survey, has monitored those changes from space for over four decades. Scientists are turning yearly Landsat data sets into a powerful time series that show the evolution of the landscape. This visualization of the Pacific Northwest from 1984 to 2011 reveals many cause and effect relationships. Some are obvious, like the patchwork of logged land that flickers from mature trees (blue) to clear-cut (red) to regrown shrubs (yellow). Some are subtle, like the bark beetle or
western spruce budworm infestations (dark red) that pulse across mountainsides. Watch as these and other changes come to life in the video.