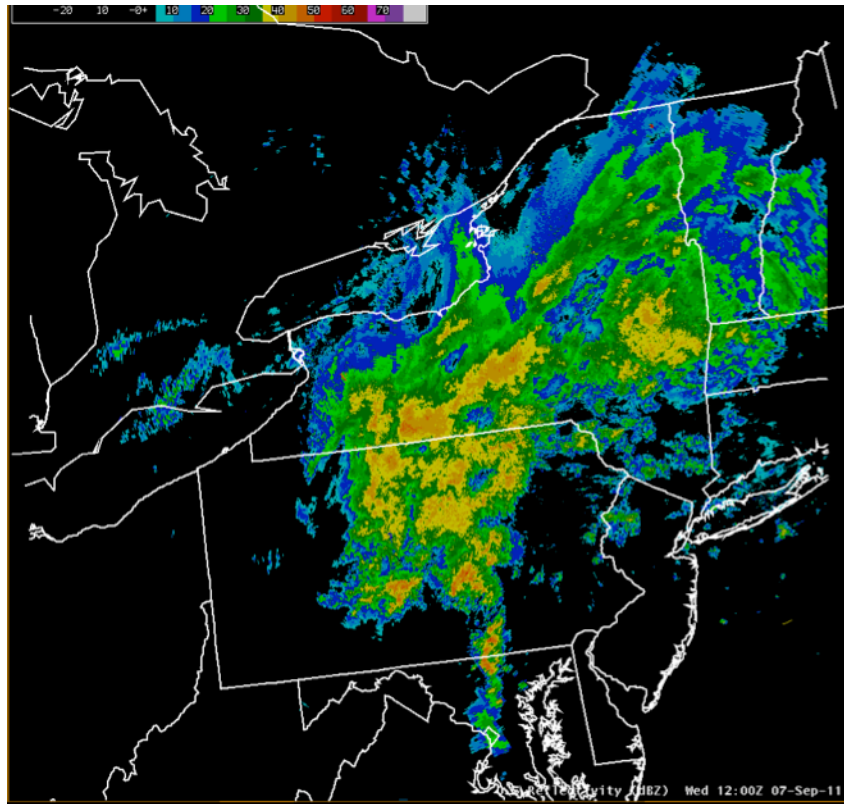


## Getting Started with Data



### Why Use Real Data in Teaching Science?

Using real Earth system data in teaching Earth & Environmental Sciences has significant benefits not only in connecting students directly with the Earth and its processes, but it also introduces them to a skill they will use the rest of their lives. Data is an important part of our daily lives in the 21st century. We read and interpret data every day in weather reports, financial updates, news articles and political blogs. Being able to interpret data is an essential skill, but real data can be messy, challenging and is not always easy to work with. This too is important for students to learn.

### Metadata:

Working with data involves developing a basic understanding of the conditions under which the data was collected. We call this metadata which is often defined as the 'How, when, under what conditions, and by whom was a particular set of data was collected, and how is the data formatted?' In our situation since the data is being collected in a field environment we also need to know factors about weather and physical conditions that might influence the data we are working with. Having the metadata to consult is essential for understanding information stored in datasets.

Where can you find Metadata for 'Day in the Life'? Our data collection includes two main sections that provide these insights: The site description and the physical section includes sample times, and weather information. In addition you will need to consider the equipment used when analyzing the data since the equipment is not standardized and some equipment has lower resolution than other equipment. For each site and year you will want to record this metadata so that you consider it as you review the data.

### **Working with the Day in the Life Data:**

Each year's data is listed by individual sample site (in doc and pdf format) and by parameter (xls format). You can create your own excel spreadsheets and graph data using the parameter sheet. To look at trends over time with one site you will need to create the data table.