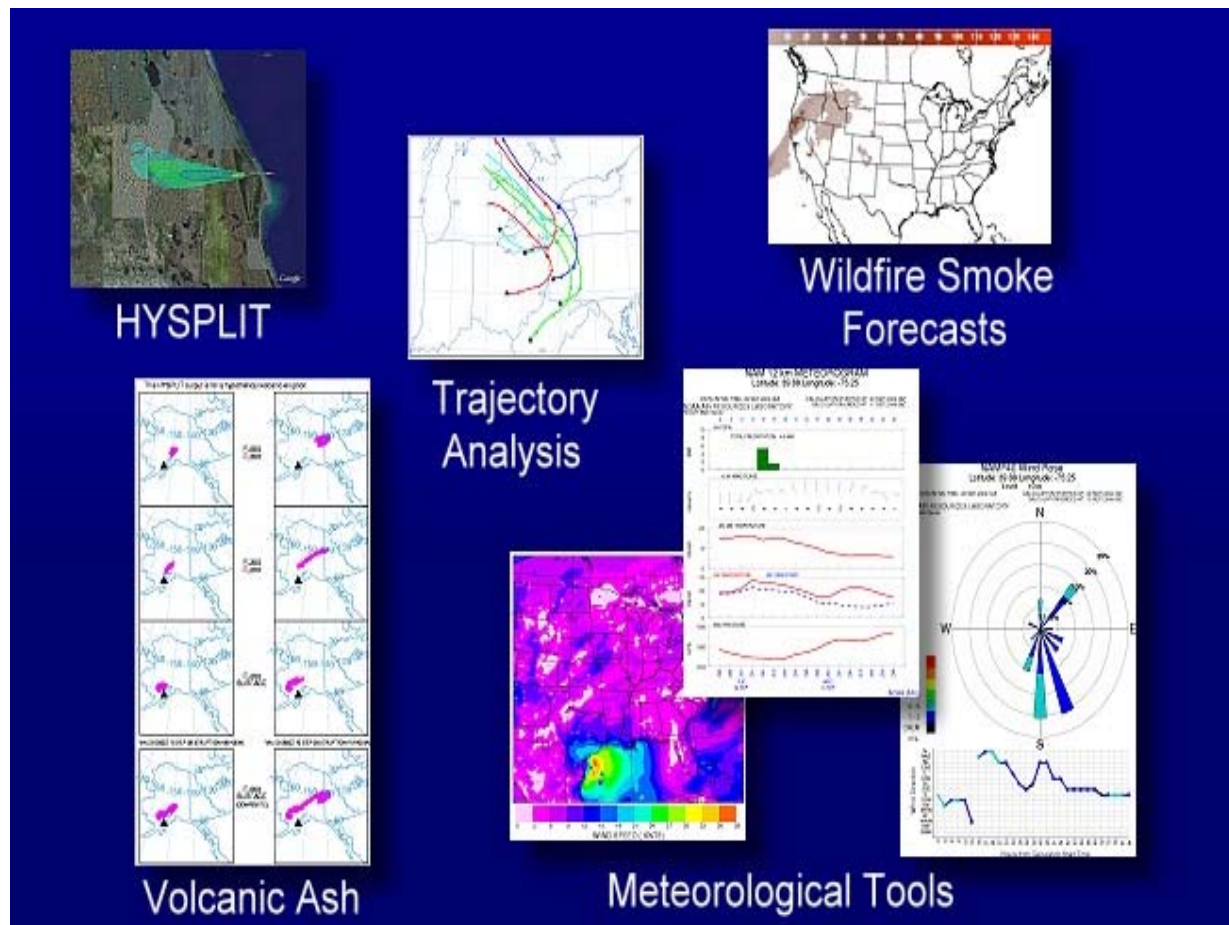# National Oceanic & Atmospheric Administration
Air Resources Laboratory
READY – Real-time Environmental Applications and Display sYstem

What It Is

The Real-time Environmental Applications and Display sYstem (READY) is a web-based tool, developed by the Air Resources Laboratory (ARL), which puts the Laboratory's state-of-the-art dispersion models and meteorological display programs into an easy to use form. Since its development in 1997, thousands of users (largely atmospheric scientists) have generated products from READY for their day-to-day needs and research projects.

READY Products

What It Is Used For

The primary application of READY is an ARL transport and dispersion model called the Hybrid Single-Particle Langrangian Integrated Trajectory, or HYSPLIT. Users can produce air parcel trajectories that follow the movement of the wind patterns defined by the meteorological models run operationally by the NOAA National Centers for Environmental Prediction (NCEP). Meteorological data (forecast and archived) are available to HYSPLIT on a global grid with a horizontal resolution as small as 111 km. Several North American grids are at much finer horizontal resolutions, with the smallest currently being 12 km.   Users also can model the dispersal of pollutants with HYSPLIT by tracking thousands of particles across the domain, as opposed to one or two particles for trajectories. In this way, pollutant plumes can be produced from such sources as wildfires, chemical or radiological releases, or volcanic eruptions.

Another application of READY is for users to be able to produce meteorological products for any location in the world based on the meteorological data produced by NCEP. These products include meteorograms (time series of meteorological variables), vertical profiles, wind roses, time-series of atmospheric stability, user-selectable two-dimensional maps, and forecast animations of meteorological data over North America and Europe. The original intent of these programs was to provide researchers with the tools necessary to probe the input meteorological data to HYSPLIT to better understand the model results.

Finally, READY provides links to other programs produced by ARL and NOAA that offer additional support to air quality forecasters, meteorologists, emergency managers and National Weather Service Forecast Offices.

Why It Is Important

READY provides a "non-operational" portal for university researchers, federal, state, and local government agencies, and international organizations to become familiar with the HYSPLIT transport and dispersion model and in the interpretation of its results. Typical applications range from atmospheric emergencies associated with the release of hazardous pollutants, routine poor air quality events, and various climatological studies. READY provides access to special meteorological products tailored to the specific application with links to operational NOAA products where appropriate. Having access to tools such as those within READY provides the user with quick access to meteorological forecasts interpolated to the location of interest. READY also can be used as a diagnostic tool to provide air quality managers information on possible pollutant source regions that may have contributed to a bad air quality event.

For More Information:
READY:
    http://www.arl.noaa.gov/ready.php
HYSPLIT Model:
    http://www.arl.noaa.gov/HYSPLIT_info.php
Air Resources Laboratory
    http://www.arl.noaa.gov/

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