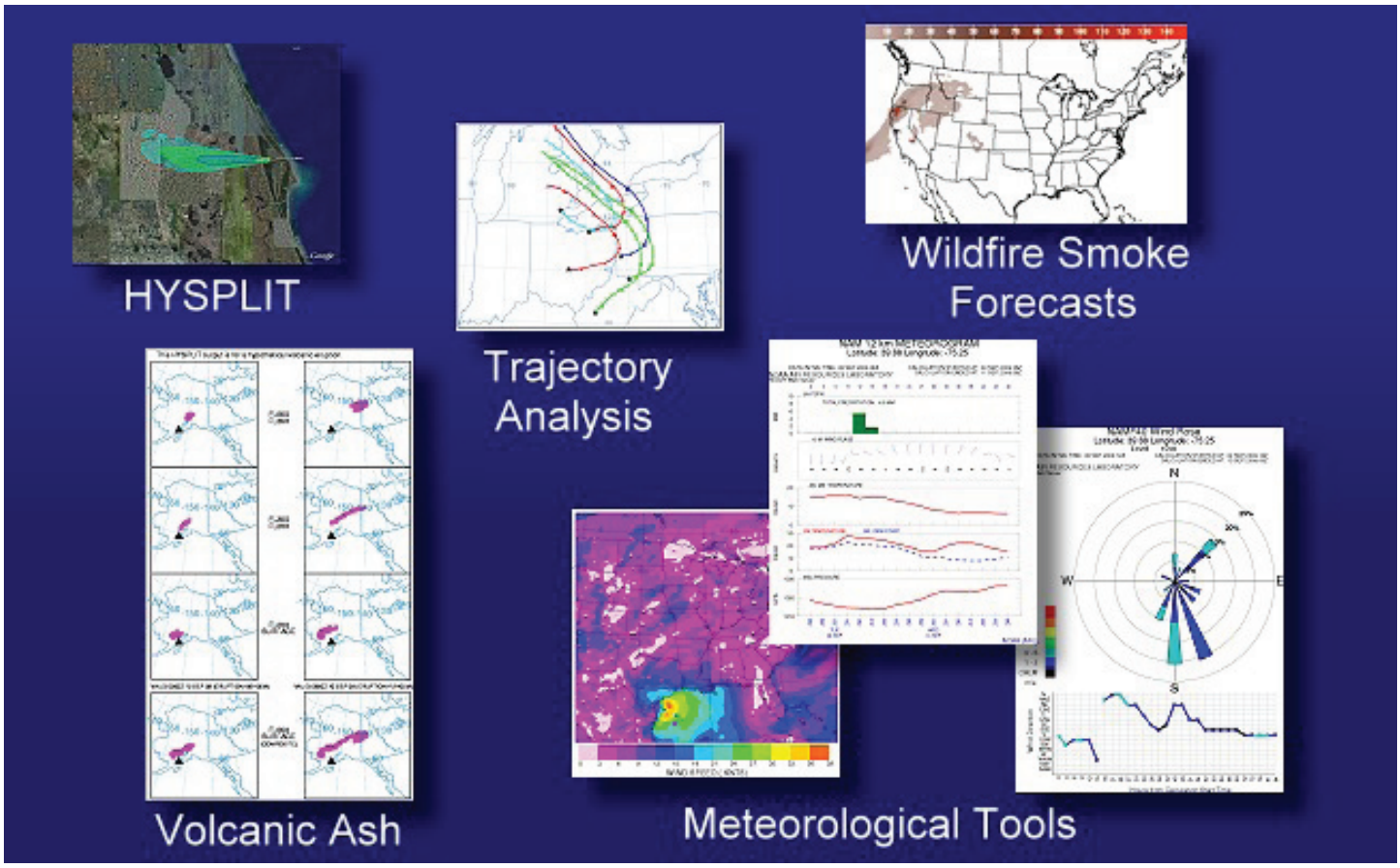
Air Resources Laboratory
Real-time Environmental Applications and Display sYstem

What It Is

The Real-time Environmental Applications and Display sYstem (READY) is a web-based system, developed by the Air Resources Laboratory (ARL), for accessing and displaying meteorological data and running trajectory and dispersion model products on ARL's web server. The system brings together dispersion models, graphical display programs and textual forecast programs generated over many years at ARL into a form that is easy to use by anyone. 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.

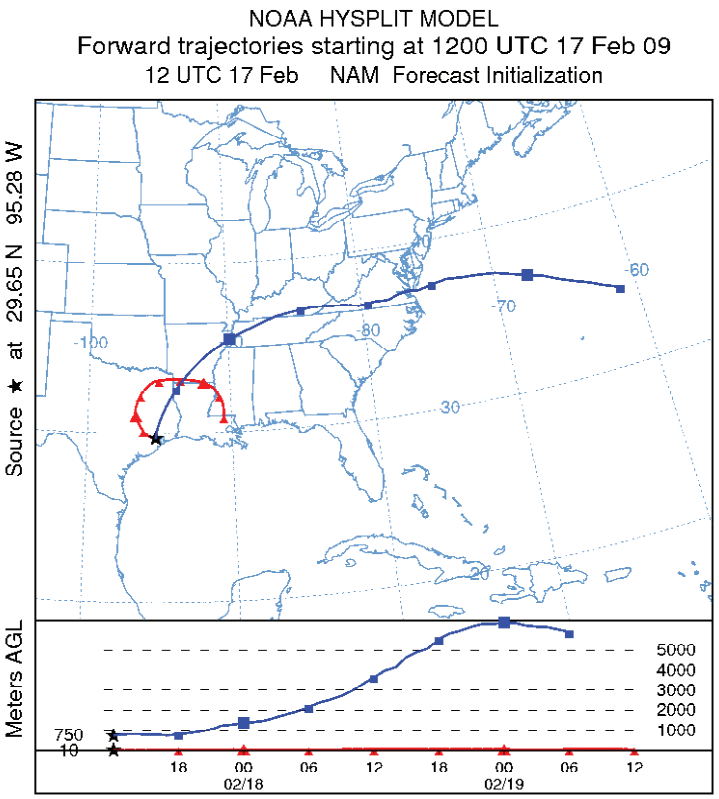
READY Tools and Products



READY was originally developed for the personal computer but is now available to anyone with a web browser. Users can access many of the products available to ARL personnel for analyzing forecast meteorological data. In addition, users can run the Hybrid Single-Particle Langrangian Integrated Trajectory, or HYSPLIT model and then use meteorological display programs to analyze the results— all within READY. This makes READY a unique web-based system.

What It Is Used For

There are several applications of READY. The primary one is running HYSPLIT, ARL's transport and dispersion model. 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 global and regional scale grids. 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.



Example of two forward trajectories at different heights with source location being Houston, TX

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. Although READY meteorological programs were initially designed just to support HYSPLIT, many users now use the meteorological display programs independent of HYSPLIT for a wide range of applications.

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

Why It Is Important

One of the many functions of ARL is to provide meteorological services and related research to NOAA and to other Federal agencies, in order to predict the consequences of atmospheric releases of radioactivity and other potentially harmful materials. READY provides a "non-operational" portal for federal, state, and local government agencies, university researchers, and international organizations to become familiar with the HYSPLIT model and in the interpretation of its results. Typical user applications range from atmospheric emergencies associated with the release of hazardous pollutants, to routine poor air quality events, to various climatological studies. 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 can also 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:
www.arl.noaa.gov/ready.php
HYSPLIT Model:
www.arl.noaa.gov/HYSPLIT_info.php

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