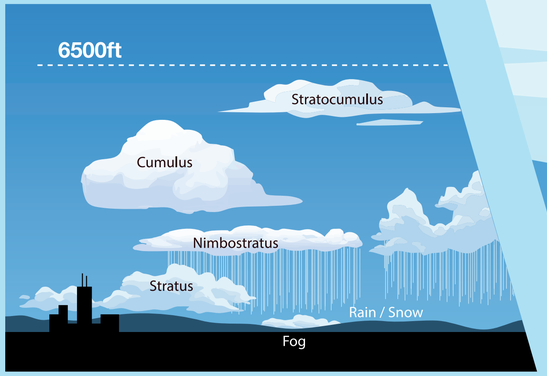
Fog and Low Clouds

Safety is important when traveling in foggy conditions. How can weather satellites help?

Fog and Clouds: What's the difference?

Clouds and fog both form when water vapor condenses or freezes to form tiny droplets or crystals in the air. However, clouds can form at many different altitudes while fog only forms near the ground.

Fog and low clouds—those below 6,500 feet—can both be a hazard during travel. Foggy conditions can cause low visibility, creating dangerous conditions for vehicles on roads, as well as airplanes, trains, boats and other forms of transportation



What are some different types of fog?

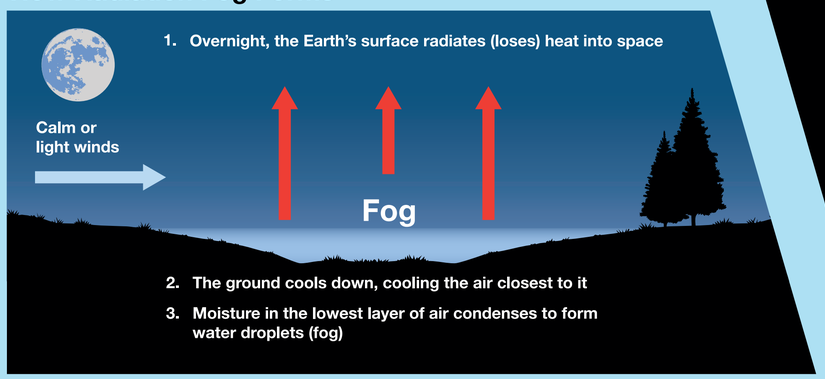
Radiation fog is a very common type of fog during the fall and winter. It forms overnight as the air near the ground cools and stabilizes.

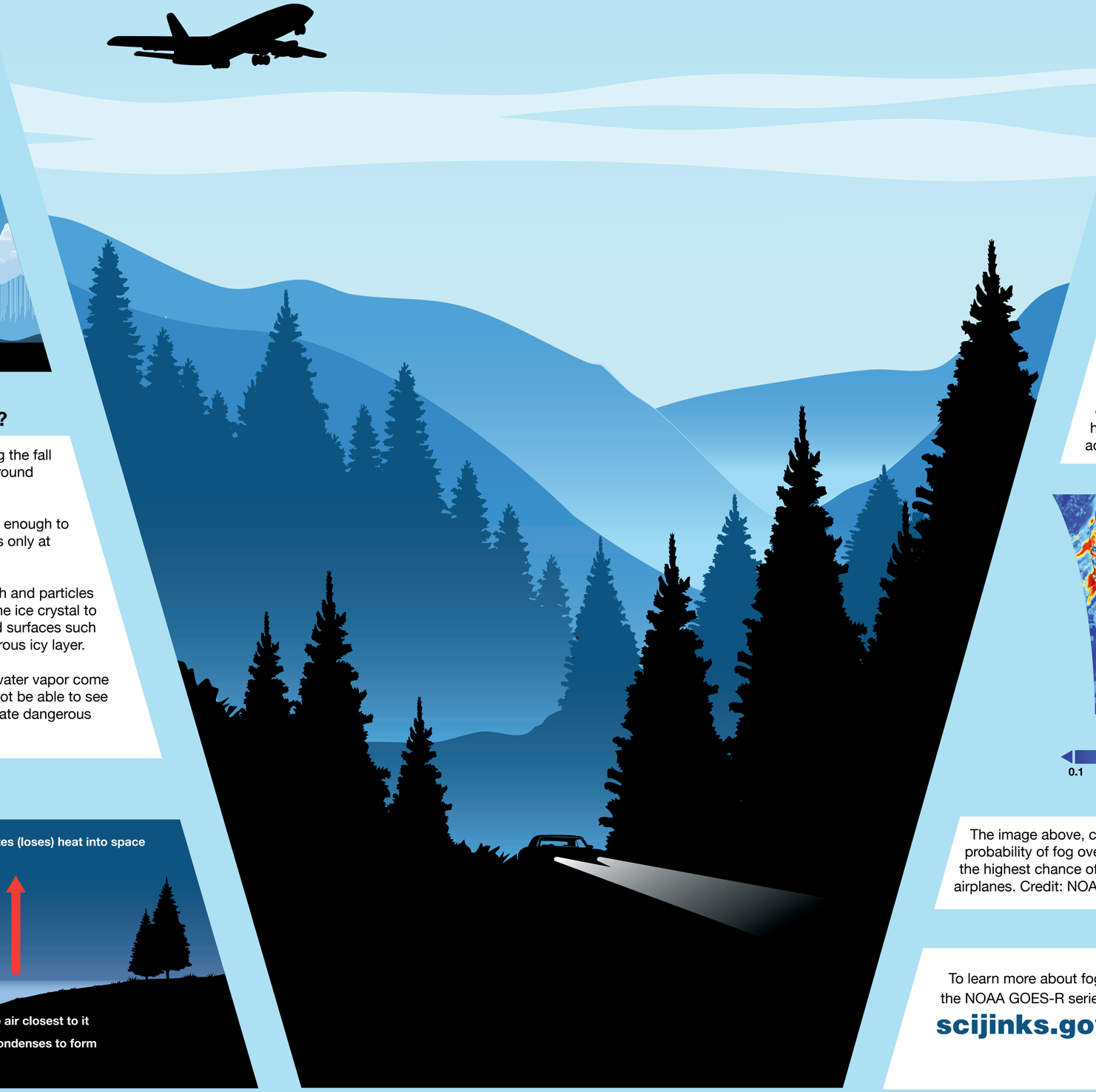
Ice fog forms when the air near the ground is cold enough to turn the water in fog into ice crystals. Ice fog forms only at extremely cold temperatures.

Freezing fog forms in the air when it's cold enough and particles like dust or smoke in the air provide a "seed" for the ice crystal to form around. When it comes into contact with cold surfaces such as roads and sidewalks, it instantly forms a dangerous icy layer.

Super fog forms when smoke from wildfires and water vapor come together. A super fog is so dense that you would not be able to see your own hand in front of your face, which can create dangerous driving conditions.

How Radiation Fog Forms

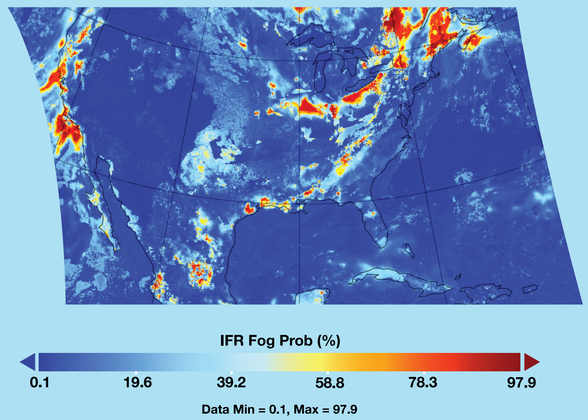




Keeping an Eye on Fog… From Space!

Satellites from the National Oceanic and Atmospheric Administration (NOAA) monitor fog from high in the sky. One type is called a geostationary satellite. These satellites orbit Earth in the same exact time that it takes for Earth to make a full rotation. Orbiting Earth in such a way allows the satellite to hover over one location, providing a bird's eye view of our weather. Fog is one of the many weather phenomena that the Geostationary Operational Environmental Satellites – R (GOES-R) Series of satellites can monitor. These satellites take detailed high-resolution photos of fog and low clouds.

The images and data help forecasters to issue important fog advisories and warnings. More accurate warnings can tell drivers and pilots where to expect fog, and can help reduce the number of automobile and aircraft accidents due to fog.



The image above, captured by the GOES-16 weather satellite, shows the probability of fog over an area of North America. In this image, red areas have the highest chance of fog and may have reduced visibility for pilots flying airplanes. Credit: NOAA

To learn more about fog and low clouds, and about the NOAA GOES-R series satellites visit:

scijinks.gov

NOAA
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
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