

This is Ryan Aylward from the National Weather Service with a Community Comment:

Fog. We have a lot of it around here. From here at the coast to inland valley locations of Northwestern California, we have plenty of fog. But why do we have fog? I thought this would be a great time to discuss how fog occurs along the coast and dispel a large rumor.

First, what is fog? Fog is a cloud that touches the ground. There isn't much else to it. It doesn't matter where it touches the ground, either in the mountains or on the valley floor, wherever it touches the ground, it's fog. Interestingly enough, one person's cloudy sky is another person's fog. For instance the difference between clouds sitting at an elevation of 2,000 feet resulting in fog in Kneeland and just cloudy conditions here at the coast with no visibility restrictions means Kneeland has fog and we don't down here. That sure doesn't make for easy forecasting at the National Weather Service!

A cloud forms when the dewpoint temperature, a measure of moisture in the atmosphere, matches the regular old air temperature that we are all used to. When this occurs on the ground, when the dewpoint matches the air temperature, fog forms. Around here on the coast, the coastal water temperatures can be quite cold, in the 40s and 50s at times, especially when upwelling is occurring, which is cold water coming up to the surface from deep down in the ocean. This allows the air temperatures to remain cool, thus not requiring much moisture in the air for the dewpoint and air temperatures to be the same.

The fog typically forms over the ocean waters and then moves toward the coast as our typical sea breezes occur during the day. Sometimes it can form directly over the land in the evening as temperatures fall after the "warm" afternoon temperatures cool off, but essentially even if it forms over land it is forming as a result of the cool ocean temperatures.

I often hear that fog at the coast means hot temperatures inland. Though it is often true that when temperatures are hot across the interior, say in Garberville or Hoopa, that fog is occurring at the coast, this is not a true statement. The heat across the interior does not cause the coastal fog. The only thing the heat can sometimes do is enhance the blocking mechanism, a little bit of warm air aloft, that locks in the fog at the coast. But the fog wouldn't be here at the coast without the cool ocean temperatures. If you ever have a chance, look at a satellite picture of the southeastern United States coastline in the summer when temperatures are the warmest. You will never see coastal fog. That's because the water temperatures there are in the 80s and 90s. The warm water restricts fog development because the dewpoint can't get warm enough. This is exactly opposite of what occurs here in Northwestern California where the cold water supports fog development.

This has been Ryan Aylward with a community comment.