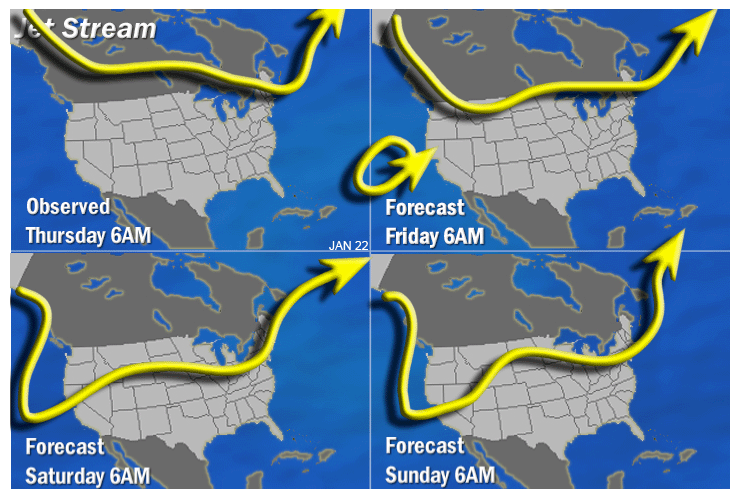


The Big Current in the Sky

By Marc Hopkins

My first experience with the jet stream was flying on a cross-country flight from Boston to San Diego. Many people, like myself, didn't know exactly how the jet stream works or what was important about it. Most people only care if their airline flight is longer or shorter because of it, when in reality the jet stream is extremely important to the earth's atmosphere and is very complex system of strong winds. Jet streams are narrow fast flowing air currents, which occur about 36,000 feet above earth's surface. These incredible currents flow across the United States from the West towards the East at speeds up to 400 miles per hour! (Remember, in a car you travel at top speeds of only 70 miles per hour on a highway).

Many believe that the jet stream is one big current around the earth's surface. This is a false assumption; in fact, the world has five different jet streams, all which have their own unique characteristics. Before you can fully understand the 5 jet streams, you must know a couple of geographic terms. First, is the equator. The equator is the imaginary line which circles the earth dividing it into two different poles, north and south. Another term you must know is latitude. Latitudes are horizontal lines on a map, which represent how far north or south something is from the equator. Finally, you must be able to understand degrees north and south. A degree is a measurement of distance of which something is above or below the equator.



The most prominent types of jet streams are called polar jet streams. These are located at the latitudes of 50 to 60 degrees North and South of the equator. These powerful winds act as a boundary line, which separate the extremely cold polar air in the North, from the warm, sub-tropical air in the South. The speeds of the polar jet streams depend on the time of year. Next is the subtropical jet stream. This jet stream is located about 30 degrees north and south of the equator, have very strong winds, and these subtropical streams are responsible for many weather patterns depending on the time of year. Another type of jet stream is the equatorial jet stream. This one is located about 7 degrees above the equator and is only present between the continents of Asia and Africa during the summer months of July and August. Finally, there is the Polar night stream. This is only active during the winter months in the northern hemisphere. It is one of the highest jets streams in altitude, occurring 80,000 feet above the earth. All these different cycles of jet streams, however, do not stay constant.

There are many changes to these cycles that occur on a monthly, daily, or yearly basis. Like most elements of this world, the jet stream does not stay at a constant pace or on a constant route around the earth. Recently, during the summer months, the polar jet streams were weaker than usual due to the temperature. During the upcoming winter months, the polar jet streams will have stronger winds. When these changes in cycles occur, the weather of much of the earth changes as well. The jet stream is responsible for carrying many of earth's storms and dumping them on different parts of the world. When the cycle of the jet stream changes, it either propels storms more quickly around the world and increases the strength of the storm, or slows down the pace of the storm and makes it weaker.

Many people wonder why New England has such wacky weather and why there are so many storms here. One of the reasons is because the jet stream has a lasting affect on costal storms especially on the east coast, where we live. Costal storms are storms which are located anywhere on the **coast** (where land meets the ocean.) The Eastern part of the United States has a giant coast and throughout each year, there are thousands of costal storms, which are affected by none other than the jet stream. As you know by now the jet stream has a large effect on all kinds of storms. The jet stream affects costal storms especially on the East coast because the normal flow of the jet stream pushes storms and other weather patterns toward the East coast. Storms usually start in the West or the middle of the U.S, but because of the jet stream, storms always end up on the eastern coast where they eventually go out to sea. If there wasn't a jet stream, the storms would not move as fast as they do now and the east coast wouldn't get nearly as many storms. Since the jet stream speeds up storm fronts and pushes them towards the East, the East coast of the U.S gets greatly affected by various types of storms.

The jet stream is important to society for a variety of reasons. It is very important because it changes earth's storms for better or worse, helps produce many costal storms in the New England region, and it helps airlines have a quicker flight by flying in or with the jet stream. Finally, the jet stream is very important because it helps separate the earth's warmer air from its colder air producing different temperatures and different weather patterns all over the world. Without the jet stream, many things in today's world would not be the same!