HISTORY OF DIKES AND POLDERS IN THE NETHERLANDS

In 1986, the Netherlands proclaimed the new 12th province of Flevoland, but they didn't carve out the province from already existing land nor did they annex the territory of their neighbors - Germany and Belgium. The Netherlands actually grew.

The Dutch and their ancestors have been working to hold back and reclaim land from the North Sea for over 2000 years. Over 2000 years ago, the Frisians who first settled the Netherlands began to build terpen, the first dikes to hold back the water.

In 1287 the terpen and dikes that held back the North Sea failed, and water flooded the country. A new bay, called Zuiderzee (South Sea) was created over former farmland. For the next few centuries, the Dutch worked to slowly push back the water of the Zuiderzee, building dikes and creating polders (the term used to describe any piece of land reclaimed from water). Once dikes are built, canals and pumps are used to drain the land and to keep it dry. From the 1200s, windmills had been used to pump excess water off the fertile soil; today most of the windmills have been replaced with electricity- and diesel-driven pumps.

Then, storms and floods of 1916 provided the impetus [momentum] for the Dutch to start a major project to reclaim the Zuiderzee. From 1927 to 1932, a 30.5 km (19 mile) long dike called Afsluitdijk (the Closing Dike) was built, turning the Zuiderzee into the IJsselmeer, a freshwater lake. (Much of the Netherlands is essentially a delta for the Rhine and other rivers.)

Further protective dikes and works were built, reclaiming the land of the IJsselmeer. The new land led to the creation of the new province of Flevoland from what had been sea and water for centuries. The collective North Sea Protective Works is one of the Seven Wonders of the Modern World, according to the American Society of Civil Engineers.

Today, approximately 27 percent of the Netherlands is actually below sea level. This area is home to over 60 percent of the country's population of 15.8 million people. The Netherlands, which is approximately the size of the U.S. states Connecticut and Massachusetts combined, has an approximate average elevation of 11 meters (36 feet). The Netherlands ties Lemmefjord, Denmark for claim to the lowest point in Western Europe - Prince Alexander Polder lies at 23 feet (7 meters) below sea level.

http://geography.about.com/od/specificplacesofinterest/a/dykes.htm

VOCABULARY:

DIKE- an embankment for controlling or holding back the waters of the sea or a river; a bank of earth formed of material being excavated. *Dictionary.com*

ESTUARY- that part of the mouth or lower course of a river in which the river's current meets the sea's tide; an arm or inlet of the sea at the lower end of a river. *Dictionary.com*

POLDER- a tract of low land, especially in the Netherlands, reclaimed from the sea or other body of water and protected by dikes. *Dictionary.com*

TERPEN- earth mounds; first type of dikes *Brittanica.com*

about.com

planetware.com

http://www.fredhoogervorst.com/oni.app/local/upload/07034.jpg

Polders and Dikes along the North Sea, the Netherlands

The extent to which humans manage the natural environment is starkly apparent in this scene over the Netherlands. Most of the tan portions of this scene are land that lies below sea level and was reclaimed from the North Sea (dark blue). Some of the most recently reclaimed land — referred to as polders — is visible in the right-hand (southwest) side of this image. At the entrance to the bay is a large dike (thin, straight line) that has effectively turned the estuary behind it into a shallow, salty lake. Large areas behind this dike were then isolated with additional dikes. Extensive pumping of water behind this second system of dikes eventually exposed the sea bottom.

Once drained, each of these land parcels was sown with plants to remove moisture and bind the soil. Rainfall helped to remove salts from the soil. Subsequently the plant cover was burned and plowed under. From the time the dikes are in place, it takes approximately 15 years before the land is ready for planting. Since the twelfth century, more than 7800 square kilometers of land has been reclaimed from the sea by the Dutch.

Recovering coastal lands by various means is a fairly common practice throughout the world. Simple filling of low-lying coastal areas is another method of reclaiming land from the sea. This method has been employed to augment the land areas around cities such as Venice, Boston, and Tokyo. Barrier islands fringed with white beaches are found offshore in the lower left. The white streak originating in the upper left-hand (northeast) corner of this scene is an airplane *contrail.

http://www.lpi.usra.edu/publications/slidesets/humanimprints/slide_11.html

**A visible trail of streaks of condensed water vapor or ice crystals sometimes forming in the wake of an aircraft. Also called vapor trail http://education.yahoo.com/reference/dictionary*

NAME_____DATE_____HOUR_____

Directions: Read the passage describing the satellite picture of the dikes and polders in the Netherlands. Write a concluding paragraph for the passage including a reflection on how humans have adapted the environment.