Chapter 10: Google Earth Exercise

Exercise 1
Examining Housing and Urban Poverty in Detroit

Detroit is an example of city experiencing industrial decline, urban blight, and depopulation. The city's population peaked at 1.8 million in the 1950s but today, after decades of decline in manufacturing jobs and flight of residents to the suburbs, it has approximately 700,000 residents. While the metropolitan area is affluent, downtown Detroit continues to struggle to maintain its infrastructure, deal with crime, and cope with property foreclosure and abandonment.

The task: Using data overlays in Google Earth, examine the City of Detroit to understand the relationship between the various socio-economic indicators and the built environment.

Step 1: Open the Chapter 10.1.kmz file; enable the "borders and labels" layer, the "roads" layer and the "Rail Network."

Step 2: Begin by examining the lower west side of the city—the area bordered by John Kronk Street and the railroad tracks to the north and the St Clair River to the south. Click through the data layers as you view this area.

➢ **Question 1:** Examining both the data layers and the satellite view, what spatial patterns can you identify?
➢ **Question 2:** How has the built landscape contribute to these spatial patterns?
➢ **Question 3:** How are the neighbourhoods adjacent to the St. Clair River different from the surrounding neighbours?
➢ **Question 4:** Where are the high income neighbourhoods located?

Exercise 2
Global Oil Consumption, Production, and Economic Growth

Since the 1960s, oil has been the leading source of energy worldwide. As noted in your textbook, economic growth has a strong impact on oil consumption. For instance, rising oil consumption within a country reflects rapid economic growth. Structural conditions such as the dominance of certain type of industries also influences oil consumption rates. Developing countries tend to have a greater proportion of economic activities in the manufacturing sector, which are more energy intensive than service-based industries. Few countries dominate oil production, and some of these countries are not the largest consumers of oil—or may not be in the future due to dwindling reserves. This gap between geographies of oil production and consumption means that countries with high rates of consumption will have to increasing rely on importing oil and/or find viable alternatives, thus potentially straining economic growth or stability.

The task: Using Google Earth, examine the geographies of oil production and consumption and the relationship of oil use and economic growth using choropleth maps assembled by the Center for Geographic Analysis, Harvard University.

Step 1: Disable all layers of Google Earth except "Borders and Labels." Load the Chapter 10.2.kmz file. Enable the layer "oil consumption per capita."

➢ **Question 1:** Which world region has the highest rate of per capital oil consumption? Which region has the lowest? How does Canadian oil per capital consumption compare with the US?

Step 2: Disable the "oil consumption" per capita layer and enable the "oil production" layer.

➢ **Question 2:** What are the top three oil producing countries?

Step 3: Disable the "oil production" layer and enable the "GDP" layer.

➢ **Question 3:** Which three countries have the highest GDP?

Step 4: Next, disable the **GDP** layer and enable the **global oil consumption (1980-2006)** layer.

➢ **Question 4:** Think about the relationship between economic growth (measured in GDP), oil consumption and the dominant types of industries in each country to describe the oil consumption graphs for the three countries you identified in question as having the highest GDP levels.

[Please contact your instructor for the answers to these exercises]