Questions for the Plate Tectonics Pre-Workshop Reading

**Dirt – The Erosion of Civilizations**

by David R. Montgomery (2007, ISBN-13: 978-0-520-24870-0)

As you read through each chapter in *Dirt*, please keep in mind the following questions. We have tried to group chapters according to broad themes that illustrate key points about how societies manage (or mismanage) this critical natural resource.

As you view each of the videos, please answer the questions listed below. We suggest that you type up your responses in a word document (or other word processing program) as you view the videos. Then, when you are prepared to submit your responses to the questions, please visit the following website to enter your answers (“copy and paste” from your document):

<http://www.essp.psu.edu/plate-tectonics-workshop-2013>

**Please have these questions completed ONE WEEK before the workshop (no later than Monday, July 22),** as your workshop leaders will be reviewing your responses to inform instruction during the week.

Additional questions and discussions will be held during the workshop. Be sure to bring your copy of *Dirt* with you to Penn State Brandywine.

*Introductory Material:*

Chapter One – Good Old Dirt/ Chapter Two – Skin of the Earth

1. Based on what you have read and your prior knowledge, provide a brief defense of the statement that “soil is our most underappreciated, least valued, and yet essential natural resource.” Consider how and at what rate the chemical, physical and biological processes build soil horizons, and contrast these to rates at which soils are being eroded.

*Prehistoric civilization - The Ancient World:*

Chapter Three – Rivers of Life/ Chapter Four – Graveyard of Empires

1. How did agricultural practices impact the development and growth of populations? What were the impacts of intensive agriculture on soil during the Bronze Age (Greek, Roman and Mayan cultures)?

*Historical examples – Europe and the New World:*

Chapter Five – Let Them Eat Colonies/ Chapter Six – Westward Hoe/ Chapter Seven – Dust Blow

1. Consider the different effects of soil erosion in the humid landscapes along the eastern seaboard with those in the dryer prairie regions. Did new soil improvement theories imported from Europe make soil more productive?
2. What were the causes and consequences of soil erosion and gully development in the American Colonies, and how did these factor into the westward expansion of peoples?

*The Present – Can we manage?*

Chapter Eight – Dirty Business/ Chapter Nine – Islands in Time

1. In your opinion, can modern “low-impact” agricultural practices help reduce soil erosion in societies such as Haiti? Why or why not?

*Toward the Future:*

Chapter Ten – Life Span of Civilizations

1. When it comes to soil, what do civilizations need to do to survive?