

Peak Oil — Primer, Overview, References, and Personal Reflections

I have never been motivated or compelled by a problem as I have with that of Peak Oil.

Shortly after starting work as a professor at UW and having to identify and develop a research program, I can clearly recall thinking how my research would be more satisfying and clearly directed if I, or someone close to me, had some sort of *difficulty* that needed “solving”, such as impaired hearing or vision, something to work on. Instead, almost as a reflection of the malaise of Western society, I had to “invent” research problems to work on.

No longer.

I have found Peak Oil to be a fantastically challenging topic, possibly the most interdisciplinary topic I have ever encountered, for which a deep understanding requires a huge range of subtly-interacting topics and disciplines. This makes the topic terribly fascinating for an academic, but at the same time the vastness of the subject matter undermines politician’s abilities to respond, since there are many more concrete, tangible problems to tend to, and similarly undermines any media attempt to inform the public, since the topic does not lend itself well to a brief or superficial treatment. In my opinion, Peak Oil spans the following 16 topics (plus others, surely):

Ancient History	Rise & Fall of Civilizations
20th C. History	Oil, Manipulation, Military, Foreign Policy
Sociology	Societal Response to Change and Challenge
Politics	Response of Leadership to Social Crises
Monetary Policy	Fiat / Debt-Based Currencies and Growth
Economics	Impacts of Energy Prices, Costs of Shortages
Demographics	Implications of Population Distribution
Statistics	Analysis of very subtle, complex data
Complex Systems Theory	The Nature of Complex Interactions
Electrical Engineering	Energy Conversion and Storage
Chemical Engineering	Ethanol, Biodiesel, Fuel Cells
Thermodynamics	Fundamental Limits to Energy
Environmental Science	Sustainability, Natural Resources
Geophysics	Oil / Gas Resources & Recoverability
Agriculture	Implications of Energy-Intensive Food
Internet Savvy	5,880,000 Internet Pages on “Peak Oil”

Although I have long considered myself an environmentalist, and have lived very conscious of my impact on the environment, nevertheless the majority of how I work and live has followed the status-quo of most of the West.

For me, this issue directly contradicts status-quo. Once I accepted that our way of life is untenable, heading off a cliff, I was forced to face, head on, many assumptions and premises of my society and future expectations. Mentally I have written-off my RRSPs, pensions, job security, regular travel, air conditioning, and strawberries in January — anachronisms all.

The challenges: What sort of lifestyle should I seek? What is God calling me to do? What do I create for my children? How do I stay optimistic?

Some Key Issues:

Limits to Growth: Indefinite growth is not possible on a finite planet. Oil may or may not peak, however at some point we face Peak Food, Peak Soil, Peak Heat, Peak Air, Peak Water ...

Society Complexity: A complex system takes more energy to maintain than a simple one. The development of our society is premised on very cheap energy. A transition to expensive energy may be inherently impossible.

Food Production: We have expanded agricultural output by eating into natural capital (depleting soil and water aquifers), and by extensive fertilization (requiring energy). A reduction in available energy may lead to precipitous drops in food.

Heat and Transportation: Materials processing (steel, aluminum, concrete, glass), heat, and transportation inherently (unavoidably) require a lot of energy. There are strict limits to efficiency and to what technology can provide: as energy becomes scarce, there *will* be less heat and transport.

Energy Storage: There are many sources of energy (wind, solar, ...), however most are intermittent. A reliable form of large-scale energy storage is crucial to alternative energy development and success.

Reference Books:

Author	Title	Subject Matter
Meadows <i>et al</i>	<i>Limits to Growth</i>	Sustainability
Schumacher	<i>Small is Beautiful</i>	Sustainability
Kunstler	<i>Home from Nowhere</i>	Urban Planning
Jacobs	<i>Dark Ages Ahead</i>	Urban Planning, Societal Collapse
Wright	<i>A Short History of Progress</i>	Societal Collapse
Heinberg	<i>The Party's Over</i>	Peak Oil
Simmons	<i>Twilight in the Desert</i>	Peak Oil
Darley	<i>High Noon for Natural Gas</i>	Peak Gas
Heinberg	<i>Powerdown</i>	Living with Peak Oil
Kunstler	<i>The Long Emergency</i>	Living with Peak Oil

Web Sites:

Peak Oil Related Sites:

www.lifeaftertheoilcrash.net

www.peakoil.org

www.peakoil.net

www.peakoil.com

www.journeytoforever.org

www.museletter.com

Contrarian Sites:

marshallbrain.blogspot.com/2005/06/peak-oil-will-be-non-event.html

peakoildebunked.blogspot.com