

## ***The Ravaging Tide: Observations, Questions, and Sources***

The materials that follow were developed by the members of the summer 2008 Learning Circle on *The Ravaging Tide* at the suggestion of Jason Schmeltzer and with the encouragement of Calley Stevens Taylor. The circle participants were: Ellen Bailey, Bunny Halton-Subkis, Bruce Larson, Karin Lichtenstein, Ellen Holmes Pearson, Todd Pierce, Tracie Pouliot, Barbara (Kitti) Reynolds, Elizabeth Snyder, Jo Stephenson, and David Wilken.

The circle was developed to provide UNC Asheville faculty and staff with an opportunity to read and discuss Mike Tidwell, *The Ravaging Tide: Strange Weather, Future Katrinas, and the Coming Death of America's Coastal Cities* (New York: Free Press, 2006), the summer reading for incoming students during fall 2008. *The Ravaging Tide* was selected by the LSIC Summer Reading Committee, which was comprised of: Mary Chakales, Jane Hartsfield, Brian Hook, Ed Katz, Merritt Moseley, Jason Schmeltzer, and Calley Stevens Taylor (chair).

May these materials enhance the learning of UNC Asheville's newest students!

### *Chapters and Contributors*

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## **One:** The Real Reason Katrina Happened

*Karin Lichtenstein*

National Environmental Modeling and Analysis Center

Three things to notice:

- There are two basic geologic phenomena to know about: 1) The Mississippi River drains the lower forty-eight states and annually floods its banks, building wetlands and barrier islands; 2) The landscape naturally subsides (sinks) and is essentially unstable.
- The people of the Louisiana bayous have known about these phenomena for a long time, while much of the American public has been unaware.
- The concept of an ecosystem: "if you disrupt one major aspect of a natural system as colossal as the lower Mississippi River, you profoundly disrupt ALL aspects of that system."

Two questions to consider:

- What do you think would've happened if early French settlers never built levees on the lower Mississippi River?
- What do you think is going to happen to the Cajun culture of coastal Louisiana?

One source to consult:

- United States Geological Survey (USGS) Louisiana Coastal Land loss: <http://www.nwrc.usgs.gov/special/landloss.htm>.

## **Two:** Ignoring the Warning Signs in Louisiana

*Ellen Holmes Pearson*

Department of History

Three things to notice:

- New Orleans' loss of at least 15-25 linear miles of wetlands in last 100 years means the loss of an important buffer against tidal surge and wind speed.
- The destruction and death in New Orleans after Katrina's landfall exposed "a much larger illness" in the forms of race and poverty issues, government mismanagement, and lack of preparation at all levels.
- A hurricane hitting New Orleans was one of the most widely-predicted disasters in the U.S. Political figures, Corps of Engineers, scientists, journalists repeatedly warned of the possibility, but Congress and presidential administrations did not appropriate adequate funds to protect the city.

Two questions to consider:

- Why do we rely on the federal government for help with infrastructural issues such as levees and coastal land management?
- What considerations played into Congressional and Federal Administrative decisions about use and protection of coastal lands and waterways?

Two sources to consult:

- Louisiana Coast website, maintained by the National Wetlands Research Center:  
<http://www.lacoast.gov/>.
- Barry, John. *Rising Tide: The Great Mississippi Flood of 1927 and How It Changed America*. New York: Simon and Schuster, 1998.

## Three: Why Do Societies Commit Suicide?

*Bruce Larson*

Department of Economics and Center for Teaching and Learning

Three things to notice:

- In the late 1960s Dr. Sherwood Gagliano showed that “the seven-thousand-year period of land building along the Louisiana had come to a screeching halt, and now the gulf of Mexico was rushing north toward New Orleans” (p. 37).
- In the mid 1990s “a master plan called Coast 2050: Toward a Sustainable Coastal Louisiana” was developed requiring \$14 billion (pp. 41-42). In the “post-Katrina emergency spending package sent to Congress in November 2005, the White House [requested] . . . \$250 million . . .” (p.45).
- “By 1670, much of Japan's once glorious old-growth forests were completely logged. . . . Japan today is again a ‘green archipelago’ of mostly unbroken forest land. . . . All of Japan's people and agricultural production occupy just 20 percent of its land” (p. 40)!

Two questions to consider:

- A friend of Mike Tidwell says that “human beings typically insist in learning life's biggest lessons the hardest way possible. One world war is not enough” (p. 46). What biological or psychological factors must be overcome to help us avoid this painful type of learning?
- The societies of Easter Island and Japan realized starkly different environmental outcomes. Assuming that we want to avoid what happened on Easter Island, what challenges will the United States have to face that Japan didn't?

One source to consult:

- Diamond, Jared. *Collapse: How Societies Choose to Fail or Succeed*. New York: Viking Penguin, 2005.

## Four: Global Warming: Same Mistakes, Bigger Stage

*Ellen Bailey*

Department of Foreign Languages

Three things to notice:

- Tidwell provides some background examples from the industrial revolution and the inventions and progress, which impact how we live now and contribute to our current behaviors and beliefs about progress and energy use.
- The Intergovernmental Panel on Climate Change concluded in 2001, after dozens of years of study, that there is “an increasing body of observations give a collective picture of a warming world” and “there is new and stronger evidence that most of the warming . . . is attributable to human activities.” Notice (p. 61) the information that the IPCC has provided over the years and the possibility of slowing down climate change.
- Notice the examples, impact, and possible consequences that Tidwell provides of varying degrees of global warming on Arctic native people, animals, and bodies of water.

Two questions to consider:

- “Now, whether we like it or not, we’re all finally on the same team” (p. 60). The Kyoto Protocol represents a world team working towards the same goal of slowing global warming. How do you think our current role on this “team” would be different if the Kyoto Protocol had been ratified under President Clinton or if President Bush had not withdrawn from the Kyoto Process (p. 62)?
- According to Sheila Watt-Cloutier, president of the Inuit Circumpolar Conference, “The people of the arctic are an endangered species” (p. 59). How would we live differently if we considered people as an endangered species affected by climate change?

One source to consult:

- The Intergovernmental Panel on Climate Change:  
<http://www.ipcc.ch>.

The IPCC “assesses the scientific, technical and socio-economic information relevant for the understanding of the risk of human induced climate change.”

## **Five:** Sea-Level Rise: Exporting New Orleans to the World

*Bunny Halton-Subkis*

Cultural and Special Events

Three things to notice:

- The statement on p. 66 by the Intergovernmental Panel on Climate Change (and endorsed by the US National Academy of Sciences but ignored by much of our current government) that unchecked global warming will cause the world's oceans to rise somewhere between one and three feet above current levels by 2100.
- One of the main reasons the oceans will rise this much: because *land-based* ice is melting (in particular, Greenland), contributing massively to the sheer volume of water on earth as it warms. Where will all this water go?
- The negative impact this rise will have: on the sea as a ready source of food for billions of humans; on the health of urban and rural populations as heat waves increase on land; the loss of valuable wetlands, agricultural and urban coastal living space and how we *must* extrapolate to the world the lessons learned from the "man-made global warming" that was Katrina/Rita in New Orleans.

Two questions to consider:

- Did the US population and its government really appear to learn anything from the "unsupervised, large-scale and very dangerous experiment" in New Orleans, Louisiana in August 2005?
- What are the implications of that major catastrophic series of events for Western North Carolina's life and culture?

One source to consult:

- The 2007 Nobel Prize-winning IPCC report on mitigation of climate change:  
<http://www.ipcc.ch/inccreports/ar4-wg3.htm>.

## Six: Killer Hurricanes: Exporting Katrina to the World

Todd Pierce

National Environmental Modeling and Analysis Center

Three things to notice:

- The 2005 Atlantic hurricane season broke several records: most named storms (27), most hurricanes (14), most major hurricanes to hit the US (4), and most Category 5 hurricanes (3). Of the six most powerful storms in the Atlantic Basin, three occurred before 2005 ([http://www.hurricaneville.com/all\\_time\\_storms.php](http://www.hurricaneville.com/all_time_storms.php)) and the other three (Katrina, Rita, Wilma) occurred within just 52 days in 2005 (pp. 91-92).
- Recent studies show that while the *frequency* of tropical cyclones has not changed in recent decades, the *intensity* of the storms has dramatically increased (p. 96).
- New Orleans suffered tremendously from Katrina, but two other cities—Miami and New York—have the potential for equivalent damage from storms due to local topography, low elevations, and dense populations (pp. 100-105).

Two questions to consider:

- The book includes some dire predictions for the 2006 hurricane season and beyond. However the 2006 season and the 2007 season together produced only one land falling hurricane in the US (<http://www.nhc.noaa.gov/pastall.shtml>). How does this recent low activity change any of the book's conclusions? Note that some scientists predict global warming will reduce hurricanes—see, for example: (<http://dsc.discovery.com/news/2008/05/19/hurricane-warming-climate.html>).
- Miami and New York are both at risk from devastating hurricane strikes. Compared to New Orleans, what factors make these cities more at risk? Less at risk? Some things to consider are: topography, road networks, education levels of population, access to public and personal transport in evacuations, non-English speaking groups, underground infrastructure.

One source to consult:

- National Hurricane Center:  
<http://www.nhc.noaa.gov/index.shtml>.

## **Seven: No More Katrinas, No More Warming, No More Waiting**

*Bruce Larson*

Department of Economics and Center for Teaching and Learning

Three things to notice:

- “And so, on that January morning in 2001, staring at the *Washington Post*, I realized something with terrifying certainty: The entire world was becoming one enormous state of Louisiana” (p. 114).
- “At the Group of Eight economic summit in Scotland in July 2005, [president] Bush told reporters, ‘I recognize that the surface of the earth is warmer and that an increase in greenhouse gases caused by humans is contributing to the problem’” (p. 116).
- In 2001 Mike Tidwell concluded: “The only way our species was going to avoid global suicide was if people like me—and you—ended our state of denial and passivity and raised our voices against the powerful special interests that are driving the climate chaos” (p. 115).

Two questions to consider:

- What would you have to do to reduce your CO<sub>2</sub> emissions by 50%?
- Tidwell asserts that “The solution to global warming means the unavoidable death of the world’s oil industry” (p. 117). Do you agree with this statement? What are your reasons for accepting or rejecting it?

One source to consult:

- Information on diet and climate change from the Chesapeake Climate Action Network:  
[http://www.chesapeakeclimate.org/pages/page.cfm?page\\_id=66](http://www.chesapeakeclimate.org/pages/page.cfm?page_id=66).

## **Eight:** The Clean Energy Revolution

*Barbara (Kitti) Reynolds*

*Department of Environmental Studies*

Three things to notice:

- The easiest fuel to exploit is “efficiency fuel” = energy conservation (p. 119). For example, the National Academy of Sciences estimated in 2001 that American automobile manufactures could nearly double the average fuel economy of the US fleet using existing technology (p. 120).
- Coal is the fuel source for 50% of our electric power; natural gas and oil provide another 19%. Almost 40% of America's total CO<sub>2</sub> emissions come from power plants, which waste 66% of their energy to heat (p. 121).
- A change in public policy is needed to solve our national energy problems (p. 122). Example, switching entirely to “Energy Star” appliances over the next 15 years would save the US \$100 billion in energy (p. 123).

Two questions to consider:

- What are some ways you and your family could save energy?
- What are some advantages and disadvantages of wind and solar power (p. 127-129)?

One source to consult:

- Pew Center on Global Climate Change:  
<http://www.pewclimate.org/>.

## **Nine:** Climate Cover-up at the White House

*Bruce Larson*

Department of Economics and Center for Teaching and Learning

Two things to notice:

- In December 2005 NASA climate scientist James Hansen did something very unusual: “He began openly advocating for a government policy response to the [global warming] data that science was bringing to the table” (p. 143). Subsequently, a political appointee of the Bush Administration told Hansen that “I wasn’t his job to call for urgent reductions in greenhouse gas emissions” (p. 145).
- “We are rapidly exporting to every coastal city in the world the basic conditions that wiped out New Orleans. This is the chief argument of this book. The two major features of that threat . . . rapid relative sea-level rise followed by a huge storm—are coming soon to a coastal city near you thanks to global warming” (p. 149).

Two questions to consider:

- What is the present energy policy of the United States? Is climate change a central part of the current presidential election debates?
- Tidwell writes that “global warming is not a ‘normal’ issue. It’s not one more item in the tug of war between left and right with the spoils of control going to the party in power and its industry backers. The stakes are too high this time and *none* of us can pretend otherwise any longer” (p. 149). What is it about global warming that makes it an ‘abnormal’ issue?

Two sources to consult:

- Former Vice President and Nobel laureate Al Gore is well known for his film *An Inconvenient Truth*, a DVD of which is available from the UNCA library. Learn more about the film at: <http://www.climatecrisis.net/>.

- On July 17<sup>th</sup> Al Gore challenged the United States to reach “the goal of 100 percent renewable and truly clean electricity within 10 years,” echoing president John F. Kennedy’s challenge to the United States to land a man on the moon and return him safely within a decade. You can listen to his speech and read its text at: [http://www.wecansolveit.org/pages/al\\_gore\\_a\\_generational\\_challenge\\_to\\_repower\\_america/](http://www.wecansolveit.org/pages/al_gore_a_generational_challenge_to_repower_america/).

## **Ten:** A Way Out of This Mess: Kyoto and Beyond

*Jo Stephenson*

Student Activities and Integrative Learning

Three things to notice in the chapter:

- The fact that we have the technology to utilize sustainable and renewable resources, we just do not have the policy to enforce it.
- Using corn for fuel may initially seem like a good idea but could cause food prices to increase tremendously (and is already occurring).
- Using patriotism to market clean energy may prove to be a valuable strategy.

Two questions worth pondering:

- Who owns the sky?
- Is the United States the catalyst required to make the Kyoto Protocol succeed?

One source to consult for further information:

- Understanding Climate Change: A Beginner's Guide to the UN Framework Convention and its Kyoto Protocol:  
[http://unfccc.int/resource/docs/publications/beginner\\_en.pdf](http://unfccc.int/resource/docs/publications/beginner_en.pdf).

## **Eleven:** The Bottom-up Solution: A Grassroots Rebellion

*Tracie Pouliot*

Cultural and Special Events

Four things to notice:

- Poor people get hurt the most: the most vulnerable people often have no say in federal policies that trigger environmental justice and health issues, and often times they are the most effected by environmental injustices (p.174).
- The U.S., with just 4.5 % of the world's population is responsible for 25% of all the man made greenhouse gases in the atmosphere (p. 175).
- We have almost no time left, maybe 10 years and, with the cultural and political attachments that connect us to this way of life, the task before us is very tall (p. 176).
- All of our greatest problems as a nation, in the realms of health, national security, the economy, the environment, flow directly from our national energy choices (p. 179).

Two questions to consider:

- How can you, personally, create the change Tidwell is calling for in this chapter?
- How do you suppose a grassroots movement is built? How can you build a movement? How can you be a part of a movement?

One source to consult:

- The Environmental Justice and Climate Change Initiative:  
<http://www.ejcc.org/>.

The EJCC: trains new leaders; pushes for policies that protect the most vulnerable from the impacts of climate change and foster a just transition to a future free from fossil fuels; and supports energy efficiency, renewable energy, and conservation policies while seeking equitable measures to protect and assist the communities most affected by climate change.