



# ***FROM THE WILDERNESS***

*A Nonpartisan Non-sectarian MAP from the Here That Is,  
Into the Tomorrow of Our Own Making*

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## **HEARTS AND MINDS AND A WHOLE LOT OF BLOOD: Blinded By Its Smug Ignorance, the War Machine Gets Panicky**

by  
Stan Goff

[Racism and greed may have made the neocons bolder, freeing them from whatever ethical constraints they might have heard of in their travels. But that same rapacity and contempt for human life have also blunted their judgment. The War Department and its private contractors are making a certain class of mistakes that you only make when you know you're in the wrong, and your army knows it, and your enemy knows it. The Secretary of War has somehow convinced himself that the same bazillion dollar ultragadget that launches a missile through a doorway can also convince all those bereaved Iraqi families to roll out the red carpet. Surely there's a button for that here somewhere?

Maybe some American officer with the ear of the state will decide that it might be a good idea to pay some attention to demographics, to Islam, to history, to just who it is they're fighting and why that opponent hasn't given up. But the current US position shows a deep institutional rot that nobody on Planet Neoconservative seems to know how to remedy. A little respect for his own soldiers, a little acquaintance with the people of the region, and Mr. Rumsfeld would not be sweating quite so hard. - JAH]

MAY 20, 2004 0950 PDT (FTW) -- **W**hen I entered a twelve-step program to break off my relationship with alcohol, one of the first things I heard was, "Insanity is doing the same thing over and over and expecting a different result."

While I don't think this conforms to anything in the American Dictionary of Psychiatry, and is likely more truism than truth, it certainly seems to apply to the occupation of Iraq right now.

The US war on Iraq is on the cusp of disaster, and the only tricks in the US bag seem to be more of the same. Not simply the same things they've been doing in Iraq, but the same policy that landed them in this whole political swamp in the first place.

Donald Rumsfeld has pointed out more than once that while there are only 134,000 US troops in Iraq, 20,000 or so mercenaries, 11,000 British troops, and the chump-change window-dressing of the other members of the so-called coalition, there are 2.4 million Americans who are in some manner or another officially under arms. This is precisely why he has maintained his aversion to the draft. The plan is to privatize as much as possible all non-combat roles, and to push as many as possible of those in uniform into more direct combat roles. (He fails to understand that these are predominantly non-combat specialties, but that's a minor glitch. Cannon cockers are kicking doors in Iraq like grunts right now.)

*(Cont'd on page 22)*

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## **TABLE OF CONTENTS**

<b>Hearts and Minds and a Whole Lot of Blood: Blinded by Its Smug Ignorance, the War Machine Gets Panicky.....</b>	<b>page 1</b>
<b>CRUDE TALK: U.S. &amp; Venezuela Dance "The Joropo".....</b>	<b>page 2</b>
<b>Selective Service Has Plans to Include Drafting Women and Increasing Eligibility Age to 34.....</b>	<b>page 3</b>
<b>The Peak in U.S. Coal Production: LNG Import Issues Key .....</b>	<b>page 4</b>
<b>Global Climate Change &amp; Peak Oil, Part 2.....</b>	<b>page 13</b>
<b>Toward The Petro Collapse.....</b>	<b>page 20</b>

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## **CRUDE TALK:**

### **US & VENEZUELA DANCE "THE JOROPO"**

by  
**Suzan Mazur**

*[After several failed efforts to unseat Venezuela's popular President Hugo Chavez, the fuel sector of corporate America is getting nervous. Venezuela is growing in prosperity, relying on its own mineral resources and technological patents to build new wealth. Chavez is exactly the kind of indigenous national leader whom American power can't tolerate. Arbenz, Mossadegh, Allende, and the other names on that too-familiar list were deposed for the crime of using their countries' own resources to enrich the general population. More recently, Aristide moved a few inches in that direction and found himself miles from home. Even as Venezuela consolidates its position on the global oil chessboard, American law-and-order rhetoric is less and less credible. The old script goes like this: U.S. corporations expropriate third world wealth; a democratic leader then nationalizes that wealth; the US then cries "property rights!" and invades said country in the name of international law. But Iraq is tearing that script to shreds at every point, and the Venezuela story is unfolding in what may prove to be a new narrative for the world --- or a particularly bitter replay of the old one. --JAH]*

MAY 28, 2004 1000 PDT (FTW) -- In spite of a robust and energetic press conference last week in New York that was wide open to the public, a spokesman for Venezuela's President Hugo Chavez reiterated Chavez's promise that he would cut off crude oil supplies from the US's 3rd largest producer in the event of any US-sponsored attempts to destabilize his government.

This comes on the heels of serious oil trade talks between Venezuela and China. What is provoking Chavez is an ongoing US campaign to get rid of him by supporting those in the Venezuelan opposition who are demanding a recall referendum. It is a dance of arrogance on the part of the US, considering the devalued dollar and China's thirst for oil.

China already has supply contracts for Venezuelan crude and other petroleum products and may be waiting for just such a rift to replace the US as Venezuela's favorite customer. Its imports of crude, fuel oil and diesel oil have dramatically increased this year -- 60%, 90% and 33%, respectively -- while exports of gasoline are down 43%.

*(Cont'd on page 10)*

# Selective Service Eyes Women's Draft

By  
Eric Rosenberg

The Seattle Post-Intelligencer  
Saturday 01 May 2004

WASHINGTON -- The chief of the Selective Service System has proposed registering women for the military draft and requiring that young Americans regularly inform the government about whether they have training in niche specialties needed in the armed services.

The proposal, which the agency's acting Director Lewis Brodsky presented to senior Pentagon officials just before the U.S.-led invasion of Iraq, also seeks to extend the age of draft registration to 34 years old, up from 25.

The Selective Service System plan, obtained under the Freedom of Information Act, highlights the extent to which agency officials have planned for an expanded military draft in case the administration and Congress would authorize one in the future.

"In line with today's needs, the Selective Service System's structure, programs and activities should be reengineered toward maintaining a national inventory of American men and, for the first time, women, ages 18 through 34, with an added focus on identifying individuals with critical skills," the agency said in a Feb. 11,

2003, proposal presented to senior Pentagon officials.

Brodsky and Richard Flahavan, the agency's director of public and congressional affairs, reviewed the six page proposal with Pentagon officials responsible for personnel issues. They included Charles Abell, principal deputy undersecretary for personnel and readiness, and William Carr, deputy undersecretary for military personnel policy.

The agency officials acknowledged that they would have "to market the concept" of a female draft to Congress, which ultimately would have to authorize such a step.

Dan Amon, a spokesman for the Selective Service System, based in Arlington, Va., said that the Pentagon has taken no action on the proposal to expand draft registration.

"These ideas were only being floated for Department of Defense consideration," Amon said. He described the proposal as "food for thought" for contingency planning. Navy Lt. Cmdr. Jane Campbell, a spokeswoman for the Defense Department, said the Pentagon "has not agreed to, nor even suggested, a change to Selective Service's current missions."

Nonetheless, Flahavan said the agency has begun designing procedures for a targeted registration and draft of people with computer and language skills, in case military officials and Congress authorize it.

Defense Secretary Donald Rumsfeld and Air Force Gen. Richard Myers, chairman of the Joint Chiefs of Staff, say they oppose a revival of the military draft, last used in 1973 as the American commitment in Vietnam waned, beginning the era of the all-volunteer force. Mandatory registration for the draft was suspended in 1975 but was resumed in 1980 by President Carter after the Soviets invaded Afghanistan.

About 13.5 million men, ages 18 to 25, currently are registered with the Selective Service. "I don't know anyone in the executive branch of the government who believes that it would be appropriate or necessary to reinstitute the draft," Rumsfeld said last month.

At present, the Selective Service is authorized to register only young men and they are not required to inform the government about any professional skills. Separately, the agency has in place a special registration system to draft health care personnel in more than 60 specialties into the military if necessary in a crisis.

Some of the skill areas where the armed forces are facing "critical shortages" include linguists and computer specialists, the agency said.

Individuals proficient in more than one critical skill would list the skill in which they have the greatest degree of competency.

Americans would then be required to regularly update the agency on their skills until they reach age 35.

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# THE PEAK IN U.S. COAL PRODUCTION LNG Import Issues Key

By  
Gregson Vaux

*[Under the radar of almost every environmental and energy-study group, The Christian Science Monitor reported on Feb. 25, 2004, "At least 94 coal-fired electric power plants - with the capacity to power 62 million American homes - are now planned across 36 states." As FTW has long predicted, oil and gas shortages would inevitably lead the US into short-term, knee-jerk, reversion to coal and nuclear options as means to put proverbial fingers into the leaking energy dike.*

*Here, scientist Gregson Vaux presents an original study on US coal reserves which indicates that coal is likely behaving almost exactly like Peak Oil. If his analysis is correct, then coal may itself prove to be a short-lived and illusory solution. - MCR]*

MAY 27, 2004 1100 PDT (FTW) -- **A**s many people with even a casual interest in energy now know, natural gas supplies in the United States are very tight and will most likely become worse due to mature gas reservoirs no longer being able to meet demand. The National Petroleum Council (NPC), an industry organization established by the U.S. Interior Secretary in 1946, announced in a September 2003 report that U.S. and Canadian gas production has "plateaued" and that North America will no longer be self reliant in meeting its gas needs.<sup>1</sup> There currently exists only one source of proposed salvation for meeting American gas demand, and that is importing Liquefied Natural Gas (LNG) from other countries such as Oman, Qatar, or Algeria. There is currently a large effort in this nation to rapidly increase LNG imports but safety and environmental concerns are greatly slowing down this effort. In addition, competition for LNG from Japan, Europe, India, and China may very well limit the amount we can ultimately obtain.

The oil situation may turn out to be just as bad, if not worse. Studies conducted by petroleum geologists such as Colin Campbell<sup>2</sup> and L.F. Ivanhoe<sup>3</sup> suggest that conventional oil production will peak sometime before 2010. While this claim was at first ignored by most mainstream media, it can't be ignored any longer. Petroleum prices have reached record highs; oil production has peaked in individual countries including the U.S., Britain, and perhaps Oman; and it's now commonly recognized that Saudi Arabia is the only country claiming excess production capacity. Ever-increasing numbers of former skeptics agree that oil production may peak during this decade.

We live in a world that was built and is sustained by inexpensive, readily available fossil fuels. Fossil energy powers our delivery vehicles and all of our farm machinery, it pumps water to our homes, it produces nearly all of the products that we call chemicals. In short, without fossil fuels our civilization cannot exist as we currently know it. Figure 1 shows the percentage of various energy sources used to run American civilization from 1920 to 2002. It can be easily seen that natural gas, petroleum, and coal make up the vast majority of American energy demand and that as petroleum and gas consumption have risen or fallen, coal has done the inverse. This is because coal is the only real alternative for gas and oil. Some might argue that there could be other sources of energy and they would be right but we are simply not ready for them.

Nuclear energy can be used to generate electricity and can even make motor fuels, but safety concerns, waste disposal issues, and needs for further technological development mean that nuclear energy will not be a majority energy source for several decades.

Hydroelectric power has served the U.S. well but is now near its maximum potential because there are simply almost no rivers remaining to be dammed. In addition, water shortages have affected the reliability of hydroelectric power. Wind power has a moderately promising future but the unreliability of wind has limited its use throughout the world. Even countries such as Denmark that have made heroic efforts to develop wind power are connected to a larger electrical grid so that they can rely on more traditional sources of electricity when the wind is not blowing. There are also other energy sources such as solar power but they are very minor contributors and will remain so for reasons that are beyond the scope of this paper. In short, the only major energy sources for the next few decades will be oil, natural gas, and coal.

Another item to note about figure 1 is the peak in gas and oil production that occurred in the 1970s which led to the resurgence in the percentage growth of coal. If indeed we are nearing a point in which the U.S. will find more difficulty in obtaining oil and natural gas, then only coal will be called upon to fill the shortfall.

There is almost no doubt that coal production will rise in the future and the Department of Energy's Energy Information Administration (EIA) predicts that coal consumption will greatly increase in the next two decades.<sup>4</sup> Most would agree that this will not be a problem because in the U.S. we have hundreds of years of reserves remaining. Years of reserves remaining is easy enough to calculate: one only need determine how many tons of coal remain in the ground (available from the EIA) and divide by the production for that year. If we look at the year 2000, we can see that we have 255 years of coal remaining. However, if we look at other years, we see something strange: there were 300 years of coal reserves in 1988, 1000 years reserves in 1904, and 10,000 years reserves in 1868! As each year goes by, we use our coal more quickly and we see that the standard formulation of 'years remaining' is nearly meaningless.

Figure 2 shows U.S. coal production from 1800 to 2001. We can see a fairly good example of exponential growth with a change in that pattern from 1917 to 1961. This deviation from exponential growth teaches us an important lesson about projections. Any mathematical model that involves human decision such as whether to use coal or oil, or models that include the chaotic, human driven economy will deviate from mathematical perfection. Any model that we devise will only be a decent fit at best.

One model that has been fairly successful at predicting the production of oil and gas is the Hubbert curve.

It is a bell shaped mathematical curve very similar to the normal distribution curve and is named after the now famous geophysicist M. King Hubbert who used it to predict that oil production in the 48 contiguous states would peak in the early 1970's. Hubbert was proven to be right when production peaked in 1971. Figure 3 shows a Hubbert curve that has been fitted to coal production data for the United Kingdom. The U.K. was chosen as an example because it is a region that is well past its peak and will likely never be able to increase its production to British coal's heyday in the early parts of the 20th century.

Britain has already shown us that a region's coal fields can be depleted, but we must ask whether the Hubbert curve is a good depletion model. It seems to work fairly well for British coal but this sort of analysis is traditionally used for oil and gas. A review of the U.S. Geological Survey's databases shows us that there are at least two resources that have experienced depletion. Figures 4 and 5 show U.S. production for Arsenic and Manganese. The Hubbert model predicts that a resource will peak when  $\frac{1}{2}$  of the ultimate production (the total amount that will ever be produced) has been produced. For arsenic, we see that the production peak occurred exactly in the year that the model predicts. As for manganese, there was an early peak in 1918 but then production went back down not because of geological constraints but due to human decisions. However, we see a second production peak in 1943 that is only one year after the peak predicted by the Hubbert model.

It is probably too early to definitively say whether the Hubbert model can be used for coal production in the U.S., but the examples of British coal, U.S. arsenic, and U.S. manganese seem to indicate that a Hubbert curve may be able to predict future production trends for U.S. coal.

A full paper will be published at a later date explaining how the Hubbert curve was fit to U.S. coal production data, but the results can be seen in figure 6. The fitted curve takes into account past production trends and predicts the peak date based on the assumption that once one half of the ultimate has been reached, production will naturally decline as the remaining coal lies in thinner and deeper seams. In this fitting of the Hubbert model, the date of peak coal production is forecast to be 2032. If we look at figure 6, it might seem that the Hubbert curve does not closely match the historic data but that is because of the variable nature of historic growth. The full paper gives details describing analyses that argue that the fitted curve does indeed match the historic data. Some critics have argued that Hubbert's curves are really just curve fitting which is partially true but the Hubbert model also takes into account remaining and original reserves which are determined using geological knowledge.

Perhaps a better method could be used to predict peak production that takes into account future supply and demand of energy. It is possible to estimate future demand given certain assumptions and much as with the Hubbert model, assume that coal production will peak when 1/2 of original reserves have been depleted.

The first scenario investigated assumes that future coal demand will exactly follow the EIA's Annual Energy Outlook 2004. Using the EIA's assumptions, coal will peak in 2060. However, The Annual Energy Outlook 2004 was published before it was widely accepted that U.S. gas production had peaked and that growth of LNG would be difficult. If we assume that U.S. gas consumption cannot grow beyond 2002 levels (2003 gas consumption was less than 2002) due to the North American gas production peak and limited LNG imports, then growth in electrical demand must be met by coal instead of gas. In this second scenario, coal is forecast to peak in 2053. The final scenario assumes that in addition to flat natural gas consumption, oil will peak in 2010 and synfuels will be produced from coal for use in vehicles. It is further assumed that these synfuels will be produced using the process currently employed by the Sasol Company in South Africa. While this is a rather inefficient process, it has been proven at large scales over many years. In this scenario, coal is forecast to peak in 2035. A summary of the results for these three scenarios and for the Hubbert model can be found in table 1.

The question is whether these three supply/demand scenarios are optimistic or pessimistic. The majority of the calculations were conducted at Carnegie Mellon University in the Fall Semester of 2003 before the severity of the gas crisis had become obvious. It is possible that gas consumption in the U.S. will not remain flat but will actually decline; in this case, the coal peak will come sooner.

In addition, none of the three supply/demand scenarios looks at coal use for various industrial processes or coke production. Recent interviews with coal and rail companies have revealed that metallurgical coal demand in the Spring of 2004 has been unexpectedly high. If industrial coal demand does increase, this will also cause coal to peak at an earlier date.

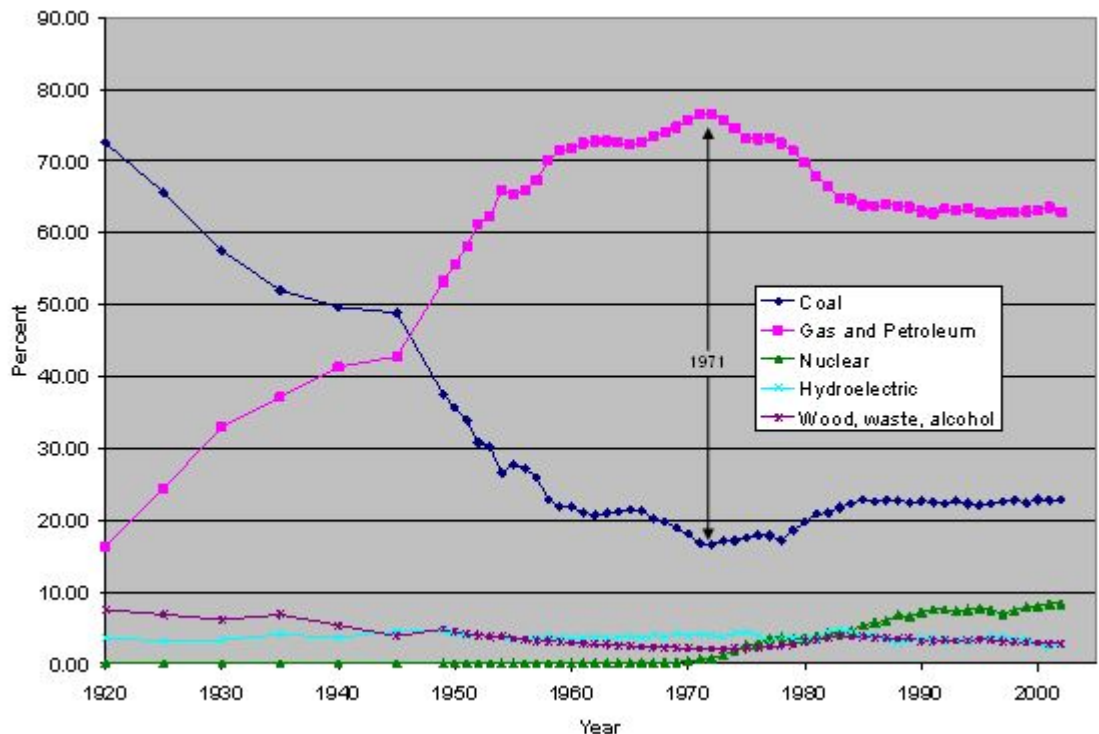
There is a significant difference between the forecast from the Hubbert Model and the three supply demand forecasts which raises the question of which is more accurate. The Hubbert model relies heavily on assuming that future growth will be similar to past growth and this may be correct in that the Hubbert model predicts an average annual growth rate for U.S. coal of only 1.2% between 2000 and 2032. With economic growth and possible declines in natural gas and later oil, even 1.2% annual growth in coal consumption might be too conservative.

In conclusion, is there any hope that the coal production peak can be pushed back to a later date? The various models described above, all assume that current trends will continue along a certain path, but we can decide to change the way we consume energy. There exist technologies such as coal gasification that produce electricity and even synfuels much more efficiently than current methods. We can also make efforts as a nation to conserve our resources and perhaps even conclude that endless growth may not be in our best interests. It is probably safe to assume that coal and economic growth will be closely tied in the next few decades meaning that we can either have long lasting coal supplies or economic growth, but not both.

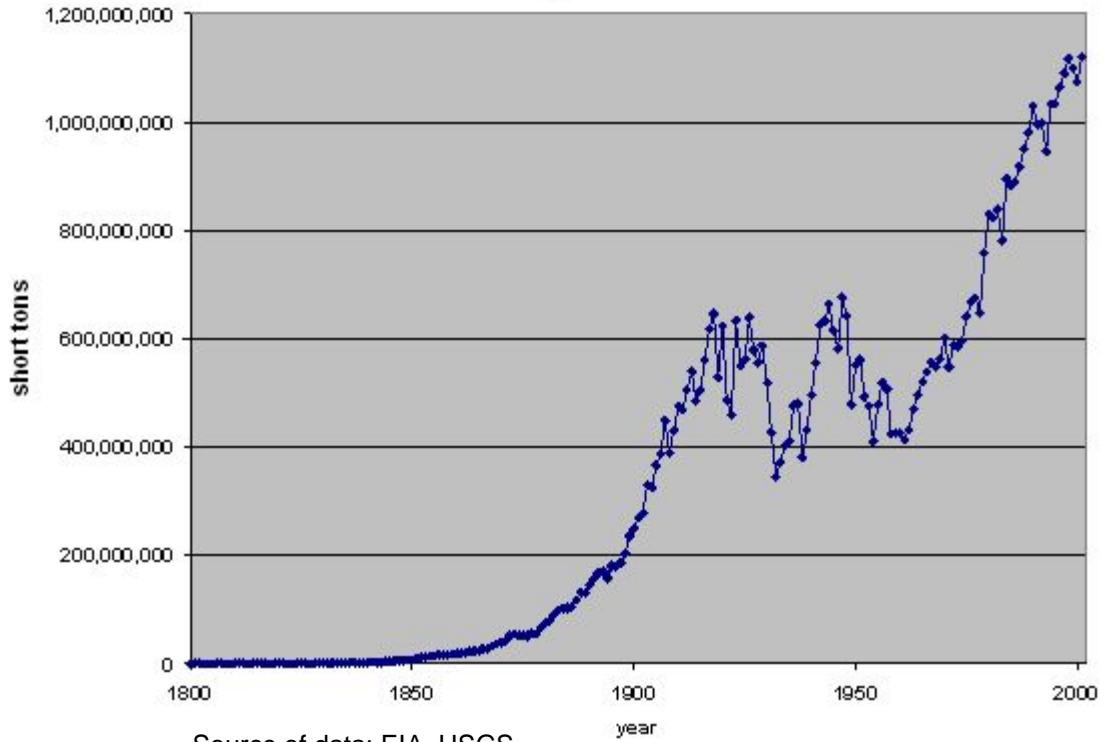
**Figure 1: Total U.S. Energy Consumption, Mix of Fuels**

Source of data: 1949-2002 data: <http://www.eia.doe.gov/emeu/aer/txt/ptb0103.html>

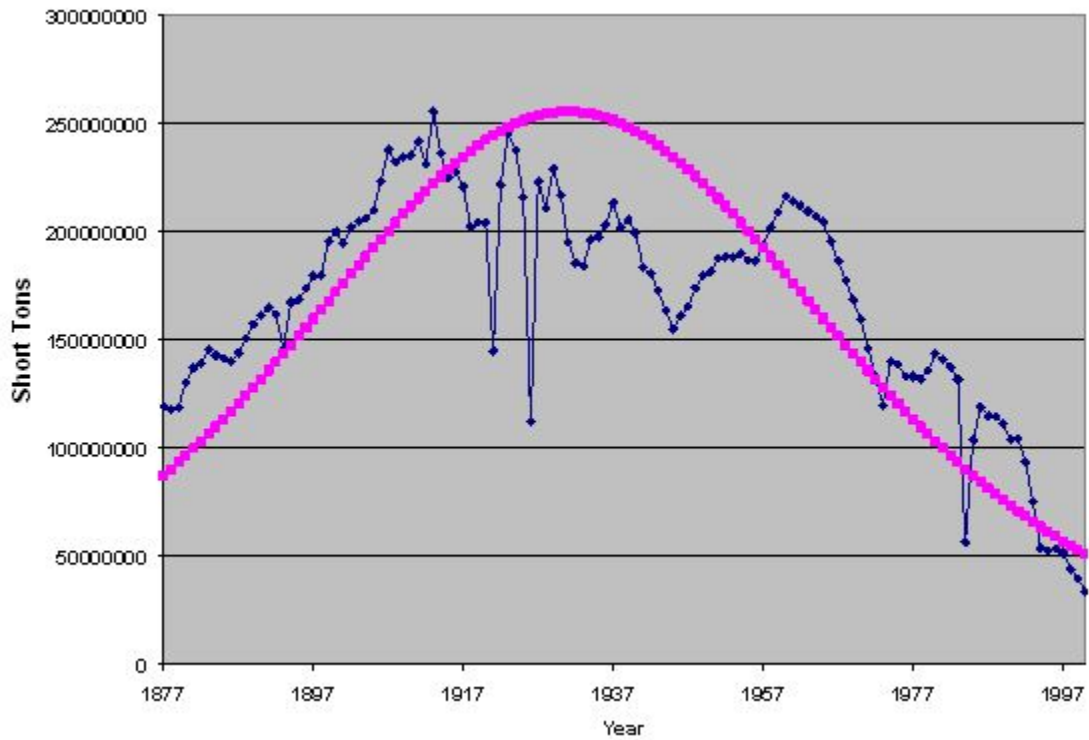
1920-1945 data: <http://www.eia.doe.gov/emeu/aer/>



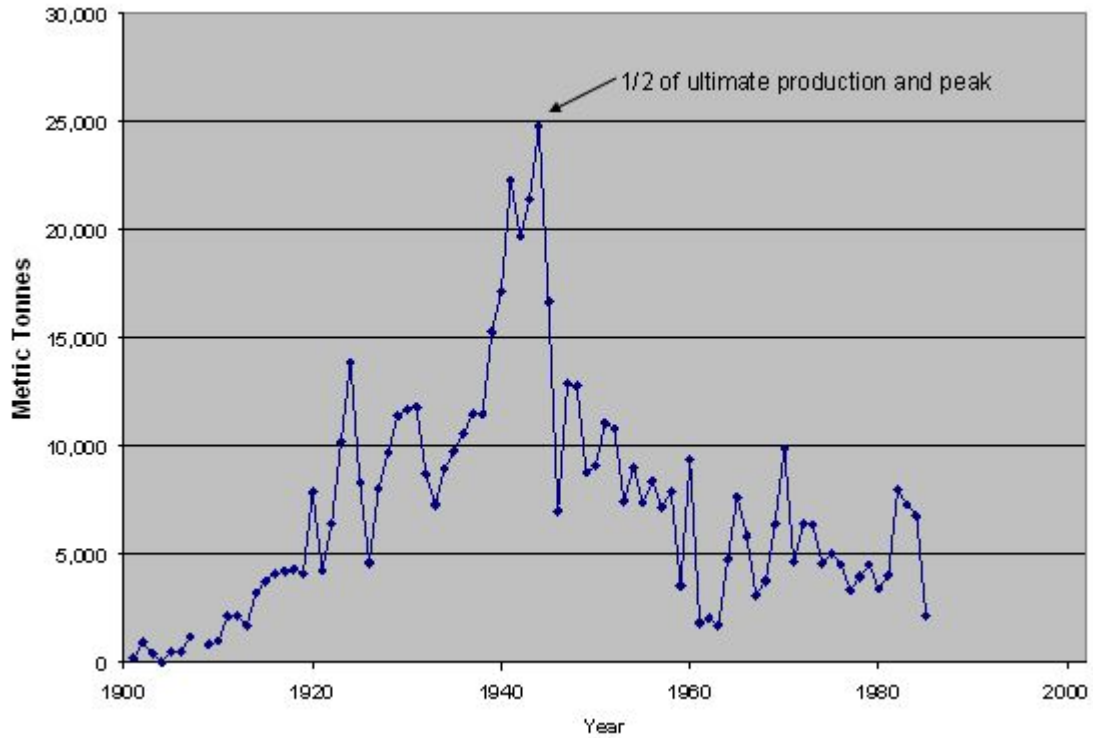
**Figure 2: U.S. Coal Production**



**Figure 3: U.K. Coal Production 1877-2000 and Hubbert Curve**

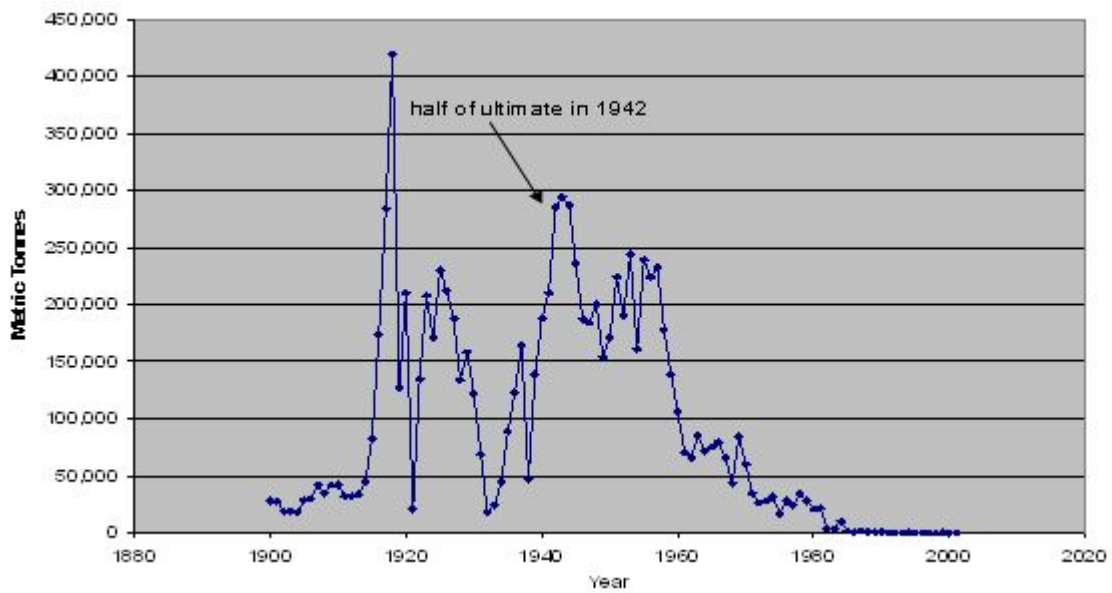


**Figure 4: U.S. Arsenic Production**



Source of data: USGS

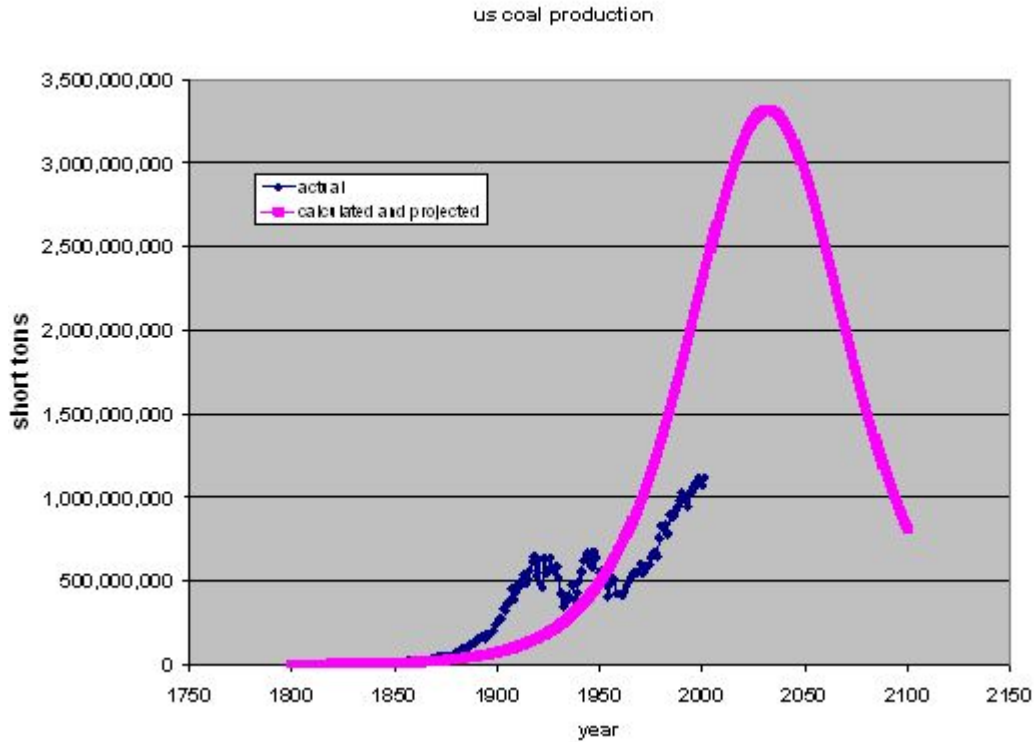
**Figure 5: U.S. Manganese Production**



Source of data: USGS



**Figure 6: Actual U.S. Coal Production and a Fitted Hubbert Curve**



Source of data: USGS, EIA

**Table 1: Results of Hubbert Model and Three Supply/Demand Scenarios**

Method	Hubbert Model	Production Meeting Demand		
Scenario		Energy Information Administration, Annual Energy Outlook 2004	Flat gas consumption and greater coal consumption	Flat gas consumption and synfuels from coal to replace oil
Peak Year	2032	2060	2053	2035

**ENDNOTES**

- 1 Balancing Natural Gas Policy, National Petroleum Council, September 2003
- 2 C.J. Campbell, The Essence of Oil & Gas Depletion, Multi-Science Publishing Company (2003)
- 3 L.F. Ivanhoe, World Oil, November 1996
- 4 EIA, Annual Energy Outlook 2004

So it was a charged conference room as Dr. Ali Rodriguez Araque, President and CEO of Petroleos de Venezuela S.A., Venezuela's state-run oil company, opened the discussion. A graceful and eloquent man, Rodriguez brings to PDVSA his impressive credentials from the world petroleum stage, having served as President and Secretary General of OPEC (2000, 2001). Prior to this, Rodriguez was Venezuela's Minister of Energy and Mines. In 1997, he published a key paper on privatization of the Venezuelan oil industry.

Rodriguez was joined on the panel by Luis E. Marin, CEO of Citgo Petroleum, America's 3rd largest refiner of oil -- a wholly-owned subsidiary of PDVSA -- and PDVSA VPs Ivan Hernandez (Refining) and Jose Alejandro Rojas (Finance).

The oil trade publications were packed in tightly at the Regency Hotel with an aggressive team from Platts most vocal. Energy Intelligence Group, Dow and Reuters also made their presence known in the questioning. Yet, at a time of maximum national concern about price and supply of oil -- the international media were visibly missing, as were the major New York dailies.

There was also an absence of US dignitaries. Unlike the Saudi Arabian oil conference at New York's Waldorf-Astoria a few weeks earlier, there were no former US ambassadors wearing expensive gold watches. No delegation from the Council on Foreign Relations. No Frank Wisner -- even though reinsurer AIG (Francis Lobo and Andrew Barber) recently visited western Venezuela's natural gas facilities and gave PDVSA a thumbs-up high degree of security index.

Rodriguez began by focusing on remarks he'd made at the Harvard Club luncheon earlier in the day, citing Venezuela's crude oil reserves at 78 billion barrels, heavy crude and extra-heavy crude from the Orinoco Belt at 235 billion barrels, and 148 trillion cubic feet of proven natural gas reserves -- the largest in the Western Hemisphere. There have also been important discoveries of crude and natural gas in eastern Venezuela, which PDVSA cites as "several billion barrels of low-sulfur, light crude".

Dr. Rodriguez said the country had recovered from the strike and sabotage in December 2002 and January 2003, which virtually shut down oil production -- from 2.9 m/b/d to a trickle of 25,000 b/d -- and that production was now at 2.6 m/b/d (some barrels sourced from foreign contractors). Rodriguez noted PDVSA sales in 2003 were \$46 billion with a net profit of \$3.8 billion and that the 2004-2009 business plan is to increase production to 5 m/b/d.

Rodriguez also cited Venezuela's 22 refinery projects.

Particularly significant is PDVSA's ownership of Citgo, which makes Venezuela an important player in the US economy. Citgo say it has \$12 billion invested in US refineries, terminals and pipelines and employs 2,400 (indirectly 150,000). The Chavez administration has threatened to nationalize US assets in Venezuela should the US take any action against Citgo.

Rodriguez said Venezuela has joint ventures with Amerada Hess and ExxonMobil in refineries in the Virgin Islands and Louisiana. He also noted that ExxonMobil, ChevronTexaco and ConocoPhillips, as well as a number of European oil companies, are invested in Venezuela's oil industry, and that PDVSA is about to offer seven offshore natural gas exploration blocks in western Venezuela (bidding in June). Also, Venezuela has now authorized Shell gas liquification for export to the US.

Luis Marin said that Citgo, a marketer of fuels, lubricants and petrochemicals, operates 13,500 gas outlets in America with 50 terminals between the Gulf of Mexico, New York and Chicago. Marin also indicated they're about to increase the operating capacity at the company's Lake Charles, Louisiana refinery to 425,000 b/p/d (to the delight of environmentalists), and that Citgo has two other US refineries -- in Corpus Christi, Texas and Lemont, Illinois. He cited Citgo's 14 safety awards from NPRA (National Petrochemical & Refiners Association).

Refining was a topic of conversation at the Saudi Waldorf energy panel, as well, with the Saudis saying they are committed to financing two new 500,000 b/p/d refineries in the US. It's rumored one reason may be that they are now dipping into their heavy crude supplies.

ChevronTexaco Vice Chair Peter Robertson, a panelist at the Waldorf press conference, said that regulations regarding US refineries are so diverse from region to region -- with different jurisdictions requiring different formulas -- that the price of gasoline gets pushed up.

"So when a refinery's down in one location," Robertson said, "it's very difficult to satisfy demand somewhere else because you have all these formulas. It would make life a lot easier by adopting a simple formula across the country. There probably will be at some point in time."

Meanwhile, Venezuela has said it has patented the ISAL process to reduce sulfur levels of gasoline. Ali Rodriguez said the technique "not only meets, but exceeds" the new US sulfur requirements.

PDVSA VP for Finance Jose Alejandro Rojas said Venezuela will soon have a risk rating.

Moody's on April 13, 2004 recognized PDVSA's production recovery following the 2002/2003 oil workers' strike. It stressed, however, that Venezuela will need foreign investment and expertise.

Rojas indicated PDVSA will invest \$37 billion in the domestic oil industry over the next five years -- with \$10 billion of this coming from third-party financing (probably foreign oil companies, especially if investment becomes more attractive).

Rojas is viewed by many as key to PDVSA's success since he has a rapport with international bankers and foreign governments from his years as the country's finance minister. Addressing criticism that PDVSA is still understaffed (thousands were fired by Chavez following the 2002 strike -- mostly executives), Rojas said the company has an aggressive plan for human resources and is bringing back retirees as well as hiring foreign specialists.

Rojas was not specific about where he would get foreign capital. But Ali Rodriguez has described Venezuela's low debt and high generation of liquidity enabling PDVSA to raise \$133 million in 2003 at highly favorable rates. And in 2004 PDVSA received a \$122 million loan from the Japan Bank for International Cooperation for a refinery project in eastern Venezuela.

Venezuela might find some inspiration in the approach of Saudi Arabia, which has long been cautious about foreign investment. Its investment authority, SAGIA, is led by the maverick Abdullah bin Faisal bin Turki Al Saud who says the country recognizes "foreign investors bring in both money and expertise, and can plug into developments around the world".

The problem is at what price? Chavez, in an effort to stem the commercial exploitation of his country has, for instance, taken on Science Applications International Corp., the California-based information technology company, because it was demanding 60% ownership in its joint venture with Venezuela.

In a question and answer session that was broadcast into Venezuela along with the panel's speeches, I asked Ali Rodriguez just how serious President Chavez was about statements regarding cutting off Venezuela's crude oil to the US and stepping up exports to China if the US continues to meddle in Venezuela's political affairs.

Chavez has accused the US of not only instigating opposition protests for his recall, but also for playing a starring role in the April 11, 2002 coup d'etat, which lasted two days before supporters clamored for Chavez's reinstatement.

He has said he would also interrupt the crude supply to the US if Washington threatened sanctions or tried an invasion.

Chavez has announced that even if he did step down and hand over the government, it would only be to another "revolutionary" government. And he advised he's taken steps to strengthen the military, calling up reservists and setting up a people's militia.

Dr. Rodriguez answered my question saying "President Chavez's statement stands". That it's happened before. And that he had nothing further to add.

As for the Chinese supply contracts, Rodriguez said China is of interest because it needs oil for its intense development. He cited 60% of the projected increase in the world's primary energy demand to 2030 will come from developing countries, particularly in Asia, and that Venezuela was interested in selling oil to these "new markets" in order to "better our population".

But he was firm that Venezuela would not sell its technology or patent for Orimulsion (made from extra-heavy crude) to China or to any other country -- although he said Venezuela will fulfill its other contracts to China.

UK oil financial analyst Oliver Campbell (no relation to "peak oil guru" Colin Campbell), is a native of Venezuela and is familiar with its oil fields, having worked in Venezuela's petroleum industry from 1953-1982, with Shell and as finance coordinator at PDVSA. He has noted Venezuela's interest in adding 235 billion barrels of extra-heavy crude from the Orinoco Belt to its reserves and suggests "they could be regarded as conventional" considering that the per barrel price of oil is now as high as it is. He also believes the Orinoco crudes were classified as "bitumen" to keep Orimulsion out of the OPEC quota.

Campbell says further that because the distinction between conventional and non conventional oil "has become blurred," it might make sense for the oil industry to consider switching to the UK method of reporting reserves, which offers more of a range: proven, probable, proven and probable, possible, and maximum -- as opposed to the SEC model widely in use of disclosing only proved reserves producible under existing economic conditions.

Moreover, "it is the end result that counts" he says, "if a substance can be produced and upgraded to be saleable oil at a cost of only \$8 a barrel, what does it matter if it started life with a viscosity over 10,000 milliPascals/second?"

Moving beyond oil economics and politics to humanitarian issues, Dr. Rodriguez has sketched out what his country hopes to do with its oil wealth saying Venezuela is "witnessing the beginning of a time in which a better quality of life will be the privilege of the many, not the few . . . The new PDVSA is a company dedicated to the task of enhancing the value of not only these [petroleum] resources, but also of the human being."

Meanwhile, the labor movement in the oil sector has also come together. In March of this year, Venezuela's three oil unions – Fedepetrol, Febrahidrocarburos and Sinutrapetrol – signed the "Palito Declaration". Venezuela's Minister of Energy and Mines Rafael Ramirez has said Palito will allow for the "deepening of the bolivariana revolution" in social and economic terms. Ali Rodriguez told me that two of the union leaders, Nelson Nunez and Rafael Rosales, are external directors of PDVSA's 10-member board.

Rodriguez has said further: "We are making use of all our capabilities and assets to generate and multiply wealth, to transform our oil industry into a tool for sustainable development . . . . It is unacceptable that 100 million Latin American citizens live with less than one dollar a day. . . . We must dispel the pessimistic view that nothing can be done to ameliorate the poverty in our region."

Kevin Saville from Platts questioned Rodriguez as to whether Venezuela had really recovered from the 2002 strike. Rodriguez said scepticism in the media was a matter of disinformation. Rodriguez again cited Venezuela's earnings in 2003 at \$46 billion. And he promised Venezuela's oil sector had not only recovered but that it would be offering "greater products" – not just crude.

A reporter from Dow questioned whether shipments were now ready for New York and Connecticut and what percentage of the gas complied with US requirements.

Ivan Hernandez, VP for Refining, answered saying there was no problem with 2004-2005 exportation. The sulphur level was at 390 ppms.

Reuters challenged the b/p/d production figure of PDVSA. Rodriguez reiterated that it was indeed 2.6 m/b/d.

Dr. Rodriguez addressed questions about the price of oil, saying factors include the war in Iraq, insufficient capacity in the US (US 2.7 m/b/d deficient), and particularly speculation on "paper barrels" on futures markets -- citing New York and Dubai OPEC crude production increase because "the price in the market has nothing to do with production".

And Venezuela's energy minister, Rafael Ramirez, agreed with his colleague's statement saying last week he doesn't support an OPEC crude production increase because "the price in the market has nothing to do with production".

Saudi Arabia's oil minister Ali Naimi said during his appearance at New York's Waldorf that commodities were part of the problem. "Look at metals," he said, "I think if you compare prices in 2002 and 2003, over 50% to 70% increase. So this is one of the driving forces behind the price."

And PDVSA's Ivan Hernandez responded to my question in a private conversation about drug money's influence in the oil futures market, telling me he did not rule it out.

There is no shortage of opinion as to why the price of oil is high. Platts cites oil analyst Mehdi Varzi who said, "I think it's now a question of panic, and I'm not sure what OPEC can do about it." Varzi echoed the Venezuelan statements that there is no "physical crude supply" problem. He blamed the US government for not easing specs for gasoline and the buildup of petroleum reserves. And he said Chinese demand and a destabilized Middle East were also factors.

But it really became clear to me at the Venezuelan press briefing just what the Chavez government is up against when a woman from the "Abril 11" (day of the coup) movement seated next to me later confronted me outside the ladies room with a press packet of anti-Chavez literature about how Venezuelan oil is being used as a political weapon. The packet included speeches by Senators Bill Nelson (Dem-FL) and Diane Feinstein (Dem-CA) following a tour of Venezuela in April 2004.

Nelson said on the floor of the Senate April 24 that he hoped the Bush administration would "make clear to President Chavez that our Government places a high priority on democracy, the rule of law, and responsible conduct in international relations". And he said this with a straight face! Nelson went on, "If things do not improve soon, I worry that we may eventually reach the point where we have to treat this Venezuelan Government as an unfriendly government that is hostile to U.S. interests." Hopefully, rumors that Nelson is on Senator John Kerry's short list for VP are just that.

There were also statements in the press packet from Andrew Gold, CEO of Schlumberger, the world's biggest oil field service provider, that PDVSA was "floundering" as a result of last year's mass firings and that payments to Schlumberger had slowed.

The woman from April 11 offered to set up an appointment with a former petroleum officer from the Venezuelan embassy who she said had been educated at Harvard. And she advised that there was a human rights gathering I could attend.

I have a soft spot for Venezuela.

It is the first foreign country I visited 35 years ago aboard the SS Santa Rosa. As the cruise ship pulled into port at La Guaira -- the enormous green and purple Avila mountains tufted with clouds were a glimpse of Heaven. I would hate to see those skies littered with B-52s . . .

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# Global Climate Change & Peak Oil

## Part II

By  
Dale Allen Pfeiffer

*[In part 1 of this article, we looked at the abrupt climate change scenario leaked from the Pentagon. We noted the authors' recommendation that the President should elevate abrupt climate change to a national security issue. And we observed that the Pentagon's next move was an effort to back off from the report's conclusions and ultimately bury the report. The Bush Administration has ignored the report entirely, aided by a powerful global-warming-denial lobby which promotes junk science produced by industry-sponsored research.*

*We then turned our attention to the amply published consensus of the world's scientific academies: that global climate change is taking place, and that it poses a threat to life on this planet and to human civilization in particular. Then we reviewed some of the hard evidence of industry-induced climate change as reported by the Intergovernmental Panel on Climate Change (IPCC) in their voluminous report, *Climate Change 2001*.<sup>1</sup> Finally, we looked at some of the present costs of global climate change — in monetary terms, in environmental terms, and in terms of human life.*

*But the Pentagon report was more than a summary of the greenhouse effect, ozone depletion, and increases in global average temperatures. It was an unprecedented acknowledgement of a much more direct threat to our place in the world: abrupt climate change. That will be the focus of this essay. We will look at the oceans' role in the climate, the ocean conveyor system, the history of abrupt climate change episodes, and the effect of these episodes upon previous civilizations. — DAP]*

### Abrupt Climate Change

Large bodies of water — particularly the oceans and seas — have a moderating effect upon the weather. As anyone living on an island or near the seashore is well aware, the summers in such an area tend to be cooler than farther inland, and the winters tend to be warmer. As a resident of the state of Michigan, I am well aware that an Alberta clipper which will freeze North Dakota and Minnesota down to -20° F, will be warmed sufficiently upon crossing over Lake Michigan so that this same weather system will only drop Michigan's temperature down to 0° F. This is because bodies of water tend to have less seasonal variance in their temperature than does stone or soil, and they interact with overriding air masses to transfer heat from one to the other.

This process is much more complex in the oceans than in the Great Lakes. Ocean currents channel warm water from the equator and cold water from the polar regions, with considerable effect upon local weather. Warm waters flowing up from the South Pacific bring heat to the Pacific Northwest and the Alaska Panhandle through the winter, leading directly to the temperate rainforests which dominate the ecology of this area.

Meteorologists have traditionally ignored the oceans' role in meteorological processes. And this would seem to make sense on the face of it: if you are studying the weather it is natural to focus on the atmosphere, not the oceans. But we are coming to understand that the oceans are an equal partner with the atmosphere in producing the weather, and the dominant partner with regard to long-range weather patterns.

The oceans play an important role in heat storage and transport, and are vital to the transportation of heat from the equator to the poles. They are essential to the hydrological cycle as well. Covering 70% of the Earth's surface, the oceans have 1,100 times the heat capacity of the atmosphere. They contain 97% of the free water on the planet—90,000 times as much water as the atmosphere. And they receive 78% of global precipitation.<sup>2</sup> Unfortunately, oceanic processes have not been studied nearly so well as atmospheric processes; even environmentally crucial properties such as salinity and heat transference at depth have been relatively neglected until recently. As we'll see, abrupt climate change has everything to do with “thermohaline” dynamics in the ocean depths; that term is a compound of two ancient Greek roots meaning “heat” and “salt.”

But a series of global ship-based observations in the 1990s revealed that the ocean has warmed at depth since similar observations were last made in the 1950s. It turns out that this heat difference corresponds to about half of the greenhouse warming that had been projected by models but had been missing from actual measurements of the atmosphere. Meteorological models had not accounted for the capacity of the oceans to store large quantities of heat on short timescales.<sup>3</sup> This capacity has been accounted for in more recent models, with the result that they are now much more accurate in their reproduction of long term heating and cooling trends.

The oceans could accurately be called the long-term memory of the Earth's climate system. The atmosphere is as fickle as it is dynamic. It lacks the permanence to produce decadal patterns. The oceans, however, host a variety of long-term cycles which can and do affect the weather.

Everyone has heard of El Niño and La Niña. Caused by the movement of warm water in the tropical Pacific — particularly off the coast of equatorial South America — these periodic three to five year disruptions are fully monitored by a system of buoys, so that they can now be predicted up to a year in advance. Yet these two phenomena represent only a small fraction of the influence which periodic ocean cycles exert upon the temperature and rainfall over North America. The variability of winter weather is highly correlated to long-term ocean cycles known as the Pacific Decadal Oscillation (PDO) and the North Atlantic Oscillation (NAO). The NAO, in particular, has a much stronger influence over the weather of the Eastern United States than does El Niño. Yet both of these long-term cycles are poorly monitored.

Likewise, it is the oceans which regulate the hydrological cycle. A diversion of only 1% of the rainfall currently falling on the Atlantic would double the discharge of the Mississippi River.<sup>4</sup>

At the other end of the spectrum, an increase of rainfall over the oceans, particularly over key areas such as the Labrador Sea and the North Atlantic, could disrupt the thermohaline circulation of the oceans, with a drastic and immediate effect upon the climate of North America and Europe.

The climate is a dynamic and sensitive energy exchange system held in a self-regulating equilibrium. The interactions of water and air have always been difficult to predict because they're governed by the branch of physics called fluid dynamics, whose recent mathematical formalism is called chaos theory. It's a description of the way that chaotic systems tend to magnify the effects of initially small changes. Depending on the stability of the system, proliferating changes can be compensated for by mechanisms that reestablish equilibrium, or they can overwhelm the system. In the latter case, the result is either a permanent disequilibrium, or a new equilibrium markedly different from the old. Any attempt at large-scale weather manipulation without a reliable model would be like driving down a mountain road with the windows blackened out using a roadmap whose reliability decreases progressively the farther you venture from your point of departure.

The problem with modeling weather patterns is that there are simply too many variables. Many of these variables, such as the NAO and the PDO, are not well understood and are poorly monitored. Even if computer power continues to increase by an order of magnitude every 6 years, it would take over 160 years before models would have sufficient capacity to simulate the smallest ocean mixing processes.

So predictive climate modeling is constrained by two intractable problems: the limitations of our computational equipment, and the inherent uncertainty of the data we put into it. In a different discipline, small initial errors might be averaged out or otherwise corrected-for. But in a domain like the weather — where the behavior of turbulent fluids is influenced by myriad variables all mutually interacting — the smallest numerical error can become enormous as it propagates through the model. If I want to know my county's surface temperature, pressure, rainfall and wind-speed a week in advance, I had better be rigorously correct about the numbers I put into my computer at the beginning.

This sensitivity afflicts long-term climate change modeling as well as short-term weather prediction, albeit in different ways. The chief difference is in the enormous disparity between the atmosphere and the oceans as reservoirs of thermal energy. Dr. Raymond Schmitt of the Woods Hole Oceanographic Institute describes climate modeling:

An abundance of evidence indicates that the key to long-term prediction is in the workings of the ocean, which has 99.9% of the heat capacity of Earth's fluids. It is the heart of the climate 'beast,' the atmosphere its rapidly waving tail, with only 0.1% of the heat capacity.<sup>6</sup>

### **Thermohaline Circulation — the Oceans' Heat Conveyor**

Perhaps the most important role for the oceans in helping to regulate the climate is the absorption of heat from equatorial regions and the transportation of that heat into northern regions. This process helps to distribute heat more evenly around the globe, moderating the heat of equatorial regions as well as the cold of higher latitudes — particularly in the North Atlantic. These currents warm North Atlantic regions by an average of 5° Celsius, significantly tempering the winter season in North America and Europe.<sup>7</sup>



*Taken from Abrupt Climate Change; should we be worried?*

*Woods Hole Oceanographic Institute, 1/27/2003*

This global current could be said to originate in the seas which ring the North Atlantic —the Labrador, Irminger and Greenland Seas, where the oceans release large amounts of heat into the cold atmosphere. Evaporation, which has been occurring throughout the North Atlantic, is here increased to the point that these northern waters constitute the saltiest waters in the oceans. The concentration of salts results in a denser solution, as does the loss of heat. And this denser water sinks to the ocean abyss, where it begins a slow migration back down the Atlantic and eastward into the Indian and Pacific Oceans. There it wells up, having lost much of its salinity. Displaced by colder waters moving under it and heated by contact with warmer flows from above, the formerly deep water rises toward the surface and picks up additional heat along the return journey into the Atlantic.

Unfortunately, the ocean conveyor does have an Achilles heel. And this Achilles heel lies in the Northern Atlantic region where the deep limb of the ocean conveyor originates, drawing warm equatorial waters to replace it. If the cold, salty, dense waters of the North Atlantic somehow failed to sink, then the global circulation could slacken and halt. Currents would weaken and/or be re-directed, with potentially catastrophic consequences for the whole biosphere.

Were this to happen, the North Atlantic region would cool by an average of 5° Celsius. This would mean that winters in Eastern North America would be twice as cold as the coldest winter on record in the past century, and Europe would be even colder.<sup>8</sup> The summer growing season in these areas would be shortened, and summer crops might fail altogether. Previous conveyor shut-downs have been linked to widespread droughts throughout the world, and the disruption of the Asian monsoons.<sup>9</sup>

The resultant mini-ice age in North America and Northern Europe — and droughts elsewhere in the world — could continue for decades or even centuries, until conditions change sufficiently for thermohaline circulation to resume. Further, this localized mini-ice age might occur even as the Earth, on average, continues to warm.<sup>10</sup> As a result, once thermohaline circulation resumed, the Northern Atlantic region could be thrown from one extreme to the other — from an ice age to a hot house.

All that is necessary for this scenario to occur is an influx of fresh water into the surface of the North Atlantic. This buoyant, fresh water would virtually seal off and insulate the denser, saltier waters, preventing them from venting heat and moisture into the atmosphere. The fresh waters would also dilute the salinity of the North Atlantic, further reducing the density of these waters. The force driving the deep limb of the ocean conveyor would quickly weaken and halt. And the cessation of thermohaline circulation would quickly impact the world's climates.

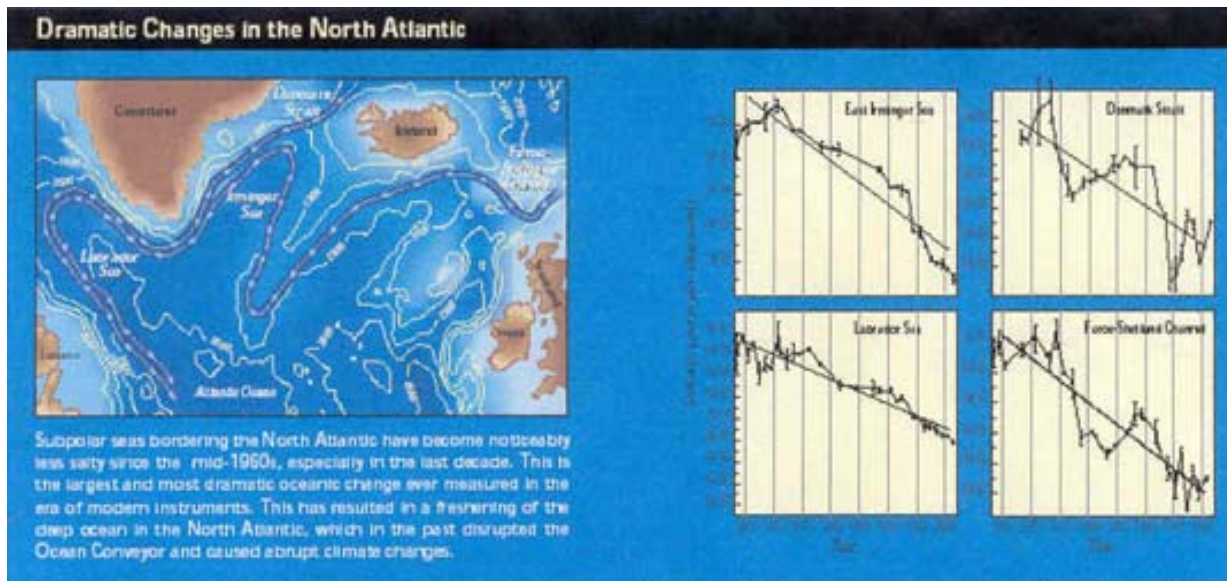
This scenario could take place in a decade or less from the time that fresh water influx in the Northern Atlantic reaches a critical threshold. Unfortunately, though scientists are certain that such a threshold exists, not enough research has been done thus far to determine where this threshold is. Oceanographers have complained that we do not have a system in place to monitor slowly developing ocean circulation changes. While we have thousands of meteorological stations recording temperature on land and in the atmosphere, we have only three sites with anything like a continuous deep record of the North Atlantic. And these sites only make observations once per month.<sup>11</sup> Satellites can monitor ocean circulation globally, but only at the surface.

For measurements at depth, we need a network of buoys and current-monitoring vessels.

Oceanographers reporting in *Nature*, in 2002, concluded that a dramatic influx of fresh water into the North Atlantic has taken place continuously within the past forty years, and has accelerated within the last decade.<sup>12</sup> This is the largest and most dramatic change in the oceans in the era of modern instruments. So far, the influx has been dispersed throughout the water column. But it is noticeably diluting salinity.<sup>13</sup> And, at some point, the continuing influx may begin to pile up at the surface of the North Atlantic. An earlier report in *Nature* observed that the flow of cold, dense water from the Greenland and Norwegian Seas has slowed by 20% since 1950.<sup>14</sup> This indicates that a slowdown of the ocean conveyor may already be occurring. An observation system must be put into place before we can better assess the impact of these developments on thermohaline circulation, and the rate at which the ocean conveyor may be disrupted.

It is the study of carbon dioxide levels, as recorded in the air bubbles of these ice cores, which has established the ineluctable proof of industry-induced global climate change.

Thanks to these ice cores, we now have a detailed history of the Earth's climate stretching back nearly twenty thousand years. Reading the ice cores is somewhat similar to reading the growth rings on a tree, but complicated because the yearly layers of ice have been contorted and folded by pressure and ice flow. However, with the help of some applied physics and structural geology, the layers can be unfolded and the record can be read accurately. This endeavor has already yielded remarkable scientific results, including the discovery that abrupt climate change has already occurred in previous eras. In the last fifteen thousand years, there have been several periods of abrupt climate change of varying severity and duration. Let's review four of these abrupt climate change episodes.



The Younger Dryas— Named for a small subarctic flowering plant which extended its range far southward into North America and Eurasia during this period. The Younger Dryas began about 12,700 years ago when average temperatures in the North Atlantic region plummeted by about 5° C. This abrupt

*Taken from Abrupt Climate Change; should we be worried?*

*Woods Hole Oceanographic Institute, 1/27/2003*

### **A History of Abrupt Climate Change**

Until very recently, scientists believed that major climate change could only occur gradually, over long periods of time. The study of ice cores drilled in Greenland, Antarctica and in alpine glaciers around the world has changed that thinking. These ice cores hold a wealth of information. Aside from a record of annual snowfall, the ice cores hold spores and pollens, and volcanic ash. Also found in tiny inclusions in the glacial ice are trapped remnants of the atmosphere from thousands of years past. These gas inclusions can be analyzed to give an accurate measure of the chemical makeup of the Earth's

change took place within a decade, and is believed to have been caused by a shutdown of the ocean conveyor due to a sudden influx of fresh water from the deglaciation of North America. The climate remained colder by about 5° C for the next 1,300 years, before another abrupt change caused temperatures to rise by about 7° C in less than a decade.<sup>15</sup>

Study of the Younger Dryas in particular has led scientists to conclude that there are preferred states of balance in the atmosphere. Should one state be tipped sufficiently out of balance, the atmosphere will cross some critical but unknown threshold and will then transition quickly to another state of balance. This thinking has revolutionized our view of climate change, and holds important implications for industry-induced climate change.



The 8,200-Year Event— This event was not as severe as the Younger Dryas, and lasted only a century. Temperatures in the North Atlantic region dropped by an average of 3° C. This episode seems to be associated with widespread dry conditions. There are two possible explanations for the 8,200-Year Event. The most widely accepted explanation is a disturbance in thermohaline circulation due to freshwater input associated with the retreat of the Laurentide ice sheet. Other studies have indicated that a fresh water influx from large proglacial lakes could have produced the 8,200-Year Event, and would even account for a brief warming episode within the event.<sup>16</sup>

The Medieval Warming Period— This is considered to be a period of abrupt warming which began approximately 1,000 years ago, and then ended abruptly 700 years ago with the beginning of the Little Ice Age. This event was very mild compared to earlier events, and there is much contradictory evidence from this period. Evidence appears to support warming at the beginning of the 20th century in Scandinavia, Greenland, China, the Sierra Nevadas, the Canadian Rockies and Tasmania. However, evidence from the Eastern United States, Mediterranean Europe, and South America show no change in climate. Ice core data from Greenland supports the theory of a warming trend, but needs to be correlated with ice core data from other areas of the globe. The Intergovernmental Panel on Climate Change (IPCC) states that temperatures from the 11th century to the 14th century were only about 0.2° C warmer than temperatures from the 15th to the 19th centuries, and were below average temperatures in the 20th century.<sup>17</sup> Though the specific changes in regional temperatures remain difficult to specify, the data clearly indicate that during the past millennium the Earth's climate has varied on a decadal scale.<sup>18</sup>

The Little Ice Age— This event brought an abrupt end to the Medieval Warming Period. It extended from the 1300s to the mid 1800s. The Little Ice Age was once thought to be a global phenomenon, but now that assumption is less certain. Evidence for the Little Ice Age appears to be stronger than the evidence for the Medieval Warming Period. The IPCC defines this as a period of modest cooling of the Northern Hemisphere by less than 1° C.<sup>19</sup> It was certainly a period of bitterly cold winters in many parts of the world, and is most thoroughly attested in Europe and North America. It is documented that glaciers in the Swiss Alps advanced during this period — even threatening villages. Rivers which are not known to freeze over in recent history did freeze over in this period—the Thames, the Delaware, the Ohio. In the winter of 1780, the New York Harbor froze so thick that people could walk from Manhattan to Staten Island. And the sea ice surrounding Greenland closed that island nation's harbors to shipping.<sup>20</sup>

Scientists believe there were two causes for this cold period. In the middle of the Little Ice Age, from 1645-1715, there was a marked decrease in sun spot activity. This period is known as the Maunder Minimum. The exact link between sunspot activity and climate is not known, but scientists find it highly suggestive that the Maunder Minimum coincides with the coldest years of the Little Ice Age. The other causal factor was increased volcanism throughout the Little Ice Age. Volcanic ash dispersed throughout the atmosphere blocked incoming solar radiation. Sulfuric acid particles derived from sulfuric oxide gases discharged by volcanoes served to reflect more of the sun's rays, further reducing the amount of solar energy reaching the Earth's surface.<sup>21</sup>

### **Abrupt Climate Change & Civilization**

It seems that the climate conditions on this planet naturally undergo sudden shifts several times per thousand-year period. Clearly, anthropogenic changes like those responsible for global warming are likely to bring the next major shift closer. How will abrupt climate change affect our civilization? How has abrupt climate change affected past civilizations? The Medieval Warming Period and the Little Ice Age took place in relatively recent times. During the Medieval Warming Period, the Vikings colonized Greenland and other areas of the far north, venturing so far as the Americas, where they came into contact with the Inuit peoples. When the climate reversed itself, plunging into the Little Ice Age, the Vikings abandoned their colonies in Greenland, and the population of Iceland fell by half. Famines were frequent and deaths from disease increased. The famine of 1315 claimed 1.5 million lives. The forests of Northern Europe were denuded as people chopped wood for heating. And the severe cold played a major role in spurring the European expansion into the New World and elsewhere.<sup>22</sup>

It is now thought that the Younger Dryas led the Natufian communities of southwest Asia to abandon their nomadic hunting and gathering and develop labor intensive agriculture. The cooling of the Younger Dryas caused harvests of wild resources to dwindle below the level necessary for subsistence. The Natufians abandoned their nomadic culture, and established permanent settlements in areas where they could cultivate previously wild cereals. The development of agriculture entails the permanently localized settlement that we call civilization (literally, the "culture of the city"). These early farming communities grew in population and socioeconomic complexity until they were hit by another abrupt climate shock around 6400 B.C. This was the last major climate event related to the melting of the continental ice sheets.<sup>23</sup>

In the Middle East, a 200-year drought is blamed for the abandonment of early agricultural settlements in the Levant and Mesopotamia. The return of a wetter climate in Mesopotamia led to the occupation and development of the Tigris-Euphrates river plain. The collapse of the Late Uruk urban society of southern Mesopotamia may be related to a severe drought which lasted less than 200 years. Such a drought is hinted at in the paleoclimatic record.<sup>24</sup>

The Akkadian Empire of Mesopotamia, the Old Kingdom civilization of Egypt, the Harappan 3B civilization of the Indus valley and the Early Bronze Age civilizations of Palestine, Greece and Crete were all abruptly terminated by 2200 B.C. due to catastrophic drought and cooling. Paleoclimatic evidence shows that rainfall was reduced by 30%, leading to failing agricultural production from the Aegean to the Indus.<sup>25</sup>

Abrupt climate change also correlates to societal collapses in the Americas. Prolonged drought and severe flooding coincide with the collapse of the Moche civilization in northern coastal Peru. Similarly, the collapse 400 years later of the Tiwanaku civilization of the Central Andes correlates with a period of prolonged drought. The collapse of the Classic Mayans in the 9th century A.D. coincides with the most severe and lengthy drought of that millennium. And in North America, three decades of severe drought and colder temperatures spelled the downfall of the Anasazi culture in the 13th century.<sup>26</sup>

Modern civilization, with its technological ingenuity, may be more capable of withstanding an abrupt climate change event than were these ancient civilizations. However, if abrupt climate change happens at a time when modern civilization is already suffering from resource depletion — particularly the depletion of its hydrocarbon energy base — the effect of such a double impact upon our civilization could be very grave indeed. In the past, when abrupt climate change rendered one area uninhabitable, people could migrate to another area. In today's world, that is no longer possible.

### Weakening of the North Atlantic Current

As this article was being written, NASA issued a bulletin reporting that satellite records reveal that North Atlantic circulation system weakened considerably in the 1990s from what it was in the 1970s and 1980s. Considering how essential this area is to the ocean conveyor — and consequently to the climate — this evidence of weakening is extremely important. This current, known as the sub polar gyre, is tied in with the NAO as well as the ocean conveyor.<sup>27</sup>



*The pathways associated with the transformation of warm subtropical waters into colder subpolar and polar waters in the northern North Atlantic. Along the subpolar gyre pathway the red to yellow transition indicates the cooling to Labrador Sea Water, which flows back to the subtropical gyre in the west as an intermediate depth current (yellow). In the Norwegian and Greenland Seas the red to blue/purple transitions indicate the transformation to a variety of colder waters that spill southwards across the shallow ridge system connecting northern Europe, Iceland, Greenland, and northern North America. These overflows form up into a deep current also flowing back to the subtropics (purple), but beneath the Labrador Sea Water. The green pathway also indicates cold waters—but so influenced by continental runoff as to remain light and near the sea surface on the continental shelf.*

—Map and caption taken from NASA press release

### Satellites record weakening North Atlantic Current

<http://www.gsfc.nasa.gov/topstory/2004/0415gyre.html>

Researchers believe the cause of this slowing is a reduction in the temperature differential between water from the Labrador Sea and waters from the Atlantic. Labrador Sea waters in the core of the gyre appear to have warmed during the 1990s, reducing the contrast with waters from warmer southern latitudes.<sup>28</sup> This temperature differential is a major part of the driving force for ocean circulation.

Researchers point out that this is a signal of large climate variability in higher latitudes. Sirpa Hakkinen, lead author of the report and a researcher at NASA's Goddard Space Flight Center, has said, "If the trend continues, it could indicate reorganization of the ocean climate system, perhaps with changes in the whole climate system, but we need another good 5 to 10 years to say something like that is happening."<sup>29</sup>

To be Continued...

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26) Ibid.

27) **Satellites Record Weakening North Atlantic Current**. NASA, Goddard Space Flight Center press release. April 15th, 2004. <http://www.gsfc.nasa.gov/topstory/2004/0415gyre.html>

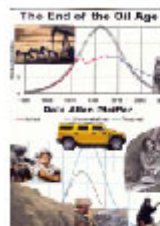
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29) Op. Cit. See note 27.

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# TOWARD THE PETRO-APOCALYPSE

By  
Yves Cochet

Le Monde (Paris) March 31, 2004

<http://www.lemonde.fr/web/article/0,1-0@2-3232,36-359335,0.html>

In a few years, the global production of conventional oil will fall, while the global demand continues to rise. The resulting shock of this structural oil famine is inevitable, so great are the dependency of our economies on cheap oil and, related to the first, our inability to wean ourselves from this dependency in a short period of time.

We can hope to soften the shock, but only if its imminence immediately becomes the unique reference point for a general mobilization of our societies, with, as a consequence, drastic consequences in every sector. The alternative is chaos. This prospect is based on the work of the American geologist King Hubbert, who predicted in 1956 the peak in US domestic production of oil in 1970. This occurred exactly as predicted.

Transposing Hubbert's approach today to other countries has given similar predictive results: at present, the production of every giant oilfield -- and only the giant ones matter -- is in decline, except in the "black triangle" of Iraq-Iran-Saudi Arabia.

The Hubbert's peak of the oil-producing Middle East should be reached around 2010, depending on the more or less rapid recovery of full Iraqi production and the growth rate of demand in China.

The sectors most affected by the steady rise in the price of crude oil will be, first, aviation and intensive agriculture, since the price of jet fuel for one, and of nitrogenous fertilizer as well as diesel fuel for the other, are directly linked to the price of crude oil.

This will occur unless stabilizing policies are used -- for a time and in some other sectors -- to lower taxes on oil as prices rise.

But afterwards ground transport, tourism, the petrochemical industry, and the automotive industry will feel the depressive effects of a reduction in the quantity of oil (depletion). To what extent will this situation lead to a general recession?

No one knows, but the blindness of politicians and the usual panicked overreaction of markets allows us to fear the worst.

This unavoidable prophecy is being universally ignored, denied, or underestimated. Rare are those who realize exactly how close and how great is its advent. Michael Meacher, formerly UK minister of the environment (1997-2003), wrote recently in the Financial Times that unless there is a general awakening and decisions at the planetary scale to bring radical change in the domain of energy, "civilization will confront the most acute and no doubt most violent upheaval in recent history."

If, in spite of everything, we want to maintain a bit of humanity in life on Earth in the 2010s, we ought, as the geologist Colin Campbell has suggested, to call on the United Nations to agree immediately on the following: to guarantee that poor countries will still be able to import a little oil; to forbid oil profiteering; to encourage saving energy; to promote renewable sources of energy. In order to attain these objectives, this universal agreement should impose the following measures: every State must regulate oil imports and exports; no oil-exporting country may produce more oil than its annual depletion, scientifically calculated, allows; every State must reduce its oil imports to an agreed-upon global depletion rate.

This necessary priority granted to physical econometrics will not suit economists and politicians, especially in America. No government of the United States has ever accepted questioning the American way of life. Since the first oil shock of 1973-1974,

every American military intervention can be analyzed in the light of the fear of running short of cheap oil. It was, moreover, the American production peak in 1970 that enabled OPEC to seize the occasion and cause the first shock, which coincided with the Yom Kippur War. Countries in the West then attempted to regain control and conjure away the specter of shortage, less through energy sobriety than by means of opening oilfields in Alaska and the North Sea. In 1979, the Iranian revolution and the second oil shock once again allowed OPEC to regain preeminence, as Western economies paid dearly for their thirst for oil through the recession of subsequent years.

At the beginning of the 1980s, the financing and arming of Saddam Hussein to fight Iran was part of the American reconquest of the price and flow of oil, as was the cooperation obtained from King Fahd of Saudi Arabia to increase crude oil exports to the West. That allowed the oil price crash of 1986, a return of Western growth through unlimited oil abundance, the extension of the thirst for energy up to the Iraq wars (1991, 2003) no matter how many died from them (100,000? 300,000?), no matter how much they cost (\$100 billion? \$300 billion?), by no matter what means (annual Dept. of Defense budget: \$400 billion).

During these same last fifteen years, the multiple conflicts in the Balkans had their source and their resolution in the American desire to keep Russia away from the oil transport routes from the Black Sea and the Caspian to the ports on the Adriatic, by way of Bulgaria, Macedonia, and Albania. Oil geopolitics authorizes any pact with Islamist devils, from central Asia to Bosnia, and all the cynical connivances with terrorists, right up to Tony Blair's recent trip to Libya to allow Shell to bring its volume of reserves in return for several hundred million dollars.

The present American Greater Middle East Initiative is dressed up in humanitarian and democratic considerations, but it is nothing but an attempt to get control once and for all of every source of oil in the region.

More than thirty years of worrying about oil has not opened the eyes of American and European leaders concerning the energy crisis that is looming just before us. Despite what René Dumont and the ecologists were saying from the 1974 presidential campaign on, the governments of industrialized countries have continued and continue to believe in almost inexhaustible cheap oil -- to the detriment of the climate and human health, both perturbed by greenhouse gas emissions -- instead of organizing a reduction in their economies' reliance on hydrocarbons.

However, the oil shock that promises to strike before the end of the decade is not like the ones that preceded it.

What is at stake this time is not geopolitical, but geological. In 1973 and 1979, the shortage had a political origin in OPEC's decision. Then the supply was restored.

Today, it is the wells themselves that are declining. Even if the United States succeeded in imposing its hegemony on all the oilfields in the world (outside of Russia), their army and their technology will not be able to prevail against the coming depletion of conventional oil. In any case, there is not enough time to replace a fluid so cheap to produce, so rich in energy, so easy to use, store, and transport, with so many uses (domestic, industrial, fuel, raw material...), in order to reinvest \$100 billion in another source of abundance that doesn't exist.

Natural gas? It does not have the just-named qualities of oil and will reach its global production peak in around 2020 -- about ten years after the other peak. The only viable path is immediate oil sobriety organized through an international agreement along the lines I have sketched out above, authorizing a prompt weaning from our addiction to black gold.

Without waiting for this delicate international agreement, our new regional elected officials and our soon-to-be-elected European representatives should set for themselves as a top priority the local realization of these objectives by organizing, on their own territory, an oil shrinkage. Otherwise, rationing will come from the market through the coming rise in oil prices, and then be propagated by inflation, with the shock reaching every sector. Since the price will soon reach \$100 a barrel, this will no longer be a simple oil shock -- it will be the end of the world as we know it.

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--Yves Cochet (Green) represents Paris in the National Assembly, and is former land and environment minister (ministre du territoire et de l'environnement).

Part of this personnel conservation program was the Rumsfeld sequence-theory of warfare. Pick off one major target at a time, focusing the trimmed-down force on that single point, then once a military reduction is accomplished, move along to the next one. In the grand plan, this was to be Afghanistan, Iraq, then choose your flavor of the week: Venezuela, Syria, Iran, etc. Oil matters a lot in this equation, so if you're sitting on oil, or have the misfortune of sitting between the oil and a major port, you fall into the Oh-shit! category.

Since the outcome of this theory has been so dismal for the Bush administration, they are electing to employ the exact same theory on a much smaller scale... Fallujah and Najaf. Once they've been reduced to Jenins, they can move on to bigger and better things.

The problem is - and I keep pointing this out with the absolute confidence that no one in the administration will ever pay attention or act on this dull but accurate little insight - military success is not determined through battlefield outcomes, but politically. If you don't get this, then you're always taken back to the old body-count formula.

Robert McNamara, are you in the house?

Duh, you might say. But the Bush administration is still hell-bent on substituting a military solution for a political one, in large part because there never was a political solution to begin with.

The current US defeat in Fallujah, and to some degree in Najaf as well, is not anecdotal... a defeat embedded in an amalgamation of success. It is systemic, and it was already in the cards the minute Dick Cheney, his presidential pet rock, and the military-petroleum complex began scheming about the occupation of Iraq.

Colin Powell warned them, but these folks don't listen to their house Negroes, even if the house Negroes are about three times smarter than Massah Dick. Sorry Colin, but you know it's true. Otherwise you wouldn't keep rolling over for those twits.

While the United States Armed Forces enjoy unrivaled technological war superiority, that superiority is three-dimensional in a five dimensional world. Range and lethality are the stuff of conventional military doctrine, and that doctrine is aimed at the imposition of one state's will upon another. Repeated warnings from fellow-imperialists that the invasion of Iraq might result in a stateless battlefield were ignored, and now the fourth and fifth dimensions are culture and regional politics. The Cheney-Rumsfeld clique really and honestly believed that military superiority could swallow these realities whole and digest them.

Now one of the most committed imperialists in the world, currency-predator George Soros, is spending big bucks out of his own considerable pockets to defeat Bush before the neo-cons send late imperialism into a terminal tailspin.

The revenge assault on Fallujah that took hundreds of civilian lives (every Iraqi who now dies at the hands of US troops is called an "insurgent") was met with fierce resistance that stalled the entire operation. The so-called truce was nothing more than a lull in the fighting, and if anyone cares to note the demands for resolution of the "stand-off," they include all combatants turning in their weapons and submitting themselves to a kangaroo court. This is a demand that is constructed explicitly to be rejected - in other words, no offer at all. The US is trying to figure out how to finish what they started, the "pacification" of Fallujah... and now Najaf.

While the US media obediently parrots the CENTCOM claims that firefights in and around Fallujah are Iraqi violations of the cease-fire, independent journalists are reporting that the Marines are still boring away at Fallujah,

under cover of the cease-fire story, and that these appear to be unsuccessful offensive operations.

The fact is firepower is mere force. It has to be tactically focused to be effective. In a conventional war, the determination of focus is made from battlefield intelligence: size, composition, disposition, strength, and morale of enemy forces. If these variables can't be determined, it is the tactical equivalent of blindness. An immensely strong opponent that is blind can be extremely destructive and dangerous because this opponent lashes out everywhere. But this opponent can be outmaneuvered by a smaller, more agile, sighted adversary.

In Iraq, almost 80% of the population is urban and over 60% of the population is now estimated to be 20-years-old or younger. This massive expansion of urban youth created the conditions for the multi-focal urban insurgency that has now all but neutralized any US military doctrine. The State, always the principal target of conventional warfare, is dissolved now in Iraq. In the wake of the longstanding Iran-Iraq conflict, facilitated behind the scenes by Western provocateurs, weapons proliferated with the fecundity of Mesopotamian dates. Now resistance is ubiquitous, and it's bristling with those weapons.

The ham-fisted tactics that sparked the Shia rebellion, now focused in Najaf but closely watched by 60% of Iraqis, have overwhelmed the ability of the Coalition Provisional Authority (CPA) to concoct responses. The CPA understands neither Iraqi society nor the resistance.

The insurgent attacks on collaborators have effectively closed the only window that US military intelligence had. The CPA is now a blind flailing giant.

On April 26th, at yet another small-mammal CENTCOM briefing, Brigadier General Mark Kimmitt - who looks like a trained ferret - and Dan Senor, who had the expression of a cornered rat - were sellin' woof tickets to the Iraqi guerrillas, telling them for the tenth consecutive day, give it up right now, or tomorrow we're gonna whup you.

Kimmitt actually had the gall to say that the United States Marine Corps was going to ensure that "Fallujah will be put back under Iraqi control," when the Marines are lodged like pop-up targets in the outskirts of Fallujah precisely because it is under Iraqi control.

But it's not a form of control for which any effective US military doctrine exists. It is a social and political organization first, and one that counterposes a synthesis of pre-modernity, modernity, and post-modernity against the "radical technological optimism" of Donald Rumsfeld's military.

Iraqi resistance is in the neighborhood. It is task-organized through kinship and circumstance. It is culturally organized by the folkways of the rural communities a mere one generation past.

The military structure is not the centralized, bureaucratic structure of either a modern conventional military or a modern political party. It is not hierarchically arranged like a pyramid, but coordinated like a web, and the coordination can now take place via the Fatwa, through which this growing sea of young, urban dispossessed get their basic directives: fight, hold, disappear, stand down. This provides every neighborhood the autonomy (and appropriate creativity) to exercise a tactical agility that no conventional military can match or defeat short of extermination, and which will - paradoxically - combine with higher and higher levels of political unity in response to every imperial crackdown.

As this is written, and Kimmitt has thrown down the gauntlet, Fallujah is already approaching a boil again, and Najaf is preparing for a Battle Royale. In a last ditch attempt to have their cake and eat it too, the Ba'athists were invited by the CPA back into the government - even as Unocal employee and President of Kabul, Hamid Karzai, is inviting the Taliban back into the non-existent Afghan government - and Ahmed Chalabi, Dick Cheney's Iraqi asset is being given his pink slip.

The same Dick Cheney, who is in many respects the architect of the so-called Bush Doctrine,

was filing memos well before 9/11 that pointed out declining domestic oil production alongside a projected jump in American oil consumption from 19.5 million barrels a day to 25.5 mbd in less than 20 years. As Michael Klare pointed out recently in an article entitled US: Procuring the World's Oil, "this 7.5 mbd increment [is] equivalent to the total oil consumed by China and India."

Even with sanctions, the US was importing 5% of its foreign oil from Iraq in 2002, at 566,000 barrels a day. On April 25th, suicide boat bombers - a new tactic - were used to blast the Basra oil terminal in southern Iraq, causing a panic in the markets.

Around half the world's proven petroleum reserves are in this region, where the major producing states are US flunkies like the Saudi and Kuwaiti monarchs and their venal families. They are now faced with increasingly urban, increasingly young populations whose restiveness is being fed by the predations of Apartheid Israel. So the US will not only undermine their puppets in Iraq with the upcoming military operations in Najaf and Fallujah, they will endanger their own regional servant-autocrats.

At home, there may be good news for this administration on the political front. They will likely be re-elected now so they can finish driving this train over the bluff. John Kerry has transformed himself into a more hawkish than thou war-monger, calling for more troops in Iraq, even as Democrats have taken point in calling for the reinstatement of the draft. A small but significant fraction of the anti-Bush camp that might have held its nose to vote a Democrat if that Democrat would only recall the invasion will now sit this one out or vote Nader.

That's fine with me, as long as we understand that once this deed is done, once we punish the Democrats, we must learn to disobey the Republicans. We can't have our cake and eat it too, either.

Meanwhile, air attacks have already sown multiple plumes of black smoke from the neighborhoods of Fallujah. People are being chewed up by high explosive and high velocity ammunition. Broken bodies and broken minds will stream through Walter Reed. And the boxes with the flags will be coming back to Dover.

This is Rumsfeld's Folly, the crime of an administration, and the shame of us all who will not see.

# **Draft Extradition Update**

As regular FTW readers know, four months ago we began contacting the embassies and consulates of 75 countries and asking the following question: "Under existing treaties, is \_\_\_\_\_ obligated to extradite fugitives (back) to the United States for draft evasion?"

Replies have come slowly, but since this chart was first published in the Feb '04 issue of this newsletter, we have received additional replies from the following countries: Argentina, Brazil, Colombia, Nigeria, Peru, Poland, and South Africa). Last updated April 22, 2004, this chart will be continually updated until all 75 countries on our list have responded. Updates can be viewed online, in Mike Ruppert's article, "Nowhere to Run, Nowhere to hide."

	Extradite Yes/No?	FBI LEGAT	NORTH- COM	NATO	ANZUS	CONDITIONS
Argentina	No*	Yes				* "Requested State may refuse extradition for offenses under military law that are not offenses under ordinary criminal law (article 4, military offenses-paragraph 4"
Australia	Yes	Yes			Yes	
Brazil	Yes	Yes				
Canada	Yes	Yes	Yes	Yes		
Colombia	Yes	Yes				Case by case basis
Germany	Yes	Yes		Yes		
Italy	Yes	Yes		Yes		
Mexico	Yes	Yes	Yes			
New Guinea	No					Will not extradite
New Zealand	No				Yes	Will not extradite if violation of military law
Nigeria	No	Yes				"No treaty exists between US and Nigeria to mandate repatriation of draft dodgers"
Norway	No			Yes		Discretion of Foreign Ministry
Panama	Yes	Yes				
Peru	Yes					Case by case basis
Philippines	Yes	Yes				
Poland	No	Yes		Yes		"Extradition can also be denied if military offense does not constitute a felony under existing national penal code (Art 5, sub-section 4)"
Portugal	No			Yes		
Russia	No	Yes				"No agreement for extradition exists"
South Africa	No*	Yes				"The Executive Authority of the Requested State shall refuse extradition for offenses under ordinary criminal law."
Spain	Yes	Yes		Yes		
Sweden	No					No, if only crime is against military law
Switzerland	No	Yes				No, if only crime is against military law
Thailand	Yes	Yes				