



## DrumBeat: September 19, 2008

Posted by [Leanan](#) on September 19, 2008 - 10:03am

Topic: [Miscellaneous](#)

### [Hydrocarbons - the formula of war](#)

MOSCOW. (RIA Novosti military commentator Ilya Kramnik) - Hydrocarbon prices, new nuclear and hydro-power plants, oil blackmail - energy is now one of the central issues discussed in the world. Even the defense sector is not immune: many analysts tend to view most 20th century wars as wars for energy. The role and significance of energy resources and the part energy plays in wars is worth examining.

As industrial society forges ahead, energy and energy resources play a more significant role in the affairs of nations. Eventually, a nation reaches a point at which accessible energy resources become vital for its existence, and any shortage in these resources may result in serious consequences for its economy. Control over energy production was not the ultimate goal for Germany, Italy or Japan - the aggressor countries in World War II - but it was one of the overriding objectives.

### [Study group questions military action against Iran](#)

WASHINGTON — The next president would be wise to make contingency plans for a military attack against Iran, but even a successful strike might not stop Tehran's development of nuclear weapons, a bipartisan study group has concluded.

Intensified diplomacy and tougher economic sanctions aimed at Iran's oil and gas industries are more likely to be productive, said the forthcoming report by the Bipartisan Policy Center, prepared under the guidance of former Sens. Daniel Coats, R-Ind., and Charles Robb, D-Va.

"A military strike is a feasible option and must remain a last resort to retard Iran's nuclear development," the report said.

### [U.S. Won't Seek Emergency Fuel Supplies From the IEA](#)

(Bloomberg) -- The U.S. won't ask the International Energy Agency for emergency fuel supplies to offset disruptions from hurricanes in the Gulf of Mexico, an Energy Department spokeswoman said.

Damages from the storms were ``far less severe than we thought," spokeswoman Healy Baumgardner said today in a telephone interview.

### [Delays Loom in Oil Sands as Small Cos Eye Market Turmoil](#)

While plummeting oil prices have unnerved Alberta's oil sands industry, it is the fallout from the banking crisis that is keeping company executives awake at night.

Fears of a clampdown on credit availability surged after two of Wall Street's biggest investment names disappeared last weekend, with Lehman Brothers Holdings Inc. (LEH) suddenly filing for bankruptcy and Merrill Lynch & Co. (MER) due to be sold to Bank of America Corp. (BAC). Morgan Stanley (MS) could also be swallowed up by Wachovia Corp. (WB).

### [World financial crisis stalks global air carriers](#)

Four years ago, when the price of jet fuel rose by half, the number of passengers dropped by one percent. This year, fuel prices have shot up by 70 percent, and statistics already show a fall of 1.9 percent in traffic - a five-year high.

This means millions of people have decided against flying. Carriers cannot help recalling the "black year 2001" when the Sep 11 terror attacks brought a fall in flights and caused civil aviation across the world to lose approximately \$12 billion.

### [India: Night power cuts leave UP industries bewildered](#)

The night power cuts in Uttar Pradesh is creating lot of trouble for the textile, jute and leather industry, as the entrepreneurs are unable to meet their production targets. Uttar Pradesh Power Corporation Ltd (UPPCL) has recently imposed power cuts on all industrial units from 10 pm to 6 am on a daily basis.

### [Long lines as Malawi experiences fuel shortages](#)

APA-Lilongwe (Malawi) Malawi is currently experiencing a shortage of petrol and diesel, forcing motorists to spend hours in long lines in search of motor vehicle fuel at service stations in the central and southern cities of the country.

Malawi Energy Regulatory Authority (MERA) Chief Executive Charles Kafumba told journalists on Friday that the shortages were due to logistical problems that have affected the loading of both petrol and diesel from the Malawi Cargo Centre Limited fuel depot in Dar-es-Salaam, Tanzania, to the landlocked state.

### [EPA move could reduce gas prices 5 to 10 cents a gallon](#)

Gasoline stations in Maryland were given permission yesterday to start selling a heavier blend of gasoline that usually wouldn't be allowed until October.

The move, which was approved by the Environmental Protection Agency following a request from Maryland Comptroller Peter Franchot, is intended to increase the gasoline supply in the aftermath of Hurricane Ike, which closed several major refineries on the Gulf Coast.

### [Byron King: The Markets Are Making Almost No Sense](#)

I surely do not envy the next U.S. president. One of these days, the morning National Intelligence Brief will begin, "Mr. President, we have some really bad news about Mexico's oil exports to the U.S. Pemex told us that within the next two months, it just can't deliver the oil that we're expecting. And none of the other oil suppliers in the world can begin to make up the difference."

### [Al Gore Asks MoveOn.org To Help Udall Despite Congressman's Reversal On Offshore Drilling](#)

Denver, CO (AHN) - Former Vice President Al Gore has sent an email to MoveOn.org members asking for their help raising funds for Rep. Mark Udall (D-CO) and two other Democrats seeking their first term in the Senate.

Calling Udall one of his "three champions of clean energy," Gore wrote, "At the convention, I said that the oil industry has a 50-year lease on the Republican Party. And they're drilling it for everything it's worth... We're in an energy crisis, and the burgeoning solar and wind power business is on the edge of shutting down-because Republicans are blocking the tax incentives they count on. Yet they'll fight to the death for huge oil industry subsidies."

### [7 sexy hybrids you can't \(yet\) buy](#)

The Toyota Prius changed the market — and automakers are responding.

### [Farmers go green as petrol prices rise](#)

The increased cost of petrol is providing an incentive for some farmers to consider alternatives such as organic and bio dynamic farming.

## [New fleet may mean U.S. covets Brazil's oil: Lula](#)

SAO PAULO (Reuters) - Brazilian President Luiz Inacio Lula da Silva warned on Thursday that the resurrection of a U.S. naval fleet in Latin America may signal that Washington covets huge new oil reserves off Brazil's coast.

The U.S. Navy is reestablishing the U.S. Fourth Fleet, which was decommissioned 58 years ago, to combat drug trafficking, provide disaster relief and help with peacekeeping missions in Latin America and the Caribbean.

But the return of the fleet has been met with widespread skepticism in Brazil and elsewhere in the region, where many see a U.S. military presence as a threat to sovereignty.

## [Reasons To Be Gloomy](#)

The problem is not that the world is running out of oil. It's that future supplies will come increasingly from politically less stable parts of the world—the broader Middle East, the Caspian Sea basin, and West Africa. These regions are especially vulnerable to political turmoil, terrorist and insurgent attacks, war, government collapse, and other serious threats.

And, of course, the sixfold increase in oil prices since 2002 has empowered the governments of some oil- and gas-exporting states to use their newfound market leverage as a political weapon. Political leaders in Russia, Iran, Venezuela, and others already use their hydrocarbon wealth to pick political fights. High prices allow even marginal energy exporters like Sudan and Burma to resist international pressure for political reform.

## [Why the Current Energy Bill is Bad for Americans](#)

The bill includes a buffer that would prohibit any new drilling within fifty miles of America's coastline. These are the most promising areas for oil and gas production, and this bill would lock up an estimated 90% of America's offshore reserves.

...Nuclear energy was NOT included as a way to meet this mandate. While we must use all sources of alternative energy and all methods of conservation, nuclear remains one of our best options for electricity production. It's clean, technology has made it increasingly safer, and countries around the world are already using our technology to produce nuclear energy.

## [Global food situation at a crossroads](#)

Los Baños, Philippines – Declining agricultural productivity and continued growing demand have brought the world food situation to a crossroads. Failure to act now through a wholesale reinvestment in agriculture—including research into improved technologies, infrastructure development, and training and education of agricultural scientists and trainers—could lead to a long-term crisis that makes the price spikes of 2008 seem a mere blip.

This stark warning, in line with calls from organizations such as the World Bank, the World Food Program, and Asian Development Bank (ADB), was issued by members of the Board of Trustees (BOT) of the International Rice Research Institute (IRRI) following their meeting on 16-19 September at Institute headquarters in Los Baños, Philippines.

### [Edmonton fat thanks to urban sprawl](#)

Edmonton in 1892 was a svelte nine square kilometres. Then came the age of the internal combustion engine: asphalt, traffic lights, freeways, pump jockeys, eight-tracks, traffic helicopters, shock jocks, cassette players, self-serve gas, travel mugs and heated seats, CD players, hands-free cellular, GPS, satellite radio and a 30-minute commute to the 'burbs, complete with toasty bum and a BlackBerry reminder to stop for milk.

Over those decades Edmonton sprawled to a corpulent 700 square kilometres. Ours is one of the most spread-out cities in the world, with one of its lowest population densities. Our corpulence doesn't even take into account the big-lot bedroom communities, acreages or country-residential developments in the region. Factor in regional sprawl and we're morbidly obese.

### [Sustainability Conference: Airports, roads and rails face threats](#)

Gallamore said the nation faces a circle of connected crises – the coastal inundation crisis, which is linked to the climate crisis, which links to the energy crisis, which is connected to the economic crisis.

“High oil prices lead to recessions all the time, call it what you want,” he said, alluding to some people’s aversion to using the R word. Gallamore said the nation needs a massive retraining program for those who used to have jobs in industries that no longer exist in the country.

### [Civilisation And The Carbon Credit Card](#)

I want to introduce you to Lester Brown. The Washington Post called him "one of the world's most influential thinkers." He founded the Worldwatch Institute, publishes an annual State of the World report, and recently founded the Earth Policy Institute.

One of his goals is to provide a vision of the world we want, and a plan of how to get there. He has called this Plan B3. (Compared to Plan A, which is where we continue hell-bent on our current lemming-like course ... When the lemmings jumped off the cliff not one of them questioned their actions!)

### [The Banks Get Their Presidential Pardon](#)

All of this is occurring even as the Republicans seek to entrench the Bush tax cuts, and Obama sings from only a slightly different hymnal. Even as the Iraq/Afghanistan wars is threatening to end up costing \$3 trillion, and with the current account deficit coming in at \$183.1 billion this quarter. A stunning 5.1% of GDP And while this collapse is having a salutary effect for now on the price of oil the problems with oil supply are really just starting. The next four years certain to prove beyond a shadow of doubt that peak oil is a theory in the same way that round earth is a theory. The costs of climate change too with its vanishing glaciers, arctic ice, and monster storms only now just starting to give us hints at just how expensive the future we are building is likely to be.

### [Australia: State must plan for coastal swamping](#)

VICTORIA must start planning for sea level rises of two metres that will swamp coastal housing and industry, a former planning minister has warned.

### [Warming World in Range of Dangerous Consequences](#)

The earth will warm about 2.4° C (4.3° F) above pre-industrial levels even under extremely conservative greenhouse-gas emission scenarios and under the assumption that efforts to clean up particulate pollution continue to be successful, according to a new analysis by a pair of researchers at Scripps Institution of Oceanography at UC San Diego.

### [OSU plans conversion to natural gas vehicles](#)

STILLWATER — Oklahoma State University plans to convert its fleet to vehicles that use compressed natural gas, university President Burns Hargis said Thursday.

### [IT at sea: Google to launch a computer navy](#)

According to a patent application seen by London newspaper "The Times," Google is considering launching barges up to seven miles (11km) offshore to host the massive data centers required to run its Internet search engines.

The plan would likely see the data centers -- which consist of huge supercomputers --

use wave energy to power and cool themselves while stationed at sea.

### [Can 'small wind' reap big rewards?](#)

LONDON, England (CNN) -- Micro wind turbines are beginning to pop up all over our urban and rural landscapes. But is it worth investing your hard-earned cash in your very own wind machine? In short, it depends. Take a look at our quick guide to see if "small wind" could help you reduce your energy bills and your carbon footprint.

### [Gasoline Supply May Fall 'Substantially,' Energy Official Says](#)

(Bloomberg) -- The Energy Department's Sept. 24 inventory report may show that U.S. gasoline supplies fell 8.5 million barrels from a four-decade low as Texas refineries assess damage from Hurricane Ike, a department official said.

``Probably the max is an 8.5 million draw in gasoline because demand is down, and it could be as low as 6.5 million" barrels, John Duff, survey manager for the Energy Department's weekly petroleum status report, said in an interview. The report will show ``the real impact of the hurricane on the refining sector," he said. Supplies will fall ``substantially."

### [Crude Oil Gains \\$3 a Barrel as Bank-Bailout Plan Boosts Markets](#)

(Bloomberg) -- Crude oil climbed more than \$3 a barrel to the highest in a week on speculation government measures to resolve the bank crisis may bolster demand for petroleum.

### [Chevron venture to develop oil field off Nigeria](#)

A joint venture between Chevron Corp. and Nigeria's national oil company will move forward on development of the Usan oil field off the African coast.

### [Russian oil firms could develop deposits in Indonesia - envoy](#)

MOSCOW (RIA Novosti) - Russian oil companies could be involved in broad cooperation in Indonesia, the southeast Asian country's ambassador to Moscow said on Friday.

### [Naked Bathers Protest Japan Power Plan to Siphon Hot Spa Waters](#)

(Bloomberg) -- One of Japan's opportunities to tap cleaner, cheaper energy and reduce dependence on imported oil has run into a problem: millions of naked bathers.

The dispute is over deep-underground volcanically heated water that geothermal power plants would tap to generate electricity. Japan, with nearly a tenth of the world's active volcanoes, also has thousands of hot spring resorts whose owners oppose plans to siphon off steaming mineral waters.

## [Peak Oil - Are We There Yet?](#)

### **How close are we to the peak?**

Recapping from our theoretical discussion on the depletion curves, the peak happens after discoveries have peaked, after consumption has overtaken discoveries, and once total accumulated consumption/production is roughly equal to the remaining reserves.

Looking at the numbers, one concludes that two of the conditions for a production peak have occurred, and a third may be occurring:

- 1) Discoveries peaked 44 years ago (by coincidence, the United States discoveries peak happened 41 years before peak consumption, although the lag for the worldwide case could vary substantially from the US case).
- 2) Consumption overtook discoveries in 1980, about 28 years ago (in the United States, consumption overtook discoveries about 32 years before the peak, again possibly just a coincidence of dates).
- 3) Total accumulated output may be roughly equal to existing proven reserves (this could vary somewhat, depending on estimates, and even more so on probable and possible reserves), the final condition, which is expected to coincide with Hubert's peak.

## [IEA sees risk of recession if oil stays high](#)

LONDON (Reuters) - The head of the International Energy Agency said on Wednesday there was a risk of global recession if oil prices stayed around the current level and hurt emerging economies.

Nobuo Tanaka, head of the agency which advises 27 industrialized countries, also said the supply and demand balance in the oil market is tight, leaving consumers vulnerable to a fresh surge in prices.

## [ANALYSIS - Saudi Arabia lays ground for more OPEC action](#)

DUBAI/LONDON (Reuters) - OPEC's surprisingly tough output deal last week lays the



foundation for more decisive action to prop up weakened oil markets and it could involve the possible collaboration of leading non-OPEC producer Russia.

Until OPEC reached agreement in the early hours of Sept. 10, most had anticipated the group would leave production unchanged.

But top oil exporter Saudi Arabia, which before the meeting said the market was fine as it was, put its name to the Organization of the Petroleum Exporting Countries' (OPEC) unanimous decision to throttle back to agreed output levels.

"The agreement was a surprise," said one OPEC delegate. "We had all expected there to be no change."

### [Can OPEC Curb The Oil Roller Coaster?](#)

The last 12 months have seen a roller coaster oil market. In September 2007 the price of West Texas Intermediate averaged \$79.69 per barrel. By July 3 it had reached an all-time record level of \$147 per barrel. In the last week, it has plunged to below \$100 per barrel. The cuts announced by OPEC on Sept. 9 have created significant uncertainties in terms of the effective size of the production cuts involved and the likely impact on prices.

### [Kazakhstan to tie up with Shell for Kashagan oil](#)

ALMATY (Reuters) - Kazakhstan said on Friday state oil company KazMunaiGas would create a joint venture with Royal Dutch Shell to handle the production segment of the Kashagan oilfield.

"A joint venture between Shell and KazMunaiGas is being formed so that KazMunaiGas could take the lead in the production sector of the project," the government said on its website, [government.kz](http://government.kz).

### [Nigerian militants say Shell pipeline destroyed](#)

LAGOS (AFP) - The main militant group in southern Nigeria -- the Movement for the Emancipation of the Niger Delta (MEND) -- said Thursday it had destroyed a major oil pipeline belonging to Royal Dutch Shell.

"Fighters from MEND using high explosives have destroyed a major pipeline belonging to Shell Development Company at the Elem-Kalabari Cawthorne Channel axis in Rivers state," the group said in an email to the media.

### [Nigeria militants turn against each other in delta](#)

PORT HARCOURT, Nigeria (Reuters) - Nigerian militants clashed with each other in the restive Niger Delta, a military spokesman said on Friday, highlighting the complex security situation in the oil-rich region. Two militant factions with close links to the Movement for the Emancipation of the Niger Delta (MEND) exchanged gunfire on Thursday at Harristown in Rivers state, a village known to be a battleground for the lucrative trade in oil theft, more commonly known as oil bunkering.

### [Shell says Nigeria violence to hit earnings](#)

LONDON (Reuters) - Oil major Royal Dutch Shell Plc said an escalation in violence in Nigeria in the past week would likely weigh on its earnings.

A spokesman for the Hague-based company said the attacks on oil facilities would have an impact but declined to put figures on production outages or the extent to which quarterly earnings may suffer.

### [Peak Oil: America uses 21 million barrels per day](#)

The concept of peak oil is not about running out of crude oil. It never has been. A Shell geologist (M. King Hubbert) in the '50s formulated, from his years of study of oil field production, his theory of Peak Oil. He predicted, accurately, that U.S. crude production would peak between 1965 and 1970.

Be clear on this. It's not about running out. We are pumping crude in the U.S. today, 38 years after the U.S. peaked. The peak comes when daily output can no longer be expanded and begins to shrink inexorably, year after year.

### [Medvedev pours in more oil billions as battered stock exchanges stay shut](#)

Russia's battered stock exchanges remained closed yesterday as President Medvedev ordered the Government to pour billions of pounds into saving the financial system.

He told ministers that there was "no more important task" than stabilising the markets after a torrid week that has seen share prices slump and brought warnings of a financial crash.

### [Russia plans more oil sector tax cuts-Kremlin aide](#)

MOSCOW (Reuters) - Russia will propose more tax cuts for the oil industry this year and implement them in 2010, Kremlin economic aide Arkady Dvorkovich said on Friday, without giving many details of the plan.

President Dmitry Medvedev met top officials from the Kremlin and the government on Thursday to discuss tax reform after a debate between a pro-growth camp, which wanted a major cut in value-added tax (VAT), and fiscal hawks, led by Finance Minister Alexei Kudrin.

### [Shell plans Russian oil exploration project-source](#)

SOCHI, Russia (Reuters) - Royal Dutch Shell (RDSa.L: Quote, Profile, Research) plans a new exploration project in Russia and is considering three oil fields in Kalmykia in the Urals as possible sites, a source familiar with the plans said on Friday.

"The fields require deep drilling, over 6 kilometres," the source said on the sidelines of an investment forum in Russia's southern city of Sochi.

### [Russia says new-style OPEC link "interesting"](#)

MOSCOW (Reuters) - Russia is considering renewed ties with OPEC, a minister said on Friday, a move that could rattle nerves among energy consuming nations.

Energy Minister Sergei Shmatko said Moscow will send a high-level delegation to the Organization of the Petroleum Exporting Countries' next meeting in Algeria on Dec. 17.

"We are planning again to take part in the meeting by sending a high-level delegation. The prospects of cooperation in a new format between OPEC and the Russian Federation are very interesting," Shmatko told reporters.

### [Airlines fail to pass on oil cuts to passengers](#)

British Airways and Virgin have declined to drop their fuel surcharges, despite oil prices falling by more than a third

### [Airlines, cruise lines stand by fuel surcharges](#)

Despite lower crude oil prices, fuel-related fees added by airlines and cruise companies are here to stay.

Citing soaring fuel prices, airlines and cruise lines have added fuel surcharges and other transactional fees in the past 12 months to help recoup their costs. But the oil price is now far below the level at which it stood back in the summer, when the latest round of fuel surcharge hikes went through.

### [Alitalia airline cancels flights](#)

Alitalia has cancelled a number of flights from Rome's Fiumicino airport, increasing fears that the carrier may soon go into liquidation.

The airline confirmed that a number of flights have been cancelled, but denied it had run out of aviation fuel.

### [Slump in oil prices should enable Ryanair to break even this year](#)

A SLUMP in oil prices during the past two months should see Ryanair break even this financial year after it had earlier predicted a loss of up to €60m, chief executive Michael O'Leary said yesterday.

Speaking at the airline's annual general meeting in Dublin, Mr O'Leary told shareholders that as long as oil prices remain under \$100 a barrel for the remainder of the year the low-cost carrier should break even.

### [Futurologist Richard Watson's 2050 vision: goodbye Belgium, hello brain transplants](#)

The environment will remain vitally important, but climate change won't be the only game in town - the approach of peak oil, peak coal, peak gas, peak water, peak uranium and even peak people (a severe shortage of workers in many parts of the world) will also have an impact, and require a profound shift towards sustainability.

### [Wind Power Can Solve the U.S. Oil Addiction](#)

It's become cliché to say that the United States is addicted to oil. I'll make no effort to refute the claim because it's true. It's an expensive habit, too. The upshot, however, has been the explosion of interest in renewable energy sources. Last year, investors poured a record \$71 billion into the alternative energy space. And billions more funnel in every day.

But with so many possibilities - hydropower, wind power, solar power, geothermal, biofuel, clean coal technology - investors are forced to pick which alternative energy source will distinguish itself as the most viable replacement for oil. It's a crapshoot.

That is, until you realize the shooter (in this case Wall Street) is rolling a pair of "loaded" dice.

### [India's Iconic Electric Car Gets Energised](#)

MUMBAI - Long before "green" cars became trendy in other parts of the world, a boxy electric two-seater began rolling out of a small factory in the Indian city of Bangalore, which was then emerging as a software services hub.

Today, scores of Reva electric cars can be seen tootling down Bangalore's crowded streets, their bright colours and minimalist design drawing curious looks, even smiles, from commuters.

### [US Power Firm To Build Biomass Energy Plants](#)

Oglethorpe Power Corporation (OPC), America's largest power supply cooperative, has recently unveiled plans to build as many as three 100 megawatt (MW) biomass electric generating facilities in the state of Georgia.

Designed to utilize woody biomass, one of the state's most abundant renewable resources, the power plants will be carbon-neutral and provide power to OPC's 38 member cooperatives, which supply electricity to nearly half of Georgia's population.

### [New system could help avert collapse of fisheries](#)

CHICAGO (Reuters) - Guaranteeing individual fishermen a share of the catch could help avert a global collapse of fisheries, U.S. researchers said on Thursday.

Such programs, known as catch-shares, eliminate the frantic race to get the biggest share of the catch as in traditional open-access fishing, a system that promotes overfishing and habitat destruction, putting a key global food supply at risk.

"Under open access, you have a free-for-all race to fish, which ultimately leads to collapse," said Christopher Costello of the University of California, Santa Barbara, whose study appears in the journal Science.

"But when you allocate shares of the catch, then there is an incentive to protect the stock, which reduces collapse. We saw this across the globe," he said in a statement.

### [Chicago outlines plan to slash greenhouse gases](#)

CHICAGO - Mayor Richard M. Daley has announced a plan to dramatically slash emissions of heat-trapping gases, part of an effort to fight global warming and become one of the greenest cities in the nation.

The plan calls for reducing greenhouse gas emissions to three-fourths of 1990 levels by 2020 through more energy-efficient buildings, using clean and renewable energy sources, improving transportation and reducing industrial pollution.

### [Australia to launch ambitious global carbon capture scheme](#)

SYDNEY (AFP) - Australia will launch a multi-million dollar international carbon capture and storage institute to fight global warming, Prime Minister Kevin Rudd announced Friday.

Rudd said the plan would be the centrepiece of his address to the United Nations General Assembly in New York next week, adding that British Prime Minister Gordon Brown had already offered his support.

### [UN chief appoints two new special envoys on climate change](#)

UNITED NATIONS (AFP) - UN chief Ban Ki-moon has appointed two new special envoys on climate change, one of his top priorities, his press office said Thursday in a statement.

Former Botswanan president Festus Mogae and former Macedonian foreign minister Srgjan Kerim, who has just stepped down as president of the UN General Assembly, are to join two other special envoys for climate change appointed last year: former Chilean president Ricardo Lagos and Norwegian ex-prime minister Gro Harlem Brundtland.

### [Live Earth climate change concert heads to India](#)

MUMBAI, India - Jon Bon Jovi and Bollywood star Amitabh Bachchan will perform at this year's Live Earth concert, when the music extravaganza aimed at raising awareness of climate change heads to India.

### [The changing climate of war and peace](#)

While voices in the political world remain locked in inertia, alternately debating and decrying the science of global warming itself, top military leaders and defense think-tanks have been taking it seriously.

Terrorism is a malevolent problem, but climate change, observers say, is a malignant problem, and the world can ignore neither.

The American military has been examining future implications of global warming as a threat to peace, hoping to head off a world fighting over reduced natural resources, food and water, and conflicts brought on by population locations created by droughts, floods, and diseases.



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