The Week That Was: 2013-03-30 (March 30, 2013) Brought to You by SEPP (www.SEPP.org) The Science and Environmental Policy Project

Quote of the Week: The first principle is that you must not fool yourself--and you are the easiest person to fool. So you have to be very careful about that. After you've not fooled yourself, it's easy not to fool other scientists. You just have to be honest in a conventional way after that. Richard Feynman, Cargo Cult Science, 1974 [H/t Donna Laframboise]

Number of the Week: 1200 million metric tonnes!

Urgent: Reviewers Needed for Climate Change Reconsidered-2

The Nongovernmental International Panel on Climate Change (NIPCC) is seeking credentialed individuals who are willing to serve as reviewers of the forthcoming NIPCC report Climate Change Reconsidered-2. Reviewers will be needed between April and August 2013 for various chapters and sub-chapters of the report. A list of topics addressed in the report, and for which reviews will be needed, can be found under the links and sub-links listed on the NIPCC Web site's Topical Archive page. To volunteer as a reviewer, or for more information, please send an email to NIPCC_contact@nipccreport.org.

Thank you, your help in this matter is greatly appreciated.

April Fools: April is upon us, and it is time to hold the SEPP April Fools contest. Using the following criteria, readers are requested to submit their nomination of a government official or political leader along with a sentence or two why that person should be considered:

- The nominee has advanced, or proposes to advance, significant expansion of governmental power, regulation, or control over the public or significant sections of the general economy.
- The nominee does so by declaring such measures are necessary to protect public health, welfare, or the environment.
- The nominee declares that physical science supports such measures.
- The physical science supporting the measures is flimsy at best, and possibly non-existent.

The final selection will be determined by a special SEPP panel. The name of the winner will be emblazoned with names of other winners of the great SEPP trophy – The Jackson – a lump of coal. Please submit your nomination to Ken@SEPP.org.

THIS WEEK:

By Ken Haapala, Executive Vice President, Science and Environmental Policy Project (SEPP)

Greenhouse Re-Visited: Vincent Gray, a five time expert reviewer of the Assessment Reports of the Intergovernmental Panel on Climate Change (IPCC), has reassessed his earlier review of the origins "greenhouse effect." Also, he addresses many errors that arise in the models. They are too highly simplified versions of the climate system and fail to incorporate important components of the earth's heat transfer system.

The paper (22 pages including references) may become controversial, as it should be. If Gray is correct, then the entire IPCC program, and the ones that parrot it, such as the U.S. Global Change

Research Program and the EPA's endangerment finding, are built on false assumptions that must be revised.

According to reports from the Government Accountability Office and the Congressional Research Service, from 1993 to 2012 the US Government has spent about \$140 to 150 Billion on global warming / climate change – creating the Climate Establishment. Based on continuing resolutions, current spending is about \$20 Billion per year. This figure does not include subsidies for unreliable wind and solar, or Biofuels.

No doubt, the Climate Establishment will bitterly contest any major revision of their ideas and models, in which they have expressed great, if scientifically unfounded, certainty. The following is not intended to be a summary of Gray's assessment, but just a brief list of some of the highlights.

- In postulating that carbon dioxide is a major greenhouse gas, Svante August Arrhenius used the wrong measurements ones of water vapor, not carbon dioxide. He did not make the measurements, but used those by Langley.
- Arrhenius greatly over estimated the concentration of carbon dioxide (CO2) in the atmosphere as compared with water vapor, by an average of 50 to 1.
- Guy Callendar, who continued the emphasis on carbon dioxide, ignored water vapor and believed that radiation was the only form of energy transfer in the climate system. He ignored the existence of conduction, convection, evaporation, and condensation as mechanisms of heat transfer.
- The IPCC has continued to emphasize radiation, ignoring the other mechanisms of heat transfer.
- The simplified model of the IPCC by Kiehl and Trenberth ignores the fact that the sun does not shine on the same place 24 hours a day. Measures of the average radiation from the earth are not suitable and measurements should include the difference between day and night.
- There are no estimates of the accuracy of the values of solar heating over oceans and land.
- The range in estimated values solar heating effects of oceans and land is significantly greater than the calculated values of warming effects from increasing carbon dioxide.
- Thus, the value of warming effects from increasing carbon dioxide cannot be calculated with scientific precision.

Gray differentiates between an actual greenhouse and the earth's climate. For the earth, both ocean and atmospheric circulation are critical. The movements of fluids are chaotic, and have not been satisfactorily described by mathematics. He states that the IPCC falsely claims that the chaotic behavior is managed; pointing out that, based on their calculations, the energy subject to

chaotic behavior is about 60 times greater than the estimate of the warming effect of increased carbon dioxide (97 v. 1.6 W/m squared).

Labeling: Proper labeling is important in marketing (propaganda). Many skeptics have studied the history of climate change and concluded that it is real, ongoing, significant, and natural; but, the human influence is minor. Many climate alarmists label these skeptics as climate change deniers, or science deniers. Similarly, it has become fashionable for some in the Climate Establishment to label the current era (say the past 250 years) as the Anthropocene, a geological epoch dominated by human activity.

With a touch of humor in a comment on Britain's Climate Change Commission posted on Bishop Hill, James Evans suggests a label for latest period, (say last 50 years) – The Hubrisocene – an epoch dominated by ego that humans can control climate. Please see link under Challenging the Orthodoxy.

Renewable Mandates: In the US, the battle over renewable energy mandates is moving to the several states (Renewable Energy Standards or Portofolio). Some politicians are becoming aware that many citizens do not wish to pay for unreliable, expensive wind power. One hot-bed is the

state legislature of North Carolina, which is taking up the issue this week. Please see link under Subsidies and Mandates Forever.

Keystone XL: The fate of Keystone XL pipeline remains in the hands of the Administration in Washington. Obviously, Canadians with an interest in oil sands are disturbed by the delay. These interests include the government of Alberta, which will receive increased royalties with increased development. Pipelines are the safest way to move oil and gas. Without the pipeline, the oil is moving by rail, and one accident occurred this week.

An interesting proposal is to convert one of the pipelines in Canada's Mainline from natural gas to oil. The Mainline carries natural gas east from Alberta, over the Canadian Shield, to the eastern cities of Canada. The Canadian Shield is a formidable barrier with extensive exposed bedrock, some of the oldest in the world. As discussed by Robert Bradley, in *From Edison to Enron*, building the Mainline east was expensive, both financially and politically, rather than building it south into the US around the Great Lakes then back north again,. If the gas pipeline can be physically converted, or if an oil pipeline can be built adjacent to it, then that may be a more practical venture than dealing with Washington. Please see Article # 2 and links under Energy Issues – Non-US.

Number of the Week: 1200 million metric tonnes! (1323 million short tons) Petroleum engineer, and world class track cyclist and coach, Norm Kalmanovitch calculates humans exhale approximately 1200 million metric tonnes of CO2 every year. "I based the number on an average calorie intake of 1200 calories which gives about 180 kg/person of CO2 per year. Seven billion people times 180 kg/person comes to 1260 million tonnes which I rounded off to 1200 million metric tonnes!" Of course this is approximate, but it gives some sense of proportion compared to claimed CO2 savings by certain policy measures.

For example, according to an article by John Dawson, the carbon tax scheme of Australian Prime Minister Julia Gillard boasts that by 2020 it would cut CO2 emissions by 160 million tonnes – about thirteen percent (13%) of human emissions from breathing. Perhaps Australians should ask Ms. Gillard: Is breathing polluting?

Please see link under Cap and Trade and Carbon Taxes.

ARTICLES:

For the numbered articles below please see this week's TWTW at: **www.sepp.org**. The articles are at the end of the pdf.

1. What Science Really Says about Religion

By Thomas P. Sheahen, American Thinker, Mar 26, 2013

http://www.americanthinker.com/2013/03/what_science_really_says_about_religion.html [SEPP Comment: Thomas Sheahen is on the SEPP Board of Directors.]

2. Oil Spills Mount on Tracks

Minnesota Derailment Joins a Sharp Rise in Incidents in Years of Energy Boom By Tom Fowler, WSJ, Mar 27, 2013

http://online.wsj.com/article/SB10001424127887324685104578386662069983532.html

[SEPP Comment: Subsequent accounts placed the amount of the new spill to be a little over 300 barrels.]

NEWS YOU CAN USE:

Challenging the Orthodoxy

A Revisit on the "The Greenhouse Effect"

By Vincent Gray, The New Zealand Climate Coalition, Mar 27, 2013 http://nzclimatescience.net/index.php?option=com_content&task=view&id=919&Itemid=1

European Institute For Climate And Energy Calls The New "Warm-Cold Hypothesis" Meteorological Nonsense!

By Translated by P. Gosselin, No Tricks Zone, Mar 29, 2013

http://notrickszone.com/2013/03/29/european-institute-for-climate-and-energy-calls-the-new-warm-cold-hypothesis-meteorological-nonsense/

[SEPP Comment: A rebuttal to the argument that a warm Arctic summer causes a cold European winter.]

Committee on Climate Change vs. Mail on Sunday

By David Whitehouse, GWPF, Mar 27, 2013

http://www.thegwpf.org/committee-climate-change-mail-sunday/

In their criticism of the Mail's article Professor Sir Brian Hoskins on behalf of the committee, with assistance from Dr Steve Smith, science advisor to the committee, state that "like all scientists we take a skeptical stance, testing each assertion against the evidence." If only they did. Throughout their riposte they emphasise models over real world data, and only select supporting research.

The CCC abandons science

By Andrew Montford, Bishop Hill, Mar 26, 2013 [H/t Bob Tisdale] http://www.bishop-hill.net/blog/2013/3/26/the-ccc-abandons-science.html
"It's hard to take seriously someone who prefers models to empirical observation"

The science is settled: no warming

By Barry Brill, Quadrant, Mar 26, 2013

http://www.quadrant.org.au/blogs/doomed-planet/2013/03/the-science-is-settled-no-warming
There have been three distinct warming episodes since the instrumental record began – 1860-80,
1912-40 and 1978-96 – but nobody suggests that any of them were linked by a "pause"

Ocean plankton sponge up nearly twice the carbon currently assumed

By Staff Writers, Irvine CA (SPX), Mar 24, 2013

http://www.spacedaily.com/reports/Ocean_plankton_sponge_up_nearly_twice_the_carbon_curre_ntly_assumed_999.html

Defending the Orthodoxy

Chief scientist warns climate change will bring extremes in weather

By Priyanka Shrestha, Energy Live, Mar 25, 2013 [H/t GWPF]

http://www.energylivenews.com/2013/03/25/chief-scientist-warns-climate-change-will-bring-extremes-in-weather/

Significant reduction in temperature and vegetation seasonality over northern latitudes

By Staff Writers, Cape Cod MA (SPX). Mar 12, 2013

http://www.spacedaily.com/reports/Significant_reduction_in_temperature_and_vegetation_season_ality_over_northern_latitudes_999.html

Climate Change Is the Risk That Increases All Others

By Larry Brillant, Skoll Global Threats, Mar 25, 2013

http://online.wsj.com/article/SB10001424127887323419104578376853911373178.html?mod=W SJ_JREnergy_4_2_LEFT

Questioning the Orthodoxy

Twenty-year hiatus in rising temperatures has climate scientists puzzled

By Graham Lloyd, The Australian, March 30, 2013 [H/t GWPF]

 $\underline{http://www.theaustralian.com.au/news/features/twenty-year-hiatus-in-rising-temperatures-has-climate-scientists-puzzled/story-e6frg6z6-1226609140980$

[SEPP Comment: Is the 90% certainty diminishing?]

A sensitive matter

The climate may be heating up less in response to greenhouse-gas emissions than was once thought. But that does not mean the problem is going away

By Staff Writers, The Economist, Mar 30, 2013

http://www.economist.com/news/science-and-technology/21574461-climate-may-be-heating-up-less-response-greenhouse-gas-emissions

Climate change: an elite affectation

Rupert Darwall's history of the idea of global warming shows how the belief in an impending manmade apocalypse emanated from the top of wealthy Western societies.

Book Review By Rob Lyons, Spiked, No Date

http://www.spiked-online.com/site/reviewofbooks article/13491

The Climate Science Caricatures...Jyllands-Posten Features Massive 4 Full Pages Of Climate Science Skepticism!

By P. Sosselin, No Tricks Zone, Mar 27, 2013

http://notrickszone.com/2013/03/27/the-climate-science-caricatures-jylland-posten-features-massive-4-full-pages-of-climate-science-skepticism/

[SEPP Comment: Even in Denmark!]

Met Office or bookie's office?

By Andrew Montford, Bishop Hill, Mar 29, 2013

http://bishophill.squarespace.com/blog/2013/3/29/met-office-or-bookies-office.html

James Hansen Says Coal Is Greening The Planet!?!

By Willis Eschenbach, WUWT, Mar 29, 2013

 $\underline{\text{http://wattsupwiththat.com/2013/03/29/james-hansen-says-coal-is-greening-the-planet/\#more-83103}$

Dispelling myths about global warming

By Stan Robertson, WUWT, Mar 25, 2013

http://wattsupwiththat.com/2013/03/25/dispelling-myths-about-global-warming/

Climate Models Are So Flawed They Fail History

Editorial, IBD, Mar 28, 2013

 $\underline{http://news.investors.com/ibd-editorials/032813-649780\text{-}climate-models-so-wrong-they-canteven-reconstruct-history.htm}$

Climate models aren't good enough to hindcast, says new study

Posted by Anthony Watts, WUWT, Mar 25, 2013

 $\underline{http://wattsupwiththat.com/2013/03/25/climate-models-arent-good-enough-to-hindcast-says-new-study/}$

Questioning European Green

It's payback time for our insane energy policy

An obsession with CO2 has left us dangerously short of power as coal-powered stations are forced to close

By Christopher Booker, Telegraph, UK, Mar 23, 2013 [H/t Malcolm Ross]

http://www.telegraph.co.uk/earth/energy/windpower/9949571/Its-payback-time-for-our-insane-energy-policy.html

The UK Energy Crisis in 3 simple awareness-raising pictures

Wrap up and think of Gaia

By Andrew Orlowski, The Register, Mar 25, 2013 [H/t GWPF]

http://www.theregister.co.uk/2013/03/25/uk_energy_crisis_illustrated/

Too much green energy is bad for Britain

The Tory part of the Coalition is beginning to recognise some painful truths, but it is time for the Coalition to tear up its energy policy before the lights go out

Editorial, Telegraph, UK, Mar 23, 2013 [H/t Malcolm Ross]

http://www.telegraph.co.uk/comment/telegraph-view/9949595/Too-much-green-energy-is-bad-for-Britain.html

Households 'will have to buy green appliances' to benefit from Government energy bill boasts

Households will have to spend thousands of pounds buying new green appliances to benefit from the Government's claims its policies are bringing down energy bills, it emerged last night.

By Rowena Mason, Telegraph, UK, Mar 27, 2013

http://www.telegraph.co.uk/earth/energy/9955852/Households-will-have-to-buy-green-appliances-to-benefit-from-Government-energy-bill-boasts.html

Global warming: if only we'd listened to the experts, eh?

By James Delingpole, Telegraph, UK, Mar 25, 2013 [H/t ICECAP]

http://blogs.telegraph.co.uk/news/jamesdelingpole/100208918/global-warming-if-only-wed-listened-to-the-experts-eh/

Questioning Green Elsewhere

Eco fascism

By Norm Kalmanovitch, Calgary Herald, Mar 25, 2013

http://www.calgaryherald.com/business/fascism/8146864/story.html

The Dream of a World Without Oil

By Peter Wilson, American Thinker, Mar 25, 2013

http://www.americanthinker.com/2013/03/the_dream_of_a_world_without_oil.html

Renewable Energy Myths

By Anthony Cox, NCTCS, Mar 29, 2013

http://theclimatescepticsparty.blogspot.com.au/2013/03/renewable-energy-myths.html

Expanding the Orthodoxy

Job offer: Students wanted to be IPCC climate change reviewers

By David Zaruk, Risk Monger, Mar 25, 2013 [H/t Jo Nova]

 $\underline{http://risk-monger.blogactiv.eu/2013/03/25/job-offer-students-wanted-to-be-ipcc-climate-change-reviewers/\#.UVbzlRyG0Z7}$

Seeking a Common Ground

American Physical Society

By Judith Curry, Climate Etc, Mar 24, 2013

http://judithcurry.com/2013/03/24/american-physical-society/#more-11370

[SEPP Comment: Setting up a Topical Group on the Physics of Climate.]

The Climate Mechanisms of World Deserts and Limitations in Allan Savory's thesis.

By Tim Ball, WUWT, Mar 25, 2013

 $\frac{http://wattsupwiththat.com/2013/03/25/the-climate-mechanisms-of-world-deserts-and-limitations-in-allan-savorys-thesis/$

[SEPP Comment: A lengthy comment on the proposal that cattle raising can limit climate change and desertification of grasslands.]

Stossel Show: Schmidt, Spencer, & Ridley on Global Warming

By Roy Spencer, His Blog, Mar 27, 2013

http://www.drroyspencer.com/2013/03/stossel-show-schmidt-spencer-ridley-on-global-warming/ [SEPP Comment: Discussing the filming of a debate that is appearing on the Stossel Show.]

Has Trenberth found the 'missing' heat?

By Judith Curry, Climate Etc, Mar 29, 2013

http://judithcurry.com/2013/03/29/has-trenberth-found-the-missing-heat/#more-11401 [SEPP Comment: Unlikely.]

New Hockey-Stick

Where's the hockey stick? The 'Marcott 9' show no warming past 1950 By John Kehr, WUWT, Mar 26, 2013

http://wattsupwiththat.com/2013/03/26/wheres-the-hockey-stick-the-marcott-9-show-nowarming-past-1950/

The Gleick Affair

Not a Joke: Disgraced Thief Peter Gleick Poses for 'Lifetime Achievement' Award

By Jim Lakely, Somewhat Reasonable, Mar 24, 2013

 $\underline{\text{http://blog.heartland.org/2013/03/not-a-joke-disgraced-thief-peter-gleick-poses-for-lifetime-achievement-award/}$

Climate Fraudster? Have an Award

By Lord Monckton, WND, Mar 25, 2013

http://www.wnd.com/2013/03/climate-fraudster-have-an-award/#JJ5IvA2P7S1u37i6.99

World Water Day 2013: Peter Gleick and Pacific Institute Honored with Lifetime Achievement Award at Silicon Valley Water Conservation Awards

By Staff Writers, Pacific Institute, Mar 22, 2013

http://yubanet.com/california/World-Water-Day-2013-Peter-Gleick-and-Pacific-Institute-Honored-with-Lifetime-Achievement-Award-at-Silicon-Valley-Water-Conservation-Awards.php#.UVHEOVfotFY

Communicating Better to the Public – Exaggerate, or be Vague?

Study Links 2011 Quake to Technique at Oil Wells

By Henry Fountain, NYT, Mar 28, 2013

http://www.nytimes.com/2013/03/29/science/earth/2011-oklahoma-quake-tied-to-wastewater-disposal-at-oil-wells.html? r=1&

[SEPP Comment: The compelling evidence may be less than compelling.]

Ancient megavolcanoes killed half the world's species

By Staff Writers, Washington (AFP), March 21, 2013

http://www.terradaily.com/reports/Ancient_megavolcanoes_killed_half_the_worlds_species_999.html

[SEPP Comment: Skeptics and alarmists largely agree that aerosols produced by volcanoes have cooling effect. Yet, the authors of this study state what killed the species was a warming of the world coming from massive increases in carbon dioxide, not the cooling that must have immediately come from massive injections of aerosols.]

Volcano-induced die-off paved way for dinosaurs, study suggests

New findings support the theory that a massive volcanic event tore apart Pangea and dramatically changed Earth's climate, ushering in the biggest biological shift in the planet's history. By Geoffrey Mohan, LA Times, Mar 21, 2013

http://articles.latimes.com/2013/mar/21/science/la-sci-volcanoes-dinosaurs-20130322

Communicating Better to the Public - Make things up.

Sen. Inhofe 'proud' to be target of climate flick 'Greedy Lying Bastards'

By Ben Geman, The Hill, Mar 29, 2013

http://thehill.com/blogs/e2-wire/e2-wire/290961-inhofe-proud-to-be-target-in-climate-flick-greedy-lying-bastards

Lewandowsky, Cook claim 78,000 skeptics could see conspiracy survey at Cooks site where there is no link

By Jo Nova, Her Blog, Mar 29, 2013

http://joannenova.com.au/2013/03/lewandowsky-cook-claim-78000-skeptics-could-see-conspiracy-survey-at-cooks-site-where-he-didnt-even-put-up-a-link/

[SEPP Comment: According to Jo Nova, when the authors were challenged as misrepresenting the scope of their survey, the Australian Research Council awarded Lewandowsky et al, another \$338,000 (AUD).]

For the Sake of the Children

Climate crusaders urge us to Think of the children! But that can be used by anyone to advance any argument under the sun.

By Donna Laframboise, NFC, Mar 25, 2013

http://nofrakkingconsensus.com/2013/03/25/for-the-sake-of-the-children/

FrackNation Debunks Fantasyland

By Gordon Tomb, Energy Tribune, Mar 29, 2013

http://www.energytribune.com/75397/fracknation-debunks-fantasyland

Climate change foes: 'Sick' science distorts facts

By Jeff Montgomery, The News Journal, Mar 19, 2013 [H/t ICECAP]

 $\underline{\text{http://www.delawareonline.com/article/20130319/NEWS/303180080/Climate-change-foes-Sick-science-distorts-facts}$

[SEPP Comment: Labeling Soon and Legates as climate change foes is blatant media distortion.]

Models v. Observations

Warm Bias: the Met Office's Disastrous Track Record

The Met Office's temperature forecasts issued in 12 out of the last 13 years have been too warm. None of the forecasts issued ended up too cold. That makes the errors systemic and significant. By Staff Writers, GWPF, Mar 29, 2013

http://www.thegwpf.org/warm-bias-met-offices-disastrous-track-record/

Measurement Issues

Aqua AMSU ch. 5 Bites the Dust

By Roy Spencer, His Blog, Mar 25, 2013

http://www.drroyspencer.com/2013/03/aqua-amsu-ch-5-bites-the-dust/

[SEPP Comment: It is not a sudden drop in atmospheric temperatures, it is instrument failure.]

Changing Weather

Britain's colder than the Arctic: -10 degC freeze over Easter

BRITAIN will be colder than parts of Greenland this Easter with temperatures plunging to an Arctic -10C (14F)

By Lianne Kolirin, Express, UK, Mar 29, 2013

http://www.express.co.uk/news/uk/387878/Britain-s-colder-than-the-Arctic-10c-freeze-over-Easter

What planet are they living on? As freezing Britain faces a grave energy crisis, ministers unveil more green gimmicks and eco taxes. What folly

By Christopher Booker, Daily Mail, UK, Mar 26, 2013

http://www.dailymail.co.uk/debate/article-2299607/What-planet-living-As-freezing-Britain-faces-grave-energy-crisis-ministers-unveil-green-gimmicks-eco-taxes-What-folly-says-CHRISTOPHER-BOOKER.html

When will this winter ever end?

British Summer Time and the cricket season are nearly upon us, yet as snow, bitter winds and floods once again disrupt the country, any sign of spring has been extinguished By Michael Leapman, Telegraph, UK, Mar 22, 2013

 $\underline{http://www.telegraph.co.uk/topics/weather/9948524/When-will-this-winter-ever-end.html}$

White Easter: Germany Faces Coldest March Since 1883

Complaining about the weather has reached epidemic proportions in northern Germany this "spring." And with good reason. With Easter just around the corner, meteorologists are telling us this could end up being the coldest March in Berlin and its surroundings since records began in the 1880s.

By Staff Writers, Spiegel, Mar 28, 2013 [H/t GWPF]

 $\underline{\text{http://www.spiegel.de/international/europe/cold-german-winter-refuses-to-warm-up-for-easter-a-891468.html}$

Supersized "XXL Winter...In Complete Contradiction To Climate Prognoses!" Reports Germany's No. 1 Daily!

By P. Gosselin, No Tricks Zone, Mar 26, 2013

http://notrickszone.com/2013/03/26/supersized-xxl-winter-in-complete-contradiction-to-climate-prognoses-reports-germanys-no-1-daily/

[SEPP Comment: Major German newspapers are finally getting the news.]

It's weather, not climate

By Matt Ridley, His Blog, Mar 29, 2013

http://www.rationaloptimist.com/blog/it's-weather,-not-climate.aspx

When it rains these days, does it pour?

By Staff Writers, St. Louis MO (SPX), Mar 25, 2013

http://www.terradaily.com/reports/When_it_rains_these_days_does_it_pour_999.html

[SEPP Comment: Only one site in 13 had and noticeable increase in storminess over 70 years. Unable to locate link to paper.]

Changing Climate

Scientists Warn of Ice Age,

By Ulli Kulke, Trans: Phillip Mueller, Die Welt, GWPF, Mar 26, 2013

http://www.thegwpf.org/scientists-warn-ice-age/

[SEPP Comment: Hope not.]

Little Ice Age Triggered Social and Political Crisis

By Dominic Sandbrook, Sunday Times, Mar 24, 2013 [On GWPF web site] http://www.thegwpf.org/ice-age-triggered-social-political-crisis/

Changing Cryosphere – Land / Sea Ice

Summer Melt Season Getting Longer On Antarctic Peninsula

By Staff Writer, Science Daily, Mar 27, 2013

http://www.sciencedaily.com/releases/2013/03/130327133707.htm

Link to paper: Trends in Antarctic Peninsula surface melting conditions from observations and regional climate modeling

By Barrand, et at, Journal of Geophysical Research, Mar 27, 2013

 $\frac{http://onlinelibrary.wiley.com/doi/10.1029/2012JF002559/abstract; jsessionid=16C1E7D7BB3448}{40B50F9776C137F443.d04t02}$

[SEPP Comment: The climate/weather on the peninsula do not reflect the climate/weather on the continent.]

Changing Earth

Fires After The Asteroid Impact Probably Caused The K-Pg Extinction

By Staff Writers, London, UK (SPX), Mar 28, 2013

http://www.spacedaily.com/reports/Fires_After_The_Asteroid_Impact_Probably_Caused_The_K_Pg_Extinction_999.html

Link to paper: K-Pg extinction: Reevaluation of the heat-fire hypothesis By Robertson, et al, Journal of Geophysical Research, Mar 26, 2013 http://onlinelibrary.wiley.com/doi/10.1002/jgrg.20018/abstract

Review of Recent Scientific Articles by NIPCC

For a full list of articles see www.NIPCCreport.org

How Does a Nondescript Shrimp Deal with Rising Temperatures?

Reference: Ravaux, J., Leger, N., Rabet, N., Morini, M., Zbinden, M., Thatje, S. and Shillito, B. 2012. Adaptation to thermally variable environments: capacity for acclimation of thermal limit and heat shock response in the shrimp Palaemonetes varians. *Journal of Comparative Physiology* B 182: 899-907.

http://www.nipccreport.org/articles/2013/mar/26mar2013a1.html

Vegetative Growth in China: It's Response to Climate Stressor

Reference: Xu, X., Piao, S., Wang, X., Chen, A., Ciais, P. and Myneni, R.B. 2012. Spatio-temporal patterns of the area experiencing negative vegetation growth anomalies in China over the last three decades. *Environmental Research Letters* 7: 10.1088/1748-9326/7/3/035701 http://www.nipccreport.org/articles/2013/mar/26mar2013a2.html

CMIP3 Models Simulating Temperature and Precipitation in China

Reference: Miao, C., Duan, Q., Yang, L. and Borthwick, A.G.L. 2012. On the applicability of temperature and precipitation data from CMIP3 for China. PLoS ONE 7: e44659.

http://www.nipccreport.org/articles/2013/mar/26mar2013a4.html

The Trend in Global Drought Over the Past Six Decades

Reference: Sheffield, J., Wood, E.F. and Roderick, M.L. 2012. Little change in global drought over the past 60 years. *Nature* 491: 435-437.

http://www.nipccreport.org/articles/2013/mar/27mar2013a3.html

Litigation Issues

Green groups want Supreme Court to revive power plant rule

By Ben Geman, The Hill, Mar 29, 2013

 $\underline{\text{http://thehill.com/blogs/e2-wire/e2-wire/291015-green-groups-want-supreme-court-to-revive-power-plant-rule}\\$

Cap-and-Trade and Carbon Taxes

Professor Bolt and the dunce Quiggin

By John Dawson, Quadrant, Mar 26, 2013

http://www.quadrant.org.au/blogs/doomed-planet/2013/03/professor-bolt-and-the-dunce-quiggin

IMF: End fossil fuel subsidies, tax carbon

By Zack Colman, The Hill, Mar 27, 2013

http://thehill.com/blogs/e2-wire/e2-wire/290657-imf-end-fossil-fuel-subsidies-tax-carbon

Link to the report: ENERGY SUBSIDY REFORM: LESSONS AND IMPLICATIONS

By Staff Writers, IMF, Jan 28, 2013

http://www.imf.org/external/np/pp/eng/2013/012813.pdf

[SEPP Comment: IMF goes political!]

Duke Energy's Rogers discusses impact of air regulations on energy investments

Transcript, EETV, Mar 25, 2013

http://www.eenews.net/tv/transcript/1653

[SEPP Comment: Regulated utilities do not object to carbon taxes because they can pass on the costs to the consumers.]

Subsidies and Mandates Forever

The biggest fight over renewable energy is now in the states

By Brad Plumer, Washington Post, Mar 15, 2013

 $\underline{http://www.washingtonpost.com/blogs/wonkblog/wp/2013/03/25/the-biggest-fights-over-renewable-energy-are-now-happening-in-the-states/}$

Report: Some federal wind energy programs 'duplicative'

By Zack Colman, The Hill, Mar 28, 2013

 $\frac{http://thehill.com/blogs/e2-wire/e2-wire/290869-report-some-federal-wind-energy-programs-duplicative}{}$

Natural gas considered for trucking fuel

By Staff Writers, Washington (UPI), Mar 22, 2013

http://www.energy-daily.com/reports/Natural gas considered for trucking fuel 999.html

[SEPP Comment: Why are Federal incentives needed? Already companies with major fleets are shifting to natural gas.]

Congressional Oversight Needed on Wind PTC Rulemaking

By Lisa Linowes, Master Resource, Mar 25, 2013

http://www.masterresource.org/2013/03/congress-irs-oversight-ptc/#more-24877

[SEPP Comment: More deals behind closed doors.]

EPA and other Regulators on the March

U.S. seeks land conservation to adapt to climate change

How to protect plants and animals from climate change? That's the goal behind a new climate adaptation strategy released by the Obama administration.

By Wendy Koch, USA Today, Mar 26, 2013

http://www.usatoday.com/story/news/nation/2013/03/26/climate-change-requires-us-land-conservation/2021931/

[SEPP Comment: Others may call it land seizure.]

Obama administration moves ahead with sweeping rules requiring cleaner gasoline

By Juliet Eilperin, Washington Post, Mar 28, 2013 [H/t Timothy Wise]

 $\frac{http://www.washingtonpost.com/politics/obama-administration-moves-ahead-with-sweeping-rules-requiring-cleaner-gasoline/2013/03/28/4ea2e01c-97cd-11e2-814b-063623d80a60_story.html$

New panel to advise EPA on 'fracking'

By Ben Goad and Megan R. Wilson, The Hill, Mar 25, 2013

http://thehill.com/blogs/regwatch/energyenvironment/290235-new-panel-to-advise-epa-on-fracking-

Energy Issues – Non-US

UK Shale Gas Green-Lighted With Tax Breaks

By Peter Glover, Energy Tribune, Mar 28, 2013

http://www.energytribune.com/75368/uk-shale-gas-green-lighted-with-tax-breaks

[SEPP Comment: To shore up government revenues, why not eliminate tax breaks on all forms of energy production.]

Time to turn TransCanada's Mainline into oil pipeline

By Claudia Cattaneo, Financial Post, Mar 13, 2013

http://business.financialpost.com/2013/03/27/time-to-turn-transcanadas-mainline-into-oil-pipeline/? lsa=cc4e-4220

[SEPP Comment: Intriguing idea. Is it physically possible?]

North American's Energy Boom (will Mexico join?)

By Maureen Crandall, Master Resource, Mar 27, 2013

http://www.masterresource.org/2013/03/north-american-boom-except-mexico/#more-24814

Energy Issues -- US

Wall Street Journal's Crony Capitalist Conference Turns Sour

By Myron Ebell, Global Warming.org, Mar 27, 2013

 $\underline{http://www.global warming.org/2013/03/27/wall-street-journals-crony-capitalist-conference-turns-sour/$

Study: Environmentally Friendly People With Sustainable Lifestyles Live in the South By Editor, TMT, Mar 28, 2013

 $\underline{http://thirdmillenniumtimes.com/study-environmentally-friendly-people-with-sustainable-lifestyles-live-in-the-south/}$

Link to paper: Air conditioning versus heating: climate control is more energy demanding in Minneapolis than in Miami

By Michael Sivak, Environmental Research Letters, Mar 27, 2013 http://iopscience.iop.org/1748-9326/8/1/014050/article

Oil Abundance and US Mideast Involvement

By Donn Dears, Power for USA, Mar 26, 2013

http://dddusmma.wordpress.com/2013/03/26/oil-abundance-and-us-mideast-involvement/ [SEPP Comment: Distinguishing between oil self-sufficiency and oil independence.]

Washington's Control of Energy

In farewell speech, Salazar calls reducing oil imports a top achievement

By Zack Colman, The Hill, Mar 25, 2013

http://thehill.com/blogs/e2-wire/e2-wire/290233-in-farewell-speech-salazar-calls-reducing-oil-imports-top-achievement

[SEPP Comment: Hypocrisy is his greatest achievement.]

Pipeline Economics: The dollars & cents of the energy export debate

By Dina O'Meara, Financial Post, Mar 25, 2013

http://business.financialpost.com/2013/03/26/pipeline-economics-the-dollars-cents-of-the-energy-export-debate/? lsa=cc4e-4220

Oil and Natural Gas – the Future or the Past?

Year in review: America's amazing energy revolution

By Mark Perry, AEIdeas, Mar 27, 2013 [H/t GWPF]

http://www.aei-ideas.org/2013/03/year-in-review-americas-amazing-energy-revolution/

Return of King Coal?

Upgrade coal power and cut 15% of emissions. Where is the Green applause?

By Jo Nova, Her Blog, Mar 27, 2013

http://joannenova.com.au/2013/03/upgrade-coal-power-and-cut-15-of-emissions-will-the-greens-consider-coal/#more-27582

Explanation of benefits of ultra super critical coal fired plants By Anton Lang. Just follow the Chinese leadership and experience in this Western technology

Nuclear Energy and Fears

Delay (Georgia Power reconfirms the perils of government-subsidized energy)

By Jim Clarkson, Master Resource, Mar 28, 2013

http://www.masterresource.org/2013/03/vogtle-nuclear-more-overruns/

[SEPP Comment: Georgia Power appears to be competing with the wind industry in output of "smoke and mirrors." The EPA is a good example why a government regulatory agency should not be responsible for the contracting and evaluation of science. Georgia Power may be a good reason why a regulated industry should not the responsible for the construction of power plants. The entire industry suffers when cost overruns become commonplace.]

Alternative, Green ("Clean") Solar and Wind

Wind Industry: Killing 200,000 birds per year is 'most benign'

By Steve Malloy, Junk Science, Mar 27, 2013

http://junkscience.com/2013/03/27/wind-industry-killing-200000-birds-per-year-is-most-benign/ ExxonMobil paid \$3.1 million for the deaths of 85 birds in 2009. On that scale, the wind industry should pay \$7.3 billion annually.

U.S. and China waste billions on solar panel race

By Tim Carney, Washington Examiner, Mar 24, 2013

http://washingtonexaminer.com/tim-carney-u.s.-and-china-waste-billions-on-solar-panel-race/article/2525180?utm_source=Washington%20Examiner:%20Opinion%20Digest%20-%2003/25/2013&utm_medium=email&utm_campaign=Washington%20Examiner:%20Opinion%20Digest

Using fluctuating wind power

By Staff Writers, Washington DC (SPX), Mar 27, 2013

http://www.winddaily.com/reports/Using_fluctuating_wind_power_999.html

[SEPP Comment: More added costs.]

Is The Sky The Limit For Wind Power?

By Christopher Joyce, NPR, Mar 27, 2013

http://www.npr.org/2013/03/27/174820893/is-the-sky-the-limit-for-wind-power

Bosch abandons solar energy

By Ludwig Burger and Hendrik Sackmann, International Business Times, Mar 22, 2013 [H/t GWPF] Mar 22, 2013

http://www.ibtimes.co.uk/articles/449399/20130322/bosch-abandons-solar-energy.htm

[SEPP Comment: The subsidies were not enough.]

Alternative, Green ("Clean") Vehicles

Batteries, the Achilles Heel

By Donn Dears, Power for USA, Mar 29, 2013

http://dddusmma.wordpress.com/2013/03/29/batteries-the-achilles-heal/

[SEPP Comment: Relearning that which was known 100 years ago.]

California Dreaming

Solterra Offers 100 Percent Solar Power Apartments

By Staff Writers, San Diego CA (SPX), Mar 27, 2013

http://www.solardaily.com/reports/Solterra EcoLuxury Apartments is First Market Rate 100

Percent Photovoltaic Community in USA 999.html

[SEPP Comment: The fine print in the lease contracts will be interesting.]

Health, Energy, and Climate

It's the cold, not global warming, that we should be worried about

No one seems upset that in modern Britain, old people are freezing to death as hidden taxes make fuel more expensive

By Fraser Nelson, Telegraph, UK, Mar 28, 2013 [H/t GWPF]

 $\underline{http://www.telegraph.co.uk/health/elderhealth/9959856/Its-the-cold-not-global-warming-that-we-should-be-worried-about.html}$

Speaking of the Children

By Donna Laframboise, NFC, Mar 26, 2013

http://nofrakkingconsensus.com/2013/03/26/speaking-of-the-children/

Oh Mann!

Opinion: Life as a Target

Attacks on my work aimed at undermining climate change science have turned me into a public figure. I have come to embrace that role.

By Michael E. Mann, The Scientist, Mar 27, 2013

http://www.the-scientist.com/?articles.view/articleNo/34853/title/Opinion--Life-as-a-Target/

[SEPP Comment: See link immediately below and Monckton's comments under Other News That May Be of Interest.]

Michael Mann pretends to be an involuntary 'public figure'; Posturing for libel suit filed against Steyn, CEI?

By Steven Malloy, Junkscience, Mar 27, 2013

http://junkscience.com/2013/03/27/michael-mann-pretends-to-be-an-involuntary-public-figure-posturing-for-libel-suit-filed-against-steyn-cei/

The descent of Mann's legal standing

By Rob Ricket, WUWT, Mar 27, 2013

http://wattsupwiththat.com/2013/03/27/the-descent-of-manns-legal-standing/

[SEPP Comment: Mann's foot-in-the-mouth disease.]

How We Know the 'Climate Crisis' Isn't Real

By Donna Laframboise, NFC, Mar 27, 2013

http://nofrakkingconsensus.com/2013/03/27/how-we-know-the-climate-crisis-isnt-real/

Other Scientific News

Thin films of nickel and iron oxides yield efficient solar water-splitting catalyst

By Staff Writers, Eugene, OR (SPX), Mar 22, 2013

http://www.solardaily.com/reports/Thin films of nickel and iron oxides yield efficient solar water splitting catalyst 999.html

Scientific Peer Review in Crisis

The case of the Danish Cohort

By Dariusz Leszczynski, The Scientist, Feb 25, 2013

http://www.the-scientist.com/?articles.view/articleNo/34518/title/Opinion--Scientific-Peer-Review-in-Crisis/

New discovery may allow scientists to make fuel from CO2 in the atmosphere

By James Hataway, Phys Org, Mar 26, 2013

http://phys.org/news/2013-03-discovery-scientists-fuel-co2-atmosphere.html

No link to paper

[SEPP Comment: What is meant by excess carbon dioxide? Duplicating what microbes have done for billions of years.]

Japan breaks China's stranglehold on rare metals with sea-mud bonanza

Japanese scientists have found vast reserves of rare earth metals on the Pacific seabed that can be mined cheaply, a discovery that may break the Chinese monopoly on a crucial raw material needed in hi-tech industries and advanced weapons systems.

B y Ambrose Evans-Pritchard, Telegraph, UK, Mar 24, 2013 [H/t GWPF]

http://www.telegraph.co.uk/finance/comment/ambroseevans_pritchard/9951299/Japan-breaks-Chinas-stranglehold-on-rare-metals-with-sea-mud-bonanza.html

[SEPP Comment: It remains to be demonstrated if the new finds are economically recoverable.]

CO2 could produce valuable chemical cheaply

By Staff Writers, Providence RI (SPX), Mar 25, 2013

http://www.spacemart.com/reports/CO2_could_produce_valuable_chemical_cheaply_999.html

Other News that May Be of Interest

Opinion: Life as a Target

By Christopher Monckton, WUWT, Mar 27, 2013

http://wattsupwiththat.com/2013/03/27/opinion-life-as-a-target/

Radi-Aid: Africa helps freezing children in Norway

Video posted by Jo Nova, Her Blog, Mar 30, 2013

http://joannenova.com.au/2013/03/radi-aid-africa-helps-freezing-children-in-norway-d/

[SEPP Comment: A bit of humor, artistically done.]

BELOW THE BOTTOM LINE:

Life After Oil and Gas

By Elisabeth Rosenthal, NYT, Mar 23, 2013

http://www.nytimes.com/2013/03/24/sunday-review/life-after-oil-and-

gas.html?nl=todaysheadlines&emc=edit th 20130324& r=0

How to survive a worse-than-usual allergy season

By Dr. Clifford Bassett, Fox News, Mar 18, 2013 [H/t Paul Redfern]

http://www.foxnews.com/health/2013/03/17/how-to-survive-worse-than-usual-allergy-season/

[SEPP Comment: Plant growth causes pollens, which result in allergies. Is the solution no plants?]

Climate Craziness of the Week – the new climate forcing

By Anthony Watts, WUWT, Mar 28, 2013

http://wattsupwiththat.com/2013/03/28/climate-craziness-of-the-week-the-new-climate-forcing/ [SEPP Comment: Review of a silly editorial in the New York Times.]

ARTICLES:

1. What Science Really Says about Religion

By Thomas P. Sheahen, American Thinker, Mar 26, 2013 http://www.americanthinker.com/2013/03/what_science_really_says_about_religion.html [SEPP Comment: Thomas Sheahen is on the SEPP Board of Directors.]

In the March 25 issue of *The Weekly Standard*, the lead article entitled "The Heretic" deals with philosopher Thomas Nagel, who has abandoned his long-held perspective on philosophy and religion. This has caused consternation and alarm among contemporary philosophy professors, the great majority of whom are strongly committed to an atheistic world-view. A recurring assertion by members of that profession is that they are being very scientific, because science disproves religion.

The question arises, "Where did the idea come from that science disproves religion?" It didn't come from within science; rather, it's the province of non-scientists making statements about science. To understand its origins, the foremost thing to note is that academic philosophers are by and large a group with limited understanding of science -- having passed their science requirement in college, most haven't gone deeper to investigate real science and discover the limits of science. Their familiar claim that science supports atheism result from their misunderstanding of science.

Here is my scientific perspective about what happened over the past century:

As the 19th century was coming to a close, classical physics was in very good shape (Newtonian mechanics plus Maxwell's equations for electromagnetism). There was a strong belief in determinism, the notion that absolutely everything behaved over time according to the exact laws of physics. Quantum Mechanics and the uncertainty principle were still decades in the future.

Accompanying that belief in determinism in nature, the philosophers wanted their system of thought to be deterministic too, with every valid philosophical statement following logically from a previous one, all the way back to some "mathematical proof" at the basic level. Bertrand Russell advocated that way of thinking. In the first quarter of the 20th century, the system of "logical positivism" gained dominance among philosophical schools.

Of course in all of this, theology and religion were summarily brushed aside by these exalted schools of philosophy, which felt there was no place for God in their perfect structure of reason alone.

This edifice started to crumble in the latter 1920s, when Quantum Mechanics introduced the uncertainty principle. That did away with the perfect determinism of classical physics by which the state of any system was supposed to necessarily follow from the previous condition.

Separately about that time, General Relativity and astronomical observations were showing that the universe was vastly bigger than anybody had ever imagined; and that there were other

galaxies, perhaps a lot of them. The age of the universe was revised to over a billion years, and subsequently pushed further back.

Shortly behind that series of upsets to official established thinking, in 1931 the logician Kurt Gödel stated a principle about the consistency of logical systems of thought. The essence of Gödel's theorem says that, in any system of thought that is consistent, there are going to be statements that in fact are true, and you can know they are true, but you cannot prove they are true. Otherwise, showed Gödel, the system will turn out to be inconsistent and contradictory with itself. It took several decades to sink in, but that was the end of logical positivism.

A huge assembly of 19th & 20th century deterministic philosophy (heavily atheistic, such as Freud's theories of how man invented religion) bit the dust because of Gödel's theorem. To read further on that important transition, I particularly recommend the book "Modern Physics and Ancient Faith" by Stephen M. Barr; his chapters 20-23 explain the significance of modern physics for philosophy.

By mid-20th century (1956), the philosopher Bernard Lonergan, S.J., wrote "Insight: an Inquiry into Human Understanding." Lonergan took as his cornerstone the plain reality of common sense, and added science to that (especially the principles of modern physics), constructing a logically consistent way of thinking and knowing. Human knowledge and thinking are more than just detached abstract discussion of things "out there." Lonergan underlined the difference between subjectivity and objectivity as he wrote: "I am not this typewriter." He went on to explore the importance of distinguishing self from other, where both are involved in the act of understanding. It is impossible to completely separate the objective from the subjective.

Unfortunately, a lot of people "didn't get the memo" about this realistic science-based approach. The most outspoken cluster of contemporary philosophers today (names such as Daniel Dennett and Ricahrd Dawkins come to mind) apparently haven't paid attention to Lonergan. Included in their strident atheistic position is the belief that we're all just a bunch of molecules, and hence the entire history of mankind must be just evolution by random chance. That position is incoherent, meaning that it conflicts with itself. Specifically, it uses the properties of the human mind to deny the existence of the human mind. Several books by John F. Haught explain this in more detail (viz., "Is Nature Enough?" "God and the New Atheists")

Consequently it came as a great shock to that group of philosophers that their colleague Thomas Nagel deserted them; when The Weekly Standard titled the article "The Heretic," that was to draw attention to the conflict within that community. Nagel essentially re-discovered the importance of common sense, the basis of Lonergan's philosophy.

Meanwhile, most physicists are completely oblivious to this entire discussion, focusing on hard reality instead of esoteric philosophical theories. They begin with common sense and go from there, just as Lonergan did. They know the limits of real science, and don't try to stretch it too far.

Science itself emphatically does not disprove religion; the notion that they're in conflict belongs to professors in the humanities who passed only a minimum science requirement decades ago. Among physicists, some would say that that science and religion don't overlap at all, but many others find a pathway of compatibility between the two.

There is a lively dialog going on, but the current philosophy establishment is missing it. Hence the dismay about Thomas Nagel's heresy.

2. Oil Spills Mount on Tracks

Minnesota Derailment Joins a Sharp Rise in Incidents in Years of Energy Boom By Tom Fowler, WSJ, Mar 27, 2013

http://online.wsj.com/article/SB10001424127887324685104578386662069983532.html

[SEPP Comment: Subsequent accounts placed the amount of the new spill to be a little over 300 barrels.]

A Canadian Pacific Railway Ltd. train carrying crude oil to Chicago derailed in western Minnesota on Wednesday and spilled up to 714 barrels, state officials said, the biggest recent accident in a growing number of railroad leaks of crude.

As energy companies have turned to trains to move crude from booming North American oil fields not adequately served by pipelines, such railroad-related incidents have risen sharply in the past few years, according to federal data analyzed by The Wall Street Journal.

From 2010 to 2012, 112 oil spills were reported from U.S. rail tanker cars, up from just 10 in the previous three years, according to the Pipeline and Hazardous Materials Safety Administration, a part of the Department of Transportation that tracks most releases of hazardous materials. But the amount of crude leaked in spills has declined since 2008, when a big accident in Oklahoma released more than 1,900 barrels. On August 22, 2008, a BNSF Railway Co. train carrying crude derailed northeast of Oklahoma City; five tanker cars leaked oil that caught fire, leading to an evacuation of nearby residents.

Questions about the safest way to transport crude are bubbling up as President Barack Obama considers whether to approve an expansion of the Keystone pipeline, which would move crude from the oil sands of Alberta, Canada, to the U.S. Gulf Coast. Pipelines carry much more crude than trains and have fewer leaks per mile, though failures can be serious. In 2010, for example, an Exxon Mobil Corp. pipeline spilled 1,500 barrels of oil into Montana's Yellowstone River in an hour. The possibility of oil spills from derailments is only beginning to be on the public's radar.

Most of the recent rail spills occurred at refineries or other places where the oil is transferred to storage tanks or pipelines, and involved just fractions of barrels that were noticed by inspectors who look for leaks. But at almost 300 barrels, the 2010-2012 total of crude spilled is almost eight times higher than the amount that leaked in 2002-2007. Energy companies typically foot the cleanup bills.

The railroad industry says the amount of oil spilled is tiny compared to the volume of oil transported by the U.S. rail system, which has surged from 9,500 carloads in 2008, the year widely seen as the beginning of the current oil boom, to 233,811 carloads in 2012, according to the Association of American Railroads.

"When you have more exposure to shipments, you would expect to see more incidents," said Peter French, the lead safety analyst for the association. "But the industry has gotten better over the years of managing these risks."

Derailments, which are typically the cause of the largest rail spills, are down significantly in recent decades as railroads have beefed up monitoring the condition of equipment and the integrity of rail lines, said Steve Forsberg, a spokesman for BNSF Railway, which has become the largest shipper of crude via rail. In addition to regularly inspecting cars for leaks, BNSF also employs its own hazardous-materials response teams, he said.

From 2008 to 2012, daily U.S. oil production has grown to an average of 6.5 million barrels, its highest level in more than 15 years, according to the Energy Information Administration. It is expected to grow to 7.3 million barrels a day this year and to 7.9 million barrels in 2014.

The surge comes thanks to a combination of technologies—horizontal drilling and hydraulic fracturing, or fracking, which involves pumping water, chemicals and sand down wells to break up rock formations. The increased production, much of which has occurred in remote areas of North Dakota and South Texas, has outpaced the ability of companies to build new pipelines or expand existing ones to move the oil to refineries.

Canada also is shipping crude via rail. Peters & Co., a Calgary consultancy, estimates that rail shipments of western Canadian crude have leapt 150% to some 150,000 barrels a day in the last eight months.

Historically, railways have spilled more oil on a gallons-per-mile basis than pipelines, according to several studies. One 2009 analysis of oil spills between 1980 and 2003 done for the American Petroleum Institute by Environmental Research Consulting found 80 out of every 1 billion gallons transported via rail spilled, compared to 38 out of every 1 billion gallons transported via pipeline.

States are beginning to ask what they can do to be better prepared for rail spills of crude. In Maine, where the volume of crude moving by rail has soared from 14,300 barrels in January 2012 to 1.1 million barrels in December, state officials dealt with their first rail-related crude spill earlier this month. Only three gallons of oil leaked after 13 crude-filled rail tanker cars tipped over, but the spill was within yards of the Penobscot River, known for its salmon and bass fishing.

"The accident by the Penobscot was a real attention-getter," said Peter Blanchard, director of the Division of Response for Maine's Department of Environmental Protection.

State hazardous materials teams will begin mapping inland waterways crossed by railways and start training for spills in rivers and lakes, Mr. Blanchard said. The state also begin staging response and containment equipment near sensitive areas and may may ask railways to carry spill equipment on the trains themselves so response can begin more quickly.

Rail Ruptures As energy companies increasingly ship crude oil by rail, incidents involving oil spills are on the rise. Most of the recent leaks have been relatively small, according to federal data through 2012.										34	69
NUMBER OF SPILLS	1	1	1	3	1	1	8	1	9		
AMOUNT SPILLED, in barrels	Less than one	0	Less than one	36	2	Less than one	1,931	Less than one	117	94	89
AMOUNT TRANSPOR in millions of barrels	ΓΕD, 8.6 M	8.8M	7.1M	4.3M	3.4M	4.2M	6.8M	7.7M	21.1M	47M	167M
YEAR	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Note: Each barrel holds 42 gallons. "Number of barrels is based on carload data multiplied by 30,000 Sources: Department of Transportation Pipeline and Hazardous Materials Safety Administration; Association of American Railroads The Wall Street Journal											