Featured News

THE FISH FROM HELL
BY JAMES NEDROW

CLIMATE CHAOS IS HERE
BY S. TOM BOND AND DUANE NICHOLS

WEST FORK RIVER WATER TRAIL
BY JEFF REICHEL

GUARDIANS NEWSLETTER

The Fish from Hell

By Jim Nedrow

The snakehead fish (*Channa argus*) is coming!

The northern snakehead fish is called “the fish from hell”, a name it has earned the old fashioned way. This freshwater fish was originally found in Asia, mainly in the eastern or Chinese region. Fossils records date it back to 50,000 years ago.

This invasive carnivorous fiend first invaded Eastern Europe. Where people carelessly, or by purpose released these fish into the local waters. The Snakehead then spread to the African continent. The first reported sighting of the northern snakehead in the United States was in Crofton, MD in July 2002. It was caught in a farm pond. The Pawtuxet River is only 75 feet away from this pond.

The Snakehead is a voracious eater and will out-eat, out-grow, and eliminate most domestic fishes. It has no known enemies except for humans. It grows up to 40 inches long and has a primitive lung giving it the ability to stay out of the water up to four hours. Snakeheads can survive in stagnant water with very low oxygen content. The young snakeheads, if given a moist surrounding, will wriggle overland up to a quarter of a mile and thereby spread themselves to other streams and ponds. The snakehead spawns up to five times a year, with an average 15,000 eggs, which hatch in one to two days. It is suspected that snakeheads have been intentionally released by people who no longer want them in their aquariums due to their fast growth and the

expense of feeding. A large snakehead can require up to $10.00 of goldfish per day.

Snakeheads are very similar to our native bowfin fish. You can tell the difference by noting that the snakeheads have large dorsal fins, top and bottom, and the lower jaw is longer than the top. Bowfins have only a long dorsal on top and their lower jaw is shorter than the top. The bowfins (*Amia calva*) are also known as mudfish.

The State of Maryland now has a bounty on the snakeheads. By sending in a picture of a snakehead, you will receive a gift card. They suggest any snakeheads caught to be killed and not released back into the water. Thirteen states have outlawed ownership of snakeheads. Snakeheads are now known to be established in the Potomac River. It's only a matter of time till they will eventually find their way to the Mississippi basin waters.

There are no natural predators to keep these fish under control. The only way to control and eliminate these predaceous fish is by draining ponds and/or by poisoning them with the pesticide Rotenone. There is just no known method to get rid of them in streams, rivers, or large bodies of water.

So beware, the snakeheads are coming!

Climate Chaos is Here, There is no Time for a Bridge

By S. Tom Bond and Duane Nichols

The gas industry itself, in 1981, came up with the clever pitch that natural gas was a "bridge" to a clean energy future. We've been on it 33 years. Long bridge! And the far bank ain't nowhere in view. Natural gas people don't say what that far bank is, or where it is.

In 1988–the year that the climatologist James Hansen warned Congress, in historic testimony, about the urgent problem of global warming–the American Gas Association began to explicitly frame its product as a response to the "greenhouse effect." It wasted no time, in other words, selling itself as the solution to a global crisis that it had helped create.

The principal methods of advancing its interests have been (1) influence peddling to political and business elites and (2) sound bites for those who take their reality predigested from TV and newspapers. Things like "Natural Gas. It's hot stuff," "Clean, Reliable, Abundant and Affordable" and "Nature Loves Natural Gas." We've all seen the executive type female dancing around under a blue flame extolling the virtues of fracking in a lengthy advertisements on the evening news. And we've seen them selling to any captive audience from kindergarten to 4-H clubs to high school students to farmers to civic and business clubs.

It might interest you to know this started as early as 1921. There is an article called “Seventy Children win prizes for Natural Gas Essays” in Natural Gas (billed as the Official Publication of the Natural Gas association of America). “In this contest the children attending public and parochial schools of the Pittsburgh district were offered $1000 in prizes for the best slogans, posters or essays on the controversial subject of natural gas conservation,” it says.

Gas companies even go to colleges! In The Triangle, The Independent Student Newspaper of Drexel University, for November 30, 2012, there is an article called “Class Promotes Use of Natural Gas.” The 11 students were given a budget of $3,000.

They were competing with 15 other colleges and universities from around the country to do the best work for the American Natural Gas Alliance. ANGA is an advocacy group that, according to its website, “promote[s] the economic, environmental and national security benefits of greater use of clean, abundant, domestic natural gas.” [You may have heard their “Think About It” advertising.]

Furthermore, “The class generally wanted to increase awareness of the benefits of natural gas, and they did so by organizing and sponsoring events throughout the term in order to reach as many students as possible with ANGA’s message,” according to The Triangle.

“Start ‘em out early and bring ‘em up right” seems to be the motto of the petroleum industry. Some of this stuff gets scary. In California, Chevron even provides cleaned up frack water for irrigation of nut trees, to alleviate the drought. Then they use the nut hulls to clean up the frack water! Wonder if they employ a chemist?

For oodles and oodles of detail on the reality of gas fracking, see Andrew Nikiforuk’s article in the Alberta, Canada, Tyee titled “Shale Gas Plagued By Unusual Methane Leaks.”
Do you suppose fracked gas is going to be a bridge that is never finished, because, in the fracker’s minds, there really is no other side?

West Fork River Water Trail

By Jeff Reichel

The vision of the West Fork River Water Trail Committee is to establish a safe recreational water trail for non-motorized boaters on the West Fork River. The water trail committee is sponsored by the members of the Guardians of the West Fork Watershed.

The group’s focus is the lower 75-mile section of river beginning at the base of the Stonewall Jackson reservoir dam near Weston, WV and running to the confluence of the Monongahela River in Fairmont, WV. This segment is family friendly and suitable for beginners - but its beauty and other qualities will make it very popular for people with all levels of experience and varied interests.

What is unique about the West Fork River Water Trail?

This lower 70-mile segment of river is unique from nearly all others in that it contains several sections made up of long, deep, very slow moving pools suitable for out and back paddling going in either direction. It also includes many sections of shallow riffles where wading is possible. Seven low-head dams create the deep pools, and the paddler must be aware to stay safely away from the dams. The dams also provide opportunities for the construction of creative and fun structures that can be used to navigate around them.

Between Weston and Fairmont, the river runs through small towns, farmlands, deep forest, and rocky gorges. These characteristics make it suitable for paddling trips of any length and all experience levels.

The West Fork River is home to the widest assortment of aquatic wildlife, including monster fish such as the muskie, giant turtles, countless waterfowl, and even the elusive river otter. Its banks sustain a population of deer, fox, coyote, raccoon, squirrels, and many others. A multitude of wild flowers and blooming trees cover the fields and shoreline all along the entire length of the river. This water trail will bring the user into contact with the whole ecology of the trail corridor, and in the process, the user learns and grows physically, mentally and emotionally; while the community grows in spirit, economic health and vitality.

Water trails continue as an important traditional mode of travel that has been practiced for thousands of years, first by Native Americans, then by the explorers and traders who lived along these banks, and now by people who wish to discover the joy and adventure of paddling.

Why a water trail in Lewis, Harrison, and Marion counties?

The West Fork River joins the Tygart River in Fairmont, WV to form the Monongahela River. The Mon River flows 129 miles north to Pittsburgh, PA, and is a designated Bi-State Water Trail in both WV and PA. From there, the Mon River joins the Allegheny River at “The Point” in Pittsburgh, and forms the Ohio River (a Pennsylvania Water Trail), flowing to the Mississippi River and the Gulf of Mexico in New Orleans, Louisiana. Paddlers are able to sojourn along this entire route, going around or through numerous dams or locks & dams as part of this eco-adventure.

In 2012, President Obama announced America’s Great Outdoors Initiative, which includes a focus on restoring the nation’s rivers and expanding access to outdoor recreational activities in and around rivers.

Also in 2012, Secretary of the Interior, Ken Salazar, established the National Water Trails System as a class of National Recreation Trails under the National Trails System Act of 1968. The designation acknowledges not only the recreation values of the trails but also the excellent stewardship of the state, local communities and other partners who maintain their natural beauty and integrity.

The State of West Virginia has a separate designation process for water trails, which opens up Department of Transportation/Division of Highways funding opportunities for public access improvement projects on designated water trails.

On July 12th, the first application in the process for official designation as a West Virginia water trail was submitted to the State. In about six weeks, we should receive approval to proceed with the process, at which time presentations will be made before the County Commissions in Harrison, Lewis, and Marion counties as well as opening the project to public comment.

What's next and how can you help?

Once we receive the approval to complete the trail designation process, help will be needed to identify, clear, and improve the access points along the river. Continued assistance will be needed from any individuals or groups that lend a hand.

If successful, the trail will be completed in 2015.

This will project will be a total community effort and we see great benefit, both economic and recreational, building in the three counties that include the 75 mile length of the West Fork River.

Currently, a number of organizations are assisting in the effort to establish the water trail. They include the US National Park Service, WV DNR, WV DEP, and the Millford Wheel Historical Society. The plan is to also include the Clarksburg Water Board, City of Weston, City of Clarksburg, and the counties of Harrison, Lewis, and Marion, among others.

To offer your assistance, please contact the Guardians of the West Fork Watershed or Jeff Reichel at jeffreichel@yahoo.com.

Check out our website!
www.guardiansofthewestfork.com

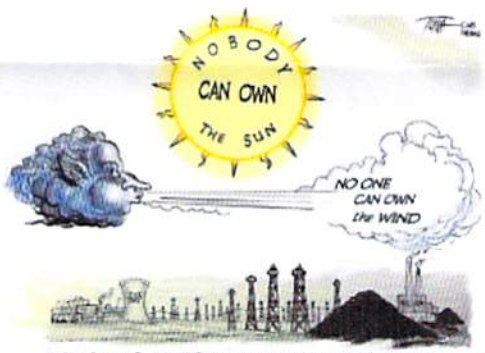
Someone has finally managed to photograph the Pot at the end of the rainbow.

And wouldn't you know it It's in Ireland West Virginia...

If you would like to join our organization and receive a hard copy of our quarterly newsletter, send $5 per calendar year to John Eleyette at 830 Benoni Avenue Fairmont, WV 26554. To receive a free electronic copy of our newsletter, email JMELEYETTE@rocketmail.com.

Progress (or Not) with Energy and the Environment (Part II)

Posted: 10 Apr 2014 12:34 PM PDT



Why Solar & Wind Power Aren't deemed 'Feasible'

II What are the alternatives and what are their characteristics. Part 2 of three parts.

By S. Tom Bond, Retired Chemistry Professor & Resident Farmer, Lewis County, WV

Waste products are a huge, largely unrecognized, problem with burning hydrocarbons. Originally it was seen that coal could be shipped to the cities and electricity generated there more efficiently – trains hauling coal to the city would take less energy than is lost in long distance transmission lines.

But long ago the decision was made to leave the dirt of conversion of coal to electricity in the rural areas where coal is mined, rather than bringing it to the cities where it is used. Removal of dust from the gases going up the smokestack and later removal of some of the gases, was a huge success story at one time.

All hydrocarbons are the remains of plants that lived long ago. With solid and liquid hydrocarbons (coal and oil) these remains contain not only hydrogen and carbon, but other elements in the plants, primarily sulfur, phosphorus, nitrogen, which leave as gases, as well as silica sand and metals. In coal these last items become fly ash, which must be stored (forever) or used in a manufacturing process.

The principal advantage of oil in use is its liquid nature, which makes it easy to handle, and the absence of solid waste, like fly ash. However the sulfur, phosphorus and nitrogen are found in oil and go into the exhaust gases.

The huge advantage of natural gas is that atoms heavier than carbon are relatively rare. Pure methane, CH_4 is a very light weight molecule, whereas phosphorus, sulfur and nitrogen compounds are much heavier; and compounds containing them sort out easily. So no sulfur, phosphorus or nitrogen oxides result from burning gas, but nitrogen oxides can result from any flame burning in air (which is 78% nitrogen) at high temperature. This absence of contaminants is one of the principal appeals of natural gas.

Clearly, coal, oil and natural gas are hydrocarbons. In gases form they are greenhouse gases and when burned become carbon dioxide and other greenhouse gases. A real problem for climate change.

Present day alternatives. Fission reactors. These are based on heavy elements like uranium and thorium. The fuel is abundant, with the supply adequate for 30,000 **years at the present rate** with the use of "breeder reactors." High technology is involved, and frankly the public is "psyched-out," as the expression goes, about radioactivity. That is no wonder, since their education about radioactivity is not derived from objective formal education, but largely from the media, on behalf of the hydrocarbon industry, which has fought nuclear tooth-and-nail because it is competition.

There is a waste disposal problem with fission, but it is concentrated, not dispersed over the landscape as is the waste from hydrocarbon use, and it can be kept together. The actual tonnage is small for the amount of energy obtained. However, the radiation is very long lasting, although it slowly decays over time. A depository must be found that is stable over a geological time span.

Fission is considered unsafe for cities, a disadvantage for maximum usefulness (see below). It is considered suitable for some very large navy ships and for submarines, in part because so little fuel is needed that resupply takes place infrequently. Other navy ships require huge amounts of fuel, and special tankers are designed to go with them to the areas where they might need to fight. Nuclear ships do not have that disadvantage.

Nuclear power plants sometimes must be slowed when the water for cooling becomes too hot – **not good for a warming climate world.** After the Japanese experience, it is obvious they should not be placed on the ocean shore, even disregarding increasing sea levels.

A second alternative is using wind power. These generators are becoming familiar on mountain ridges and in the windy plains. Today's wind turbines can approach 80% of the **theoretical limits of the power** that can be extracted from wind, and provide perhaps 3 megawatts of power.

Blades must be large, and the further up into the atmosphere the blades reach, the more power is available. Little windmills are less efficient. Very careful attention must be paid to aerodynamic design, and the generators are designed for long use and minimum maintenance. Nevertheless **failure** can be spectacular.

Since wind power occurs in remote places, extensive new connections are needed between populated areas and the places where it can be obtained. There are complaints about birds and bats which are attracted to them and killed. The output varies with wind speed, so other sources, or power storage, is needed for the low output times. The input energy cost is zero, which makes them attractive.

Another viable alternative is solar power. It also has variable output, according to time of day and clouds, so use for sole source of electricity requires batteries or some other storage. Solar is already the source of choice for small, remote needs, where an ordinary lead-acid (car) battery is sufficient for night or cloudy times. Things such as road signs, metering natural gas in transmission lines, electrical fences, and such are already best uses all over the world.

This article has a list of **leading nations using of solar power**, and also a map showing where solar energy is available. Solar power is a great hit in places with no distribution lines. In parts of Africa, it is important far beyond the size of the installed base. It provides recharges for cell phones, a little light at night, and radios. Also electric fences to protect villagers from wild animals. India is making great progress with solar in rural areas. In many places it is as cheap as conventional power now.

Energy radiated from the sun spans a considerable spectrum. The "trick" in engineering photocells is to get them to take up as much of the spectrum as possible. This is the basis of a lot of scientific work now, finding one or a combination of photocell materials which can harvest the maximum energy available. However room remains for improvement, the efficiency is now approaching 50%. The opportunity (and reward) for improvement is great. Once you have it installed, it is very cheap.

A great advantages of wind and solar are they do not take water for installation, and they do not use or produce contaminating chemicals on a huge scale. Capital cost is the entire cost, and negligible input energy cost.

Storage for night use and low input times is a problem with both wind and solar. Storage for large amounts of energy is almost non-existent. This is not a very large problem as long as sufficient other sources of energy are available, because they can be scaled up and down as wind and solar decrease and increase.

Pumped storage is the use of energy to pump water uphill to a lake, and then using the water to generate hydropower in "off hours." It is very expensive and low efficiency. Several other kinds of storage have been explored: **flywheels**, compressed air, fuel cells, and **other systems.**

One of the greatest possibilities for the energy future is conservation. Insulation both for heating and cooling, more efficient light sources, more efficient transportation (both for personal use and for shipping), heat pumps, design improvements in computers (which use about 1/10 as much energy when turned off, but plugged in), more efficient irrigation, and building design.

Up to 75% of energy use in the United States would be saved with energy efficiency measures which would cost less than the energy saved, according to the Rocky Mountain Institute.

One of the most important factors in future use is to have power generation in cities where it is used. Remote power stations have a lot of waste energy which must be disposed of in the air or a river. Typically in the neighborhood of **two-thirds of the energy in the coal** is lost, with a similar thermal loss of nuclear plants. It could be used for space heating in houses and businesses and for some factory uses instead of being just dumped uselessly into the environment if the generating station was near the population using it.

Other energy economies are high speed trains, smart grids for electrical distribution, stopping lateral expansion of cities, more public transportation, and so on.