Briefly Noted

Regulatory Monsters

BY RICHARD A. WILLIAMS AND SHERZOD ABDUKADIROV
Mercatus Center at George Mason University

On *River Monsters*, a popular TV show on the Animal Planet channel, host Jeremy Wade travels the world in search of the largest and most dangerous river creatures. In India, he finds a fish that makes his top-10 list: an enormous catfish. Easily the size of a grown man, the monster is rumored to include humans among its prey.

But are catfish so dangerous once they're caught? Congress thinks so. It has instructed the Food Safety and Inspection Services (FSIS) of the Department of Agriculture to continuously inspect catfish and catfish products even though two existing federal programs by the Food and Drug Administration and the Department of Commerce already provide seafood-safety inspection. Would the new FSIS inspections make catfish consumption any safer?

Why regulate? | A provision of the Food, Conservation, and Energy Act of 2008 (better known as the farm bill) makes catfish subject to continuous inspection under the Federal Meat Inspection Act (FMIA). But the actual need for regulatory action appears to be zero, for two reasons: First, the risk of salmonella contamination from catfish is very close to zero. Second, all catfish, both domestic and imported, are already regulated under the FDA's seafood Hazard Analysis Critical Control Point (HACCP) program. In addition, most domestic fish processors (18 out of 23) are under additional intense inspection from the National Marine Fisheries Service (NMFS). Nonetheless, the FSIS has proposed new rules for the processing of catfish.

How risky is food poisoning from catfish? There has been only one *possible* outbreak of human salmonellosis associated with catfish in the past 20 years. That outbreak occurred in 1991, with 10 cases of Salmonella Hadar — a variety of salmonella primarily associated with turkey — at a restaurant in New Jersey. Catfish has also not been identified in case-control studies of salmonellosis. Six other outbreaks where the linkage to catfish appears even weaker than the "possible" outbreak in New Jersey are also

discussed in the literature. So, from weak evidence of 10 cases of salmonellosis 20 years ago, the FSIS estimates that there are 2,400 cases each year associated with catfish.

Clearly this indicts the FDA, who already regulates seafood, having instituted the HACCP system in the mid-1990s. For all types of seafood, the FDA estimates that, of the roughly 200 cases of (non-typhoidal) salmonella infections each year, between 100 and 150 cases would be averted by their regulation. (Notice that the FSIS estimate of the number of salmonella cases from catfish each year is 10 times the number of cases that the FDA estimates for *all fish*.)

For their improbable extrapolation, the FSIS risk assessment makes a number of assumptions about risk parameters. First, the agency has limited data on the number of contaminated servings of fish per year (one short study found an improbable contamination rate of 2.3 percent). Second, the cooking time and temperature parameters that the FSIS recommends for fish are based on "expert opinion" and online cooking recommendations. The entire extrapolation depends on estimates of the proportion of contaminated fish where the salmonella is not killed by cooking. As the FSIS notes, the cooking temperature parameters are the most important parameter in the risk assessment. Yet, the agency does not explain why the cooking temperatures it uses in its analysis are apparently not close to the minimum needed to kill salmonella.

Furthermore, the FSIS has no data on the concentration and distribution of salmonella in catfish. Inexplicably, the agency has assumed that the distribution of salmonella in catfish is exactly

ILLUSTRATIONS BY KEVIN TUMA

RICHARD A. WILLIAMS is director for policy research at the Mercatus Center at George Mason University.

SHERZOD ABDUKADIROV is a research associate in the Regulatory Studies Program at Mercatus.

the same as found in poultry (actually, slightly less, by way of a "default" assumption). Similarly, the FSIS's assumption about the increase in concentration of salmonella in a serving of catfish that occurs during storage and preparation was determined from experience with chicken, but the agency gives no justification for the extrapolation from chicken data to catfish. Although there is no reason given for that assumed relationship, the FSIS defends it by saying that it may be more plausible than comparing enumeration to hogs or cattle. This seems to be a matter of the FSIS knowing something about the animals it currently regulates and knowing almost nothing about the catfish it intends to regulate.

In fact, a more likely vehicle for contamination of catfish would not be industry processing but rather retail or consumer mishandling, such as through cross-contamination. The FSIS acknowledges that this is a possibility in catfish-filleting operations at the manufacturing level, but not in the retail or consumer setting. Retail handling is not covered in the FSIS's proposed regulatory regime.

To summarize, the evidence for salmonella contamination from catfish is weak and two agencies (the FDA and the Department of Commerce) already regulate seafood, including catfish. Thus, FSIS regulation seems unlikely to result in any additional public health benefits.

Why regulate if public health isn't improved? | The FSIS considers two options for the scope of the rule, based on the definition of catfish. If the definition includes imported catfish, the FSIS claims that 29 percent more illnesses would be prevented because it assumes that there is no difference in the rates of contaminated servings and the effectiveness of their inspections between domestic and imported catfish. Because the inclusion of imported fish expands the benefits of the proposed rule and because the costs of the rule would fall primarily on imported fish, the actual purpose of the FSIS regulation would seem to be protection of domestic competitors, not protection of public health. Additional evidence comes from the FSIS's report that sales of domestic catfish have dropped by around 13 percent since 2007 while imports have increased by about the same amount.

Under the provisions of the proposed catfish rule, the FSIS is proposing mandatory Sanitation Standard Operating Procedures (SSOPs) and HACCP plans. The SSOPs are plans to ensure that catfish processing plants are sufficiently sanitary for processing. HACCP is a system of processing controls to ensure that processes are monitored and corrected when there is a chance that hazards may enter the system. Given that these requirements already exist under the FDA's HACCP plan, what gains come from having FSIS regulation?

In fact, the Regulatory Impact Analysis (RIA) does not show any significant difference between the FDA plan and the FSIS plan. The FSIS assumes in its RIA that "many catfish and catfish products processing establishments would need to re-write their existing HACCP plans to be compliant with FSIS HACCP plans." Given that all other seafood, juice, and — eventually — all other products except meat, poultry, and egg products are likely to be subject to the FDA's oversight of its mandated HACCP plans under the Food Safety Modernization Act, the FSIS should explain the deficiency in HACCP plans now required by the FDA. In particular, given that the FDA oversees seafood products that are actually risky, e.g., shellfish from the Gulf of Mexico, the FDA could undoubtedly benefit from FSIS insights — if there are any — into the best manner in which to prepare a HACCP plan.

Will it work? | The FSIS admits that "substantial uncertainty remains about the level of effectiveness that can be achieved by FSIS inspection." In fact, there is no discussion of how such an inspection might actually reduce the amount of salmonella in catfish other than to note, "The role of daily FSIS inspection of catfish processing establishments in reducing potential contamination rates is expected to be important." The mechanism for achieving such importance appears to be that FSIS inspectors will observe what is happening and will periodically test products — and this will somehow prevent 10 to 90 percent of all cases of catfish salmonella poisoning.

In the absence of a mechanism and data that describe precisely what activities would take place during FSIS inspections that would lead to reductions in pathogens — in particular related to fish, not birds — a plausible assumption is that FSIS inspection could be totally ineffective. There is no basis for the assertion that the FSIS model will prevent a "plausible" 10 to 90 percent of all cases of salmonellosis from catfish, which would mean preventing between 230 and 2,077 cases per year.

Who pays? | From the FSIS RIA, most of the cost of this regulation will fall on U.S. trading partners who must initiate an "equivalence" program to be eligible for trade with the United States. For foreign firms, the impact of having to be in compliance with "all of the inspection, building construction standards, and other provisions of the FMIA and regulations" is likely to be prohibitive compared to U.S. domestic industries. Those firms that remain in business exporting to the United States will pass much of the cost on to domestic consumers. The World Trade Organization could easily classify the regulation as a non-tariff trade barrier.

The RIA, however, focuses on domestic costs. It makes no attempt to estimate the costs to foreign producers. But since the costs appear to fall heavily on foreign producers, this seems like a serious oversight for the RIA. There certainly appears to be no basis for the RIA's assumption that "the flow of imported catfish would not change as a result of this rulemaking." If the regulation does have the effect of excluding many foreign producers, it may also increase prices for U.S. consumers.

Net benefits | The FSIS may also have understated its own costs in carrying out the inspection program. In particular, there are likely to be large administrative costs in overseeing each firm's conversion to FSIS-approved practices as well as ongoing costs dealing with USDA in-plant inspectors. This involves senior management time, and it should be calculated. The FSIS has also not provided cost estimates for FSIS testing — beyond the estimated $12 million that taxpayers would pay, presumably every year. Industry testing costs may very possibly be large. It is incumbent on the FSIS to estimate these costs and — rather than simply soliciting comments on the testing frequency and costs — provide them for comment.

Neither an option to define catfish differently so as to reduce these costs nor having a once-daily inspection based on HACCP is likely to generate net benefits. There simply are not enough cases of salmonellosis to prevent and the case has not been made for the new FSIS regime providing protection from any other hazards. Cooking catfish properly may account almost exclusively for the non-existent risk, but whatever risks stem from inadequate cooking have already been addressed by the other food inspection programs. This means that any costs that are incurred by the proposed program represent a social loss. The additional costs will be paid by consumers and taxpayers.

Summary | The FSIS has not established a case for additional regulation. On the contrary, the risk assessment and benefit-cost analysis demonstrate that there is no need for additional regulation of catfish. Any and all costs that are likely to be incurred by both foreign and domestic producers and passed on to U.S. consumers are not likely to be justified by the benefits. Furthermore, it is unlikely that the FSIS could ever meet its threshold for the number of cases of salmonella that need to be prevented for the regulation to pay for itself.

The FSIS should revise both analyses to reflect actual risk and estimate the total costs for both domestic and foreign producers, and put that information out for comments. Revised analyses are likely to show that no option under the new provisions of the farm bill is likely to be cost-beneficial. R

READINGS

- "A New Role for the FDA in Food Safety," by Richard A. Williams. Mercatus Center at George Mason University working paper, 2010.

Summer 2011: Hot Air in Washington

BY PATRICK J. MICHAELS *Cato Institute*

Summers in Washington, D.C. are usually awful. Before the invention of air conditioning, everyone who could, including Congress, headed for the exits in early June and didn't return until the end of August. Unfortunately, technological progress has unforeseen consequences, and thanks to our ability to cool our buildings, D.C. now legislates all summer long.

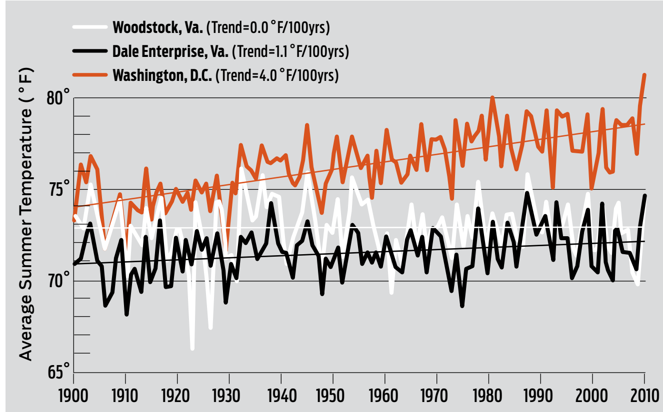
Washington's natural summer climate is abysmal. Downtown and the federal government sit a mere few feet above sea level,

Patrick J. Michaels is senior fellow in environmental studies at the Cato Institute.

FIGURE 1

Summer Average Temperature

June–August, 1897–2010

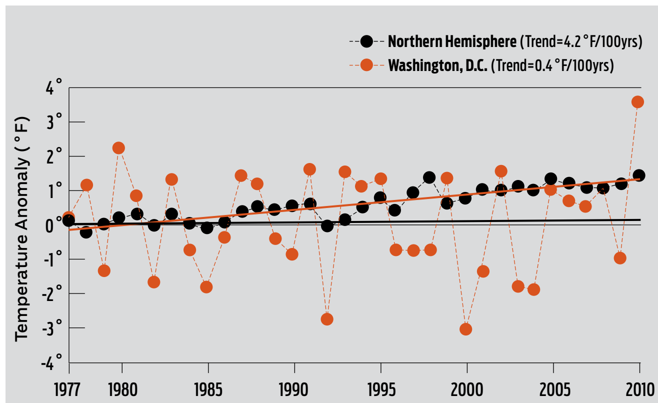


Source: Southeast Regional Climate Center

FIGURE 2

Summer Temperature Anomalies (°F)

1977–2010

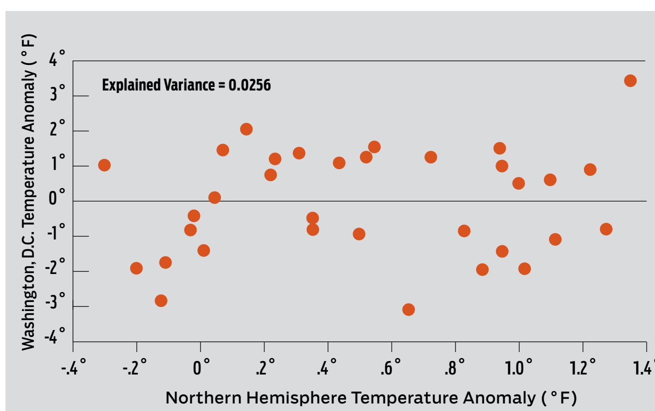


Source: UK Hadley Center, National Weather Service

FIGURE 3

Summer Temperature Anomalies (°F)

Northern Hemisphere vs. Washington, D.C., 1977–2010



Source: UK Hadley Center, National Weather Service between two major shallow estuaries (the Chesapeake Bay and the Potomac River) that heat up early in the summer. Those water bodies drive dewpoint temperatures — a very good measure of the total amount of moisture in the air — into the mid-70s. (The dewpoint is the temperature at which moisture will condense if a parcel of air is cooled. The greater the moisture, the higher the dewpoint.) This is where it should be called the *don't* point, meaning don't jog, don't play softball, and don't do anything without a jug of Gatorade nearby.

But D.C. also has one of the worst "urban heat island" effects in the nation. The bricks, buildings, and pavement absorb more solar radiation than the long-gone natural vegetation, and their uneven surface impedes the flow of ventilating winds at night. Non-air-conditioned brownstones here would do Hansel and Gretel proud. But most homes, and all commercial buildings, are air conditioned, and the heat that is removed inside goes somewhere — i.e. outside, adding more fuel to the fire.

July 2011 was the hottest month ever recorded here. It should be no surprise that our greener friends, like the London *Guardian,* immediately blamed global warming. One of my local friends, who works for I-can't-tell-you-who, grumbled that "maybe now the politicians will finally listen."

Climate-related pronouncements like these are really hypotheses posing as truth, and it is easy to check whether this warming is a result of the heat island or something forced by dreaded climate change. One can do this by looking at nearby weather stations whose environs have changed little over time, both in terms of the surrounding ground cover and urbanization. In Figure 1 we compare Washington's temperature to Woodstock and Dale Enterprise, Va. Woodstock is a small town in the middle of the Shenandoah Valley that has been surrounded by cornstalks since the 19th century. Dale Enterprise is in rolling country that only recently has become a bit suburban as nearby Harrisonburg, Va. expanded. Both are considered very reliable stations by climatologists.

Another interesting comparison is to see how temperature departures from normal in Washington correlate with those in the Northern Hemisphere during the era of global warming putatively from greenhouse gas emissions.

There have been two separate warming periods since 1900. The first was from approximately 1910 through 1945. It is hard to blame that warming on human carbon dioxide emissions because the vast majority of global emissions occurred after World War II. The second warming period began in 1976–1977 with something known as "The Great Pacific Climate Shift" and ended with a gigantic El Nino in 1997–1998. Los Ninos release the tropical Pacific Ocean's heat to the atmosphere and create temporary spikes in the temperature history. The 1997–1998 one was so great that global temperatures have yet to beat the 1998 record, something that may or may not mean anything about prospective warming in this century. Figure 2 shows a comparison between Washington, D.C. and Northern Hemisphere temperatures since 1977.

Figure 3 offers a scatterplot of D.C. vs. Northern Hemisphere temperatures, and manfully shoots the last of the big fish in this very small barrel. In the figure, "explained variance" is the amount of statistical correspondence between the Northern Hemisphere's departure from normal and Washington's. The explained variance of 2.5 percent is statistically indistinguishable from zero for a sample of this many years.

The bottom line is there is just no relationship between Washington's misery and global warming. Of course, if and when Washington does get with the global temperature program, D.C.'s summer temperatures will go from their current hell to even hotter. R

When Are Trading Programs Really Market-Like?

By Leonard Shabman, *Resources for the Future*
and Kurt Stephenson, *Virginia Tech*

With increasing frequency, observers and practitioners of water quality management policy are proposing water quality trading programs. For example, in a recent *Regulation* article, Robert Earle and Virginia Perry-Failor criticized the U.S. Environmental Protection Agency for not making trading a part of its rule for the setting of Florida water quality standards for nutrients ("How Not to Improve Surface Water Quality," Fall 2010).

Their argument was that nutrient trading, as opposed to command-and-control regulation, could lower the costs of compliance over time and hence make meeting any standard more affordable. To bolster their argument, the authors cite publications that inventory proposed and existing trading programs for water quality management. The impression is left that the inventoried programs are reasonable efforts to implement market-like, cost-effective design principles and that trading is being successfully applied to address discharges from currently unregulated nonpoint-source pollution.

We have written on how to embed market-like features in water quality management programs, but many such programs are not market-like. They are extensions of conventional command-and-control permitting — despite the "market-like" rhetoric used to describe such programs.

Point and nonpoint sources | Regulatory authorities grant National Pollution Discharge Elimination System (NPDES) permits for a subset of discharge sources, commonly called "point sources." Most often these are industrial and municipal wastewater treatment facilities, but NPDES permitting has been extended in recent years to include some confined-animal feeding opera-

Leonard Shabman is a resident scholar at Resources for the Future and professor emeritus of resources and environmental economics at Virginia Tech.

Kurt Stephenson is professor of resources and environmental economics at Virginia Tech.

tions and some areas of storm water runoff. These sources are required to adhere to permits that contain numeric limitations on the nutrient pollutant loads that can be discharged.

Pollution by land-based runoff from agriculture (nonpoint sources) remains outside the regulatory process, even though in watersheds across the nation agricultural discharges are often the reason water quality standards are not being met. In the event that a particular stream, lake, or estuary does not meet water quality standards, regulators have only one regulatory instrument available to achieve water quality standards: the NPDES permits on point sources.

This regulatory context first compels regulators to maximize the discharge reductions that can be realized at the point sources. Most often, this translates into imposing near limits-of-technology effluent limitations in permits (sometimes aggregated for a group of dischargers who are allocated a legally- and regulatory-binding group limit). In most cases these stringent point-source controls will be insufficient to achieve water quality standards because nonpoint-source runoff is primarily responsible for the impairment. In fact, even zero point-source discharge may not secure the ambient water quality standard.

Meanwhile, controls on unregulated nonpoint sources (typically agricultural) rely on educational and subsidy programs to encourage those sources to reduce their discharges. Enter trading as often practiced. Point-source dischargers are required, and cannot avoid, imposition of these stringent permit requirements. When the point-source effluent load limitations are technically impossible to achieve (because of technology limits or uncontrollable growth in wastewater flows), the point sources are given the option to maintain NPDES permit compliance by "sponsoring" (that is, paying for) nonpoint-source controls elsewhere in the watershed.

This form of trading has little to do with cost savings or successfully addressing the water quality impairment, and has everything to do with maintaining compliance with increasingly stringent permit conditions. At the same time, there is another expressed motivation for this form of trading: creating a new funding source for subsidizing agricultural nonpoint-source controls that would otherwise continue to be unregulated. These new funds to pay for nonpoint-source reductions are how proponents argue that trading will help address the nonpoint-source problem.

Making gains? | Of course, trading as implemented above will not produce any new net reductions because the nonpoint-source reductions just offset new point-source pollutant loads. For water quality to be improved, the realized reduction in nonpoint-source loads must be greater than — not just offset — the point-source load.

To improve water quality, regulatory authorities are increasingly considering ways to secure nonpoint-source reductions beyond what is required to offset point-source load, under the rubric of trading. For instance, the EPA recently expressed a willingness to consider requiring all new and expanding point sources to generate net reductions in watershed loads (called "net improvement offsets") for permitted discharges to the Chesapeake Bay. The net reductions would come primarily from unregulated agricultural nonpoint sources. These new requirements would be triggered in the event that the states failed to make adequate progress toward achieving nutrient reduction goals in the Chesapeake Bay. A variation on this idea is the proposal for "retirement ratios." In this case, a permitted discharger must buy additional offsets to generate a net reduction to the receiving waters.

Obviously, trading as a revenue source for buying nonpoint-source reductions raises fundamental issues of fairness. In many watersheds, point sources have met their NPDES effluent limits, even as these limits have been made more stringent over time. Now, trading programs demand that point sources and their customers finance reduction efforts of nonpoint sources that governments have decided not to address directly.

Perhaps more troubling is that the purpose of trading programs is increasingly to extract revenue from regulated sources in order to subsidize agricultural nonpoint-source control programs — a purpose that is explicitly stated in many programs. In such cases, trading should be recognized for what it is: a tax on regulated sources. However, it is a tax that has been created and will be levied by an administrative bureau, without explicit statutory authorization.

In summary, proponents of markets need to distinguish carefully between trading programs with market-like features and those that are really command-and-control or simply a questionable tax. Just because the word "trading" is attached to a regulatory program does not make it market-like. The burden is on those who would advocate for market-like programs to fully understand existing programs by looking past the rhetoric used to promote them and fully evaluate their purposes and operation. R

READINGS

- "Achieving Nutrient Water Quality Goals: Bringing Market-like Principles to Water Quality Management," by Leonard Shabman and Kurt Stephenson. *Journal of the American Water Resources Association,* Vol. 43, No. 4 (August 2007).
- "Rhetoric and Reality of Water Quality Trading and the Potential for Market-like Reform," by Kurt Stephenson and Leonard Shabman. *Journal of the American Water Resources Association,* Vol. 47, No. 1 (February 2011).