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Land Air Water

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Tim Ream

Failure in Copenhagen: Hopes for a Climate Deal Must Wait Another Year

It is never easy to sit down and write a short article about global warming. It would be so helpful to tell a simple story of a monster and a hero at the climate talks in Copenhagen last December, even though, sadly, the hero lost this time. But no simple story will do this issue justice. The climate issue is unparalleled for quite a few reasons.

Perhaps most importantly, the magnitude and scope of the climate catastrophe is without comparison in human history. We are only beginning to experience the impacts of global warming, but most analysts who have looked seriously at the science of climate change predict almost unimaginable future impacts. For example, recalling the Dust Bowl years of the 1930s, can we imagine such a disaster lasting for generations? Can we truly grasp the impacts on our coasts of seas as much as three to six feet higher this century and still rising? Imagine both of those occurrences on top of a loss of agricultural productivity, increased forest fires, unprecedented urban heat waves and a tremendous loss of the mountain snowpack that provides drinking and irrigation water for much of the West. And just when those images settle in and become clear, realize that

much of the world, especially the poorest areas, will be hit far harder than the U.S.

Climate change is not only going to be the number one environmental issue faced by the next generation. It will likely be the number one food security issue and the number one water security issue, thereby making it a human rights threat of absolutely unprecedented importance. Past experience unfortunately shows that it is the most vulnerable in society, the elderly, the sick, the poor, women and children, who will likely bear the greatest brunt of this calamity as it strikes around the world.

The social changes necessary to stop the worst impacts of climate change are also unprecedented. We need to change the energy infrastructure and many of the land use practices of practically the entire planet in a single generation. There is no regional solution to this problem. Greenhouse gases mix and affect the entire globe. Europe cannot save itself by perfecting a green economy. Sub-Saharan African nations did almost nothing to cause this problem but may be the worst affected.

Also working against positive change

is the scientific complexity of the climate problem and its solutions. A deep understanding of climate science requires a fair mastery of physics, chemistry, statistics and modeling. A deep understanding of solutions requires further knowledge of engineering and economics, if not social psychology and political science. This complexity provides ripe ground for those that aim to confuse the public, deny global warming, and delay solutions. In the battle to communicate, scientists accustomed to communicating in peer-reviewed journals find themselves pitted against the world's best-funded public relations firms, hired by the world's most powerful fossil fuel corporations.

And if this were not enough, a political system driven by 24-hour news cycles and fifteen minutes of fame must address a problem that requires massive social change today to save future generations, most of whom are not yet even born. Metaphor fails. There is no known story of a monster that can fill all the globe's sky forever, one who comes now to destroy the future, one who can only be slayed by the concerted efforts of a billion well-organized heroes.

But as they say in the monster stories, all is not yet lost. The majority of people in nearly every nation of the world want their governments to stop global warming. And there is an international process in place for addressing climate change. The 1992 United Nations Framework Convention on Climate Change and its 1997 Kyoto Protocol represent the first international steps taken to address the growing climate catastrophe. The recent meetings in Copenhagen under the auspices of these treaties provided an opportunity for the nations of the world to step up to a new level of commitment to stopping the worst climate impacts.

Going into the December meetings, civil society had managed to agree on a crystallized description of what was needed. We wanted a "fab" deal, F-A-B, a deal that was fair, ambitious, and binding.

The greenhouse gases that currently blanket the Earth, and that will remain for hundreds of years after we stop polluting, have come primarily from developed countries. The rich countries not

only hold historical responsibility for causing global warming, they continue to dump far more of these gases per person into the atmosphere every day. A fair agreement then would have two components. Developed countries would take the lead in reductions of greenhouse gas emissions, moving first and making the deepest cuts. Secondly, developed nations would take responsibility for the problem they have created by providing adequate funds to developing countries both to adapt to a changing climate and to assure future development occurs on a low carbon pathway.

The ambitious requirement can be reduced to a simple metric. Any deal touted as stopping climate change needs to be scientifically defensible. Everyone agrees that we cannot let the planet get more than 3.6°F above pre-industrial temperatures. In Copenhagen, the majority of nations, but not the big emitters like the U.S., were calling for a rise of no more than 2.7°F. We have already warmed by about 1.5°F. Steep, ambitious cuts are needed, and needed now to minimize damage.

The binding requirement speaks for itself. Rich nations have a long track record of generous international promises followed by spotty follow through. Political promises will not stop climate change; only actions will. Reduction pledges must be subject to international review with significant consequences for failure to act. Only then can we be sure that these critical commitments will not be subject to changing political whims.

With civil society in agreement on measures for success, it has been relatively easy to assess the resulting Copenhagen Accord. And the results are disappointing even beyond the most pessimistic of pre-meeting analyses. Working backward through the three requirements, the Accord is not binding, not ambitious, and not fair.

The Copenhagen promises are not binding; they are nothing more than aspirational political statements with no system to assure compliance and no consequences for failure to follow through. No level of ambition is even set in the Accord. There is no language calling for certain reductions by a certain time frame. There is a loose commitment to keep the world from heating beyond

3.6°F, but that is simply a reiteration of similar political statements already made by nearly every nation. With the purposeful exclusion of emission reduction targets in the Copenhagen Accord, the temperature commitment hardly seems worth the paper it is written upon.

Nor can the deal be said to be fair. Once again, developed nations have failed to commit to the early and deep domestic reductions of greenhouse gases that would signal to the rest of the world that the climate problem is being taken seriously by those who caused and continue to worsen it. Also of great concern is the fact that the Accord could represent the first step on a slippery slope that shuts the U.N. out of climate negotiations. If this were to happen, the only forum for smaller, poorer nations to affect the negotiating process would disappear, a tremendous blow to fairness.

The only bright spot in the Accord is a commitment of \$10 billion per year for three years for adaptation and mitigation from developed to developing countries. Even here, though, analysts point out that this is likely a small amount compared to real need and there is no clear formula explaining how much each country will donate or what financial mechanism will be used to distribute the funds.

In Copenhagen, the monster won. And there is plenty of blame to go around. Certainly powerful oil and coal corporations and their public relations mercenaries are at the top of the list. Most Republican and far too many Democratic Senators deserve a heap of scorn for inaction or worse. President Obama ceding leadership on the issue to those same Senators is far from blameless. The U.S. role in Copenhagen was an international embarrassment that caused progressive nations to hesitate and let major polluting nations like ours completely off the hook.

But let's even take some of the blame ourselves as individuals. This was never going to be easy, but the environmental community has simply not yet pressured our leaders to the point that Congress will act nationally, or the President internationally. Climate change is not yet a top-tier issue for enough concerned

people. This is especially troubling given that every year the world fails to act seriously means greater human impacts for longer periods of time, more species extinctions, and more costly and onerous solutions once the world finally wakes up.

Our failure to get a fab deal in 2009 now makes 2010 incredibly important. Climate negotiations replay themselves in Cancun in December of this year. People who understand the seriousness of the problem and truly care about the Earth and future generations need to prioritize this issue right now. We must get a strong climate bill out of Congress this summer, and a fab international deal in December. The future is counting on us and the stakes, truly, have never been higher. Let's get to work, heroes.

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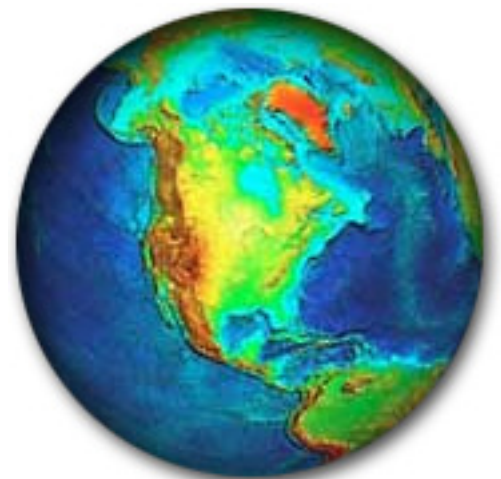




Photo: NOAA

Jordan Beckett

A Global Look at Trawling

Countries are moving to ban trawling.¹ In 2006, the United States banned trawling in waters covering 150,000 square miles off the West Coast, notably in Alaska along the Aleutian chain. Europeans have banned trawling in the Mediterranean at depths greater than 3,200 feet within member states' exclusive fishing zones.² Under the Common Fisheries Policy, nations have claimed 200-mile exclusive fishing zones, but outside those fishing zones, trawling continues.³

Scientific advances have been a significant factor in supporting legislation banning trawling by educating and creating awareness of what certain types of commercial fishing practices actually do to ocean floor ecosystems. The move to ban trawling off the West Coast of the United States has two major points of origin. First, in 1996 Congress required regional fisheries to protect essential fish habitat. Second, there has been an increased interest in coral exploration and a scientific interest in the role of coral in marine ecosystems:

"In recent years, scientists have been taking deep-sea submersibles 1,200 feet or more along the volcanic flanks of the Aleutians. They found acres of coral gardens: red corals shaped like a Joshua tree; sponges shaped like spatulas, barrels or crooked human fingers; and a 5-foot sponge that looked like a little girl's pigtails. They were brilliant green, violent shades of orange and bright yel-

low. Scientists even saw a lone predatory sponge that captured crustaceans for food. More than two dozen were coral species found nowhere else on earth."⁴

A scientist with National Marine Fisheries Service's Auke Bay Laboratory in Alaska identifies the significance of protecting the underwater biotic life along the Aleutians:

"It's safe to say that many, or at least a representative amount, of deep-sea coral habitat has been looked at worldwide—corals on both sides of the North Atlantic, corals in Antarctica, corals in Tasmania—many corners of the world. . . Nothing comes close to the Aleutians."⁵

"The pioneering days are over," writes a fisherman about trawling in the Aleutians. "If in the future we are unable to harvest up to our quotas, it doesn't mean we should seek new fishing grounds. It means we need to re-examine whether we have been managing conservatively enough."⁶ By dragging weighted nets across the sea bottom, trawling can easily wipe out miles of coral and undersea species. Scientists are inclined to believe the Aleutians may be the most diverse and abundant cold-water coral and sponge habitat on Earth, and a single run by a trawler can leave the ocean floor barren of life for generations to come. Indeed, the wide swaths trawlers cut along the ocean floor can be seen from space.

THE RATIONALE BEHIND VENEZUELA BANNING TRAWLING

Venezuela passed legislation in 2008 banning all trawlers from Venezuelan waters. Historically, Italian and Spanish ships also trawled Venezuelan waters. However, the regulation is aimed not only at protecting domestic product from foreign vessels but also at giving more power to individual commercial fishermen who supply the majority of fish product to the country. Venezuelan Agriculture Minister Elias Jaua stated: "Banning trawling will not cause shortages, because small-scale artisanal fisherfolk supply 70 percent of production, and industrial fishing 30 percent, but trawl fishing provides only 6 percent of the total."⁷ President Chavez delivered the same message: "Small-scale fishermen provide 70 percent of the country's fish, while the trawlers mostly caught shrimp for export."⁸

Several spokesmen for different fishing regions let it be known there was a distinction between those who trawled for export product and artisanal fisherfolk who supplied the country. One spokesperson said: "We artisanal fisherfolk are the ones who really supply the country. There will be no shortage of fish, and we support the new law 100 percent. . . When this law comes into force we'll start seeing better catches, and those who stand to gain are the people, because when there are lots of fish of all sorts, prices will come down."⁹

The government invested \$32 million USD to convert or decommission trawling boats, as well as directing funds towards development of fish processing plants to replace those trawlers that did their processing on-board. The Venezuelan government expropriated thirty trawling ships because the owners refused "to cooperate with the plans to adapt the boats to uses compliant with the new fishing regulations."¹⁰

TRAWLING: DIMINISHING WORLDWIDE

According to a 2004 report by the World Conservation Union (Geneva), out of 84 million tons of fish caught in 2001, trawling on the high seas accounted for a maximum of 0.25 percent of the total. Member states in the European Community account for the biggest share of fish caught by trawling worldwide, with Spain at the top of the list

doing 40 percent of all trawling worldwide. The next highest percentage was Russia's 14 percent.¹¹

There are only a handful of countries and fishing vessels that still engage in trawling. Many, like Norway, have recognized the destruction trawling can wreak and have outlawed it in sensitive ecological areas, in addition to their policy of closing certain fisheries to trawling.¹² A majority of the world's scientists believe that trawling is a major environmental threat—1100 scientists from 69 countries constitute the majority, while only the 11 countries that engage in bottom trawling disagree.

TRAWLING REVIEWED BY THE UNITED NATIONS

In 2006, the issue of trawling came before the U.N. where nations unsuccessfully negotiated a moratorium on high-seas bottom trawling. The moratorium would have been "the single largest act of habitat protection in human history, covering an estimated 67 million square miles of ocean, an area larger than all of the world's continents combined."¹³ Iceland's opposition ultimately blocked the resolution; other nations opposed to the trawling ban included Russia, Canada, China, Japan, and South Korea. The U.N. committee's alternative measure was simply the status quo, which left it up to countries to decide whether trawling vessels will be allowed in their country.¹⁴

However, the adopted resolution did call on regional fisheries management organizations to study the impacts of trawling.¹⁵ The resolution specified that management organizations such as the Northwest Atlantic Fisheries Organization (NAFO) would either prohibit trawling or implement certain measures by the end of 2008. Specifically, the resolution provided that organizations will "conduct impact assessments of individual high seas bottom fisheries to ensure that "significant" adverse impacts on vulnerable marine ecosystems (VMEs) would be prevented or else not authorize bottom fishing to proceed." Furthermore, they will "close areas of the high seas where VMEs are known or likely to occur to bottom fishing unless bottom fisheries can be managed in these areas to prevent significant adverse impacts on VMEs." Finally, the resolution stipulated that organizations will also "ensure

the long-term sustainability of deep-sea fish stocks" and "require fishing vessels to move out of an area of the high seas where 'unexpected' encounters with VMEs occur."¹⁶

The inability to reach a legal agreement within the U.N. framework has left the decision to allow trawling up to individual countries and their economies. Until a binding agreement can be reached in the future, it is up to regional fisheries to act upon the U.N.'s call for future studies to protect those significantly impacted vulnerable aquatic ecosystems.

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ENDNOTES

1 "Powerful trawlers drag nets across the ocean bottom at depths of up to 1.5 miles. . . . The nets, with yawning maws up to 200 feet across, are weighted with large steel 'doors' that weigh up to 5 tons each. The idea is to 'rake' the bottom so that fish . . . rise into the path of the open net. But the doors, as well as rollers or wheels along the bottom of the net's opening, rip up or crush deep-sea coral reefs, colonies of sponges, and other structure-forming bottom dwellers. For instance, in 1997 during a year's fishing along a formation in the Pacific called the South Tasman Rise, 20 trawlers ripped up an estimated 10,000 tons of coral in the process of harvesting 4,000 tons of their target species, orange roughy." Gulf Coast Preservation Society, *What is Bottom Trawling?*, <http://www.gulfpreserve.org/trawlers.htm> (last visited Feb. 19, 2010).

2 "Origins of the Common Fisheries Policy date back to the 1970s when European countries decided to extend their exclusive fishing zones (EEZs) from 12 to 200 miles offshore. The extension of zones was a reaction to other nations, such as Canada, who had extended their zones as well, thus barring open fishing by other nations in those waters. . . . Fearing that foreign fleets would now begin to fish European Community waters, the European Community argued the extension of zones was necessary . . . "in order to prevent those non-Union fleets which had been denied access to the exclusive fishing zones of non-Union countries from switching their activities into Community waters, which would have had disastrous effects on the fishstocks which thrive there and on the

Community fleet." James Benseler, TED CaseStudies, UK and Spain Fishing Dispute (Jan. 11, 1997), <http://www1.american.edu/TED/UKCOD.HTM>.

3 Gulf Coast Preservation Society, *supra* note 1.

4 *Id.*

5 Craig Welch, *Coral Concerns Spur Vast Trawling Ban*, THE SEATTLE TIMES, Feb. 11, 2005, http://seattletimes.nwsources.com/html/localnews/2002177305_coral11m.html.

6 *Id.*

7 Humberto Marquez, *Venezuela Outlaws Trawl Fishing*, Oneworld.net, April 9, 2008, <http://us.oneworld.net/node/159574>.

8 *Id.*

9 *Id.*

10 Erik Sperling, *Venezuela Bans Controversial "Trawl" Fishing*, Venezuelanalysis.com, Mar. 17, 2009, <http://www.venezuelanalysis.com/news/4302?zbrandid=419&zidType=CH&zid=3062591&zsubscriberId=308210867>.

11 Gulf Coast Preservation Society, *Nations Involved in High Seas Trawling*, <http://www.gulfpreserve.org/images/nations-large.gif>.

12 Food and Agriculture Organization, *Information on Fisheries Management in the Kingdom of Norway*, Fishery Sector Methods (Jan. 2005), <http://www.fao.org/fi/oldsite/FCP/en/NOR/body.htm>.

13 Greenpeace, *Deep Sea Bottom Trawling: World Watches EU, Canada, South Korea, and Russia*, Nov. 16, 2006, <http://www.greenpeace.org/australia/news-and-events/news/deep-sea/bottom-trawling-world-watches>.

14 A UN agreement must be unanimous amongst nations, so an action that is endorsed by a clear majority can be sabotaged by one small state.

15 G.A. Res. 61/105, ¶ 83 (Dec. 2006).

16 Deep Sea Conservation Coalition, *NAFO, European Union—One Step Forward, One Step Back for Biodiversity Conservation in the Northwest Atlantic*, Sep. 25, 2009, <http://www.savethehighseas.org/display.cfm?ID=203>.



Nelly Sangrujiveth

Virtual Water and the Case for Ecolabels

Virtual water is the amount of freshwater used in the production of a trade or service, measured at the production site. For example, once wheat is grown, the real water used to grow it is no longer actually contained in the wheat. The U.S. is one of the largest exporters of virtual water; however, its freshwater resources are stressed and scientists contend that current water usage is unsustainable. Our food security is threatened by this reality. Therefore, it is becoming increasingly vital to regulate how much water is used to grow our food, both for food security and as a general environmental issue.

Despite the mounting scientific evidence that current water usage is unsustainable, the U.S. has implemented very few policies to ensure future food security. Melinda Burns illustrated this point in her article *Trading "Virtual" Water*.¹ She reports that in California, the world's fifth largest supplier of food and agricultural commodities, Imperial Valley farmers receive water supplies from the Colorado River at the rate of only \$100 to grow an acre of wheat per year. The valley's wheat requires a minimum of 450,000 acre-feet of water annually, which is the amount of water the city of San Diego uses in two years. Most of

this wheat is exported to Japan for Kobe beef cattle largely because freight rates between Long Beach and Japan are cheaper than shipping elsewhere within the state.

Many policies can be implemented to encourage agribusinesses to conserve water. Improving irrigation systems, protecting area-of-origin water rights, eliminating subsidies for water-intensive crops, and increasing water and freight rates are examples of policies that should be implemented in light of the above illustration. Although controversial, increasing rates could encourage farmers to shift production from low value, high-water-use field crops like wheat to more high value, water-efficient vegetable crops. A 25 percent shift in production would raise crop value by \$5 billion and save 1.1 million acre-feet of irrigation water—an amount equivalent to what seven dams could provide.²

Until policy changes, practitioners can look to both domestic and international laws to curtail the virtual water trade. Domestically, the Endangered Species Act (ESA) and the National Environmental Policy Act (NEPA) have been the most successful legal tools for water conserva-

In *N.R.D.C. v. Rodgers*,³ practitioners successfully utilized the ESA and NEPA to protect freshwater resources from agricultural over-exploitation. However, as will be discussed below, *Rodgers* illustrates that litigation under the ESA and NEPA has its limits and perhaps international laws should be further explored.

The *Rodgers* case concerned the Bureau of Reclamation's (Bureau's) operation of Friant Dam under the Central Valley Project (CVP). The CVP was created in 1933 to provide irrigation to California's water-poor Central Valley by diverting water from the San Joaquin River into a reservoir that could then be pumped to various water agencies. Water supply contracts delivered up to 2.14 million acre-feet of water to more than 24 irrigation and water agencies.⁴ This operation is the largest water project in California, the largest federal reclamation project in the west, and meets the needs of more than 600,000 irrigated acres.⁵

Due to the CVP, 60 miles of the San Joaquin River were left bone dry.⁶ As a result, numerous species of native fish from the upper San Joaquin River were extirpated, including spring- and fall-run Chinook salmon. The historic fall run for Chinook salmon was conservatively estimated at 50,000 to 100,000 fish.⁷ As noted in the opinion of a sister case, *N.R.D.C. v. Patterson*:

"So many salmon migrated up the San Joaquin River during the spawning season that some people who lived near the present site of Friant Dam compared the noise to a waterfall. Some residents even said that they were kept awake nights by the myriad salmon heard nightly splashing over the sand bars in the River."⁸

Reduced flows in the river below the dam also diminished the area available for fish habitat, which in turn increased the water temperature, reduced the ability of the river to assimilate agricultural runoff and other pollutants, and degraded riparian vegetation.⁹ Overall, 10 of the 16 native fish species disappeared from the area after construction of the dam.¹⁰

When the Central Valley Project Improvement Act passed in 1992, the Bureau was required to comply with provisions under the ESA in light of how the water project affected the environment. The

ESA contains several procedural and substantive provisions to protect endangered and threatened species and their habitat.¹¹

To ensure compliance with the ESA, § 1536(a)(2) required the Bureau to consult with Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS). Under this provision of the ESA, an agency must consult with other agencies when proposing to authorize, fund, or carry out an action that may affect a species or its critical habitat. The other agencies are obliged to produce a biological opinion, which determines if an endangered or threatened species will be jeopardized, or adverse modification of habitat is likely to occur due to the action. If so, the consulted agency recommends “reasonable and prudent alternatives.” A federal agency can receive a “take permit” only after finding the agency’s action does not result in jeopardy to a protected species or its habitat.¹²

After the Bureau consulted FWS and NMFS, the Bureau renewed agricultural water contracts for another 25 years.¹³ In renewing these contracts, the district court found numerous violations of the ESA and NEPA. The agencies ignored the requirement of the ESA to recover endangered species rather than simply prevent further decline toward extinction.¹⁴ Additionally, the court found that one of the most blatant violations of NEPA was the FWS’s failure to render an analysis on the effects the contracts would actually have. The Central Valley Improvement Act authorized the diversion of 2.14 million acre-feet of water from the San Joaquin River, and the FWS based its analysis on a diversion of half that amount.¹⁵ The fact the Bureau adopted a “no jeopardy” designation based on FWS’s analysis was “perhaps the clearest instance of arbitrary conduct.”¹⁶

The success of *N.R.D.C. v. Rodgers* shows that there may be hope for water conservationists filing suits elsewhere. For instance, the Grand Canyon Trust filed a lawsuit against the Bureau of Reclamation claiming that water diversions in the Colorado River violate the ESA for adversely affecting the humpback chub, a protected species that has survived in the lower basin for three to five million years, but is now threatened with extinction just 45 years after the construction

of Glen Canyon Dam.¹⁷

Despite the benefits of filing suit under ESA and NEPA, litigation is a slow and expensive process—*N.R.D.C. v. Rodgers* was litigated for 18 years.¹⁸ Due to a variety of factors, the Bureau did not begin to release water from Friant Dam until late 2009 despite the case being decided in 2005.¹⁹

A more immediate solution can come from influencing the market and pushing consumers to “Think Globally, Act Locally.” One such solution is in ecolabels that indicate a product’s water footprint. Ecolabels help consumers exercise preferences for products based upon impacts to the environment and are profitable for both companies and the government. For instance, the United States Department of Agriculture’s “Organic” label is highly successful and continues to grow each year. In 2005, foods with the USDA Organic label generated \$13.8 billion in consumer sales and represented 2.5 percent of total U.S. food sales with annual growth rates of 15 percent to 21 percent.²⁰ As companies pay to place the USDA Organic label on their products, the government generates revenue from processing dues and fees.

Ecolabels have also survived challenges under the World Trade Organization’s notoriously restrictive Most Favored Nation Obligation. For instance, under the Tuna-Dolphin I case, the Panel found that labeling products as “dolphin-safe” was not a discrimination between like products.²¹ The Panel concluded this did not violate the General Agreement on Tariffs and Trade (GATT) rules because it was designed to prevent deceptive advertising practices on all tuna products, whether imported or domestically produced.²² It appears ecolabels are permissible so long as they apply uniformly to both domestic and imported products and merely serve to inform consumers.

Implementing ecolabels to help consumers track our water footprint does not solve the issue of our environmental laws being difficult to litigate and enforce; however, it is a solution that can be both popular with consumers and legally permissible. Through ecolabeling, consumers would be reminded on a daily basis that water comes from a fin-

ite source and may not flow freely much longer. And because water is such a vital component to human survival, perhaps our society will be more amenable to implementing policies to reduce our water footprint than they have been regarding our carbon footprint.

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ENDNOTES (cont’d on page 14)

1 Melinda Burns, *Trading ‘Virtual’ Water*, MILLER-MCCUNE, June 10, 2009.

2 HEATHER COOLEY, ET. AL., PACIFIC INSTITUTE, MORE WITH LESS, AGRICULTURAL CONSERVATION AND EFFICIENCY IN CALIFORNIA (2008), available at http://www.pacinst.org/reports/more_with_less_delta/index.htm.

3 381 F.Supp.2d 1212 (2005).

4 *Id.*

5 *Id.*; California Department of Resources, California State Water Project and the Central Valley Project, <http://www.water.ca.gov/swp/cvp.cfm> (last visited Feb. 10, 2010).

6 Natural Resources Defense Council (NRDC), Restoring the San Joaquin River (Sep. 17, 2007), <http://www.nrdc.org/water/conservation/sanjoaquin.asp> (last visited Feb. 10, 2010).

7 NRDC v. Patterson, 333 F.Supp. 2d 906, 909 (E.D. Cal 2004).

8 *Id.*

9 *Id.* at 913.

10 *Id.* at 911.

11 These provisions include:

(1) the duty of federal agencies to consult with FWS before undertaking any agency action that may affect a listed species or critical habitat; (2) prohibition against federal activities that jeopardize the continued existence of listed species; (3) prohibition against federal activities that adversely modify or destroy critical habitat; and (4) prohibition against “taking” individual members of a listed species which applies comprehensively to all “persons.” See generally, ESA, 16 U.S.C.A. §§ 1532, 1536, 1538.

12 Endangered Species Act, 16 U.S.C. § 1536(b)(4)(A), (2006).

13 Pub.L. No. 102-575 (1992).

14 Rogers, 381 F.Supp. 2d 1212, 1231-1235 (2005).

15 *Id.* at 1238-1239.

16 *Id.*



Photo: Venex_jpb @ flickr

Jeremy Pyle

Emerging Issues in U.S. Food Policy

As of 2007, there are more than 2.2 million farms in the United States spread over 922 million acres, or about 40 percent of the land base.¹ The more interesting statistic, however, is how the overall number of farms breaks down according to size. Diverging from the Census Bureau's definition of a "farm" as any entity with agricultural sales of more than \$1,000, many analysts instead use a more realistic rubric: any entity with more than \$50,000 in gross agricultural sales is considered a commercial farm, while farms selling less than that are considered a hobby, or part-time, farm.² Using this number as a cutoff reflects the reality that farms with less than \$50,000 gross sales almost invariably rely on off-farm sources of income, and such farmers thus do not make a complete living as a farmer.³

Using this more accurate definition, consider that only 22 percent of American farms are commercial farms, yet they account for almost 96 percent of total agricultural sales.⁴ Meanwhile, the number of mega-farms, farms with more than \$500,000 in annual sales, increased by almost 65 percent between 2002 and 2007.⁵ What this means, of course, is that American agriculture has become an increasingly consolidated enterprise, if highly productive, which results in a highly centralized and integrated food system. This system dominated by large-scale production is also a heavy

polluter, both in terms of land-based and water pollution as well as GHG emissions, and usually entails more environmentally destructive practices than its more small-scale counterparts.

The response over the past several years is a movement toward local, small-scale production and distribution. Yet such a movement is not just an agricultural issue, but an environmental, climate change, and public health issue as well. The local food movement should play a vital role in increasing food security; responding to climate change through both mitigation and adaptation; moving toward agricultural sustainability; and improved public health outcomes. Future laws and regulations governing the agricultural and food systems will shape the collective U.S. response to these challenges, and the policy debate that will form the basis for these laws and regulations is already under way.

ENHANCING FOOD SECURITY

"Food security for a household means access by all members at all times to enough food for an active, healthy life."⁶ Since access essentially equates to money, it would seem to follow that addressing food security in the U.S. is a poverty issue, not an agricultural issue. While money will continue to be an important driver in determining a household's level of food security, the food production

and distribution system as a whole affects everyone, regardless of ability to pay.

Every community in the United States is heavily dependent on imported food that is grown and shipped all around the world, then distributed all across the country until it reaches the store shelves. Food in the U.S. now travels between 1,500 and 2,500 miles on average from production site to dinner plate.⁷ The food distribution system is thus heavily dependent upon access to major transportation corridors. This dependence is problematic during, for example, weather-related emergencies when access can be either limited or cut off completely. This danger is nothing new, of course, but the frequency with which such events occur will likely increase due to climate change. Food systems that are heavily localized, or at least regionalized, can help U.S. population centers adapt to food shortages and emergencies.

CLIMATE CHANGE MITIGATION & ADAPTATION

Reducing large-scale production in favor of local, small-scale production can also dramatically reduce the carbon footprint of the agriculture industry. While agriculture is responsible for only about 8 percent of total U.S. GHG emissions, livestock production and manure management represent the largest contributor of methane emissions in the U.S. (32 percent), and soil management practices typical of large-scale farming are by far the largest contributor of nitrous oxide emissions (67 percent).⁸ This is important because methane and nitrous oxide are more potent greenhouse gases than carbon, with heat-trapping potential 21 times and 310 times greater than carbon, respectively.⁹

By changing agricultural management practices, the industry will not only reduce its own emissions, but the creations of sinks through soil sequestration, for example, can significantly reduce net U.S. emissions from other sectors.¹⁰ By adopting best management practices currently available and pursuing attainable reductions in methane and nitrous oxide emissions, 70 to 220 MMT of carbon could be stored in U.S. soils annually—5 to 14 percent of total U.S. GHG emissions.¹¹ Many of these carbon-friendly farming methods, such as decreasing tillage in-

tensity or using alternative tillage methods like no-till or ridge-till, increasing crop rotation complexity, and drip irrigation are all widely used by small-scale and organic farmers.

A larger focus toward regionalized production not only helps shield communities from weather-related shortages from distribution network interruptions, but will make weather-related crop losses less of a factor as well. As climate change increases the frequency of extreme weather events, volatility in the commodities markets will likewise increase. For example, in an 18-month span between 2006 and 2008, the world price for rice rose 217 percent, wheat by 136 percent, corn by 125 percent, and soybeans by 107 percent.¹² Much like the global financial markets, an interdependent, global food system in a climate change era will be vulnerable to market disruptions from crop losses or other events that could affect agricultural output. Moving toward a more decentralized, regional food network will make communities much more resilient to disruptions in the global food system and prevent exacerbation of food insecurity caused by climate change.

IMPROVED PUBLIC HEALTH

U.S. sales of organic food grew from \$1 billion in 1990 to \$20 billion in 2007.¹³ This rapid rise of the organic industry is a clear indication that U.S. consumers were and are concerned about the agricultural practices that produce our food, particularly the use of pesticides. Indeed, EPA stated that “most of the foods we eat have been grown with the use of pesticides[, which] may be present inside or on the surfaces of these foods.”¹⁴ With the prospect of birth defects, reproductive problems, nerve damage, immune system function, and various cancers from pesticide exposure,¹⁵ it is no surprise that people who can afford to buy organic food are doing so in droves.

Small-scale, organic farming, on the other hand, produces food that is not only free of pesticide and nitrate residues, but has a higher nutritional quality than conventionally grown. Organic fruits and vegetables were found to have up to 40 percent more antioxidants and higher levels of zinc and iron.¹⁵ The same is true for meat and dairy products from cows raised on grass rather than grain

and regular doses of antibiotics—lower in calories and fat, and higher in levels of omega-3 fatty acids, beta-carotene, conjugated linoleic acid, and vitamin E.¹⁶

The U.S. food supply is not only filled with highly processed foods, but healthy fruits and vegetables are also less nutritious because of how they are produced. Post-harvest handling, processing, packaging, and transportation all contribute to nutrient loss as well.¹⁷ Meanwhile, heart disease, cancer, and diabetes are taking a huge toll on the U.S. population, the negative externalities of a polluting, unhealthy food system.

Fundamental changes in the way we produce food would go a long way to improving public health, but changes in individual eating habits will also be necessary—an issue that falls outside of the regulatory sphere. From the standpoint of sustainability and carbon footprint, the proverbial elephant in the room is meat consumption. Americans eat about eight ounces of meat per day—twice the global average¹⁸—yet we require only 5.5 ounce equivalents of protein per day, according to the USDA Dietary Guidelines.¹⁹ Researchers at the University of Chicago found that if every American reduced their meat consumption by 20 percent—that is, consumed 6.4 ounces instead of eight, still more than the recommended 5.5—it would be equivalent to every American switching from a standard sedan to a Toyota Prius.²⁰

The coming policy choices and subsequent regulatory structure governing agriculture and food systems will have a huge impact on a host of environmental issues like climate change and water quality, as well as public health issues like food quality and disease prevention. Consumers and mega-farms will likely have diverging interests in this regard, so environmental advocates should prepare to participate in the formation of future law and policy in these areas.

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ENDNOTES

1 NAT'L AGRIC. STATISTICS SERV., U.S. DEP'T OF AGRIC., 2007 CENSUS OF AGRICULTURE 7 (Feb. 2009), available at http://www.agcensus.usda.gov/Publications/2007/Full_Report/usv1.pdf.

2 Mark A. Edelman, Iowa State University Extension, *How Many Farms are Left in the U.S. and Iowa?*, Sep. 13, 1999, <http://www.extension.iastate.edu/newsrel/1999/sep99/sep9904.html>.

3 *Id.*

4 2007 CENSUS, *supra* note 1, at 7.

5 *Id.* at 2.

6 Econ. Research Serv., U.S. Dep't of Agric., Food Security in the United States: Measuring Household Food Security, <http://www.ers.usda.gov/Briefing/FoodSecurity/measure-ment.htm> (last visited Feb. 19, 2010).

7 Worldwatch Institute, *Globetrotting Food Will Travel Farther Than Ever This Thanksgiving*, Nov. 21, 2002, <http://www.worldwatch.org/node/1749>.

8 U.S. ENVTL. PROTECTION AGENCY, INVENTORY OF U.S. GREENHOUSE GAS EMISSIONS AND SINKS: 1990-2007 ES-13, 14 (2009), <http://www.epa.gov/climatechange/emissions/downloads09/GHG2007-ES-508.pdf>.

9 *Id.* at ES-3.

10 KEITH PAUSTIAN ET. AL., PEW CENTER ON GLOBAL CLIMATE CHANGE, AGRICULTURE'S ROLE IN GREENHOUSE GAS MITIGATION iii (2006), <http://www.pewclimate.org/docUploads/Agriculture%27s%20Role%20in%20GHG%20Mitigation.pdf>.

11 *Id.*

12 Stefan Steinberg, *Financial Speculators Reap Profits from Global Hunger*, Centre for Research on Globalization, Apr. 24, 2008, <http://globalresearch.ca/index.php?context=va&aid=8794>.

13 Organic Trade Association, Industry Statistics and Projected Growth, <http://www.ota.com/organic/mt/business.html> (last visited Feb. 19, 2010).

14 U.S. Environmental Protection Agency, Pesticides: Topical & Chemical Fact Sheets, Assessing Health Risks from Pesticides, <http://http://www.epa.gov/pesticides/factsheets/riskassess.htm>.

15 Jon Ungoed-Thomas, *Official: Organic Really Is Better*, THE TIMES, Oct. 28, 2007, <http://www.timesonline.co.uk/tol/news/uk/health/article2753446.ece>.

16 Eatwild.com, Health Benefits of Grass-Fed Products, <http://www.eatwild.com/health-benefits.htm> (last visited Feb. 19, 2010).

17 Harvard Medical School, Center for Health and the Global Environment, 'Is Local More Nutritious?' It Depends, http://chge.med.harvard.edu/programs/food/documents/local_nutrition.pdf.

18 Mark Bittman, *Rethinking the Meat-Guzzler*, N.Y. TIMES, Jan. 27, 2008, available at <http://www.nytimes.com/2008/01/27/weekinreview/27bittman.html>.



Photo: NOAA Marine Debris Program

Holly Jacobson

The Pacific's Plastic Problem

Anthony Dorsey, an oft-quoted author, once said that coastal management is a “wicked problem.”¹ This comment is a reference to Mason and Mitroff, who describe complex problems as being “wicked like the head of a hydra. They are ensnared with tentacles. The more you attempt to tame them, the more complicated they become.”² Years later this comment rings true not just for coastal management, but for plastic waste pollution in the oceans as well.

Plastic pollution in the oceans is a long-standing issue. In addition to the obvious aesthetic problems, plastic waste threatens marine life through entanglement and ingestion.³ Plastic waste breaks down very slowly, often into small pieces resembling food to fish, fowl, and mammals, and can be fatal if digested in large enough amounts.⁴ For example, the death of seven whales off the Italian shore was attributed to “plastic waste that built up and ‘strangled’ their stomachs.”⁵ Whales are not the only victims of plastic waste—approximately “267 species worldwide have been impacted . . . through entanglement or ingestion.”⁶

Although toxic chemicals can leach from plastic waste as it biodegrades, the full extent of the effects of leaching on marine life is still unknown.⁷ For example, an ad hoc Steering Committee

at the University of Washington Tacoma’s workshop⁸ admitted that the “ability for plastics to transport contaminants has been documented, but the specifics of sorption and leaching are not fully understood.”⁹ However, California believed the science behind leaching was enough to justify a ban on the use of plastic packaging that contained intentionally added cadmium, mercury, hexavalent chromium, and lead.¹⁰ These heavy metals are carcinogens or neurotoxins, and in the case of mercury, accumulate in the fatty tissue of fish and humans.¹¹ Thus, the problem of plastic waste debris in our oceans is not merely aesthetic; it clearly has major ramifications on marine life and human health.

The North Pacific Ocean contains an enormous amount of plastic waste dubbed the Pacific Garbage Patch, which is at least twice the size of Texas.¹² The total amount of plastic waste floating in our oceans today is estimated to be “over 13,000 pieces of plastic litter . . . floating on every square kilometre of ocean.”¹³ In fact, plastic waste is said to comprise 60 to 80 percent of all marine debris in our oceans, and 90 percent of floating debris.¹⁴ Whereas this waste may otherwise be overlooked when spread throughout our vast oceans, the display of this debris in the Pacific is forcing us to recognize the serious implications of

ignoring the issue.¹⁵

Like hazardous wastes in CERCLA cases, plastic waste cannot always be traced to a single source of origin. It has long been recognized that marine pollution “originates in many sources, such as dumping and discharges through the atmosphere, rivers, [and] estuaries.”¹⁶ Instead of just being dumped at sea from vessels (thus invoking MARPOL¹⁷ or the London Convention¹⁸), plastic waste can enter our oceans from beaches and the mouths of rivers as a result of intentional or accidental disposal on land.¹⁹ Land-based sources of plastic waste have been recognized as the “most frequent cause of marine pollution.”²⁰ If the majority of this plastic waste cannot be attributed to specific polluters or acts of dumping, what legal means are available to address this problem? International treaties, customary law, and the use of trade sanctions through the WTO could play a role in tackling the problem of plastic waste in the Pacific Ocean.

INTERNATIONAL LAW

If the presence of plastic waste in the ocean was the result of dumping by vessels, international treaties such as MARPOL and the London Convention would apply.²¹ These treaties, however, specifically exclude land-based sources of pollution and thus do not address the problem. Instead, there are several other treaties that address marine pollution or the obligation of states to protect the marine environment generally: the United Nations Convention on the Law of the Sea (UNCLOS), and the Convention on Biological Diversity (CBD).

Unlike MARPOL and the London Convention, UNCLOS should apply to all sources of marine pollution. The broad language of UNLCOS is the result of many years of negotiation, influenced by other conferences and conventions. For example, recommendations from the Stockholm Conference²² on marine pollution contained “guiding concepts” for UNCLOS.²³ But whether UNCLOS applies to all plastic waste pollution or imposes obligations on states depends on the intent behind the lengthy negotiation process and adoption of certain language.

The preamble of UNCLOS “enshrines the notion that all problems of ocean space are closely interrelated and need

to be addressed as a whole.”²⁴ Such broad and encompassing language indicates an intent that problems such as plastic waste pollution should fall under the purview of UNCLOS. Likewise, the addition of Part XII of the Convention, the “Protection and Preservation of the Marine Environment,” contains obligations for states²⁵ and is “treated as an essential part of the overall legal regime governing the uses of the seas.”²⁶ After years of negotiation and incorporation of concerns from other conventions, it is clear that UNLCOS intended to use “umbrella” language to extend to “all sources of pollution in all maritime zones.”²⁷

As plastic waste is a source of pollution in all maritime zones, states have an obligation to prevent its generation and accumulation. Such an obligation can be found in Art. 237.²⁸ Furthermore, the importance of the “protection and preservation of the marine environment” is mentioned throughout UNCLOS and is referred to as the foundation for states’ rights and duties.²⁹ Art. 192 uses this language to address each “[s]tates’ . . . obligation to protect and preserve the marine environment.”³⁰

This obligation remains despite UNCLOS’ lack of clear cleanup provisions for waste. By focusing on terms such as “protect” and “preserve,” one could say the states’ obligations are merely to prevent pollution, not to fix or mitigate it. However, the language of Art. 207 can be read to mandate cleanup actions. Art. 207 specifically addresses pollution of the marine environment from land-based sources: “States shall adopt laws and regulations to prevent, reduce, and *control* pollution of the marine environment from land-based sources.”³¹ Simply ignoring pollution because it is not currently located within a state’s jurisdiction is not an example of exercising “control.”³² Together, Art. 192 imposes an obligation on states to deal with plastic waste in the ocean, while Art. 207 mandates that states control pollution from land-based sources.

CUSTOMARY INTERNATIONAL LAW

While international treaties are considered binding upon states only once it has been ratified, customary international law is binding on all nations whether or not they have signed the treaty at issue. Even though the U.S. has not rat-

ified UNCLOS through a constitutionally required two-thirds vote, U.S. presidents starting with Reagan, if not Ford,³³ have recognized many of the UNCLOS provisions as customary international law.

The international community also treats UNCLOS—especially the provisions regarding pollution in the marine environment—as customary international law. Budislav Vukas, Vice President of the Tribunal, stated the 1958 provisions on pollution “represent general customary law.”³⁴ According to Douglas Brubaker, a professor of law and expert on ocean law, customary international law applies to the issue of marine pollution from vessel dumping, but does not specifically cover land-based pollution.³⁵ However, if UNCLOS and marine pollution are treated as customary law, all sources, including land-based, would be governed.³⁶ Further, it is reasonable to apply customary international law to the issue of plastic waste pollution, regardless of source, in light of the opinion from the International Court of Justice: “[N]o State has the right to use or permit the use of its territory in such a manner as to cause injury. . . to the territory of another or the properties or persons therein.”³⁷ Thus, even if the U.S. fails to recognize UNCLOS as imposing an obligation on states to deal with marine pollution in the form of plastic waste, it should recognize the applicability of customary international law.

Unfortunately, even if UNCLOS or customary international law were found to apply to the issue of plastic waste pollution in the ocean, they would likely apply only in theory. Brubaker has come to a similar conclusion concerning the liability area of customary international law as it applies to marine dumping.³⁸ Like many international and domestic laws where there is a lack of “teeth” in enforcement provisions, there is a lack of action by obligated parties. Although UNCLOS has an enforcement section under Articles 213-22, it only imposes self-regulation for pollution from land-based sources.³⁹ Moreover, Andre Nollkaemper has described UNCLOS provisions as “hortatory” and the regional instruments or regulations it encourages as “inadequate.”⁴⁰ Absent true participation and enforcement, what remains is a gap between the theoretical and practical application of UNCLOS to the issue of

plastic waste pollution.

FILLING THE UNCLOS GAP

In order to fill this gap, the U.S. should look at several options. First, as the PEW Oceans Commission suggests, the U.S. should ratify UNCLOS to codify the Exclusive Economic Zone (EEZ), as well as ratify the Convention on Biological Diversity.⁴¹ Second, as student author Dautel points out, a “Hybrid Cleanup Model” is necessary and should be examined as a practical remedy for the United States.⁴² However, the London Convention and the U.S. laws Dautel specified may not be the best fit for such a model. Assuming the ratification of UNCLOS will not occur, the U.S. should analyze how the Clean Water Act’s nonpoint source pollution provisions can be used within its territories, including those in the EEZ, to address the problem.

Lastly, trade sanctions through the WTO should be explored if the U.S. is concerned that nations not participating in conventions are creating most of the waste without taking measures to prevent or clean up the waste. The WTO has indicated trade sanctions based on environmental protection are allowed under certain conditions.⁴³ For example, the Appellate Body, in ruling against the U.S., clarified that they did not decide “that the sovereign nations that are members of the WTO cannot adopt effective measures to protect endangered species, such as sea turtles. Clearly, they can and should.”⁴⁴ The U.S. later succeeded in their efforts and should replicate this success when pursuing future trade sanctions for the purpose of controlling plastic waste.⁴⁵

Note: This article is an adapted excerpt from a larger research paper on the topic.

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ENDNOTES (cont’d on page 13-14).

1 ANTHONY J. H. DORCEY, BARGAINING IN THE GOVERNANCE OF PACIFIC COASTAL RESOURCES: RESEARCH AND REFORM, 92-95 (Westwater Research Centre, Faculty of Graduate Studies, University of British Columbia, 1986).

2 Richard Kenchington, *Future Prospects for Coastal Zone Management*, in COASTAL MAN-



Photo: Center for American Progress, www.americanprogress.org

Alison Torbitt

The Smart Grid's Privacy Implications

Richard M. Smith of the Privacy Foundation stated: "Technologies are going to come online to monitor us in ways we would never have imagined ten years ago."¹ One of these new technologies is the demand-response digital utility meter, or the "smart meter." The smart meter is part of a demand response energy program allowing customers to exert choice when using electricity by providing real-time information to the customer about peak hours and electricity prices.² This smart meter idea, and the corresponding smart grid, is at its simplest level a decentralization of the electric grid from the producer-controlled network of today to a consumer-interactive electric grid of tomorrow.³ It is a vision of two-way digital communication combined with plug-and-play capabilities where, through the individual smart meters, the home's energy-using devices (mainly focusing on thermostats, washers, dryers, and refrigerators) receive the real-time cost of energy and turn themselves on and off based on a customer-inputted cost objective.⁴ Thus, in its ideal form, the smart grid will balance the supply and demand for electricity through the smart meter at the device level by comparing customer preferences to individual appliances to the electricity generators' ability to provide.⁵

Focusing on the electronic data output of these smart meters, the smart meter will be working at the home to record electrical data, namely power usage, on a continuous basis for each appliance, transmit the data wirelessly to the utility, and then the utility will likely store the data for multiple years.⁶ If analyzed, this data can reveal private information of consumers, such as their sleep and work habits, the presence of medical equipment, and the use of heat lamps.⁷ Unlike current utility bills that track electricity usage on a monthly basis for the entire home, the output tracked by the smart meter could conceivably be device-by-device (if not outlet-by-outlet) on a per minute basis. The resulting question explored here is: will the household have any privacy rights to this data?

CUSTOMERS MAY HAVE NO PRIVACY RIGHTS TO SMART METER DATA

Under the current jurisprudence, customers living in homes equipped with smart meters will likely have no constitutional privacy rights to the resulting data due to the business records doctrine. The Fourth Amendment guarantees "[the] right of the people to be secure in their persons, houses, papers, and effects against unreasonable searches and seizures." There are currently only three are constitutional resulting rights to privacy recognized: (1) the right to be

free from government surveillance and intrusion, (2) the "right of an individual not to have his private affairs made public by the government," and (3) "the right of an individual to be free in action, thought, experience, and belief from government compulsion."⁸ All of these are protections against the government; there is no constitutional right of privacy against third parties.⁹

The seminal privacy case is *Katz v. United States*.¹⁰ In *Katz*, police attached an electronic listening device to a public telephone booth.¹¹ The Supreme Court, holding that this device was an unconstitutional search, created the two-part test for privacy still used: (1) the subjective part: does the individual's conduct reflect "an actual expectation of privacy," and (2) the objective part: is the actual expectation "one that society is prepared to recognize as reasonable?"¹² If the answer to both of these questions is yes, there is likely a violation of one's right of privacy.¹³ With this two-part "reasonable expectation" test, the Supreme Court decoupled privacy expectations from common law trespass.¹⁴

There are two possible scenarios where the smart grid's data may violate the Fourth Amendment's right to privacy: (1) if the data is within the scope of the business records doctrine, and (2) if the data affects the sanctity of one's home. Both of these scenarios will be further explored below.

THE SCOPE OF THE FOURTH AMENDMENT UNDER THE BUSINESS RECORDS DOCTRINE

The data produced by the smart meter is likely within the business records doctrine's exception to Fourth Amendment protection. In short, the Supreme Court has held that once documents are voluntarily disclosed to a third party, they no longer meet the subjective prong of the *Katz* reasonable expectation test and are outside the protection of the Fourth Amendment.¹⁵ "[A] person has no legitimate expectation of privacy in information he voluntarily turns over to third parties."¹⁶

In *United States v. Miller*, the police subpoenaed copies of bank records directly from the bank.¹⁷ The Court held that there is no Fourth Amendment protection for bank documents.¹⁸ The Court based this conclusion on three limiting

principles: (1) the intentional nature of the disclosure: that the respondent had no ownership or possession rights in the documents, (2) the independent interest factor: the bank was not neutral in the transaction but instead had “a substantial stake in their continued availability and acceptance,” and (3) the nature of the record: the bank was a party to all of the document-represented transactions.¹⁹ “[T]he Fourth Amendment does not prohibit the obtaining of information revealed to a third party and conveyed by him to Government authorities, even if the information is revealed on the assumption that it will be used only for a limited purpose and the confidence placed in the third party will not be betrayed.”²⁰

These cases reduce one’s ability to claim a right of privacy over transactional activities generated and maintained by a service or good provider, like a utility company. Today, personal data can be exchanged, bought, or sold for secondary use by a third party without one’s knowledge or consent simply because it was disclosed voluntarily to a good or service provider.²¹ When utility customers consent to the smart grid, all three of the limiting principles articulated in *United States v. Miller* are fulfilled. First, the intentional nature of the disclosure: customers are voluntarily disclosing to a third party as part of their contract all usage and efficiency records. Second, the independent interest factor: the utility is not neutral in this transaction—it has an independent interest in the records. Third, the nature of the record: the data captured by the smart meter is “not confidential communications but negotiable instruments to be used in commercial transactions.”²² Thus, the smart meter’s data documents are, in theory, third party documents not subject to Fourth Amendment protection due to the business records doctrine.

In addition, the Supreme Court has specifically extended the business records doctrine to utility records. In *Smith v. Maryland*, the Court was quick to explain that the petitioner assumed the risk of disclosure when “petitioner voluntarily conveyed to [the phone company] information that it had facilities for recording and that it was free to record” and thus phone records were outside Fourth Amendment protection.²³ The

California Court of Appeals applied this precedent to hold that utility records were also outside Fourth Amendment protection: “public awareness that such records are routinely maintained . . . negates[s] any constitutionally sufficient expectation of privacy regarding the records.”²⁴ The District Court of Oregon similarly held that “when Mr. Hamilton used power in his home, he voluntarily conveyed that information to PG&E, his electric company. As a result, he has no reasonable expectation of privacy in his power records.”²⁵ Other courts have also held that utility records receive no Fourth Amendment protection.²⁶

However, traditional utility records and smart meter records have a crucial difference—their reflection of the intimate details and activities of the home. Therefore, this extension of the business record doctrine to utility records may not necessarily encompass smart meter records. This concern was articulated by the Idaho Court of Appeals as they explained the reasoning behind allowing the business record doctrine to extend to utility records: “[Utility records] do not identify any activities of [the customer] . . . The information does not provide any intimate details of [the customer’s] life.”²⁷

THE SCOPE OF THE FOURTH AMENDMENT FOR THE SANCTITY OF THE HOME

This brings the discussion to the crucial next step in the Fourth Amendment privacy analysis: the smart meter’s data does impact the sanctity of the home. The crucial question is not whether a right to privacy exists within the home—it clearly does under the Fourth Amendment—but where the boundaries of the home end. Going back to *Katz*, “what a person knowingly exposes to the public, even in his own home or office, is not a subject of Fourth Amendment protection.”²⁸ Activities done within the home that reach beyond the boundaries of the home, such as dialing a telephone, are not constitutionally protected.²⁹

However, the boundaries of the home are not always clear. In *Kyllo v. United States*, the Supreme Court was confronted with a device that detects infrared radiation within the home from its location outside the home.³⁰ The Court acknowledged it “would be foolish to

contend that the degree of privacy secured to citizens by the Fourth Amendment has been entirely unaffected by the advance of technology.”³¹ Instead, the Court now grappled with what limits the Fourth Amendment provides upon technology as it “shrink[s] the realm of guaranteed privacy.”³² In *Kyllo*, the police used the thermal imaging device to detect hot spots, allowing the police to discover marijuana plants.³³ Finding a Fourth Amendment violation, the Court held that the information obtained regarding the interior of the home could not have been obtained absent the technology without physical trespass into the home, and the technology was not available for general public use.³⁴ Thus the device’s use violated both the subjective and objective prongs of the reasonable expectation test.³⁵ “We made clear that any physical invasion of the structure of the home, by even a fraction of an inch, was too much. . . . In the home. . . all details are intimate details, because the entire area is held safe from prying government eyes.”³⁶ The Court feared the device “might disclose, for example, at what hour each night the lady of the house takes her daily sauna and bath—a detail that many would consider ‘intimate.’”³⁷

The smart grid data, being generated from the outlets within the home, may do just that—reveal the hour “each night the lady of the house takes her daily sauna and bath.” Similar to *Kyllo*, absent the smart grid technology this data could not be obtained without physical trespass, and the technology is currently not available for general public purchase (it is currently only available to a set “test” market); thus, the device’s use arguably violates the subjective and objective prongs of the reasonable expectation test.

However, there is a main difference from *Kyllo*: in *Kyllo*, the plaintiffs had been unknowingly subjected to the police’s technology aimed from across the street. In contrast, smart meter customers knowingly have signed up for a service and voluntarily placed this data in the hands of a third party. The customer would reasonably know that the smart meter is conveying real-time information back to the utility company, which has the technology to record the information, and would in fact record this infor-

mation for legitimate business purposes. In this analysis, smart meter data records fail both the subjective and objective prongs of the reasonable expectation test for privacy. Consequently, the smart meter records will likely fall outside Fourth Amendment protections, despite its questionable intrusion on the sanctity of the home.

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ENDNOTES

- 1 Toby Lester, *The Reinvention of Privacy*, THE ATLANTIC, March 2001, available at <http://www.theatlantic.com/doc/200103/lester>.
- 2 Jack I. Lerner and Deirdre K. Mulligan, *Taking the Long View on the Fourth Amendment: Stored Records and the Sanctity of the Home*, 2008 STAN TECH. L. REV. 3 (2008).
- 3 Department of Energy, Office of Electricity Delivery and Energy Reliability, *The Smart Grid: An Introduction* (2008), available at <http://www.oe.energy.gov/SmartGridIntroduction.htm>.
- 4 *Id.*
- 5 *Id.*
- 6 Lerner and Mulligan, *supra* note 3.
- 7 *Id.*
- 8 Whalen v. Roe, 429 U.S. 589, 600 (1977).
- 9 Lester, *supra* note 2.
- 10 389 U.S. 347 (1967).
- 11 *Id.* at 353.
- 12 *Id.* at 361.
- 13 *Id.*
- 14 *Kyllo v. United States*, 533 U.S. 27, 32 (2001).
- 15 Deirdre K. Mulligan, *The Future of Internet Surveillance Law: A Symposium to Discuss Internet Surveillance, Privacy & the USA Patriot Act: Surveillance, Records & Computers*, 72 GEO. WASH. L. REV. at 1578.
- 16 *Smith v. Maryland*, 442 U.S. at 743-44.
- 17 *United States v. Miller*, 425 U.S. 435, 436 (1976).
- 18 *Id.* at 437.
- 19 *Id.* at 440-41.
- 20 *Id.* at 443.
- 21 Lester, *supra* note 2.

- 22 *Miller*, 425 U.S. at 442.
- 23 442 U.S. at 745.
- 24 *United States v. Starkweather*, No. 91-30354, 1992 WL 204005 (9th Cir. 1992) (unpublished).
- 25 *United States v. Hamilton*, 434 F. Supp. 2d 974, 980 (D. Or. 2006).
- 26 *People v. Dunkin*, 888 P.2d 305 (Colo. App. 1994), *cert denied*; *Smith v. Colorado*, 115 S. Ct. 2251 (1995); *State v. Kluss*, 867 P.2d 247 (Idaho App. 1993); *Samson v. State of Alaska*, 919 P.2d 171 (Alaska Ct. App. 1996).
- 27 *Kluss*, 867 P.2d at 254
- 28 *Katz*, 389 U.S. at 351.
- 29 *Smith v. Maryland*, 442 U.S. 735, 741 (1979).
- 30 533 U.S. 27, 29-30 (2001).
- 31 *Id.* at 33-34.
- 32 *Id.*
- 33 *Id.*
- 34 *Id.* at 34.
- 35 *Id.*
- 36 *Id.* at 37.
- 37 *Id.* at 38.

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ENDNOTES (cont'd from page 10):

- AGEMENT IN THE ASIA PACIFIC REGION: ISSUES AND APPROACHES, 386 (1995) (quoting Richard O. Mason & Ian I. Mitroff, CHALLENGING STRATEGIC PLANNING ASSUMPTIONS: THEORY, CASES AND TECHNIQUES (New York: John Wiley & Sons 1981)).
- 3 UNEP 2005, *Marine Litter: An Analytical Overview*, 5.
 - 4 *Id.*
 - 5 *LifeInItaly.com, Beached Whale Burial Site Found*, Dec. 18, 2009, <http://www.lifeinitaly.com/node/15360>.
 - 6 AB 87, Mike Davis, California Assembly Bill 87, 2009.
 - 7 UNEP 2005, *supra* note 3, at 5, 7.
 - 8 This committee was formed at the conclusion of a two-day workshop organized by the University of Washington-Tacoma and the NOAA Marine Debris Program. The committee consolidated the information generated at the workshop and produced the draft report.
 - 9 NOAA, PROCEEDINGS OF THE INTERNATIONAL RESEARCH WORKSHOP ON THE OCCURRENCE, EFFECTS, AND FATE OF MICROPLASTIC MARINE DEBRIS, 10 (Courtney Arthur et al. eds. 2008), available at <http://marinedebris.noaa.gov/projects/pdfs/Microplastics.pdf>.
 - 10 Cal. Health & Safety Code § 25214.11 (2008).
 - 11 U.S. Geological Survey, *Mercury in Aquatic Ecosystems*, Nov. 18, 2009, <http://toxics.usgs.gov/investigations/mercury.html>.
 - 12 Kate Bradshaw, *The Great Garbage Swirl: A Patch of Plastic Twice the Size of Texas is Floating in the Pacific*, MAUI TIME WEEKLY (Jan. 29, 2009), available at http://www.maui-time.com/Articles-i-2009-01-29-68584.113117_The_great_garbage_swirl.html.
 - 13 UNEP 2005, *supra* note 3, at 4.
 - 14 AB 87, *supra* note 6.
 - 15 NOAA, *De-mystifying the "Great Garbage Patch"*, Feb. 10, 2010, <http://marinedebris.noaa.gov/info/patch.html#9>.
 - 16 International Maritime Organization (IMO), *Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter* (1972); TREATIES AND OTHER INTERNATIONAL AGREEMENTS ON FISHERIES, OCEANOGRAPHIC RESOURCES, AND WILDLIFE INVOLVING THE UNITED STATES, 95th Cong., at 580 (Comm. Print 1977).
 - 17 MARPOL is short for marine pollution and refers to the International Convention for the Prevention of Pollution From Ships as modified by the Protocol of 1978. MARPOL's purpose was to address marine pollution from ships and not land-based sources.
 - 18 The London Convention is short for The "Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972."
 - 19 Michael Liffmann & Laura Boogaerts, *Linkages Between Land-Based Sources of Pollution and Marine Debris*, in MARINE DEBRIS: SOURCES, IMPACTS, AND SOLUTIONS, 359 (Springer Verlag 1997).
 - 20 BUDISLAV VUKAS, THE LAW OF THE SEA: SELECTED WRITINGS, 216, (Martinus Nijhoff Publishers 2004).
 - 21 Center for Oceans Law and Policy, *United Nations Convention On the Law of the Sea 1982: A Commentary*, Vol. IV, 7 (Myron H. Nordquist ed., Martinus Nijhoff Publishers 1991).
 - 22 The Stockholm Conference is short for the United Nations Conference on the Human Environment which was held in 1972 in Stockholm, Sweden.
 - 23 *Id.* at 9.
 - 24 *Id.* at 3.
 - 25 *Id.* at 422.
 - 26 *Id.*
 - 27 *Id.*
 - 28 *Id.*
 - 29 *Id.* at 11-12.
 - 30 *Id.* at 35.

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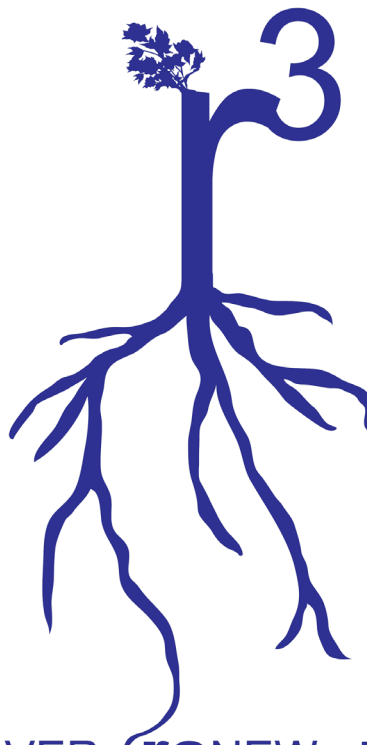
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31 *Id.* at 125 (emphasis added).

32 Setting aside the argument that any pollution within 200 nautical miles of the EEZ is within U.S. jurisdiction.

33 IMO, *supra* note 15, at 580.

34 Vukas, *supra* note 17, at 208.

35 DOUGLAS BRUBAKER, *MARINE POLLUTION AND INTERNATIONAL LAW*, 59 (Behaven Press 1993).

36 *Id.* at 59-60.

37 *Id.* at 61. The issue of whether or not territory belonging to the U.S. is being used or permitting the use of its territory is another issue.

38 *Id.* at 63.

39 Center for Oceans Law and Policy, *supra* note 18, at 214.

40 Andre Nollkaemper, *Legal Regulation of Upland Discharges of Marine Debris: From Local to Global Controls and Back*, in *MARINE DEBRIS: SOURCES, IMPACTS AND SOLUTIONS*, 294 (Springer Verlag 1997).

41 PEW Report at 80-81.

42 Susan Dautel, *Transoceanic Trash: International and United States Strategies for the Great*

Pacific Garbage Patch, 3 *GOLDEN GATE U. ENVTL. L.J.* 181, 200 (2009).

43 Susan L. Sakmar, *Free Trade and Sea Turtles: The International and Domestic Implications of the Shrimp-Turtles Case*. 10 *COLO. J. INT'L ENVTL. L. & POL'Y* 345, 377-81 (1999).

44 APPELLATE BODY REPORT, *IMPORT PROHIBITION OF CERTAIN SHRIMP AND SHRIMP PRODUCTS*, 75 (Oct. 12, 1998) available at http://www.wto.org/english/tratop_e/dispu_e/58abr.pdf.

45 APPELLATE BODY REPORT, *IMPORT PROHIBITION OF CERTAIN SHRIMP AND SHRIMP PRODUCTS: RECOURSE TO ARTICLE 21.5 BY MALAYSIA*, 99 (June 15, 2001) available at http://www.wto.org/english/tratop_e/dispu_e/58rw_e.pdf.

VIRTUAL WATER

ENDNOTES (cont'd from page 6):

17 Grand Canyon Trust, *The Grand Canyon Trust Sues Reclamation over ESA, NEPA, and GCPA claims*, http://www.grandcanyontrust.org/grand-canyon/river_actions_litigation.php (last visited Feb. 19, 2010).

18 NRDC, *supra* note 6.

19 NRDC, *San Joaquin River Restoration Set-*

tlement Act (Sep. 17, 2007), http://www.nrdc.org/legislation/factsheets/leg_07010101A.pdf.

20 Organic Trade Association, *OTA's 2006 Manufacturer Survey*, <http://www.ota.com/pics/documents/short%20overview%20MMS.pdf>.

21 The U.S. Congress promulgated regulations that specified when tuna products could be labeled as "dolphin-safe": only when no dolphins were killed and where no purse seine nets were used while catching tuna. See 16 U.S.C. §§ 1384 (d)(1)(A)-(D); *Id.* at § 1384 (h)(2).

22 WTO, *Mexico etc versus US: 'tuna-dolphin'*, (not adopted Sep. 3 1991), http://www.wto.org/english/tratop_e/envir_e/edis04_e.htm (last visited Feb. 19, 2010).

FOOD ISSUES

ENDNOTES (cont'd from page 8):

19 U.S. DEP'T OF AGRIC., *DIETARY GUIDELINES FOR AMERICANS 10* (2005), <http://www.cnpp.usda.gov/Publications/DietaryGuidelines/2005/2005DGPolyDocument.pdf>.

20 Bittman, *supra* note 18.

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