

**ONTOLOGY, ECOLOGY, BURDEN OF PROOF
AND CAUSATION: AN AMERICAN
PERSPECTIVE ON THE ROLE OF THE COURTS**

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INTRODUCTION

It is good to visit Halifax again. The last time I was here was in the fall of 1979 for a presentation at Dalhousie University's Water and Environmental Law Conference. The title of the paper I presented then was "Environmental Law in the 1980's: Healing the Human Spirit". In it I argued for an ecological perspective of law and economics and for several procedural and common law reforms, including a wider use of citizen suit laws.

Before starting this paper, I browsed through what I said in 1979 and found it idealistic, hopeful and naive. It is now 1988, and I find the predictions in my friend Paul Emond's paper to be closer to the truth. He said in his 1979 talk on a similar subject:

[S]ociety still does not believe that either the environment or its inhabitants are really endangered. Nor will they until it is too late. The solution, I think, lies in adopting an "environmental ethic" that will somehow pervade, if not dominate, all of our decision making. We must replace self-gratification and the development ethic with a sense of obligation to our environment.

There is a need for a common law articulation of an ethical obligation toward the environment. More and more, human thought and attitudes seek resolution of our conflict with environment, and they are drawn to a deeper context, one that is profoundly spiritual. While this goes on, however, the physical assault on the global commons and its life sustaining ecosystems mounts, causing an uncertain fate—a risk that, hopefully, will be appreciated before it is too late.

In one sense it is already too late. It is too late to restore the global air and water systems to what they were fifty years ago. It is too late not to do anything in the face of the mounting evidence of global harm even though the cause of such harm is scientifically uncertain. But in another sense, it is not too late. It is not too late to address day-to-day pollution problems with a judicial sensitivity that is rooted in ethics and seeks ecological truth—a search that accepts as basic truth the reality that the natural principles of ecosystems represent a status quo that must be protected and preserved in order for life to sustain itself as intended by the Creator.

It is presumptuous of me to provide an American perspective on the role of the courts. I have not had the honour or the responsibilities of a judge. I have litigated many, many environmental cases in the courts and agencies, and have for the most part represented environmental plaintiffs. Yet, time and struggle tempers idealism and, after a while, one wants to do what works, which is not always the narrow goals of litigants.

Two of the most pervasive problems of environmental law today stem from the shackles we have placed on certainty and risk in the common law. The first, is the global or macro pollution that

lies outside the scope of environmental law, and except for minor incidents, goes unremedied. The second, is a growing number of environmental illnesses that seem to be caused by exposure to toxic or hazardous chemicals that are released into our air, water and environment. This paper suggests that a proper application of burden of proof will enable courts to play a more meaningful role in addressing both of these problems.

I. STATEMENT OF THE PROBLEM: GLOBAL ENVIRONMENTAL DEGRADATION

Pollution alters life. Earth, air and water systems are closed circuits. The phenomena of acid rain, toxic rain or steady buildup of the CO₂ layer demonstrate that these closed systems can break, or like a bathtub or air bubble, be filled or used up to the point where the sustainable limit of their life support function is exceeded. A difficulty with the current explosion of the technological, chemical and synthetic era is that we do not have the precise scientific data or instruments to measure the impacts until it is too late. The awareness of our past practice in regard to hazardous and solid waste disposal over the last years only too sadly attests to this.

Environmental and economic issues are no longer separate and distinct. If the sustainable limits of air and water are exceeded to a point where the earth's natural law of sustainability is destroyed or impaired, then all life systems, including our own human social and economic order, will be burdened to the point of impairment or destruction. Fortunately, in North America we have enjoyed the affluence to shift when mistakes like toxic chemical pollution are discovered. However, this is not so in the majority of countries in the world. Moreover, the legal system, insurance industry and basic economic stability of the United States cannot support indefinitely compensation or high cost remedial measures required to clean up such pollution.

At this point, for purposes of looking at this question of post-pollution judicial and economic limits, allow me to recount to you the "Parable of Jake".

Jake and his family had been fishing Lake Michigan for four generations. Jake's father retired, and left the small fleet of four fishing boats to Jake. Jake had set his nets the previous day near the island shoals, and was preparing the boats for the next morning catch when the letter arrived from the FDA and State Department of Health:

"You are hereby notified that the FDA in cooperation with the State Department of Public Health has determined that certain species of fish, including whitefish and lake trout, taken from all waters of Lake Michigan are no longer safe for human consumption because of levels of topaphene and other contaminants in excess of standards determined to be critical for protection of human health. You are hereby notified that from and after this date you shall not sell, exchange or deliver any such fish species to any restaurant, commercial enterprise or any person or entity."

Jake threw the letter on the desk and picked up the telephone. Two days earlier he had brought in 2,000 pounds of whitefish and 200 pounds of trout. He called his State Senator, who told him he didn't think much could be done. Jake then called his Congressman in Washington, D.C. and got pretty much the same answer. Jake pulled the fishing knife from its case and drove it through the letter on his desk. He called his lawyer, and several months later a lawsuit was filed against the manufacturers of topaphene, who were scattered throughout the United States.

The manufacturers of topaphene answered the lawsuit and claimed that the topaphene had been used improperly by farmers. The manufacturers and Jake's commercial fishing industry filed lawsuits against the farmers in the states of Michigan, Illinois and Wisconsin for the improper use of topaphene by not following labelling requirements. The farmers filed a third party lawsuit against the farmers in Georgia, South Carolina and North Carolina, claiming it was them who improperly used topaphene, for cotton crops, and through an interaction with the sun and weather patterns, the pesticide became air borne and was transmitted to the Great Lakes by winds and air currents. But the farmers from the Southeast filed a lawsuit back against the manufacturers for not advising or warning of the risks and dangers of topaphene. The manufacturers then sued the Environmental Protection Agency as another third party defendant for allowing them to use the pesticide, when it should not have been allowed for resale or use in the particular fashion authorized. Jake, the fishing industry and farmers joined in the claim against the EPA. EPA answered that the labelling and approval was within their statutory authority, and that the real problem was with FDA for not having set proper limits based upon potential harm to fish and health at an earlier time when the information about the pesticide levels was first known. FDA, in turn, counter-claimed that the manufacturers and farmers assumed the risk when they manufactured, distributed and used the pesticide.

On hearing this, the farmers from the Southeast claimed that the fish contamination was actually due to the change in weather patterns caused by deforestation in Brazil, which had accelerated a warming trend, increased CO₂ levels, and affected weather patterns so much that it all synergistically worked with ozone depletion to chemically alter topaphene under direct sunlight. North American and Brazilian food producers who deforested the Amazon region for grazing land were sued as additional third party defendants. Those food producers counter-sued the EPA, and named as additional third party defendants all of the utility companies with coal-fired generating plants located in Canada and the Northeastern and Midwestern, United States. They claimed that the utilities were responsible for altering the weather patterns; that it was not deforestation. The utilities sued the auto industries for causing altered weather patterns.

On the day of Trial, the lawyers and first round of expert witnesses showed up in Court. The Judge wrenched his fists because there wasn't enough room for the 700 lawyers, 200 expert witnesses, 157 fast speed computers, journalists, spectators and clients of the lawyers. A

motion had been filed that morning to bring in all of the various defendants' insurance companies as defendants. The Trial was adjourned and moved to an 8,000 seat auditorium near the State Capitol. A year later the Trial resumed, and on the second day of Trial, the Judge read aloud a letter he had just received from the County Health Department:

"The County Health Department has determined that a density of 8,000 persons on a daily basis for a five-year estimated period of Trial will generate so much waste and sewage that the restroom facilities and city sewer capacity are inadequate. This constitutes an immediate threat to environment, public health and safety. Therefore, you are hereby ordered to cease and desist from any further use of the building until such time as the facilities and capacity have been upgraded and approved by this Department."

The Judge stood up and yelled, "This case is dismissed. I find no causes of action for the reason that there is an overload of the system. Besides, I've got to use the restroom."

He was in such a hurry, he scurried out with his black robe on. Outside he turned and walked past the grassy commons area next to the court house. He stopped, looked up the steps running to the large wooden doors across the front of a large stone cathedral. He went inside and found a restroom in the basement. On the way out the quiet contrast of the sanctuary caught him. He walked up an isle to a pew just a few rows back from the alter, kneeled and looked up at the cross. "God, Jesus, if you're up there, or here, or whatever, we need help." His fingers clutched his black robe.

The parable illustrates my point: the multiple sources, multiple injuries, synergistic effects and multi-jurisdictional implications of global or regional contamination, such as acid rain, are staggering, to the point of absurdity. Yet, it seems, there is something courts can do, something fairly simple: apply the traditional common law burden of proof to conform to the status quo of an unpolluted or less polluted environment.

To date, a fundamental question of law has been mostly ignored within environmental law. This fundamental question is whether the traditional concept of burden of proof in Anglo-American jurisprudence has been properly applied to pollution and environmental claims. Burden of proof preserves the status quo; that is, it preserves the last-before-court relationship between the parties. Historically, burden of proof has been properly applied in disputes between private individuals. However, the expansion of standing and legal rights toward the protection of natural objects, such as air, water, land and natural resources, has brought about a fundamental but unintentional misapplication of burden of proof. The last-before-court relationship to the environment is the air, water, land, wildlife, and resources in an unpolluted or at least less polluted state. Nonetheless, a person who, in effect, represents the environmental plaintiff (air, water, land and trees) in court, has the burden of proof to establish threatened or actual harm or pollution. Thus, burden of proof, rather than protecting the status quo of a sustainable human-to-ecosystem relationship, actually tends to preserve and protect human activity which damages or harms this relationship. That is, a burden of proof applied in the pollution context accepts the fact of pollution as the institutionalized status quo.

There is a continual need to understand and refine our traditional legal principles so that they are applied as originally intended. Or, if application cannot be made as originally intended, that the legal concepts be modified, under proper legal analysis and decision, to adjust to new demands not previously contemplated by law or science. The question of the appropriateness of the role of burden of proof as it relates to pollution or ecology is of fundamental importance at this time in history. Never before have the by-products of modern life so threatened the macro or global ecosystem. American courts and lawyers have a role and responsibility to seek new or refined legal tools that will tend to respond to these global threats.

II. STATEMENT OF THE PROBLEM: ENVIRONMENTAL POLLUTION VICTIMS

The macro environmental problem is not the only problem that often escapes the reach of the courts. More and more, the release of toxic chemicals and the exposure of humans to these chemicals manifest themselves in medically diagnosed diseases, undiagnosed physical or emotional symptoms, psychological worry or fear of cancer or other disease from the exposure, and an overall loss in quality of life. Underlying all of this is a scientific uncertainty of the physical or emotional damage that is caused by exposure to toxic chemicals or hazardous substances. Thus, the risk of exposure or the risk of injury or harm as a result of a known exposure is plagued with uncertainty, both with respect to the disease or harm itself and the existence of any relief in the courts.

For example, take a recent case of a release of hydrogen sulfide gas (it's in the cyanide family) from an oil well. The release occurs because of a failure in a flare re-ignition switch, allowing the hydrogen sulfide released through "relief" valves to the flare to escape into the atmosphere, and a cloud of hydrogen sulfide forms around the unmanned facility at approximately 8:00 p.m.

A husband and wife and their small one-year old baby daughter are sitting in their house trailer some 600 feet away, and the cloud of gas moves along the entrance road of the well site and over the house trailer. The husband smells the familiar rotten egg odor of hydrogen sulfide and runs outside. He sees a car pull over on the road in front of the well facility and runs to it, only to find the occupant unconscious. He drives the car and the occupant out of the cloud, then returns to the trailer to call an ambulance and the well site operator.

His wife notices that their daughter cannot breathe, and 15 minutes later the daughter vomits. He finally contacts the lease operator who arrives at the site and is able to shut off the well system and stop the high pressure release of hydrogen sulfide gas through the flare. The entire incident occurs over a period of three hours.

The baby girl and man found unconscious in the car end up in the hospital. The daughter is released in two days and the man five days later. The baby contracts many diseases, finally getting bronchitis and pneumonia and ending up in the hospital about three months later. She recovers after several days. The man recovered, except about a year later his eye sight begins to blur. The

husband becomes more nervous over the following year and the wife begins to lose her sense of smell.

All of these people finally request a conference with a lawyer who recommends they file a lawsuit. A lawsuit is filed, defendants deny that there was any release of hydrogen sulfide gas, or that hydrogen sulfide gas would cause any of the symptoms, diseases or emotional upset or discomfort experienced by any of these plaintiffs. All recognize that there is no scientific certainty that hydrogen sulfide would cause any of these symptoms. All that is known is that the plaintiffs were exposed to something on the evening in question, and they subsequently experienced these symptoms.

Plaintiffs and their attorney tried to locate physicians, toxicologists or ecology internists to assess their case, run tests and testify on their behalf. They are told that it would cost them at least \$1,000.00 per day and at least \$20,000.00 in order for these experts to assist them. Their income is below \$5,000.00 per year, and the state of the law is such that no law firm would “bankroll” the case.

Nonetheless, they go to trial on the mere theory of release and exposure, hoping that the jury will conclude from these simple facts that there was a release of hydrogen sulfide, that they were exposed to it, and that they were injured or damaged. The defendants move to dismiss the case on the grounds that there is no testimony or proof that the hydrogen sulfide, even if released, was a probable cause of any of the symptoms or damage complained of.

The trial judge grants the motion to dismiss on the basis that there is no causal evidence, and that the evidence offered by plaintiffs did not prove to any reasonable degree of scientific certainty that hydrogen sulfide would cause these injuries. In his opinion, the judge stated he regretted that the principles of law required the dismissal, but that he had no choice under the circumstances.

What role and responsibility do courts have to address situations like that described above? More and more, courts in the United States are addressing this situation out of the fundamental unfairness and disparity between plaintiffs who have little money, expertise or information, and defendants who indeed have the money, control and knowledge of the situation before any release or exposure occurs. Normally, the approaches taken by the courts have varied greatly, from relaxation in causation and burden of proof to relaxation of proof of damages. However, in each instance it seems that the courts are more open to addressing the problem where (1) defendants had knowledge and control of a hazardous substance or toxic chemical; (2) in the exercise of such control the toxic chemical or hazardous substance was released; (3) the plaintiff was in fact exposed to some levels of the toxic chemical or hazardous substance; and (4) the plaintiff has experienced some injury or loss. A brief outline of the various approaches taken by the courts is addressed in Section III of this paper.

III. AN APPROACH TO PROBLEM I—ONTOLOGY, ECOLOGY AND BURDEN OF PROOF

It has been only eighteen years since Earth Day, 1970. A look at the proliferation of environmental and pollution laws and court decisions make one think it has been a hundred. The embryonic awareness of the 1960s quickened to the environmental movement in the 1970s. The environmental movement of the 1970s matured to the reality of toxic chemicals and the impact on human health and economic systems in the United States and throughout the world in the 1980s. Pollution is no longer local or for that matter regional. It is local, regional and global.

Books like *Defending the Environment*, by professor Joseph Sax, or Aldo Leopold's *Sand County Almanac*, and Christopher Stone's *Do Trees Have Standing? Legal Rights for Natural Objects*, fostered a legal recognition of citizens' rights to protect natural objects or the environment. This protection was articulated at an institutional level in laws like the *National Environmental Policy Act* of 1969 and similar state laws or so-called "mini-NEPAs". It also brought about so-called citizen suit laws, like the *Michigan Environmental Protection Act* and the citizen suit provisions in the *Clean Water Act*, *Clean Air Act*, or recent amendments to the *Resource Conservation and Recovery Act*.

This institutional framework was and is premised upon several assumptions:

- (a) Science can with a reasonable degree of certainty determine the cause and effect relationship of human conduct and ecological damage;
- (b) Private and public decision making will change to conform to protection of the environment once there is awareness of the cause and effect of ecological damage;
- (c) If the public or the private sector does not make such change, citizens have the right to file lawsuits and "action force" a more appropriate alternative course of action. However, even environmental or ecological protection based upon the rise and fall of citizen awareness, financial resources and personal interest, a reasonable degree of certainty and scientific proof, or extension of legal rights to natural objects is limited: Such an approach is fundamentally based upon a fight among competing users, which can lead to nothing more than "rearranging the deck chairs on the Titanic".

The institutional framework of the 1970s and 1980s worked well for specific issues, particularly those involving procedural reform. However, when the problems are large, multi-jurisdictional, multi-political, or involve scientific uncertainty, the framework is stalled, and macro or global problems continue to chomp away at sustainable limits: Loss of top soil for agriculture continues in all countries; excessive irrigation continues in all countries; deforestation, which causes reduction of rainfall and creates drought, further interrupts top soil rejuvenation and the availability of water for irrigation. Acid rain continues to plague fish, wildlife and forests. Wildlife biologists' studies show increasing birth defects in birds and fish; indeed, many species of fish no longer reproduce, and the beaks of some species of birds are warped or crossed. Pesticides used in the southern parts of the United States become airborne and are deposited through rainfall in the Great

Lakes and other waters rendering fish unsafe for human consumption. Most dramatic now is the seriousness of ozone depletion in the outer atmosphere. One United States cabinet-level official stated that people will adjust by wearing protective clothing and staying out of direct sunlight. Is this an ethical response? Is this a proper response of the courts to an issue like acid rain?

While there is some hope for international institutional frameworks, the day-to-day responsibility remains with citizens, lawyers and the courts. How might the courts address these problems in the cases that come before them? And how then does our legal system get beyond an adversarial or *competing user* approach, and at the same time preserve the legal process's structure and principles?

First, it must be appreciated that the legal system remains an important device in promoting justice for the non-represented or under-represented, in this instance lakes, trees or wildlife, or the individuals who are the victims of pollution but cannot afford the tens of thousands of dollars to prove a scientifically uncertain chain of events. Second, the legal system is an important lever in striking a balance between competing users in order that reasonable minds will agree voluntarily to resolutions which will minimize or prevent ecological and global degradation. Third, the legal system is an important tool of discovery and ascertainment of the truth or level of certainty of cause and effect. While legal cause and effect is not necessarily scientific cause and effect, there is at least a retention of access and a process that will scrutinize scientific information that would not otherwise be available.

What changes might better adapt the existing court process in a day-by-day practical contribution to protecting the earth from macro ecological damage and individuals from increased risk of ecological illnesses? Burden of proof, if properly applied to preserve the status quo of the basic sustainable limits of the earth, allows for continuation of the present legal structure, and at the same time brings about a conformity of human thought and conduct to principles of ethics and natural law, which is where ontology comes in—it asks, just what is this earth telling us anyway?

Ontology comes from the Greek word "*ontos*", which means being. Ontology has to do with the nature and science of being. It asks questions like "will the circle remain unbroken?" Ecology comes from the Greek root "*eco*" which means house; curiously, so does the word "economics". Ecology has to do with the natural order of things on the earth: humans, animals, plants, air, water, earth, energy and matter. The relationship of ecology to ontology is brought about by the fact that humans have thoughts and the ability to manifest these thoughts in the natural world. In this sense, a human being's understanding of the natural order of things will be reflected in the health and sustainability of the human and world experience. In a sense, the nature of our beings is always conforming, through thought, to the natural laws of the earth. As we become more aware of these natural laws, we can shift human thought and behavior in line with the natural law.

Burden of proof is a legal concept that can allow the legal process in the context of ecological disputes to conform to the reality of natural law. Proof has to do with observation, empirical evidence and deductive or inductive reasoning from the evidence. Burden has to do with

who must come forward with the proof and who must establish by the weight or convincing nature of such proofs certain conclusions of fact. Burden of proof that preserves the status quo or existing relationship of people to nature protects the “right” or “innocent” way of conduct, and is, therefore, more ontologically true.

However, pollution that threatens the sustainable limits of life and earth can hardly be said to conform to the reality of how the earth sustains itself; i.e., ecological law. It is precisely at this point where burden of proof, if properly understood and applied, could in the ecological context conform the legal process more in line with this ecological or natural law, but without violating basic principles of fairness or substantive rights and duties under traditional principles of law.

The legal process can either honour our relationship to ecological law or not. In the 1960s and 1970s, our courts and law adjusted to a recognition of legal rights in and for natural objects: trees, lakes—indeed, whole mountains and regions of the continent found themselves in court as plaintiffs—that is, the protection of the essence of such natural objects was brought about through the eyes, ears, nose, legs, hands, mouths and minds of people whom the legal system acknowledged to be the legitimate representatives of such natural objects.

Today, a step beyond recognition of rights in the environment or citizen rights to file a suit to protect the environment is needed. This step should be a shift in the application of the legal doctrine of burden of proof when faced with the protection of the sustaining ecological limits of a natural system, or when faced with a known release of a hazardous substance into the environment, and an exposure of person to this substance. The 1970s approach of legal rights in natural objects no longer addresses this larger problem, because the natural or sustainable limits of earth are implicitly presumed “free until proven otherwise”. The macro ecological problems such as acid rain, increases in CO₂, or loss of the ozone layer involve patterns of human conduct which are not under current legal standards of cause and effect harmful in the legal sense. Thus, present burden of proof favors human conduct that tends to perpetrate rather than prevent ecological damage or risk or damage to human health.

It is suggested here that there may be some situations where the burden of proof must be placed on those engaged in certain kinds of polluting conduct rather than those seeking to stop it. Thus, when conduct is proposed that would alter natural objects or ecological limits, those seeking to alter, or who have altered, this natural relationship of ecology system and humans would have the burden of proof. A person or entity which seeks to alter the natural order or impose some new chemicals on the human environment must establish that such alternation will not impair or destroy the underlying, self-sustaining characteristics of nature as a threshold justification of their conduct. This would put the burden upon those who seek to do a particular thing: those who have the economic incentive and information, those in control, would have the burden of proof, internalizing costs in the process. The adversary process would remain the same. The only change would be that burden of proof would in some circumstances preserve the status quo of the natural and self-sustaining limits of the earth in its unpolluted or less polluted state. When it comes to the release of toxic or hazardous substances, this change in application of burden of proof is warranted.

In a recent Michigan case, the Attorney General filed a lawsuit to enjoin the threat of irreparable harm to public health resulting from the contaminants found in the soil at defendant's place of business. Defendant stored a number of toxic industrial solvents in 55 gallon drums and also maintained a number of underground tanks for the storage of cleaning solvents. A correlation was found to exist between the solvents and chemicals downstream from defendant's site and those in the soils or storage tanks on defendant's land. Plaintiffs sought a preliminary injunction immediately to correct and remove contaminants from the groundwater to protect adjacent unpolluted property and wells. After a hearing on a preliminary injunction, the court ordered defendant to install a well to purge groundwater with an activated carbon filtration system. On appeal, defendant argued that the preliminary injunction granted relief beyond that required to preserve the status quo. The court answered:

The object of a preliminary injunction is to preserve the status quo, which is the last, actual peaceable, non contested status which preceded the pending controversy, so that upon the final hearing the rights of the parties may be determined without injury to either.

Defendant argued that the status quo should be preserved by allowing it to continue storing solvents on its premises. Plaintiffs argued that the maintenance of the status quo required that there be no more leakage of toxic solvents into the groundwater. The court held:

The status quo ante is an unpolluted environment. It is clear that the status quo in this case is the maintenance of uncontaminated ground water and soil. Defendant's proposed solution would not prevent the contaminants defendant has already poured into the ground from flowing into neighboring properties. Therefore, to preserve the status quo, it was appropriate to require defendant to install ground water purge wells and monitoring wells and to treat all purged ground water with a granular activated carbon filtration system.

This case highlights the fact that courts are recognizing the relationship of burden of proof and preserving the status quo of an unpolluted or less polluted environment in toxic chemical or hazardous substance cases. Despite the lack of a full trial and no final conclusive evidence on cause and effect, the court took the very practical step of protecting "an unpolluted environment", the effect of which was to shift the burden to the defendants.

The traditional concept of burden of proof, if properly applied, can and should be used by the courts to protect the status quo of an unpolluted or less polluted environment until scientific and legal certainty as to cause and effect can be established by those who seek to alter the ecosystem for specific economic gain, and who under principles of fairness ultimately control the information and economics on which to base any such determination of cause and effect in the first instance. This approach is conservative in the sense that the status quo of a sustainable ecosystem would not be altered or subjected to risk of harm by actual release of pollutants unless there is proof that the cause and effect of the proposed conduct will not cause damage beyond the ecosystem's sustainable limits.

IV. SOME APPROACHES TO PROBLEM II: RISK AND UNCERTAINTY —CAUSATION, DAMAGES AND BURDEN OF PROOF

Following are some of the approaches taken by the courts in the United States to address the problem of risk and uncertainty with respect to causation, damages and burden of proof as a result of releases into the environment of toxic chemicals or hazardous substances.

The starting point is the English case of *Rylands v. Fletcher*, which established a doctrine of strict liability based on the theory that a condition or activity that is abnormally dangerous because of its “non-natural” character, gives rise to a claim of damage where that activity causes damage to the property or person of another. This case requires a determination of whether an activity is “natural”, and whether it is appropriate in the context of the place by reviewing the manner and relationship of this activity to the surroundings.

The “*Restatement First of Torts—Ultra-hazardous Activity*”, placed more emphasis on the “ultra-hazardous” nature of the activity to justify the imposition of strict liability. Under the definition of “ultra-hazardous activity,” there were two factors:

An activity is ultra-hazardous if it

- (a) *necessarily involves a risk of serious harm to the person, land or chattels of others which cannot be eliminated by the exercise of the utmost care, and*
- (b) *usually is not a matter of common usage.*

Contributory negligence or the contributing actions of third persons, animals and forces of nature usually were not a defense because those who choose to engage in ultra-hazardous activities introduce a risk not normally incidental to the ordinary life of the community. Therefore, such persons who engaged in this ultra-hazardous activity assumed the risk of harm to others.

The *Restatement of Second Torts* shifted the “ultra-hazardous activity” test back to the “abnormally dangerous” test of *Rylands v. Fletcher*. Thus, if a person engaged in an “abnormally dangerous” activity, that person assumed the risk of harm to the ordinary life of the community. The following factors were set forth in the *Restatement of Second Torts* for purposes of determining whether or not an activity is “abnormally dangerous”:

- (a) *existence of a high degree of risk and some harm to the person, land or chattels of others;*
- (b) *likelihood that the harm that results from it will be great;*
- (c) *inability to eliminate the risk by the exercise of reasonable care;*
- (d) *extent to which the activity is not a matter of common usage;*

- (e) *inappropriateness of the activity to the place where it is carried out; and*
- (f) *extent to which its value to the community is outweighed by its dangerous attribute.*

However, the *Restatement Second of Torts* does not resolve all situations because of an emphasis on place or location where the activity is undertaken. In many instances, whether it is taken in an appropriate place or not, there is a substantial magnitude of risk with respect to the burial or release of some hazardous substances or toxic chemicals.

A major report to the 97th Congress, Second Session—sponsored in part by the American Bar Association—has recommended that courts focus on a magnitude of risk approach to deal with hazardous waste, deemphasizing considerations of locale and other criteria and emphasizing the actual risk created by the activity to persons and the environment.

Of course, Congress or state legislatures have passed laws that, in effect, have changed the standard or amount of proof required to establish causation in general pollution situations. For example, the *Michigan Environmental Protection Act* adopts a standard of “likely” in place of “probable” or “actual” harm:

Sec. 3(1)When the plaintiff in the action has made a prima facie showing that the conduct of the defendant has, or is likely to pollute, impair or destroy the air, water or other natural resources or the public trust therein.”

The United States Congress, in the citizen suit provision of the *Resource Conservation and Recovery Act*, has required only a contribution by a defendant to the disposal of a hazardous waste which “may present an imminent and substantial endangerment”:

- (A) *Any person may commence a civil action on his own behalf*
- (B) *against any person who has contributed or who is contributing to the past or present handling, storage, treatment, transportation or disposal of any solid or hazardous waste which may present an imminent and substantial endangerment to health or the environment.”*

Under the citizen suit provision in Michigan, a plaintiff can in effect shift the burden of proof by establishing that conduct is “likely” to pollute or impair the environment. Under the federal *Resource Conservation and Recovery Act*, a person can impose liability on a defendant by showing that the defendant’s acts of contribution “may present an imminent and substantial endangerment.” In the latter instance, the burden of proof is not shifted so much as a statutory cause of action is created that imposes strict liability.

Beyond such statutory reforms, some American courts have been more willing to shift the burden of proof to address specific problems in proof of causation.

Damages may be apportioned among a number of defendants who have contributed to a single harm or injury. In an oft-cited early toxic tort case, the defendant owned a pipeline that conveyed salt water near plaintiff's land. The pipe broke and thousands of barrels of salt water flowed over plaintiff's land into his pond, killing all of his fish. At the same time, and from a different source, brine and salt water escaped from an oil well pipeline and it too flowed into plaintiff's pond. Before this case, the law did not recognize any claim for damages for loss of use and enjoyment of land where there were multiple defendants, and it could not be determined which one caused the harm. The court refused to adopt as law of the state a rule that "effectively relieves the two defendants of the consequences of their wrong, and requires the innocent plaintiff to suffer injuries without recompense." The court held each defendant liable for the entire amount unless they apportioned damages between them.

The *Restatement of Second Torts*, Sec. 875, adopts an almost identical approach:

Each of two or more persons whose tortious conduct is a legal cause of a single and indivisible harm to the injured party is subject to liability to the injured party for the entire harm.

Thus, once it is established that there is a single and indivisible harm, the burden is shifted to a defendant to establish that they either have not contributed to the harm, or that only a portion of the harm can be attributable to them.

More recently, courts have taken a broader approach in shifting the burden of proof, in effect imposing strict liability or placing the proof of causation on defendants.

In *Sindell v. Abbott Laboratories*, the court departed from common law principles and established a "market share" theory of liability. In this case, a number of class actions were brought by women against drug companies seeking damages sustained as a result of the administration of the drug DES to their mothers during pregnancy. Because of the long lapse of time between ingestion of the drug and resulting injuries, it was impossible for each plaintiff to identify any specific manufacturer of the drug. The court held that the evidentiary burden would be altered where (1) all of the defendants in the action had produced the drug from an identical formula; (2) the manufacturer of the drug which caused the injury cannot be identified through no fault of the plaintiff; and (3) each manufacturer joined in the action produced a "substantial share" of the product. If these conditions were met, market share imposed liability without establishing culpability of any single defendant.

In *Collins v. Eli Lilly*, the court adopted a "risk contribution" theory based upon principles of comparative negligence. Here, each drug manufacturer was required to share a damage award in proportion to its contribution to risk created by the industry and in the marketing of the drug. Again, there was no specific connection to actual culpability and the requirement of liability.

In a very recent case, the trial court allowed plaintiff to proceed on a theory of alternative

liability on claims for damages resulting from removal of harmful asbestos from schools. Like the DES cases, plaintiff could not identify the exact manufacturer of asbestos in plaintiff's schools. Nonetheless, the trial court allowed the matter to proceed and shifted the burden of proof to the defendant to show that it did not manufacture the asbestos used in plaintiff's schools. However, not all courts have accepted market share or alternative liability theories as a basis for imposing strict liability or shifting the burden of proof.

Finally, courts are starting to address the specific problem of lack of a link between cause and actual damage, arising out of the fact that often the real damage due to exposure is many years subsequent, most likely after the date of trial. In these instances, courts are fashioning a rule that creates a new classification of damage called "enhanced risk of future injury."

Where a person is put at a greater risk of future injury due to the exposure to a hazardous substance, the historic rule has been that no damage award can be made because the injury has not taken place. However, probably due to the latent nature of the disease arising out of such exposures, courts are becoming more sensitive to claims for compensation on the basis of "enhanced risk of future injury". Often there must be at least some physical injury or effect to the plaintiff in order to allow recovery for future probability of injury or disease.

Another approach by some courts has been to allow damages for future medical monitoring and diminished quality of life. For example, in one case, despite the absence of physical manifestation of an asbestos related disease, plaintiffs who sued for exposure to asbestos were allowed to present a claim for damages to the jury based upon expert testimony discussing the need, extent, nature and frequency of medical monitoring.

CONCLUSION

As has been stated, two of the major problems facing environmental law and the courts concern global contamination and the increased risk of injury to persons exposed to toxic or hazardous substances in the environment. Relying on the conceptual basis of *Rylands v. Fletcher*, and applying this concept to specific findings that there has been (1) a release of, and (2) actual exposure to, a hazardous substance or toxic chemical, the burden of causation is then shifted to defendants.

Independent of specific claims for damages, the proliferation of the nature and types of chemical compounds used in products or released as waste by-products into the environment continues to degrade ecosystems—the air, water and soil of a region that supports life in that region. In turn, continual releases of those compounds and the by-products of burning fossil fuels threaten the global commons. Beyond individual plaintiffs, courts have an ethical obligation to protect the sustainable relationship between life and the air, water and soil of the earth.

Applying the traditional purpose of burden of proof to this situation will conform the legal process to the reality of a less polluted ecosystem or environment. In this way, the legal system and its concept of burden of proof in the context of toxic or hazardous chemicals conform closer to reality than an application of burden of proof that perpetuates such pollution as the status quo. A shifting of burden of proof does nothing more than internalize the costs, risk and uncertainty of hazardous products or by-products to those who have the information, expertise and control in the first instance. If uniformly and fairly applied, it is better for the burden of proof and the courts to err on the side of Creation, than not.

ENDNOTES

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- 607 P.2d 20 (Cal. 1979).
- 342 N.W.2d 37 (Wis. 1984).
- *Detroit v. Celotex Corp.*, 7 Law Alert 308 (Mich. Cir. Ct. 1988). See also *Menne v. Celotex Corp.*, 1 Tx LR 43 (D. Kan. 1986), cf *Celotex Corp v. Copland*, 471 So.2d 533 (Fla. 1985) (holding no market share or alternative liability when some of defendants could be identified); *Minnick v. Ashland Oil Co.*, 15 Oh. St. 3d 396 (1984) (alternative liability adopted as set forth in Sec. 433(B)(3) of *Restatement of Torts 2d*); *Martin v. Abbott Laboratories*, 688 P.2d 368 (Wash. 1984); *Abel v. Eli Lilly*, 289 N.W.2d 20 (Mich. 1979).

- See *Mulcahy v. Eli Lilly*, 14 P.S.L.R. 302 (Iowa 1986) (Iowa Supreme Court rejects all forms of alternative liability); *Griffen v. Tenneco Resins Inc.*, 1 Tx LR 802 (W.D. N.C. 1986) (again rejects all forms of alternative liability); *Tidler v. Eli Lilly & Co*, 95 F.R.D. 332 (D. D.C. 1982).
- *Jackson v. Johns Manville Sales Corp.*, 750 F.2d 1314 (5th Cir. 1985) (this case allowed a cause of action for damages as a result of a probability of getting cancer and for the fear of cancer, cancerphobia), *Radford v. Susquehana Corp.*, 586 F. Supp. 14 (D.C. Colo. 1984); *Davis v. Graviss*, 672 S.W.2d 928 (Ky. S. Ct. 1984).
- *Jackson, supra Eagle Picher Industries v. Cox*, 481 So.2d 517 (Fla. App. 1986).
- *Burns v. Jacquays Mining Corp.*, 2 Tex. LR 868 (Ariz. Ct. App. Div. II 1987). See also *Ayers v. Jackson Twp*, 525 A. 2d 287 (S. Ct. 1987) (this case upheld damages for future medical monitoring expense and for diminished quality of life).