



Spring 1972

## Global Pollution and Human Rights

Abel Wolman

### Recommended Citation

Abel Wolman, *Global Pollution and Human Rights*, 12 NAT. RES. J. 195 (1972).  
Available at: <https://digitalrepository.unm.edu/nrj/vol12/iss2/8>

This Article is brought to you for free and open access by the Law Journals at UNM Digital Repository. It has been accepted for inclusion in Natural Resources Journal by an authorized editor of UNM Digital Repository. For more information, please contact [disc@unm.edu](mailto:disc@unm.edu).

# GLOBAL POLLUTION AND HUMAN RIGHTS

ABEL WOLMAN†

The title of this article poses a contradiction in terms. Some 37 years ago, an eminent philosopher<sup>1</sup> in the law commented upon the dilemma implicit in our subject, in these words:

The craving for absolute moral distinctions and the confused effort to apply them to practical life—the source of so much of our spiritual grandeur and misery—appear nowhere more clearly than in the history of the law. . . . Law, philosophy, and social justice have thus become merged in an absorbing theme of reflection.

But in law as in other social fields the very vitality of our interests makes us passionately espouse half-truths and zealously exclude the vision of those who see the opposing and supplementary half-truth.

The rediscovery of the environment in the 1960's, and the assumption in high places that no pollution abatement occurred prior to the Water Quality Act of 1965, are rich grist for the sociologic research mill for many years to come. Regardless of the causes of interest throughout the world, the phenomenon has endowed the word "pollution" with a conceptual entity which seems to place it in juxtaposition to man and his inalienable rights. We must be reminded that man is at the same time the creator of wastes, as well as the beneficiary of those systems which create them. More important, he is both the plaintiff and the defendant in the world court of the environment. In fact, on different days the Sierra Club member may serve on the Board of Directors of the Manufacturers Association. The lion lies down with the lamb only when the issues concern neither of them very much.

Thus, when we counterpoise "pollution" with "human rights" we place ourselves in a legal paradox. Wherever and whenever man breathes, works, plays or eats he modifies the ecology of the earth. How and whom he affects is a matter of time, place, concentration, and even one's philosophy of the ingredients of a satisfactory quality of life. The canoeist has little regard or even friendliness for the speedboat artist, although they may both desire the reservoir, that recreational Garden of Eden. Provided, of course, each possesses it for himself.

The ecologist reminds us, too, that, even if man did not exist on the earth, equilibrium between species of animal, plant and mineral is rarely permanent.

---

†Professor Emeritus, The Johns Hopkins University.

1. M. Cohen, *Law and the Social Order* (1933).

This long preamble appears necessary, after wading through thousands of pages of congressional hearings, of hundreds of pages of new curricula in law, engineering, economics, and political science, and dismal repetitive half-truths in newspapers and television. Throughout this deluge of the last decade, reason has given way to non-reason, intelligent interest to hysteria, and positive action to non-action. It is well to recall that "the function of intelligence is not only to recognize but also to evaluate opposing forces, and to determine their resultant with the highest obtainable accuracy."<sup>2</sup>

The problems of the environment are essentially those with which man has struggled for centuries. These have been qualitatively and quantitatively intensified by the almost universal population explosion, industrialization, urbanization and the precipitous advances in science and technology. If any, or all of these, are morally bad, socially objectionable and hostile to health and welfare, they are all man-made and, at least in theory, controllable by man.

If one were to single out that area of greatest promise in reducing environmental ills, it would undoubtedly focus on excessive rate of growth of population—whether in so-called developed or developing countries. Yet, law curricula on the environment or pollution are strangely silent on this score. If we really mean to protect man against himself and his doings, what promise is there in a legal attack against this "cottage industry" of population explosion?

The further pursuit of priorities in the fight against pollution would undoubtedly disclose, with respect to the air, that the automobile is par excellence the primary offender. It has to its debit, also, that it kills and cripples more people each year than almost any other weapon. Yet, few march, with wind swept banners, demanding the protection of the rights of man against these undertakers' certificates. Although these are "socially acceptable," they far outnumber "the unknown diseases of unknown origin" so diligently pursued by some. What can the law offer in this environmental field, where man's decisions daily violate his own and his neighbors' right to survive. Can society provide the curbs to the automobile, either by modifying its unrestrained use or by changing its motive power? We may well be on the road to doing both—but, as always, long after necessity warrants severe legal and technologic action.

In the water pollution field, the first priorities may be equally divided between public and private contributors. The great urban centers, growing day by day throughout the world, generate proportionate increases in domestic and industrial wastes. The speed

---

2. *Id.*

with which these areas have grown resulted in the problems outstripping the correctives in waste collection and treatment. This is the case with respect to liquid, gaseous and solid materials. In most of these situations, technologic solutions are at hand. The blocks to abatement have rarely been attributable to the absence of law. With few exceptions, the delays are due to failure of the public to provide money and to develop managerial institutions appropriate to the complex overlapping political units. The gap between public propaganda for abatement and public appropriation of funds for the purpose is wide. It is likely to continue to be wide throughout the globe under the inflationary pressures on the dollar, the rupee or the peso. In addition, the other significant demands of society, such as the ghetto, the food supply, the transportation, enter the competitive field for the public and private budget. There is no escape from the fact that no country is rich enough to do everything for everybody simultaneously, and this covers the United States of North America as well.

At the same time as these restraints operate, life goes on. Industrialization moves forward. Metro areas proliferate. Encroachments on open land proceed apace. Hence controversies will continue between preservationist, expansionist, exploiter and beneficiary. Decisions, as they now materialize, or, more often, are deferred in a morass of confusion and bitter controversy, are rarely satisfactory to all the adversaries. It is improbable that they ever will reach a state of perfection, no matter by whom defined. Perhaps, Francis Bacon's<sup>3</sup> dictum of 1627 will prevail, when he suggested for his New Atlantis: "The effecting of all things possible."

The law may very well facilitate an approach to perfecting our environment, by the strengthening of the "trust doctrine," by a new look at the balance between "jus privatum and jus publicum," by simplifying the method of participation legally of the citizen in such adjudications. How successful these efforts turn out to be will depend in no small measure on an objectivity of legal approach, the existence of which is not too obvious in many of the legal discussions of the last few years. The bias is frequent toward the frank and militant preservationist, perhaps because the "climate" of today blows the winds in that direction. The risk inherent in any bias is that "climate" is fragile, reversible and unpredictable. Decision making which is too one-sided, even when reversing an early pendulum swing, undoubtedly brings counter action in its wake.

---

3. Address by Sir Peter Medawar, *The Effecting of All Things Possible*, British Association for the Advancement of Science, 1969.

Many of the efforts of recent years to meet the problems of environmental quality, by more stringent laws, by the creation of new principles in law, by strengthening and extending administrative practice and responsibility and by promoting more effective people participation, will rise or fall depending upon the validity of the assumptions which guide them. Some examples of current environmental issues may illustrate the pitfalls to which all of us are exposed. Fulfillment of the desire to provide logic and wholeness of perspective in public policy, so wisely pressed for by the ecologist, is most difficult.

### EARTH AS SPACE-SHIP

Much of the concern regarding the deteriorating quality of the environment stems from the analogy, used by many authors, that, not only does the earth have a finite capacity for people, but that this capacity is rapidly being approached! In simplest terms, it is said that density of living is approaching a level of danger and urban growth is encroaching excessively upon available land. How true are these charges? Is the earth really analogous to a space-ship?

The long experience of Europe has some lessons in this connection. Holland and Belgium, with a combined population of 22,232,000, have managed to get along reasonably well on 25,275 square miles. England and Wales provide a viable society of 48,391,000 people on an area of 58,348 square miles. The amount of land surface there available per person is two-thirds of an acre. France has three acres per person, while the U.S.A. has over 12 acres per person.

The relative density of population in Europe versus that in the U.S.A. is 800 to 900 as against 66 persons per square mile. In addition, the urban population of the U.S. now accounts for less than two percent of the land area of the U.S. continent.

Europe and the U.S.A. may be moving toward a "space-ship" reality, but hardly at a break-neck velocity. Time is amply available to use and deploy our resources with wisdom and safety—without resorting in too great a hurry to transporting our people to the moon.

### CAN THERE BE A POLAR PLAN?

For the purposes of this discussion, it is fortunate that we now have an opportunity, as well as a challenge, to bring to bear all our wisdom upon the development of public and private policy in a relatively virgin area. Several years ago, in a session on Arctic prob-

lems in Fairbanks, I voiced the view that little time would be available in Alaska to work out a viable policy for development. Such a policy would be required to assure that, if resources were to be tapped, procedures to do so would have to be consistent with the preservation of wilderness areas and for the protection of significant ecological balances. The task would not be easy, but the time for crystallization of views was around the corner.

Since that time, meetings of interested agencies, individuals and private groups have been convened. They have so far produced much acrimony, few original proposals for new legislation and no acceptable consensus. In the meantime, large oil resources have been discovered, and other natural resources appear to be in rich potential supply.

The dilemmas posed by the Arctic are familiar ones. The areas involved are under multiple national jurisdictions, *e.g.*, Canada, U.S.A., Norway, Sweden, Finland, U.S.S.R. Each of these sovereignties has long-standing administrative structures and experienced personnel to deal with polar problems. None have so far evolved joint institutions, of all the interested nations, which might lead to concerted policies best calculated to preserve the interests of all. The issues, of course, are simple to state and most difficult to resolve.

The views of the responsible authorities in the U.S. and Canada make clear what these conflicts are. It is equally manifest, that the resolutions of the conflicts are already being made in economic, political and cultural arenas rather than in law. Administrative agencies, endowed with powers initially prescribed by law, are forced into decisions by pressing circumstances. The bases for their decisions, guaranteed to be unacceptable to some, may be gleaned from their recent pronouncements.

At a 1969 conference,<sup>4</sup> the U.S. Secretary of the Interior, Walter J. Hickel, spoke as follows:

The North is beginning to undergo the most rapid and profound changes ever seen in any wilderness region in world history. It is unlike any other region in the world in many other ways. All of us, throughout the world, who work with the Arctic must find new ways to meet this unprecedented challenge. We need new ideas, new techniques and attitudes, perhaps even new institutions, and we need them in every nation involved in the Arctic. Knowledge of the world's polar regions will change not only the countries bordering on the Arctic—it will change economic, social and cultural conditions throughout the world.

---

4. Polar Plan Conference, Sep. 29 to Oct. 2, 1969 (Arctic Institute of North America, Washington, D.C.).

Aside from this over-elaborate statement of problem and effect, the Secretary, under the pressures for immediate action because of thy discovery of oil, permitted the construction of hundreds of miles of pipeline through hitherto undisturbed Alaskan terrain. In spite of elaborate precautions to minimize ecologic disturbance, the decision has stirred up a massive hornet's nest among preservationists. Would new law or re-interpretation of the old assist the Secretary in avoiding such heated attacks—unless, of course, his decisions were always in favor of one side or the other. His attempt to sail safely through the treacherous waters between Scylla and Charybdis will never be a fully happy one.

At the same conference<sup>5</sup> John H. Gordon, Assistant Deputy Minister, Department of Indian Affairs and Northern Development of Canada, apparently intends to meet the issues in more forthright language. Realistically, he knows that change will occur and prepares to meet it, in the following terms:

Time, however, is very definitely not on our side. Developments and events are accelerating and progressively constrict the time frame within which decisions must be taken. I think it is very clear that the allocation of resources, of time, of money, and of able people to these urgent problems must be sharply increased. Otherwise, it appears inevitable that we shall face, and many of the indigenous people will be involved in, major problems of alienation and of social degradation in the very centre of developments which could be a golden opportunity for them. This very real danger defines an obligation which certainly cannot be discharged by transfer payments. The need is to ensure that the residents of these territories have an opportunity to work, to participate, and to share in the decisions affecting their future. Otherwise, their culture and their dignity as men and women are in very great danger of being destroyed.

Turning to the physical environment, the prospects of new mines opening, developments in petroleum, gas, forestry, and construction are exhilarating. At the same time we are very much aware of the responsibilities that we have for preserving the fragile ecology in the North, for the preservation of its natural beauty. The very success we are attaining poses serious dangers in this respect. The need is to find a balance between the continuing and increasing development of northern resources and the protection of the land. It is a critical problem.

Public opinion all over the world has become more urgent in its pleas for conservation and preservation. At the moment, Canada north of 60° is relatively untouched by industrial pollution and

---

5. *Id.*

disturbance. What policy should the Federal Government evolve? It appears to me there are two sides, two extreme positions.

There are those who would exclude man from the Canada north of 60° and preserve what amounts to a sub-continent in its original state for future and presumably for the benefit of generations to come. On the other hand, this is a hungry world. Frightening forecasts are made of the size of its population just 20 years from today. Man, it appears, must consume more and more merely to subsist. He consumes raw materials, food, manufactured goods and, unavoidably, land and all it contains. This is inescapable and unless and until man is willing and able to control the population explosion, he will continue in this direction. The only way to avoid disturbing the northern environment would be to cease all further activity. However, this seems to be wildly impracticable. Vast resources needed by man for survival, are simply not going to be permitted to lie fallow in a world of have-not nations. Thus, we must face up to the inevitability of disturbance of the environment, except in national parks and other specially reserved areas. The main task confronting us all is to reduce to acceptable levels the bad effects of the exploitation of our natural resources and an expanding population.

This task is one which calls for the enlightened cooperation of the industrialist and the conservationist. Indeed, if I judge the public temper correctly, it will accept nothing less. For much too long the conservationist has been ignored in the headlong rush and almost universal dedication to development. But this situation is changing rapidly. In my own country within a very short time a major hydro-electric development has been blocked on the dual grounds of its likely damaging consequences for the economy of a small Indian group and the ecological implications. The largest Canadian province has become the first to ban the general use of DDT. The Federal government has recently announced tough policies with respect to water pollution. A new cheap process for the treatment of effluent which, it is claimed, will remove 97% of the phosphate nutrients has been announced. It seems clear that the warnings of the ecologists and the frightful evidence of environmental destruction have finally convinced public opinion.

I suggest there is little profit for anyone in extreme positions. Resource development *must* go on; otherwise we shall all starve. The environment *must* be protected; otherwise man and all living things will perish. The solution must lie in cooperation—in jointly discovering how we can avoid both perils and then to get on with the job. We all sit in the same boat which we have just recently discovered is not too seaworthy with some very ominous storms on the horizon. It is no time for uncompromising attitudes, quarrelling and recriminations.

Mr. Gordon, in these extensive quotations, does expose the con-



flicts in policy, perspective and action which the polar regions exemplify—and which characterize the untouched areas of the globe where they are endowed with the natural resources man seeks and must use. He goes further, in his statement, to delineate the steps he conceives his and other governments must traverse to protect virgin environments:

- (a) to establish regulations governing entry into northern lands for exploration and development purposes;
- (b) to establish policies and regulations relating to water conservation, use and quality control;
- (c) to sponsor a broad program of hydrological and ecological research.

#### THE CASE OF THE ROTTERDAM REGION

In contrast to the situation described above for polar lands, unopened, sparsely used, lightly populated, let us review the plans and programs of an old, sophisticated, developed region, also confronted with the whole spectrum of environmental restraints and hazards.

The Port of Rotterdam was the child of hydrologic good fortune. It sits along a sharp bend of the Rhine. The current still provides there a depth between 15 and 20 feet, ample for the ships of long past days—a value non-existent for other fishing villages along the coast.<sup>6</sup> As time went on the port grew in size and importance. In May, 1940, the old center of Rotterdam was completely destroyed by German bombers and in October, 1944, about 35 percent of the port facilities were destroyed by German mines. During the Second World War the port came to a complete standstill. Was this, after the War, an opportunity for change or a return to the original status quo? Under such or similar circumstances, either man-made or by natural catastrophe, cities and regions throughout the world chose both routes, with the return to anterior status quo in the majority. Nostalgia prevailed over vision, or economics over esthetics.

Rotterdam has chosen a middle course after catastrophe, albeit with magnificent imagination, tempered by geography, economics, technology and political acumen. A circle, about 310 miles around this core city, covers an area with a population of 160 million people. The same radius circle around New York City, for example, encompasses a population of 50 million people. The Dutch region seems destined to become the new industrial axis of Northwestern Europe. The whole industrial pattern is changing and Rotterdam's

---

6. These and subsequent observations on this area I owe to Comm. on Science and Astronautics, Rotterdam—Europort (U.S. House of Representatives, 1969).

evolution is geared to it. It is and will remain an engineer's haven of activity for years to come.

In preparing for present and future growth it deepens harbors to accommodate ships of over 250,000 tons deadweight, with a draught of about 80 to 85 feet. By the year 2000, it proposes to develop required land for industries to the extent of 43,960 hectares or some 110,000 acres. Much of this will result from the recapture of marsh or "wet lands." The acreage is to be used for refineries, chemical industries, metals, basic steel, ship cleaning and repairs, container and general cargo handling.

The officials show complete awareness that the pace of this project development is not only contingent upon political acceptance, money and skill, but a highly integrated infra-structure. Roads, highways, railroads, metro transit, pipe lines, power facilities, water supply and waste handling systems will need to be heroically expanded on a fairly rigid time schedule.

Does the development of the Rotterdam Region do ecological violence to the natural environment? Historically, public policy in Holland has always favored man-made change in nature. If this were not so, there would be no Holland. It would be worth an orderly doctorate thesis to assess the pros and cons of such a national policy—the results of which are clear and measurable throughout its history. Would the application of the legal doctrines, being pressed in the U.S. today for the protection of wet lands, the preservation of the dunes, the exclusion of human adjustment of the sea littoral, if applied to Holland, have been wise for nature or man? It is conceivable that the long history of concessions to man's necessities for space and industrial development has produced irrevocable damage to nature. The extent of these disabilities and the means of avoiding them in the future would certainly be worth exploration and assessment.

#### EFFORTS AT POLLUTION ABATEMENT IN VARIOUS COUNTRIES

In many of the European countries, as in most American States, statutory prohibition of water pollution has been on the books for decades. In almost all cases, standards of quality for receiving bodies of water have been promulgated. Within and without the Iron Curtain countries these restraints have been available for a long time. In spite of them, however, water degradation has not, with some important exceptions, been prevented. The reasons for failure to forestall objectionable consequences are not difficult to detect. The desire for industrial growth, the proliferation of people, the unavail-

ability of money to make correctives promptly, were not matched by militant public interest and concern, by official administrative action, or by court implementation. Punitive action on the legislative books is not synonymous with prevention or correction. It might even be surmised that the public has priorities, inarticulately expressed, which do not come up to the hopes of the more articulate minority conservation groups.

The case for air pollution control may perhaps be a more optimistic one, particularly in England. In that country, with its extraordinary meteorologic situation, the drive for cleaner air appears to be succeeding. Some may claim that, even there, prohibitory statutes have had less impact than technology, in shifting fuel from coal to oil and still later to gas. Regardless of specific causes, progress is discernible in some places.

On the other hand, the rapidly increasing use of the automobile and its objectionable exhausts may substitute a new hazard for an old and disappearing one. The mobile society exacts a price in air quality degradation, which is technologically difficult to avoid. Progress is being made in the U.S. in the reduction of this hazard, again not to the satisfaction of more impatient members of our society.

International agreements among the countries of Europe, directed toward pollution abatement, have been singularly devoid of significant accomplishment. Like so many treaties and conventions, they generate high hopes and satisfactions in signators, largely because of the beauties of language therein. They bespeak laudable agreements on high principles. They omit implementary mechanisms and money—and the powers which these might enforce. In some instances, such agencies engage in data collection—laudable in purpose and sedative in producing correctives.

Even in international allocations of waters, permanent agreements are rare, because economic and political considerations are eternally in flux. This has been true, in the U.S., with respect to the Rio Grande, the Colorado and the Columbia Rivers. India and Pakistan have an uneasy truce on the Indus. The Jordan River, under scrutiny for more than a quarter of a century, still bears no international seal. The Rhine and the Danube understandings need both new crystallization and dynamic implementations.

On the Rhine, authorities of Germany, Holland, France, Switzerland and Luxembourg are periodically re-awakened by sudden excessive contaminations dramatically publicized, even in a milieu already heavily degraded over the years. The accidental discharge of a poisonous insecticide in mid 1969, bringing an unusually high

mortality of fish, served such a purpose. Renewed pressures toward speeding up corrective measures were imposed upon the International Commission for the Protection of the Rhine. The Commission, created in 1963, was only the latest of a series of efforts to have upstream nations assume some real responsibility for protecting downstream nation users of Rhine River waters.<sup>7</sup>

As one might surmise, money required to prevent this pollution, either by removal at its source or by subsequent treatment, will exceed some four billion U.S. dollars by 1975. The stakes are high in degradation of quality and equally high in costs of alleviation. The experience perhaps justifies the dictum that the will to change must invigorate and activate the words of international agreements.

### SOME MISCELLANEOUS, BUT IMPORTANT, PROBLEMS

No single paper could possibly encompass the totality of environmental impacts upon man. Some have more significance than others. Their significance may be accidental and temporary. Some may have subtle, long-term terminal effects. Some have strong subjective influences, while others lead almost to hysterical reflexes. Because of this very wide spectrum of impacts, every policy maker and administrator is confronted with the necessity of measurement, of quantification, and of assessment. Not only concentration, time, extent, and location must be evaluated, but priority of decision and action. In the real world, it is still true that some environmental influences are more objectionable than others. By a "blunderbuss" policy, one might generate political satisfaction, but not real prevention or correction. The doomsday prophet proclaims the necessity of zero risk—hardly attainable, rarely necessary and sometimes even harmful (as in the elimination of natural immunity). Differentiating between the important and the insignificant, between the known and the unknown, between the ideal and the possible, is the difficult task of the administrator. In general, he is helped most by science and technology, by economics and by social understanding. Crystallizations in law are perhaps less calculated to provide the wisdom, maturity and judgment he so badly needs.

The present acclaim accorded to peoples' confrontation in public decision making, resting as it does upon a laudable thesis, is due some emerging reservations. "Vox populi," historically, has had its ups and downs and its validities and errors.<sup>8</sup> It is questionable whether a plebiscite is the sensible way (even via congressional action) to deter-

---

7. The discussion of *Pollution as an International Issue* is elaborated by the author in 47 *Foreign Affairs* 164-75 (Oct. 1968).

8. G. Boas, *Vox Populi—Essays in the History of an Idea* (1969).

mine where and when an antibiotic or a contraceptive pill should be used. Confrontation loses value when it is clear that neither consensus nor decision is likely to ensue. Indecision and deferment have their risks, too. A few indications of the disparity between popular assumption and scientific verity are here noted.

### *A. Radiation*

The sea disposal of radioactive wastes gives rise to many questions, perhaps because of the manner in which we are made aware of the power of nuclear energy, but it is significant that the working group of the Intergovernmental Oceanographic Commission, surveying the situation on a world-wide basis, noted that because of the rigid control exercised over the atomic energy industry since its inception, the working group has no examples of adverse effects brought about by the discharge into the sea of radioactive elements. They might also have noted that all the wastes so far discharged into the sea are insignificant in relation to the amount of radioactivity reaching it from bomb fall-out.<sup>9</sup>

The atoms industry, aside from weapons testing, is by far the safest in the world for those working in it or those so far living outside of its protected zones.

### *B. Air Contaminents*

The health effects of air pollution are better understood today than 20 years ago. Laboratory and field research, coupled with the difficult epidemiologic inquiries, are providing increasing clarification of biological effects, while at the same time sharpening perspective regarding some alleged effects. The work going on in this field throughout the world will unravel the situation to provide more valid criteria and standards than are now available. The status of air monitoring is likewise undergoing scrutiny, first, because it is far less extensive than desired, secondly, because the appropriate parameters to be measured are under review and, third, because it is difficult and costly.

It is of interest to note that, of many pollutants measured, dust is now considered to be of little medical importance, since dust particles are too large to be inhaled by man. Dust, like exhaust gases from Diesel engines, arouses public disgust. Although these exhaust gases are often considered to be a major source of pollution, they have been shown repeatedly *not* to contain sufficient amounts of any toxic substance to produce harmful effects on the human body.

---

9. *Sea Pollution*, 89 Royal Soc'y of Health J. 116 (May-June 1969).

There are many good reasons, other than health effects, for removing particulates.

Sulphur oxides in air have been severely limited by agencies, at all levels of government, sometimes it would appear with tongue in cheek (as some officials phrased it: "Why not push it down beyond reason, regardless of cost—it's popular!"). The concentrations found in the 1952 London fog, by the Air Pollution Research Unit of the Medical Research Council, are considered insufficient to produce the harmful effects on man caused by air pollution. The concentration of these substances should be regarded mainly as an index of the general level of pollution.

Extensive studies in London, of both mortality and morbidity during fog periods from 1952 to 1962, make quite clear that sulphur dioxide is not the responsible agent of excess disease, and that the effects of acute pollution are complex. It is not sufficient merely to measure smoke and sulphur dioxide. Leonard Greenburg and Marvin Glasser, on the other hand, claim that 0.2-0.4 ppm of SO<sub>2</sub> do cause excess deaths in New York City.

Popular alarm was generated only a few years ago, by many official agencies, with respect to the effect of discharges of 3, 4 benzpyrene and other polycyclic hydrocarbons. These are undoubtedly carcinogenic. There is no evidence, however, that, in the amounts normally present in air, they have any detectable effect in causing lung cancer. It is not possible to exclude air pollution completely as a causal agent of the disease. Its effects, if any, are negligible in comparison with those of cigarette smoking.<sup>10</sup>

These comments have special pertinence in the consideration of the wisdom of rushing to national and international standards as a panacea for control. The maximum permissible concentrations adopted in different countries vary widely. Too often, these guides are not based on completely reliable evidence. More often than not, they are transferred in toto from one country to another, without regard to the fact that social conditions, administrative and legal systems, and stages of development differ markedly.

Too much emphasis has been placed in the U.S. and elsewhere on the subject of guides and standards. These actions result from an unwarranted faith in the corrective value of standards—a faith more often violated than observed. One great country, devoted to standards, meets this dilemma by a delightful distinction between "hygiene standards" (based on purely scientific, medical, or

---

10. All of the above observations on health effects of air pollution have their origin in the report of the deliberations of experts from some 40 countries. The official document is EURO-1143, 23 World Health Organization Chronicle, No. 6, at 264-74 (June 1969).

physiological criteria) and "sanitary standards" (which take into account practical difficulties in achieving the "hygiene standard" in any given area).

A more pragmatic approach has been followed in the United Kingdom, where statutory maximum limits are rarely laid down in air pollution, or, for that matter, in water pollution. The policy is to take energetic practical action to reduce pollution rather than to attempt, with scarce manpower, money and knowledge, to define the precise composition of what might ultimately be accepted as pure air.

### C. Accidents

In a busy world, accidents occur in transport, on the ground, on the oceans, and in the air. The *Torrey Canyon*, the *African Queen*, the Santa Barbara and myriads of other episodes remind us of the hazards imposed by spills. In a given year, hundreds of such accidents occur. With modern communications systems, their dramatic aspects are fully exploited. Their disastrous consequences, real or imaginary, are loudly proclaimed hour by hour. And, of course, a law must be rapidly enacted to prevent, to punish or to assess and collect damages.

Virtually all of the accidents, whether on land or sea, are the result of a variety of causes—rarely due solely to carelessness. Many, after the event, disclose deficiencies in navigation aids, design of containment, defects in structural design or maintenance. Management of the consequences of an accident has demonstrated, particularly at sea, a great confusion among administrative agencies, and an even greater ignorance of scientific control to reduce evil effects. When these difficulties are compounded by no inconsiderable hysteria the control is likely to be less than good.

In spite of these confused demonstrations, the actual consequences of the dramatic episodes have been far less publicized. The orderly scientific findings of the biologic impacts rarely find their way into the television studios and the screens. This is particularly true in the case of the *Torrey Canyon*, *African Queen* or chlorine barge sinking in the Mississippi. Non-dramatic consequences have little Madison Avenue appeal.

Real values result from accidents. Improved methods of clean-up are learned. Agencies' responsibilities are coordinated. Scientific correctives are developed. Prevention is advanced by improved design and warning systems, by defining corporate responsibility and by providing methods of assessing damages and allocating costs.

All of these important consequences move in fact toward crystalli-

zation via either private agreements (as in oil spills), advances in technology and administrative practice or statutory underpinning, or all three. It is well to recall that international agreements on the prevention of and penalty for oil spills at sea have been on the books for some decades. They do not eliminate the problems.

### SUMMARY

The impact of man upon his environment has existed since man himself walked the earth. Whatever man does changes the ecology of his surroundings for good or evil. As populations grow, as urbanization and industrialization move forward and as science and technology burgeon, the potentiality for ecologic disturbance and degradation increases. This is the history of the centuries and the impressive lesson of the last quarter of a century.

Man's desire to protect himself against his own actions has likewise primitive origins. Even when living space was great, he learned, always the hard way, that he must avoid his own human wastes and that he must husband his natural resources. These he always practiced with less than maximum success for himself and for nature. As these situations become more acute, as they now have, he searches for better and safer ways of life, for the preservation of rare wilderness areas, for raising the esthetic quality of life and for protecting values for his descendants.

All of these laudable objectives, however, come into competition with desires which science and technology increasingly satisfy. In their satisfaction, wastes occur, resources are tapped, wilderness areas are invaded and human rights are offended. The cycle is old and efforts to meet the attacks have produced partial, but not one hundred percent, success. It is doubtful whether man can survive within a formula which guarantees the attainment of all ecological balances. The hope is that, with increasing emphasis upon a high environmental ethic of quality and a vigilant eye on ecological equilibrium, we may do better in the future than in the past. This desire cannot be gainsaid, even though one does not accept the doomsday prophecies of today.

Given the thesis that man creates and modifies his environment for good and evil, what are the means available to him for avoiding the bad and multiplying the good consequences of his existence? The most valuable tool is in his better understanding of the environment and how his actions affect it. This awareness alone, however, does not guarantee that he will act militantly to take those measures to safeguard his surroundings. Motivation is the high ingredient neces-



sary, followed by the availability of money and professional manpower.

Law alone, at least from past experience, does not produce the desired result of protecting human rights, when the above ingredients in policy and action are missing. This is because human behavior is complex, often selfish, often unpredictable and frequently ignores human rights. The underpinning provided by law obviously assists in the protection of man and nature, provided public intent, economic pressures, health and safety so validate the law.

The hope that our purposes may be accomplished by fiat is one long cherished by many. This hope has culminated in the Environmental Policy Act of 1969, recently signed by the President of the United States. It is described by Senator Henry M. Jackson, Chairman of the Senate Interior Committee, as "the most important and far reaching conservation measure ever enacted." Like so much legislation, it is essentially a statement of good intentions and, as such, might well push forward our equally good objectives. It remains to be seen.