Environmental Crime
A Sourcebook

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CHAPTER 4

Environmental Laws: An Overview

This chapter provides some background material useful for navigating the intricacies of environmental law. Environmental law is complex for a number of reasons. First, numerous laws often come into play when environmental violations are at issue. To make this clear, let us compare a potential environmental law violation to a potential criminal law violation. When a behavior violates the penal code, we generally know where to look for a description of the infraction: in the state penal or criminal law statutes. Even though numerous behaviors are described in criminal law, we can find the law violation by using the criminal law index. When an environmental law is broken, however, the description of the rule of law and penalties could be in one of several different environmental statutes at the federal, state, or local level. To locate the exact legal violation where an environmental crime is suspected, we may have to examine a number of different environmental law indices. And, once we have found the appropriate statute(s), there are likely to be jurisdictional issues to settle.

Second, as a form of law, environmental law is relatively new. Consequently, there will be fewer experts in this area, and many lawyers may not even be exposed to courses that teach them about environmental law in law school. Since many key environmental statutes are less than two decades old, the fine points of these laws may not have been completely resolved in the courts. New challenges to these laws emerge on a routine basis, and environmental law is in a constant process of evolution. Therefore, this chapter simply provides an overview of some key features of environmental law. In addition, as social scientists, we are interested in the principles and theoretical perspectives that inform particular positions within the law. Consequently, we also review some of these issues.

THE EMERGENCE OF CONTEMPORARY ENVIRONMENTAL LAW

Prior to the creation of the EPA in 1970, there were few laws, statutes, or acts that directly defined or dealt with environmental crimes. Many of the activities that are now regulated by environmental law were previously addressed with common law remedies. Why the sudden change?

Prior to the 1960s, there was less concern with behaviors that directly threatened the natural environment, or public health as a consequence of degraded environmental conditions. During the 1960s and 1970s, however, levels of pollution increased dramatically, and the effects of pollution were more readily observable. Major events, such as large fish kills, rivers that burst into flames, and human tragedies, such as Love Canal, captured news headlines. Equally important was the emergence of scientific study of the potential human consequences associated with environmental pollution. Chief among these works was Rachel Carson's book, *Silent Spring*, published in 1962. Carson's work detailed the environmental damage being inflicted by widespread applications of unregulated pesticides. Its publication coincided with publicity generated by many other tragedies related to the devastating potential of man-made chemicals, such as Thalidomide, which was responsible for a number of birth defects in the early 1960s.

Carson's book, which was also excerpted in the *New York Times*, created a national controversy concerning the safety of synthetic chemicals such as pesticides. It drew the attention of researchers who began to look at the harmful consequences of synthetic chemicals more earnestly, corporations which produced and defended synthetic chemicals, and the government's responsibility for protecting public health. Increased concern over environmental pollution spread to the general public, which began to worry about how it might be impacted. Because of the increasing frequency of chemical disasters, the plight of animal populations pushed toward extinction by exposure to synthetic chemical pollutants, and increasing rates of diseases among humans that could be attributed to synthetic chemicals in the environment (Colborn, Dumanoski, & Myers, 1998), it became clear that some form of environmental regulation would be needed. In short, contrary to widely argued and popular positions, when left to regulate themselves in a free market, corporate leaders failed miserably in their responsibility to stem the growing tide of industrial pollution.

FROM FREE TO REGULATED MARKETS

Historically, the guiding source of economic regulation in the United States is found in Adam Smith's analysis of free markets and the notion that free markets are guided by the "invisible hand" of competitive market relations. Prior to the 1970s, environmental pollution issues were largely left to be addressed by the functions of the free market economy. The few exceptions to this rule involved regulations aimed at preserving wilderness areas that established federal and state parks in the early 1900s.

Free market economic perspectives assume that consumers would be able to influence manufacturing decisions that negatively impacted the environment by selecting products made by manufacturers who did less damage to the environment. In this way, consumers would act as a balancing market force by redirecting their purchasing power to environmentally friendly products, thus influencing the behavior of manufacturers. This assumption, however, is tied to a second assumption: that in a free market, manufacturers would respond to consumer preferences and demands and produce things in different ways, and thereby provide consumers with alternative choices. If environmental pollution was a consumer concern, then among the choices consumers would have at their disposal was the option of selecting products produced by manufacturers who had made wise environmental-impact decisions. This option, however, can only occur if manufacturers offer these alternatives. The problem was that until recently—and still on a limited basis—manufacturers typically did not offer these alternatives to consumers. Environmentally friendly products tend to be marketed as upscale consumer products. Thus, in contrast to free market assumptions, manufacturers were not responding to consumer demand. To some extent, market freedom appeared to take the form of freedom to ignore consumer and public demands.

As Findley and Farber (2000, pp. 81–84) argue, a free market economic system was not up to the task of protecting the environment. For much of the past century, consumers did not have consumption options when it came to purchasing decisions. For example, until recently there were no "clean cars" in the marketplace. Consumers could not select solar- or wind-powered generation over more conventional fossil fuel alternatives. Indeed, even today, fossil fuels are the preferred choice of manufacturers. This preference has been supported most recently by policy initiatives pursued by George W.

Bush's presidential administration, which has close links to the fossil fuel industry.

In making their argument that the free market failed to protect the environment and human health, Findley and Farber (2000) discuss two key free market issues that impact environmental protection: external costs and external benefits.

External costs are monetary losses or potential expenditures incurred by someone other than the manufacturer of a commodity. We illustrate this point using a fictional example. The *Wood Company* (a fictional company) produces lumber products. It harvests raw wood from national forests under a contract with the federal government. It processes the raw wood employing the local water resources in *Little Town*, and empties the water it used in the production process into the local river. This method of disposing of waste water alters the PH of *Little Town River* because *Wood Company* adds acid products in the production process which, when expelled into the river, lowers the PH of the river water. Furthermore, *Wood Company's* production process employs machinery that generates a strong odor, and air pollution composed of smoke, particle matter, carbon monoxide, sulfur dioxide, and dioxin. These air pollutants degrade local air quality, cause various diseases and, when combined with the odor, make areas adjacent to the facility uninhabitable. The declining river PH causes the death of aquatic plants and insects, affecting the downstream water quality for many miles. Because of the deteriorating water quality conditions, the local fish population begins to die which, in turn, impacts *Little Town's* fishing industry. Further, the harvesting of trees from the national forest leads to the extinction of rare, local bird species that has been the subject of *Little Town's* tourism industry. With the tourism and fishing industries in a state of decline, the local economy falters, unemployment increases, and property values fall. At the same time, profits for *Wood Company* increase, and the value of its stock rises. In fact, with the demise of rare, local bird species, the federal government allows *Wood Company* to increase its tree harvest.

The fictional scenario depicted above illustrates a variety of external costs related to *Wood Company's* actions. From the financial perspective of *Wood Company*, nothing is wrong with this scenario: the company is economically healthier today than a few years earlier. Its production practices, which have negatively affected the local environment, people, and economy, have little direct impact on *Wood Company*. Indeed, this happens because the costs of its production process are externalized, that is, borne by others outside the corporation. From an economic standpoint, *Wood Company* has no

incentive to reduce the level of environmental damage it creates. In fact, *Wood Company* benefits from the environmental damage.

In response to this kind of situation, Findley and Farber (2000, p. 83) note that "because the free market provides inadequate incentives [to reduce polluting behavior], the government must intervene to limit external costs and facilitate production of external benefits and collective goods." Given that corporate behavior is economically motivated, the question becomes: how can we introduce some factor that alters *Wood Company's* polluting behavior in ways that produce external benefits? This is precisely the role that environmental laws are designed to fulfill.

Environmental laws, regulations, and punishments generate external benefits or socially valued outcomes through a variety of mechanisms. One mechanism transforms external costs into internal costs. Simply put, environmental laws and regulations accomplish this task by providing incentives to reduce pollution and disincentives for polluting. These incentives and disincentives can be easily turned into monetary outcomes that become part of the cost-benefit analysis corporations make with respect to behaviors that may impact the environment.

Typically, environmental laws make corporations take notice of behaviors that impact the environment in one of three ways: (1) penalties and fees; (2) taxes and subsidies; and (3) flexible market incentives (Ferrey, 1997, pp. 8–11; Findlay & Farber, 2000, pp. 83–84). We describe each of these environmental protection strategies below.

INTERNALIZING EXTERNAL COSTS: THE ROLE OF REGULATION

Penalties and Fees

Penalties and fees attached to polluting behavior require polluters to pay at least some (but usually not all) of the costs associated with polluting activities. By attaching a penalty or fee to a polluting activity, environmental regulations effectively transform the external costs of polluting (e.g., environmental harms that impact entities outside the corporation) into internalized costs of production that must be included in a corporation's business costs.

In theory, penalties and fees would appear to be a useful mechanism for controlling polluting behavior because they turn the socialized costs of polluting (i.e., externalized costs) into concrete economic losses for businesses. If, for instance, a corporation must pay

a $1 penalty or fee for each pound of pollution it produces, and the corporation produces a millions pounds of pollution a year, then it will lose an additional $1 million. It does not really matter to the corporation whether this economic loss is a penalty (e.g., a fine for an activity) or a fee (e.g., the cost of disposing of waste into a river). What matters is that the government's response causes the corporation to log a loss against its profits.

Despite the fact that penalties and fees appear to make logical sense as mechanisms for controlling polluting behavior, these reactions tend to have less effect than intended for three reasons. First, penalties and fees tend to be small relative to profits and, consequently, are not an effective means for transforming external costs into sufficiently large internal costs that impact polluting behavior—they rarely approach the $1 million mark used in the example above.

Second, environmental regulations are often not enforced stringently, or are enforced irregularly, resulting in a low apprehension rate. Because they are unlikely to get caught, corporate executives can assume that the penalty or fee is unlikely to impact their business's profits. Unfortunately, this outcome has much to do with the nature of economic production and budgetary constraints faced by environmental protection agencies. There are a large number of businesses that produce pollutants, but relatively few environmental law enforcement agents to detect these violations. As a result, environmental law enforcement agencies have instituted programs that seek the voluntary compliance and reporting of polluting activities by polluters. In other words, the EPA asks polluters to self-report how much and what types of pollution they release into the environment. The effort to achieve compliance with self-reporting policies related to polluting activities and violations are integral elements of taxes and subsidies, and flexible market incentive responses. EPA enforcement practices are further discussed in Chapter 6.

Third, corporations shift penalties and fees onto consumers who end up paying the corporation's financial pollution liabilities. Consumers are not told, of course, that the extra cost of the product they have been consuming now goes to pay an environmental penalty. If they were, they might use this information as if the market were really free and competitive, and switch to more environmentally friendly products.

Taxes and Subsidies

Taxes and subsidies offer different mechanisms for internalizing pollution costs that also reward efforts at pollution reduction (Ferrey, 1997, p. 8). Pollution taxes endeavor to internalize the costs of polluting by taxing polluters when they emit pollutants in excess of a specified threshold (a specific or acceptable pollution amount). These taxes are designed to encourage pollution generators to seek alternative means of production (e.g., Lynch and Stretesky, 2001) that reduce pollution outputs. Subsidies that reimburse costs for installing pollution control devices, for example, serve the same purpose. To some extent, taxes are similar to penalties, while subsidies serve the same function as rewards for pollution reduction. Ferrey (1997) suggests that one of the benefits of taxes and subsidies is that they can be easily adjusted to reflect changing environmental conditions. If, for instance, pollution reduction efforts are not meeting expectations, both taxes and subsidies can be raised by the EPA. In contrast, the EPA does not always have such tight control over the penalties meted out for pollution violations, especially in cases for which a judge renders the penalty decision.

Like penalties, tax and subsidy systems also have limitations. The primary problem is establishing an effective external control or monitoring mechanism. An additional problem involves translating the harms caused by pollution into monetary costs (e.g., quantifying the costs of pollution; Ferrey, 1997, p. 9). Another problem stems from the effort to determine the level at which taxes and subsidies will accomplish their stated goal. How large a tax (or subsidy) is needed to get polluters to change their behavior? Accomplishing this task may require a good deal of trial and error. Finally, the income that results from a pollution tax may be insufficient to fund the governmental monitoring system needed to oversee a program of pollution reduction. To address these deficiencies, other alternatives, such as flexible market incentives, are also used by the EPA.

Flexible Market Incentives

Flexible market incentives (FMIs) operate in much the same way as taxes and subsidies at a very general level. Corporations, however, have greater control over FMIs, while they have much less control over taxes and subsidies. FMIs are similar to a credit and debit system. A corporation can earn pollution credits by generating less pollution than environmental regulations specify, while their "pollution account" with the EPA is debited when it exceeds those legal limits. The corporation must pay off its pollution debits with either cash or pollution credits.

FMIs are typically constructed on a regional basis to reflect localized pollution issues. Thus, in contrast to some EPA rules, which are standardized for the nation, FMI rules contain flexible standards and criteria that depend on the location of pollution emitters and levels of pollution in the region in which a manufacturer is located. In this flexible market scheme, the EPA may, for example, determine that a specific region has an elevated level of pollutant X, and that it is in the interest of public health to reduce the output of pollutant X in that region. To do so, the EPA first studies the extent of the problem, determines the current level of pollutant X outputs, estimates the health consequences associated with that level of output, and then sets a pollution reduction target that will enhance public or environmental health. To achieve this pollution reduction target, the EPA must also determine how much of pollutant X will be allowed to be emitted in the region under examination. Once they have determined the aggregate level of pollutant X output that will be allowed, the EPA then divides this sum and distributes pollution allowances to individual manufacturers of pollutant X. Each individual company must then decide what it will do to stay within its allowance for pollutant X. To do so, some companies may decide to close down a plant or limit production of commodities that generate pollutant X. Other companies may install pollution control devices, while still others may seek alternative methods of production that allow it to continue its current level of operation without generating pollutant X.

But, what if *Company A* decides to exceed its pollution allowance for pollutant X? Or, what if *Company A* experiences increased demand for its product, and in the process of meeting that increased demand exceeds its pollution allowance? Built into the FMI system is an allowance for buying, selling, and trading pollution. In effect, if *Company A* exceeds its allowance for pollutant X, it may buy unused pollution credits (or it may trade its own unused pollution credits for a different pollutant) from another company. This outcome does not necessarily reduce the overall emission of pollutant X within the region, but it establishes incentives to reduce pollution for some companies because they can profit by selling their credits. In other words, companies that are successful at reducing levels of pollution may reap a financial reward by selling their credits to competitors.

Some FMI programs also allow companies to accumulate credits for future use. For instance, the fictitious *Corporation Planned Growth* has laid out a development program for future facility expansion. At the same time, its leadership decides that it will begin to curtail production at a few existing plants. Knowing that it will possibly exceed its

pollution credit allowance in the future, *Corporation Planned Growth* executives decide not to sell the pollution credits it has saved through curtailed production, and instead saves these credits for future use at its new facilities.

The kind of system described above cannot work, however, unless there is also a penalty for failing to reduce the aggregate level of a pollutant within a region. What, for instance, could the EPA do if all companies that produced pollutant X within the region met and agreed that they would ignore the EPA's regulation and continue to produce unacceptable levels of pollutant X? If all companies acted in this way there would be no pollution credits to buy, which would mean each company would have a pollution debit with the EPA. To dissuade companies from acting this way, the EPA turns pollution debits into fines, and in some cases, may even be able to prosecute violators in other ways.

Another means of achieving pollution reductions under FMI is through the use of pollution offset requirements. Offset requirements differ from the more general system described above because they only allow trading of pollutant levels within a company and within a region. Let us say, for example, that the fictitious *Big Corporation* wants to build a new facility that will increase its production of pollutant X. The proposed plant's pollutant X output would have to either be offset by reductions in pollutant X at other plants in the region owned by *Big Corporation*, or offset by the reduction of some other pollutant at *Big Corporation* plants in the region as indicated by the EPA. Offset requirements, therefore, are more stringent than general market trading allowances because they force pollution producers to reduce emissions without recourse to pollution credits that may be available in the broader regional marketplace.

In theory, FMIs, like subsidies, provide incentives for exceeding the expectations for pollution production set forth in regulation. This kind of social control response is quite different from that encountered by criminologists when they study criminal law penalties for rule violations. There are no incentives for not behaving criminally in criminal law; the criminal law, for example, does not allow a burglar to trade the number of burglaries s/he did not commit for a burglary they did commit. Thus, it should be clear that corporations that violate rules and regulations are not treated in the same ways that we treat other rule violators. What is similar across these two groups of violators (criminal law and environmental law violators) is the idea that we are trying to obtain their compliance with the law, and that often times we use

mechanisms that are designed to deter them from socially disapproved behaviors.

Deterrence and Compliance

The primary goals of the social control mechanisms employed to reduce pollution operate through the connected ideas of compliance and deterrence. To some degree, the ideas of compliance and deterrence comprise opposite mechanisms in environmental law. Under EPA rules, compliance is often achieved by offering incentives or rewards for fulfilling obligations stated in law. Examples include subsidies and FMI structures. In contrast, the EPA employs the notion of deterrence when it sets out penalties for violations of rules, such as fines, taxes, or imprisonment. Compliance and deterrence mechanisms resemble the ideas found in the theory of utilitarian calculus set forth by philosopher Jeremy Bentham.

The utilitarian calculus is based on the assumption that rational actors will base their behaviors on the costs and rewards associated with different behavioral options or choices. In theory, these assumptions mean that we can manipulate the behavior of actors by altering the costs and rewards of different behavioral choices. This idea also informed the earlier work of Enlightenment theorists who examined ideas such as rationality. A prime example is found in Adam Smith's (1776) classic analysis of capitalism, *The Wealth of Nations*.

Smith's argument implies that external regulations were unnecessary in capitalist markets because in a free-market system, the actions of individual decision-makers were influenced by the rational actions of self-interested individuals who would calculate the costs and rewards of their behaviors. Theoretically, a marketplace driven by the free competition of various self-interests would create long-term equilibrium without creating an advantage for any particular actor over another. Throughout most of U.S. history, this view dominated the way economic markets were understood, which explains why there were few environmental laws until recently. The history of environmental degradation that characterized the twentieth century, however, indicates that Smith's theory is flawed and a free market economy, like the one in the United States, is incapable of creating a balance of interests. If that explanation is not acceptable, than only two other explanations of the inability of the market to achieve balance and prevent pollution are possible. First, the U.S. economy was, and is, not a truly free market economy. Many radical economists would agree. Second, it is possible that the self-interest of producers is such an overriding concern that it cannot be balanced by the interests of the general public. That is to say,

individual wealth goals are more important than social goals concerning a healthy environment.

Regardless of which explanation is adopted, the history of environmental pollution teaches us that self-regulation and self-interest do not provide adequate protection for the environment. As a result, government intervention became necessary to balance the self-interest of producers with public interest in a clean environment. To explain how this system is supposed to operate, we need to briefly return to the work of Bentham.

Bentham applied assumptions about rationality developed by Enlightenment scholars to an analysis of the relationship between crime and punishment. For Bentham, every behavior had potential costs and rewards. Rational actors possessed the ability to examine these costs and rewards, and would select the behavioral option that yielded them the greatest benefit. Rational actors, in other words, choose rewards over costs, and in theory, we can determine which behavior rational actors will select by knowing the costs and rewards associated with each behavioral choice. Further, under this assumption, behaviors could be manipulated by exerting outside influences that altered the costs and rewards associated with each behavioral choice.

Bentham applied these observations to criminal behavior, and argued that criminals could be deterred from committing socially harmful acts by increasing the costs of those acts so that the costs of crime outweighed its rewards. This could be accomplished by increasing the level of punishment associated with socially disapproved behavior.

Applying this idea to pollution prevention, polluting behavior can be deterred or prevented by adding punishments that cause the costs of polluting to rise above its rewards. This idea is similar to the environmental argument that pollution can be prevented by mechanisms that transform external costs into internal costs. In other words, when rational corporate actors make production decisions that generate pollution in a free market for which the costs of pollution are externalized, there is no mechanism that forces them to consider external costs as part of their accounting practices. If, however, the government intervenes and imposes a fine or other penalty for polluting, then the costs of that penalty must be registered against potential profits associated with that production practice.

Theoretically, this idea makes a great deal of sense, especially in capitalist economies in which the primary motivation for production is profit. In practice, however, the idea that penalties are useful mechanisms for deterring polluting behavior has met with limited

success. On one hand, the penalties may not be great enough to influence corporate decision-making in the ways predicted by Bentham's theory of utilitarian calculus. On the other hand, it is possible that other conditions outlined by Beccaria in his book, *On Crimes and Punishment* also come into play. These additional conditions include the certainty and swiftness of punishment. First, fines and other penalties are relatively rare in cases of environmental pollution violations. Second, these penalties tend to be disproportionately small compared to corporate profits (and to the harm done, though this is not a consideration in deterrence theory). Third, the meting out of penalties for polluting behavior is not typically swift, and the time lag between the offense and the penalty may include a significant number of years, especially when the legality of the penalty is challenged by the offender. Each of these penalty-related outcomes reduces the assumed effectiveness of deterrence strategies.

In sum, deterrence has the potential to be a useful mechanism for controlling corporate behavior given that corporations are rational actors that calculate the costs and rewards of their behaviors. Indeed, these kinds of calculations are an integral part of planning in a capitalist economy. For this reason, the EPA endorses deterrence as a major mechanism for controlling polluting behavior. In practice, however, deterrence often fails to accomplish the mission of significant pollution reductions. In turn, the EPA also relies on mechanisms of social control that attempt to gain the compliance of corporations without having to resort to the use of punishment or coercive means of social control. Compliance is a complex pollution control mechanism, and we discuss this practice further below.

Compliance Strategies

The federal Clean Air Act, originally passed in 1963, was amended in 1990. One key feature of the amendments involved the addition of compliance provisions in the National Ambient Air Quality Standards (NAAQS). The compliance provisions in NAAQS involve an effort to make state governments more responsible for addressing air pollution and air quality issues falling within their legal boundaries. This revision forced states to become more active in ensuring that levels of air pollution and air quality were brought within acceptable limits delineated in the Clean Air Act. States could do this in a number of ways as long as their plans were approved by the EPA.

The EPA air monitoring program instituted under NAAQS identifies geographic areas that are either in compliance with (compliance areas), or not in compliance with (in noncompliance, or

noncompliance areas) EPA air quality standards for specific pollutants. States containing noncompliance areas must submit a plan for achieving compliance to the EPA. If the state fails to submit a workable plan, or if the plan fails to achieve compliance by a specified date, then the state can be penalized. These penalties include reductions in federal funding for highways and the imposition of offset requirements within a region or area.

As noted earlier, an offset requirement involves a condition that limits the addition of new pollution sources (e.g., new production facilities, or expansion of existing production and pollution outputs) within a noncontainment area (an area where an identified pollutant is above EPA threshold levels) *unless* there is an equivalent reduction in pollution emissions at existing facilities. To determine whether emitted pollutants in an area fall within legal requirements, facilities are required to monitor the airborne pollutant outputs they generate and report this information to the EPA. The EPA can then take each of these individual reports and sum up the total level of pollution being produced in a region.

What happens when the sum of pollution reported by individual manufacturers in a region exceeds the pollution limit for that region? If an area within a state (or larger region) continues to remain in noncompliance by a specified deadline, then remediation is required. Remediation is a remedy which, in this case is designed to fix a pollution-related problem. The remedy may take numerous forms.

More serious environmental problems require that the EPA be able to access law enforcement tools with broader powers and scope. Such tools are available, for example, when pollution violations fall under the purview of the Comprehensive Environmental Response Compensation Liability Act (CERCLA, also known as the Superfund Act), which deals with hazardous waste sites.

CERCLA Enforcement Tools: An Example of Compliance

Under CERCLA or the Superfund Act, the EPA has broad enforcement powers to protect public and environmental health by "forcing" the cleanup (remediation) of hazardous waste sites. In cases where a hazardous waste site presents an "imminent hazard," for instance, the EPA is authorized to take any steps necessary to protect public health and the environment. In responding to hazardous waste sites, the EPA has recourse in the form of civil injunctions and unilateral administrative orders. Civil injunctions require court action, while unilateral administrative orders may be pursued on direct order of the EPA. The advantage of a unilateral administrative order is that the