

# A Graduated Punishment Approach to Environmental Crimes: Beyond Vindication of Administrative Authority in the United States and Europe

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## INTRODUCTION

Why do we have environmental crimes? What social harms are we addressing, and what interests are we vindicating through use of the criminal sanction? The answer to these questions is not found in traditional criminal law principles. This is because environmental interests and values do not enjoy an absolute protection in the law. Unlike theft or homicide, for example, which may cause personal benefits only to the criminal, most polluting activities generate substantial societal benefits as well as environmental costs. Thus, environmental law in many countries is aimed largely at an administrative control of pollution, usually through licensing and permitting systems. Environmental criminal statutes largely function to help ensure that control.

The interweaving of administrative and criminal law has been pronounced from the beginning of modern environmental crimes in the mid-twentieth century.<sup>1</sup> Then, as now, environmental criminal law focused on punishing the lack of a permit or the violation of permit or other regulatory requirements and conditions. Despite environmental criminal law's continued administrative dependence,<sup>2</sup> however, European commentators have increasingly pointed to serious weaknesses in this approach.<sup>3</sup> For one thing, if the role of the criminal law is restricted to

1. In the United States, some pollution-related crimes date from the late nineteenth century, although the focus was on protecting commerce rather than the environment. For example, the Rivers and Harbors Act, passed in 1890 and amended by the Refuse Act in 1899, focused on obstructions to navigation. River and Harbors Appropriation (Refuse) Act of 1899, ch. 425, § 13, 30 Stat. 1152 (codified at 33 U.S.C. § 407). However, the major environmental criminal statutes were first enacted in the 1970s.

Clean Air Act, Pub. L. No. 91-604, § 4(a), 84 Stat. 1686 (1970); Clean Water Act, Pub. L. No. 92-500, § 2, 86 Stat. 859 (1972); Resource Conservation and Recovery Act of 1976, Pub. L. No. 94-580, § 2, 90 Stat. 284 (1976).

Environmental crimes date from the 1970s in most European countries, as well. *See, e.g.*, the Surface Water Protection Act [*Wet op de bescherming van de oppervlaktewateren tegen verontreiniging*] of 26 March 1971, *Moniteur Belge* [Official Journal of Belgium], 1 May 1971.

2. This basic structure of environmental criminal law has been discussed at length in German Environmental Criminal Law. It is there known under the concept of 'Verwaltungsakzessorietät'. *See, e.g.*, WOLFGANG WINKELBAUER, *ZUR VERWALTUNGSAKZESSORIE TÄT DES UMWELTSTRAFRECHTS* (Duncker & Humblot 1985).

3. *See, e.g.*, GUNTER HEINE & VOLKER MEINBERG, EMPFEHLEN SICH ÄNDERUNGEN IM STRAFRECHTLICHEN UMWELTSCHUTZ, INS BESONDERE IN VERBINDUNG MIT DEM VERWALTUNGSRECHT? GUTACHTEN FÜR DEN 57. DEUTSCHEN JURISTENTAG [CAN CHANGES BE RECOMMENDED AS REGARDS PENAL ENVIRONMENTAL PROTECTION, PARTICULARLY IN RELATION TO ADMINISTRATIVE LAW? OPINION FOR THE 57. GERMAN JURISTENTAG] 35-37 (Beck, 1988) (strongly formulating the criticism in well-known advice before the German law society).

punishing administrative disobedience, other types of pollution may go unpunished, thus limiting the ability of the criminal law to protect ecological values. In addition, unlike the situation with traditional crimes, administrators (not legislators) decide what is and is not criminal.<sup>4</sup> This critique of the absolute administrative dependence of environmental criminal law has affected European legislation and international conventions.<sup>5</sup> As a result, legislators and commentators are increasingly using other models of environmental crimes that are less dependent on administrative law.<sup>6</sup>

The goal of this paper is to examine and advocate for approaches to environmental crimes which go beyond punishing disobedience of administrative rules and decisions. We acknowledge that an effective environmental criminal scheme must include administrative-disobedience crimes. For one thing, disobedience of at least some administrative decisions is a serious matter, as adherence to the administrative scheme is likely to prevent serious environmental harm in most instances. For another, such offenses

4. That is, by defining the conditions of an administrative permit, the authorities at the same time determine the conditions of criminal liability. Some have urged that this structure results in a loss of autonomy for both the criminal law itself and for the judges applying it. See MOHAN PRABHU, GENERAL REPORT, 65 INTERNATIONAL REVIEW OF PENAL LAW 699–728 (1994). See also ALAIN DE NAUW, LES METAMORPHOSES ADMINISTRATIVES DU DROIT PENAL DE L'ENTREPRISE 84 (Mys en Breesch 1994) (suggesting that a more direct protection by the criminal law, such as exists for traditional crimes, is more difficult to reach in environmental law).

5. See, e.g., European Union Council Framework Decision of 27 January 2003, 2003 O.J. (L 29) 55 (providing, in art. 2(a), an independent crime for “the discharge, emission or introduction of a quantity of substances or ionising [sic] radiation into air, soil or water which causes death or serious injury to any person”); Council of Europe Convention of Strasbourg of 4 November 1998, in M. Faure & G. Heine, Environmental Criminal Law in the European Union: Documentation of the Main Provisions with Introductions 397–422 (Freiburg Max Planck Institute for Foreign and International Criminal Law 2000). See also, M. Faure, *The Continuing Story of Environmental Criminal Law in Europe After 23 October 2007*, EUR. ENERGY & ENV'T L. REV. 68 (2008).

6. An example of this graduated approach introducing models of environmental crimes that are less dependent on administrative law can be found *inter alia* in a convention adopted by the Council of Europe on November 4, 1998, on the protection of the environment through criminal law (<http://www.coe.fr/eng/legaltxt/172ehtm>). Even though this convention has not yet entered into force, it is interesting because it employs subdivisions between various types of environmental crimes, as we suggest. Moreover, according to article 2.1(a), an emission that has the serious consequence of creating death, serious injury, or a significant risk of death or serious injury leads to criminal liability irrespective of a violation of administrative obligations.

are easiest to prove<sup>7</sup> and thus provide a mechanism for punishing some environmental malfeasance that cannot be otherwise addressed.<sup>8</sup> Nevertheless, actual harm to the environment—and the threat of such harm—is more serious than mere administrative disobedience. When the government can prove that someone has both acted unlawfully and caused or threatened such harm, an effective system should have criminal sanctions in place to address the situation. In addition, in circumstances of extreme environmental harm, it is important to include a crime that does not require the government to prove any disobedience to administrative rules and decisions. Finally, the authorized punishments for offenses on this continuum of environmental criminal statutes should be graduated according to the seriousness of the social harms at issue.

The approach advocated below is important for practical reasons. For one, if the goal is really protection of the environment—and not just of human beings and their activities—inclusion of statutes that actually focus on the environment will enhance efforts to achieve that goal. A graduated punishment scheme will better hone the government's environmental protection tools. Convictions will more suitably fit the defendant's culpability when crimes are defined accurately to reflect different degrees of harm. In addition, statutes that define crimes more particularly can help limit or guide fact finders' discretion, better ensuring that the social goals reflected in authorized punishments are actually met.

Part I examines four models of environmental crimes based on the extent to which a statute focuses on interests other than adherence to administrative authority. Where possible, we will illustrate each model with examples from statutes in the United States and Western Europe.<sup>9</sup> In the case of the United States, the examples will come mainly from the three major federal pollution statutes: the Federal Water Pollution Control Act, or "Clean Water Act" (hereinafter CWA),<sup>10</sup> the Solid Waste Disposal Act, or

7. See *infra* note 226.

8. For example, it may be difficult to prove that a particular defendant caused the environmental harm at issue. See discussion *infra* Part 0.

9. We do not doubt that useful examples could be drawn from other nations or that a graduated punishment approach would be beneficial outside of western Europe and the United States. To the extent that innovative approaches may exist in other countries, they must be the topic of a later article.

10. 33 U.S.C. §§ 1251–1387 (1994).

“Resource Conservation and Recovery Act” (hereinafter RCRA),<sup>11</sup> and the Clean Air Act (hereinafter CAA).<sup>12</sup> In the case of Europe, we focus mainly on environmental provisions from France, Germany, and Belgium.<sup>13</sup> In addition to giving examples, the discussion in Part I will highlight some of the problems inherent in vindicating non-administrative values through environmental criminal law. In Part II.A. we will present a suggestion for a graduated punishment approach that integrates all four models of environmental crimes. Finally, in Section II.B., we will use this framework to examine the gaps that exist in current environmental criminal laws.

## I. FOUR MODELS OF CRIMINALIZATION OF ENVIRONMENTAL HARM

Criminal statutes address specific social harms.<sup>14</sup> The act element of a criminal statute articulates the social harm at which the crime is directed. The mental-state element articulates the attitude a defendant must have had toward the social harm in order to be criminally culpable.<sup>15</sup> While mental state is a crucial element in determining criminal liability, the analysis in this article focuses exclusively on the act element of environmental crimes.

Focusing on the act element, a 1995 article<sup>16</sup> by Michael Faure and Marjolein Visser proposed and examined four models of environmental crimes based on selected European approaches.<sup>17</sup>

11. 42 U.S.C. §§ 6901–6992k (2000).

12. 42 U.S.C. §§ 7401–7671q (2000).

13. The French statutes cited in this article can be found at <http://www.legifrance.gouv.fr/> (last visited Feb. 19, 2009). The German statutes can be found at <http://www.legislationline.org/> (last visited Feb. 19, 2009).

14. For a discussion of the goals of punishment and their relationship to the topic at hand, see *infra* text accompanying notes 218–224.

15. In modern terms, the law tends to distinguish among actors who had the purpose to cause the harm, merely knew they were causing it but were indifferent, were aware of a risk of causing the harm, or should have been aware of that risk. See, e.g., Model Penal Code § 2.02 (Proposed Official Draft 1962).

16. M. Faure and M. Visser, *How to Punish Environmental Pollution? Some Reflections on Various Models of Criminalization of Environmental Harm*, 3 EUR. J. CRIME, CRIM. L. & CRIM. JUST. 316 (1995) (hereinafter Faure & Visser). Faure & Visser did include brief discussions of mental state. *Id.* at 323, 331–2, and 343.

17. The article limited its examination to Belgium, the Netherlands, and Germany. Compare, U.S. Department of Justice, *Prosecuting Environmental Crime* 5 (1993) (dividing environmental crime into “violations of a permit condition;” “violations committed outside the regulatory scheme;” and “acts that would be illegal regardless of the regulatory

The first is Abstract Endangerment, a model criminalizing disobedience to administrative rules and requirements *per se*. The second is Concrete Endangerment Crimes with Administrative Predicates (“Concrete Endangerment”). Concrete Endangerment crimes involve behavior that both violates regulatory law and poses a threat of harm to the environment; thus, on the surface, at least, these crimes target two social harms. Crimes in the third model, Serious Environmental Pollution, punish very serious environmental harm even if the activity at issue was not otherwise unlawful; these appear to be aimed at preventing or punishing only harm to the environment itself. The fourth model, Vague Statutes, covers statutes that establish a general duty of care.<sup>18</sup> We decided to revisit the Faure and Visser analysis to explore its continued viability and, if it remained useful, to expand examples to include federal environmental crimes in the United States.

The resulting analysis explores the first three of the models in more detail, but it also modifies the entire framework in two ways. First, upon further consideration, we are convinced that it is useful to add an additional model for crimes that involve both an administrative predicate and actual environmental harm. We label this model Concrete Harm and refer to it as Model IV. In addition, we eliminate the Vague Statutes Model from the scheme. It was important to include it in Faure and Visser’s essentially descriptive work, as it was employed in at least two European jurisdictions.<sup>19</sup> However, the model is subject to serious criticism,<sup>20</sup> is unnecessary,<sup>21</sup> and, in our opinion, provides no added value in an

categories”), cited in ENVIRONMENTAL CRIME: ENFORCEMENT, POLICY, AND SOCIAL RESPONSIBILITY (Mary Clifford ed., Aspen Publishers 1998).

18. Faure & Visser, *supra* note 16, at 346 et. seq.

19. *Id.* at 347–355 (noting the use of this model in the Netherlands); *id.* at 355 (noting the use in Belgium).

20. First, the Vague Statutes approach risks violating the legality principle, making it difficult for people to know whether their behavior is criminal. *Id.* at 349–52, 354, and 359; Second, the approach leads to criminal liability without “guilt.” *Id.* at 351–52. Finally, its role in protecting ecological values is unclear, and from this perspective it is ineffective. *Id.* at 358–59.

21. Vague norms may actually be a subset of one of the administratively based models. *See id.* at 346–47 (noting that vague norms are found in statutes, executive regulations, and licenses); *Id.* at 348 and 358 (suggesting that the approach is really a subset of an administratively based model, as a license seems to provide a defense). Other aspects of vague norms also contribute to their lack of value in an environmental protection scheme. *See id.* at 352 (noting that vague norms are used in place of available specific regulations because civil servants find them less demanding); *id.* at 357 (noting that presumed

integrated approach to environmental crime.

Before beginning the discussion, it is important to point out that legislators often do not differentiate among these models when drafting criminal provisions. An example is the Belgian Surface Water Protection Act of 1971.<sup>22</sup> Article 41 punishes the violation of any provision of this act. When used to punish actions in violation of a permit condition that does not involve a discharge or any other possible effect on surface waters, the act fits within the Abstract Endangerment Model. However, Article 41 can also be used to punish actions that both violate regulatory rules and result in presumed or actual harm to the surface waters, thus fitting the Concrete Endangerment or Concrete Harm Models.<sup>23</sup> In the United States as well, the general criminal provisions of the CWA<sup>24</sup> and the CAA<sup>25</sup> fit into different models depending upon application.<sup>26</sup> In Section III we will discuss issues surrounding this merging of models.

#### A. Model I: Abstract Endangerment<sup>27</sup>

Offenses following the Abstract Endangerment Model do not punish environmental pollution. Instead, their role is to enforce prior administrative decisions,<sup>28</sup> and so they punish the failure of a

advantages of vague norms might not exist in practice).

22. *Wet op de bescherming van de oppervlaktewateren tegen verontreiniging* of 26 March 1971 [Surface Water Protection Act], *Moniteur Belge* [Official Journal of Belgium], May 1, 1971. This act has been partially abrogated as a result of federalization in Belgium. See A. DE PUY, L. LAVRYSEN & P. STRYCKERS, *MILIEUZAKBOEKJE* [ENVIRONMENTAL BOOKLET] 433 (2008).

23. See *infra* text accompanying notes 73–78 and 85–86.

24. CWA §§ 309(c)(1) and (2), 33 U.S.C. §§ 1319(c)(1) and (2) (1994).

25. CAA § 113(c)(1), 42 U.S.C. § 7413(c)(1) (2000).

26. See *infra* Part III.B.1.

27. See generally, Faure & Visser, *supra* note 16, at 319 et. seq.

28. A distinction can indeed be made between a dependency upon general administrative rules and principles (*Verwaltungsrechtsakzessorietät*) and the dependency upon individual decisions of administrative agencies (*Verwaltungsakzessorietät*). The dependency upon individual decisions (*Verwaltungsakzessorietät*) links the criminal liability directly to the administrative act (i.e. a license). The dependency upon general administrative rules and principles (*Verwaltungsrechtsakzessorietät*) bases criminal liability on the violation of general duties in administrative law. German legal doctrine considers this distinction quite important: in Model I (abstract endangerment) the criminal liability is based upon individual decisions of administrative agencies (less flexibility) whereas the administrative predicate in Model II may be much broader (often referring to unlawfulness, which encompasses a violation of administrative rules and principles, not necessarily individual decisions). Hence, the *Verwaltungsrechtsakzessorietät* gives more discretion to the judge than the *Verwaltungsakzessorietät*. See, G. Heine, *Die Verwaltungsakzessorietät im deutschen*

regulated entity to adhere to administrative dictates concerning environmental regulations.<sup>29</sup> As with Models II and III, which also have administrative predicates, such crimes reflect the notion that adherence to the regulatory scheme is the most effective way to prevent serious environmental harm. In essence, the Abstract Endangerment Model merely adds criminal law to the enforcement mechanisms available to ensure compliance with monitoring, paperwork, licensing, and other rules meant to regulate pollution producing activities. The criminal provision normally contains a general statement that anyone who violates the provisions of the act, or the regulations, licenses, or permits issued to implement it, will be punished with a specific sanction. Conversely, an entity that demonstrates regulatory adherence by obtaining and complying with a permit is sometimes rewarded with a “permit shield” that protects it from criminal and other enforcement actions.<sup>30</sup>

The Abstract Endangerment Model includes most<sup>31</sup> statutes that

*Umweltstrafrecht unter Berücksichtigung des österreichischen Rechts. Aktuelle Probleme und Reformüberlegungen* [The Administrative Dependency in German Environmental Crimes having regard to Austrian Law. Current Problems and Reform Proposals], ÖSTERREICHISCHE JURISTEN ZEITUNG (ÖJZ) 370 (1991); G. Heine, *Verwaltungsakzessorietät des Umweltstrafrechts* [The Administrative Dependency of Environmental Criminal Law], NEUE JURISTISCHE WOCHENSCHRIFT (NJW) 2425 (1990); G. HEINE, ZEITSCHRIFT FÜR DIE GESAMTE STRAFRECHTSWISSENSCHAFTEN (ZSTW) 728 (1989); H. Schall, *Umweltschutz durch Strafrecht: Anspruch und Wirklichkeit* [Environmental Protection by Criminal Law: Will/Intention and Reality], NEUE JURISTISCHE WOCHENSCHRIFT (NJW) 1263, 1265–1266 (1990). See also, M. Prabhu, GENERAL REPORT, *supra* note 4, at 669 and 708 (referring to the “administrative accessoriness of penal law”).

29. Of course, punishment is possible only if the administrative dictate was itself lawful. Thus, defendants can argue the unlawfulness of an administrative decision they allegedly violated. For example, the Court of Appeals of Antwerp addressed a situation in which the defendant’s permit was replaced by a new one. The court held that the new conditions were unreasonably stringent and therefore unlawful. As a result, the defendant was acquitted of the violation of the particular permit. Court of Appeals of Antwerp, Nov. 15, 1996, *Tijdschrift voor Milieurecht* 290 (1997). On use of such judicial review in Belgium, see generally, M. FAURE & J. VANHEULE, MILIEUSTRAFRECHT [Environmental Criminal Law] 108–09 (Antwerp Kluwer 2006). For a discussion of judicial power in Europe to find administrative decisions unlawful, see *infra* text accompanying notes 157–161. In the United States, however, statutes may preclude defendants in an enforcement action from some challenges to administrative authority. See, e.g., CWA §§ 509(b)(1) and (2), 33 U.S.C. 1369(b)(1) and (2) (1994); RCRA §§ 7006(a)(1) and (b), 42 U.S.C. §§ 6976(a)(1) and (b) (2000); CAA § 307(b)(1), 42 U.S.C. 7607(b)(1) (2000). See generally, SUSAN F. MANDIBERG AND SUSAN L. SMITH, CRIMES AGAINST THE ENVIRONMENT § 3–4(c) (Michie 1997 and annual supplement through 2004).

30. E.g., CWA § 402(k), 33 U.S.C. § 1342(k) (2000); CAA § 504(f), 42 U.S.C. § 7661c(f) (2000); 40 C.F.R. § 270.4(c) (2007) (RCRA permit shield).

31. Some statutes criminalize discharging a pollutant in the absence of a required permit to do so. If the amount of the discharge is small, it is possible to argue that the social harm is primarily the flouting of administrative requirements. However, we take the position that

criminalize engaging in specified activities without a required license or operating permit.<sup>32</sup> The criminal law typically applies in these kinds of cases as soon as the administrative provision has been violated, even if no actual harm or threat of harm to the environment occurs.<sup>33</sup> In fact, the Abstract Endangerment Model is best limited to crimes that do not involve any contact between a pollutant and the environment. Once a discharge or emission occurs, either the Concrete Endangerment or the Concrete Harm Model is more appropriate.<sup>34</sup>

Although Abstract Endangerment crimes focus on vindicating administrative values, punishing the administrative violation

any discharge of a pollutant risks harm to the environment and treat such crimes as examples of Model II. *See also* comments *infra*, note 34.

32. For example, RCRA punishes operating a storage facility without a permit, even though no pollution is involved in doing so. RCRA § 3008(d)(2)(A), 42 U.S.C. § 6928(d)(2)(A) (2000). For European examples, *see, e.g.*, Law No. 76-663 of July 19, 1976, *Journal Officiel de la République Française* [J.O.] [Official Gazette of France], March 30, 1993 (concerning classified installations for environmental protection) and CODE DE L'ENVIRONNEMENT [Environmental Code], art. L514-91 (Fr.) (imposing criminal penalties); Miljöbalk [MB] [Environmental Code] 29:4 (Swed.) (providing penalties).

33. Of course, we refer here to the way in which the criminal provisions are formulated in the specific statute. A different issue is that in many legal systems prosecutors have a great deal of discretion. In reality, the ecological impact will often be one of the factors the government takes into account in determining which violators to treat criminally. For example, in the U.K. a notice on enforcement policy of the Environment Agency of 1 November 1998 provided in section 16 that regulatory effort should be directed primarily towards those whose activities give rise to or risk of serious environmental damage (the text is reproduced in M. FAURE & G. HEINE, ENVIRONMENTAL CRIMINAL LAW IN THE EUROPEAN UNION: DOCUMENTATION OF THE MAIN PROVISIONS WITH INTRODUCTION 360 (Freiburg im Breisgau, Max-Planck-Institute for Foreign and International Criminal Law 2000). In addition, in some countries the existence of actual harm to the environment may affect the sanction imposed. For example, in the Irish Environmental Protection Agency Act of 1992 article 9(2) provided that in imposing any penalty the Court shall in particular have regard to the risk or extent of damage to the environment arising from the act or omission constituting the offence. Environmental Protection Act, 1992 (Act No. 7/1992) (Ir.) *available at* <http://www.irishstatutebook.ie/1992/en/act/pub/0007/sec0009.html> (last visited February 20, 2009). *See also, e.g.*, U.S. SENTENCING GUIDELINES MANUAL §§ 2Q1.2, Application Note 5, and 2Q1.3, Application Note 4 (2008) (authorizing increased sentence based upon harm).

34. As discussed in Part II.B.1, *infra*, harm may be presumed when a pollutant is released into the environment in excess of permit limits. German commentary treats this situation as one of overlap: if a licensee violates an emission standard in the permit, this constitutes both an abstract endangerment as well as a concrete endangerment. *See, e.g.*, G. Heine 'Gewässerverunreinigung, par. 324' [Water Pollution, par. 324], IN STRAFGESETZBUCH. KOMMENTAR, [CRIMINAL CODE, COMMENTARY] par. 324, nr. 9, 2661-62 (A. Schönke & Horst Schröder eds. München, Beck 2006). We adopt a different approach for reasons of methodological clarity and because we believe that these situations merit different degrees of punishment.

indirectly furthers ecological values in two ways.<sup>35</sup> First, an entity that obtains required permits and adheres to paperwork, monitoring, and inspection requirements displays a willingness to follow administrative rules; such an entity is also likely to follow the rules more closely connected to preventing environmental harm. Second, and more to the point, if administrative rules are followed, the regulatory agency can monitor the entity's operations to ensure that harm is less likely to occur.<sup>36</sup>

Nevertheless, although environmental values are implicated by Abstract Endangerment crimes, the overlap with such values is incomplete. For one thing, an entity in compliance with all administrative rules can still cause environmental "harm."<sup>37</sup> For each parameter—air, water, soil—the administrative agency will set a baseline of "acceptable" contact between a pollutant and the environment. This baseline will often reflect a compromise among such considerations as the pollutant's effect on the environment, society's need for the polluting activity, and the existence (and cost) of technology that can be used to mitigate the damage.<sup>38</sup> Thus, even if a facility is discharging or emitting pollutants within the baseline, its compliance with other administrative rules does not equate to no environmental "harm."<sup>39</sup> The disconnect between administrative and environmental values can go the other way as well. That is, an entity that violates administrative rules may not be causing environmental harm.<sup>40</sup> Take, for example, an entity that

35. Faure & Visser, *supra* note 16, at 320.

36. The criminal sanctions support regulations that allow the agency to ensure that its environmental protection scheme is functioning properly. For example, in the Netherlands environmental statutes incorporate many duties that force the licensee to retain data and provide information to administrative authorities. Even though these provisions may not directly protect the environment, the requirements make transparent the licensee's ways of dealing with pollutants. The government can then use this information to control whether the licensee is complying with statutes that more directly protect the environment. See, e.g., TH.J.B. BUITING, STRAFRECHT EN MILIEU [CRIMINAL LAW AND ENVIRONMENT] 28–29 (Arnhem Gouda Quint 1998); C. WALING, HET MATERIËLE MILIEUSTRAFRECHT [THE MATERIAL ENVIRONMENTAL CRIMINAL LAW] 23 (Arnhem Gouda Quint 1990).

37. Faure & Visser, *supra* note 16, at 325 (illustrating this point with the Antwerp case against the Bayer Company, famous in Europe). Although employees of the company emitted titanium dioxide into surface waters, they were acquitted because the company was technically in compliance with requirements. *Id.*

38. See, e.g., *Weyerhaeuser Co. v. Coster*, 590 F.2d 1011, 1045 (D.C. Cir. 1978) (discussing the Clean Water Act).

39. For a discussion of what is meant by environmental "harm," see *infra*, Part II.C.0. Regarding administrative violations involving actual discharges, see *infra*, Parts II.B and C.

40. Faure & Visser, *supra* note 16, at 325.

transports hazardous waste without the required paperwork. This violation harms administrative norms first and foremost.<sup>41</sup> But if there is no emission, there is no environmental harm: as regards environmental values, the crime is inchoate.<sup>42</sup> Regardless of which aspect of the disconnect one views, Abstract Endangerment crimes do not focus on an activity's impact on the environment. These crimes are serious, but their relation to ecological values is indirect. As a result, they cannot be completely effective in protecting those values.<sup>43</sup>

Most western countries have plentiful examples of crimes that fit the Abstract Endangerment Model. For ease of comparison, these crimes can be organized into three categories: operating without a required license or permit; violating paperwork, monitoring, or inspection requirements; and other regulatory violations that do not involve harm or threat of harm to the environment.

In the Abstract Endangerment Model, the category of crimes imposing criminal sanctions on those who operate without a required license or permit includes only those in which an emission or discharge is not an element of the crime. In the United States, the crime of storing hazardous waste without a permit provides an example.<sup>44</sup> Among the many European examples, we discuss three. First, a Flemish Decree of 28 June 1985, concerning Environmental Permits,<sup>45</sup> provides that criminal

41. In the Netherlands many scholars have held that the criminal provisions punishing the non-respect of administrative duties protect administrative values rather than ecological values. *See, e.g.*, BUITING, *supra* note 36, at 32–34; L.E.M. HENDRIKS & J. WÖRETSHOFFER, MILIEUSTRAFRECHT [ENVIRONMENTAL CRIMINAL LAW] 29, 31–32 (1995); WALING, *supra* note 36, at 16.

42. *See infra* at notes 81–84 (discussing inchoate crimes). Some commentators label this approach to environmental protection as “indirect.” For example, in the Netherlands it is held in legal doctrine that the criminalization of administrative environmental statutes does contribute to a protection of ecological values, albeit only in an indirect way. *See, e.g.*, HENDRIKS, & WÖRETSHOFFER, *supra* note 41, at 29–30 (noting that the criminal provision punishing operation of a chemical plant without a license is aimed at protecting ecological values); WALING, *supra* note 36, at 16–19 (noting same). On the other hand, as the criminal law applies irrespective of any specific damage or threat of harm to the environment, other commentators say that these provisions punish the “abstract” endangerment of the environment. *See, e.g.*, BUITING, *supra* note 36, at 26–30; F.P.C.L. TONNAER, HANDBOEK VAN HET NEDERLANDSE MILIEURECHT [HANDBOOK OF DUTCH ENVIRONMENTAL LAW] 1103–06 (1994); WALING, *supra* note 36, at 24, 58.

43. *See* Faure & Visser, *supra* note 16, at 325.

44. RCRA § 3008(d)(2)(A), 42 U.S.C. § 6928(d)(2)(A) (2000) (authorizing criminal sanctions without requiring proof of harm or threat of harm to the environment).

45. Flemish decree concerning environmental permits of 28 June 1985, Moniteur Belge

sanctions can be imposed upon anyone who sets up or changes a classified establishment without a license. Similarly, a French provision criminalizes running a classified installation without a permit.<sup>46</sup> A third example comes from the German Criminal Code, which punishes anyone who operates a specific installation without a permit required by law.<sup>47</sup>

The second category of Abstract Endangerment crimes punishes those who violate paperwork requirements or hinder monitoring or inspection of facilities. All three of the major U.S. pollution-control statutes contain crimes of this type.<sup>48</sup> European examples include the Flemish Decree noted above<sup>49</sup> and a French statute providing that he who hinders the exercise of functions by persons charged with inspection duties or with the monitoring of classified installations will be punished.<sup>50</sup>

[Official Journal of Belgium], 17 Sept. 1985.

46. CODE DE L'ENVIRONNEMENT [Environmental Code] art. L514-9 § 1 (Fr.) (providing that the operation of a facility without the authorization required is penalized).

47. Strafgesetzbuch [StGB] [Penal Code] Nov. 13, 1998, Bundesgesetzblatt [BGBl] I 945, 3322, § 327(1) (providing that anyone who, without the necessary permit or in breach of an enforceable prohibition shall be punished). The punishment depends upon the type of installation it concerns: for most installations § 327(2) threatens with a imprisonment of three years and/or a fine, but in case of a nuclear installation the imprisonment can run up to five years. *Id.* at § 327(2).

48. CWA § 309(c)(2)(A), 33 U.S.C. § 1319(c)(2)(A) (1994) imposes felony sanctions on “[a]ny person who knowingly violates section . . . 1318 . . . of this title,” which deals with required inspections and reports. Sub-section (c)(1)(A) imposes misdemeanor sanctions on anyone who negligently violates § 1318.

42 U.S.C. § 6928(d)(3) imposes felony sanctions on “[a]ny person who knowingly omits material information or makes any false material statement or representation in any [listed document].” Sub-section (d)(4) imposes such sanctions on anyone who engages in a regulated activity under RCRA and “who knowingly destroys, alters, conceals, or fails to file any record, application, manifest, report, or other document required to be maintained or filed . . . .” Sub-section (d)(5) punishes knowing transportation of regulated materials without a manifest. Finally, permits issued under RCRA require compliance with regulatory inspection requests. 40 C.F.R. § 270.30(i) (2007). Engaging in regulated activity in knowing violation of such permit requirements is also a crime. 42 U.S.C. §§ 6928(d)(2)(B) and (d)(7).

CAA § 113(c)(1), 42 U.S.C. § 7413(c)(1) (2000) imposes felony sanctions on “[a]ny person who knowingly violates any requirement or prohibition . . . of . . . section 7414 of this title (relating to inspections, etc.) . . . .” Sub-sections (2)(A) and (C) impose felony sanctions on persons who knowingly make false statements or omit material information in listed documents or falsify or tamper with monitoring devices or methods.

49. Flemish decree concerning environmental permits of 28 June 1985, *Moniteur Belge* [Official Journal of Belgium], 17 Sept. 1985, art. 39, ¶ 1(3) (providing that anyone who hinders the supervision of classified establishment as ordained in this decree shall be punished).

50. CODE DE L'ENVIRONNEMENT [Environmental Code] art. L514-12 (Fr.) (providing that

The third type of Abstract Endangerment provision imposes criminal sanctions on other statutory, regulatory, license, or permit violations that do not involve an emission, discharge, or other direct threat to the environment. In the United States, there are relatively few federal pollution crimes that fit this category. The CAA has one provision: a crime for violations regarding payment of fees owed to the government.<sup>51</sup> The RCRA crime of exporting hazardous waste without permission of the receiving country also fits.<sup>52</sup> European examples in this category include the provision in the French Environmental Code that punishes the transmission of waste to anyone other than the operator of an approved facility and the disposal of waste without the required approval.<sup>53</sup> Similarly, the German Criminal Code punishes various acts related to “unauthorized” dealings with toxic waste. Section 326(1) includes punishment for anyone who, without authorization, treats, stores, deposits, discharges or otherwise disposes of specific wastes. Section 326(2) imposes the same punishment upon anyone who, in breach of a prohibition or without the necessary permit, brings waste out or through the territory.

#### B. Model II: Concrete Endangerment Crimes with Administrative Predicates<sup>54</sup>

The second model is that of Concrete Endangerment Crimes with Administrative Predicates (“Concrete Endangerment”). As with the first model, the activity in question must take place in an unlawful way: either without a required permit or in violation of conditions in a statute, regulation, or permit.<sup>55</sup> The characteristic of unlawfulness may be integrated in different ways. For some crimes in this model, violating regulatory law is a requisite element.<sup>56</sup> Others provide a defense for authorized activities.<sup>57</sup>

“[o]bstructing the persons responsible for inspecting or making expert appraisements of classified facilities in the exercise of their functions is punishable by imprisonment for one year and a fine of 15.000 Euros”).

51. 42 U.S.C. § 7413(c)(1).

52. 42 U.S.C. § 6928(d)(6).

53. CODE DE L'ENVIRONNEMENT [Environmental Code] art. L541-46, I, 6<sup>o</sup> and 7<sup>o</sup> (Fr.).

54. See generally Faure & Visser, *supra* note 16, at 328 et seq.

55. *Id.* at 328. As with Model I, of course, the administrative decision at issue must be lawful. See *supra* note 29.

56. See, e.g., CWA § 309(c)(1) and (2), 33 U.S.C. §§ 1319(c)(1) and (2) (1994) (establishing criminal penalties for administrative violations and also, in some applications, a discharge into the environment); 42 U.S.C. § 7413(c) (establishing criminal penalties for

Although the legal technique differs, in these two configurations the unlawfulness of the discharge remains a factor in determining criminality.

Concrete Endangerment crimes differ from the first model, however, in that they also either presume or require proof that the unlawful activity involved a threat of harm to the environment. This element moves the model closer to a vindication of environmental values than is true of Model I.<sup>58</sup> However, Concrete Endangerment crimes do not address environmental values as fully as those in our third model, which require proof that harm to the environment did, in fact, occur. The division between Models II and III accords significance to the resulting harm, a distinction important in German legal theory.<sup>59</sup> In contrast, not all legal theorists in the United States agree that crimes should be punished more severely if the target harm is realized.<sup>60</sup> Nonetheless, “all available data suggest a nearly universal and deeply held view among the community that resulting harm does matter, that it increases an offender’s deserved punishment.”<sup>61</sup> In light of this evident majority opinion, we adopt two models based on the significance of resulting harm.

While all Concrete Endangerment crimes involve a threat of harm to the environment, the model has two variations. Both

administrative violations and also, in some applications, an emission into the ambient air); Strafgesetzbuch [StGB] [Criminal Code] Nov. 13, 1998, Bundesgesetzblatt [BGBl] I at 3403, § 324 (criminalizing water-polluting acts that take place “without authorization” (*unbefugt*)).

57. See, e.g., United Kingdom’s Water Resources Act, 1991, c. 57, §§ 85–88 (providing a defense to principle offences in respect of authorized discharges). See also, *supra* note 30 and accompanying text (discussing permit shields).

58. Faure & Visser, *supra* note 16, at 329, 332–333.

59. German legal theory contrasts crimes in which an identified harm is merely threatened (*Gefährungsdelikt*) with crimes in which the harm is actually realized (*Erfolgdelikt*). G. Heine, *Umweltstrafrecht in der Bundesrepublik Deutschland: Entwicklung und Gegenwärtiger Stand, Grundprobleme und Alternativen* [Environmental Criminal Law in the Federal Republic of Germany: Development and Actual Situation, Fundamental Problems and Alternatives], in A. Eser & G. Kaiser, DRITTES DEUTSCH-SOVJETISCHES COLLOQUIUM ÜBER STRAFRECHT UND CRIMINOLOGIE [Third German-Sovjet Colloquium on Criminal Law and Criminology] 67 (Baden-Baden Nomos 1989) [hereinafter Heine, *Umweltstrafrecht in der Bundesrepublik Deutschland*].

60. See, e.g., Paul H. Robinson, *The Role of Moral Philosophers in the Competition Between Deontological and Empirical Desert*, 48 WM. & MARY L. REV. 1831, 1832 n.5 (2007) (listing theorists who have weighed in on this debate).

61. *Id.* at 1832–33 (citation omitted). See also MODEL PENAL CODE § 2.03 cmt. 1 (Official Draft and Revised Comments 1985) (noting the importance of focusing on actual results, at least where severe sanctions are authorized, in light of the way jurors are likely to assess the evidence).

usually require an emission,<sup>62</sup> and so the following discussion will focus on this type of situation. The first variation might be termed “presumed endangerment.” Statutes in this category criminalize *per se* the unlawful contact of some quantity of pollutant with the environment on the assumption that such contact necessarily causes at least some threat of harm. The second category is “demonstrated endangerment.” These statutes require affirmative proof of a threat to the environment beyond the mere fact of an unlawful emission or release. These two variations represent different approaches to vindicating environmental values. “Presumed endangerment” crimes are easiest to prove and thus allow earlier and more frequent governmental intervention. However, any situation in which the government can prove an actual threat of environmental harm arguably represents a far more serious violation. Presumably, these differences can be reflected in the punishment authorized for each type of offense.<sup>63</sup> The following sub-sections provide examples of both types of Concrete Endangerment crimes.

### 1. Presumed Endangerment

From one perspective “presumed endangerment” statutes provide the greatest protection for ecological values because the government can obtain a conviction with the least amount of proof. The government need show only that an unpermitted emission occurred: either that the facility had no permit at all, or that it allowed a pollutant to come into direct contact with air, water, or

62. Faure & Visser, *supra* note 16, at 328. See also BUTING, *supra* note 36, at 28–29; HENDRIKS & WÖRETSCHOFER, *supra* note 41, at 38; WALING, *supra* note 36, at 23.

Note, however, that convictions can sometimes be had without proof of an emission. For example, regarding the German Criminal Code § 324, which concerns water pollution, some have held that conviction does not require an emission, but only a detrimental change of the water quality without authorization. Hence, the removal of oxygen from the water (without an emission) could be punishable. See So K. Tiedemann, *Umweltstrafrecht [Environmental Criminal Law]*, in *HANDWÖRTERBUCH DES UMWELTRECHTS [HANDBOOK/CONCISE DICTIONARY OF ENVIRONMENTAL LAW]* 848 (O. Kimminich et al eds, Berlin Erich Schmidt Verlag 1986). In addition, regulations sometimes require the containment of pollutants to avoid or lower the risk of their contact with the environment. See, *E.g.*, 40 C.F.R. § 264.221 (2008) (requiring facilities treating, storing, or disposing of hazardous waste to install liners for certain surface impoundments “to prevent any migration of wastes out of the impoundment to the adjacent subsurface soil or ground water or surface water” and describing requirements for such liners). Violation of such containment requirements also fits the Concrete Endangerment model.

63. See *infra* Section III, Part 0.

earth in an amount greater than that allowed by discharge or emission standards in the existing license or operating permit. “Presumed endangerment” crimes are important in the United States, as they provide the basis for prosecuting crimes under the Clean Water Act<sup>64</sup> and Clean Air Act<sup>65</sup> even when the government cannot prove that the violator actually caused environmental harm. Both of these schemes punish discharges or emissions of pollutants into the water or air in violation of regulatory rules.<sup>66</sup> The violation can involve discharging or emitting a pollutant without a permit or doing so in violation of permit limits, and Congress presumed that such discharges or emissions threaten the environment or human beings.<sup>67</sup> In addition, the federal Sentencing Guidelines<sup>68</sup> treat crimes involving any kind of discharge, release, or emission as more serious than other environmental crimes.<sup>69</sup> This is because the Guidelines openly assume that any discharge into the environment causes “contamination,”<sup>70</sup> although it is not clear that

64. CWA § 309(c)(1) and (2), 33 U.S.C. § 1319(c)(1) and (2) (1994) (criminalizing negligent and knowing violations, respectively). The CWA criminal provisions punish discharge violations reflected in 33 U.S.C. §§ 1311, 1312, 1316, 1317, 1321(b)(3), 1328, and 1345 as well as conditions or limits in permits authorized under §§ 1342 and 1344.

65. CAA § 113(c)(1), 42 U.S.C. § 7413(c)(1) (2000) (criminalizing knowing violations). The CAA criminal provision punishes emission violations reflected in a variety of regulatory rules and requirements.

66. Note, however, that the CWA “permit shield” is eliminated for any standard imposed under § 1317 of this title for a toxic pollutant injurious to human health. In the case of an emission meeting this criterion, the administrative predicate is eliminated. *See infra*, text accompanying notes 153–154. Thus, the crime ceases to fit Model II.

67. *See, e.g.*, CWA § 101(a), 33 U.S.C. § 1251(a) (1994) (declaring the objective of the CWA to be “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters”); CAA § 101(a), 42 U.S.C. 7401(a) (2000) (reporting congressional finding that increasing air pollution presents “mounting dangers to the public health and welfare”). Note that the concept of harm focuses not only on the environment itself, however, but also on human health and welfare. This is true of the CAA in particular. *See, e.g.*, 42 U.S.C. 7401(b)(1). (setting out the purpose “to promote the public health and welfare and the productive capacity of [the Nation’s] population”). Regarding the focus on human concerns, *see infra* notes 111–120.

68. U.S. SENTENCING GUIDELINES MANUAL (2008). Note that while it was once mandatory that federal judges follow the guidelines in sentencing, their application is now discretionary. *United States v. Booker*, 543 U.S. 220 (2006). *See also* *Gall v. United States*, 128 S. Ct. 586, 591 (2007) (addressing appeal of discretionary sentencing decision); *Kimbrough v. United States*, 128 S. Ct. 558, 564 (2007) (addressing same); *Rita v. United States*, 127 S. Ct. 2456 (2007) (addressing same).

69. U.S. SENTENCING GUIDELINES MANUAL §§ 2Q1.2(b)(1) and 2Q1.3(b)(1) (2008) (directing courts to enhance the sentence if there was an actual discharge, release, or emission).

70. Neither the Guidelines Manual nor the statutes define “contamination” or

“contamination” is the equivalent of “harm.”

Presumed endangerment statutes also exist in Europe. One example is section 324 of the German Criminal Code, which criminalizes polluting water or otherwise detrimentally changing its qualities without authorization.<sup>71</sup> A change to water is considered

“environment.” *United States v. Ferrin*, 994 F.2d 658, 664 (9th Cir. 1993). The Application Notes accompanying these guidelines say that the enhancement “assumes a discharge or emission into the environment resulting in actual environmental contamination.” U.S. SENTENCING GUIDELINES MANUAL §§ 2Q1.2, Application Note 5., 2Q1.3, Application Note 4 (2008). If the government has shown an emission that contacts land or water, or a release into the ambient air, courts interpret this to mean that contamination must have occurred and thus they apply the enhancement automatically. *United States v. Perez*, 366 F.3d 1178, 1181–1183 (11th Cir. 2004) (reviewing a sentence for violation of CWA); *United States v. Ho*, 311 F.3d 589, 610 n. 25 (5th Cir. 2002) (reviewing a sentence for violation of CAA); *United States v. Overholt*, 307 F.3d 1231, 1257 (10th Cir. 2002) (reviewing a sentence for conspiracy to violate RCRA and other statutes); *United States v. Hoffman*, Nos. 99-4515, 99-4516, 99-4517, 2000 WL 309001, at \*1 (4th Cir. Mar. 27, 2000) (reviewing a sentence for violation of CWA); *United States v. Shurelds*, No. 97-6265, 1999 WL 137636, (6th Cir. Mar. 2, 1999), *cert. denied*, 526 U.S. 1150 (1999) (reviewing a sentence for violation of CAA); *United States v. Cunningham*, 194 F.3d 1186, 1201–1202 (11th Cir. 1999), *cert. denied*, 531 U.S. 831 (2000) (reviewing a sentence for violation of RCRA); *United States v. Liebman*, 40 F.3d 544, 550 (2d Cir. 1994) (reviewing a sentence for violation of CAA); *United States v. Goldfaden*, 959 F.2d 1324, 1330–1331 (5th Cir. 1992) (reviewing a sentence for violation of CWA); *United States v. Sellers*, 926 F.2d 410, 417 (5th Cir. 1991) (reviewing a sentence for violation of RCRA). The Ninth Circuit uses a different approach but also allows the enhancement if the pollution comes into physical contact with the environment because of the factual inference that contact produces contamination. *Compare United States v. Ferrin*, 994 F.2d 658, 663–664 (9th Cir. 1993) (disallowing enhancement in a RCRA prosecution where defendant disposed of waste into a dumpster) *with, e.g., United States v. Technic Services, Inc.*, 314 F.3d 1031, 1047–1048 (9th Cir. 2002) (allowing enhancement in CAA and CWA prosecution where asbestos fibers were released into air and water); *United States v. Pearson*, 274 F.3d 1225, 1234–1235 (9th Cir. 2001) (allowing enhancement in CAA prosecution where asbestos fibers came into contact with air and clogged drains); *United States v. Van Loben Sels*, 198 F.3d 1161, 1165–1166 (9th Cir. 1999), *amended by* 207 F.3d 1192 (9th Cir. 2000) (allowing enhancement in CWA prosecution involving continuous discharge into a sewer system); *United States v. Cooper*, 173 F.3d 1192, 1205 (9th Cir. 1999) (allowing enhancement in CWA prosecution where 10,000 tons of sewage sludge was dumped on the land but there was no actual environmental harm). Some cases in other circuits take no position on which approach is correct, but would allow the enhancement even under the Ninth Circuit’s allegedly more rigorous approach. *See United States v. Chau*, 293 F.3d 96, 99–100 (3d Cir. 2002) (reviewing sentence for CAA violation); *United States v. Freeman*, 30 F.3d 1040, 1041–1042 (8th Cir. 1994) (reviewing sentence for RCRA violation); *United States v. Strandquist*, 993 F.2d 395, 400 (4th Cir. 1993) (reviewing sentence for CWA violation). Finally, one court suggests that a *downward* departure might be warranted if the record affirmatively shows no contamination. *United States v. Bogas*, 920 F.2d 363, 368 (6th Cir. 1990) (reviewing a conviction under RCRA).

71. Strafgesetzbuch [StGB] [Penal Code] Nov. 13, 1998, Bundesgesetzblatt [BGBl] 945, 3322, § 324. The provision is considered by most legal commentators in Germany as an example of a concrete endangerment offense. *See, e.g., Faure & Visser, supra* note 16, at 336; G. Heine, *Umweltstrafrecht in der Bundesrepublik Deutschland, supra* note 59, at 78 (considering §

'detrimental' in the sense of paragraph 324 of the criminal code when the change is either not positive or not completely neutral, that is, as soon as the water is no longer in its natural or an improved condition. In addition, case law has interpreted this provision broadly so that mere endangerment of water quality leads to criminal liability.<sup>72</sup> Thus, this statute can be classified as a "presumed endangerment" offense, because it does not require actual proof of harm or threat of harm, but relies on contact alone.

An additional European example may be instructive: the Belgian Surface Water Protection Act of 1971.<sup>73</sup> The goal of the Act is to protect surface waters from pollution.<sup>74</sup> Articles 2 and 5 prohibit depositing polluting substances or liquids in surface waters without a license or permit.<sup>75</sup> Violations of these requirements are punished criminally.<sup>76</sup> The Act defines pollution as an emission that *can* change the quality of water so that it is less suited for the use to which it should be put.<sup>77</sup> However, case law in Belgium holds that since a license is required to discharge waste water, discharges are *presumed always to change the quality of the surface water*

324 as an endangerment provision); K. Rogall, *Gegenwartsprobleme des Umweltstrafrechts* [*Present-day Problems of Environmental Criminal Law*], in Festschrift der Rechtswissenschaftlichen Fakultät zur 600-Jahr-Feier der Universität zu Köln [Festschrift of the Law Faculty on the Occasion of the 600th Birthday of the University of Cologne] 518-520 (Carl Heymanns Köln Berlin Bonn München Verlag KG 1988) (noting that it is the unlawful emission which is punished by § 324(1) and qualifying § 324 as a 'potential endangerment' offence).

72. See Oberlandesgericht [OLG] Stuttgart (Higher Regional Court), NJW, 1977, 1408, Bundesgerichtshof [BGH] (Federal Court of Justice), Neue Zeitschrift für Strafrecht [NSTZ], 281 (1995) and OLG Köln, NJW, 2119 (1988). See also Rogall, *supra* note 71, at 517 (discussing this provision); H.J. Rudolphi, *Primat des Strafrechts im Umweltschutz?* [*Primacy of Criminal Law in Environmental Protection*], Neue Zeitschrift für Strafrecht (NSTZ) 194 (1984) (commenting on this provision).

73. Surface Water Protection Act [*Wet op de bescherming van de oppervlaktewateren tegen verontreiniging*] of 26 March 1971, Moniteur Belge [Official Journal of Belgium], 1 May 1971. See Faure & Visser, *supra* note 16, at 334 (discussing this example).

74. Surface Water Protection Act [*Wet op de bescherming van de oppervlaktewateren tegen verontreiniging*] of 26 March 1971, Moniteur Belge [Official Journal of Belgium], 1 May 1971, art. 1.

75. *Id.* at art. 2 (providing that it is generally prohibited to deposit substances, polluting or polluted liquids in the surface waters, with the exception of the discharge of waste water for which a license has been granted). Every discharge of waste water is subject to a permit on the basis of article 5.

76. *Id.* at art. 41 (punishing the violation of any provision of the Act, as well as a discharge without a permit or in violation of permit conditions).

77. *Id.* art. 1(4).

*in a negative way.*<sup>78</sup> This means that when waste water is discharged, the prosecutor does not actually have to show that the emission could or did negatively affect water quality. In other words, the prosecutor need not show that the substances were actually polluting in the sense of article 2 of the Surface Water Act.

## 2. Demonstrated Endangerment

Demonstrated endangerment statutes require affirmative proof of a threat to the environment beyond the mere fact of an unlawful emission or release. It is this requirement of affirmative proof that distinguishes statutes in this category from presumed endangerment statutes. Thus, although these offenses also fit the Concrete Endangerment Model, they are harder to prove than the other sub-category of presumed endangerment crimes. Both, however, are often easier to prove than crimes involving actual environmental harm, yet to be discussed.<sup>79</sup>

Some conceptual problems exist in articulating demonstrated endangerment crimes. For one thing, in order to know what endangers the environment, it is necessary at some level to know what is meant by “environmental harm.”<sup>80</sup> In addition, demonstrated endangerment crimes raise the issue of how imminent the harm must be for the environment to be in danger. After all, mere failure to follow regulatory paperwork requirements could “endanger” the environment in some attenuated way. In this sense, statutes punishing situations that stop short of actual environmental harm are inchoate in nature<sup>81</sup> and raise issues similar to those raised by the crime of attempt: should the statute allow official intervention as soon as authorities identify an actor who is intending harm, or should it delay intervention until the

78. *See, e.g.*, Rechtbank Antwerpen [Criminal Court of Antwerp], 30th Chamber, Jan. 6, 1988, in the case of public prosecutor against Docks (unpublished), quoted by M. FAURE & M. VISSER, *DE STRAFRECHTELIJKE BESCHERMING VAN HET LEEFMILIEU IN BELGIË, DUITSLAND EN NEDERLAND. MODELLEN VAN STRAFBAARSTELLING EN HUN BEWIJSRECHTELIJKE IMPLICATIES* [THE PENAL PROTECTION OF THE ENVIRONMENT IN BELGIUM, GERMANY AND THE NETHERLANDS. MODELS OF PENALIZING AND ITS IMPLICATIONS INVOLVING THE LAW OF EVIDENCE] 260 n.865 (Antwerp Intersentia, 1999). For a more detailed discussion, *see id.* at 257–265.

79. *See infra*, Parts II. C. and D.

80. This issue is more usefully discussed in conjunction with crimes that require actual harm. *See* discussion *infra* Part I.

81. *See also supra* note 42 (discussing approach of some European commentators).

social harm at issue is about to be realized?<sup>82</sup> In environmental cases it makes a great deal of sense to refer to the objective dangerousness of the situation. The subjective state of mind of an actor in an environmental case is often difficult to judge (was it the actor's purpose to harm the environment, or was the actor merely indifferent to the consequences of the actions?),<sup>83</sup> and it may be much easier to prove scientifically that a specific situation created an objective danger to the environment. Nevertheless, the objective focus does not necessarily lead to ease in statutory drafting, as statutes fitting the demonstrated endangerment approach ideally should define the notion of "threat" in some understandable way.<sup>84</sup>

Numerous examples of demonstrated endangerment crimes can be found in Europe. One involves the Belgian Surface Water Protection Act of 1971. As noted above,<sup>85</sup> courts presume that discharges of waste water result in pollution. The presumption flows from the requirement that the discharger obtain a permit. This means that when the discharge at issue involves a substance for which no permit is available, the presumption is inapplicable. In such a case the prosecutor will have to produce evidence proving that the emission "could have changed the water quality of the receiving surface water."<sup>86</sup> Another example, from the United Kingdom, is the Water Resources Act, which provides offenses for persons who cause or permit pollution to enter controlled waters.<sup>87</sup>

82. See, e.g., JOSHUA DRESSLER, UNDERSTANDING CRIMINAL LAW § 27.06 (4th ed. 2006). A thorough exploration of these issues is beyond the scope of this article.

83. The question of what mental state should be required for environmental crimes adds a separate, complex issue to those discussed here, which is beyond the scope of this article.

84. The challenge of defining "threat" is similar to the challenge presented by defining "harm." See *infra* Part II.C.1.

85. See *supra* notes 73 to 78.

86. Faure & Visser, *supra* note 16, at 334–35 (providing the example of a ship master cleaning cargo space and noting that pollution is defined in terms of the potential to cause harm) (emphasis added).

87. E.g., Water Resources Act, 1991, c. 57, § 85(1) (providing an offense for any person "if he causes or knowingly permits any poisonous, noxious or polluting matter or solid waste matter to enter any controlled water") and § 85(3) (providing an offense for any person who "causes or knowingly permits any trade effluent or sewage effluent to be discharged – (a) into any controlled waters; or (b) from land in England and Wales, through a pipe, into the sea outside the seaward limits of controlled waters"). Note that while § 85(1) does not require the government to prove a regulatory violation, the administrative link is not severed. This is because compliance with administrative rules provides a defense. See Water Resources Act § 88 (listing a number of defenses in respect of authorized discharges); S. BELL & D. MCGILLIVRAY, ENVIRONMENTAL LAW 588–89 (5th ed. London Blackstone 2001).

Case law has determined that “polluting” requires a likelihood or capability of causing harm to animals, plants, or those who use the water, but does not require actual harm.<sup>88</sup> The French Water Act of January 3, 1992<sup>89</sup> provides a third example. This provision aims at sanctioning a person who, in an unauthorized manner, emits substances into surface, underground, or sea waters “whose actions or reactions cause, even if only temporarily, harmful effects on . . . fauna and flora . . . .”<sup>90</sup>

In the United States, the “knowing endangerment” provisions of the Clean Water Act<sup>91</sup> and Resource Conservation and Recovery Act<sup>92</sup> at first seem to reflect the “demonstrated endangerment” version of Concrete Endangerment crime.<sup>93</sup> Both require the government to prove that the defendant “place[d] another person in imminent danger of death or serious bodily injury.” The crimes fit the “demonstrated endangerment” model when both the environment and human beings are directly or indirectly<sup>94</sup>

88. See BELL & MCGILLIVRAY, *supra* note 87, at 587–88.

89. CODE DE L'ENVIRONNEMENT [Environmental Code] art. L216-6 (Fr.). See, Martin M. Littmann, *L'article 22 de la loi du 23 Janvier 1992 et la protection des milieux aquatiques*, REVUE JURIDIQUE DE L'ENVIRONNEMENT [R.J.E.] 137 (1994) (Fr.).

90. CODE DE L'ENVIRONNEMENT [Environmental Code] art. L216-6 (Fr.). As to the administrative predicate, a later part of the article provides that a violation exists as to an authorized emission only when the provisions of the permit have not been obeyed. Hence, French legal scholars hold that compliance with an administrative license would release the licensee from criminal liability. See, e.g., D. GUILHAL, DROIT RÉPRESSIF DE L'ENVIRONNEMENT 535–37 (2d ed. 2000); M. PRIEUR, DROIT DE L'ENVIRONNEMENT 893–94 (5th ed. 2004).

91. § 309(c)(3), 33 U.S.C. § 1319(c)(3) (1994) (punishing knowing endangerment).

92. § 3008(e), 42 U.S.C. § 6928(e) (2000) (punishing knowing endangerment).

93. The CAA also has “endangerment” provisions. CAA § 113(c)(4)–(5), 42 U.S.C. § 7413(c)(4)–(5) (2000) (punishing negligent and knowing endangerment, respectively). However, they do not fit within this Concrete Endangerment Model because there is no administrative predicate. See *infra* text accompanying notes 169–70. In addition, because the CAA’s provisions require a “release into the ambient air,” and thus direct contact between the pollutant and the natural environment, the provisions do not raise the issue discussed in this paragraph. See 42 U.S.C. § 7413 (c) (4), (5) (A).

94. E.g., *United States v. Borowski*, 977 F.2d 27 (1st Cir. 1992). In this case, workers discharged spent nickel-plating and nitrous-acid baths directly into sinks without any pretreatment. The sinks drained directly into underground pipes that fed into the municipal sewer system and then into a publicly owned treatment works (POTW). Discharging the untreated liquid into a POTW violated the Clean Water Act. The court indicated that a “knowing endangerment” charge might be valid if the discharge threatened workers at the POTW. *Id.* at 31–32. Between the time the liquid was poured into the sink and the time the discharge reached the POTW, however, it would never have been outside of pipes. Similarly, the predicate violations involved in a RCRA “knowing endangerment” prosecution might involve transportation, treatment, storage, or disposal of substances in a manner that endangers human beings but does not involve direct contact with the

endangered. On the other hand, one can imagine a situation in which an administrative violation merely endangered humans, but actually harmed the environment.<sup>95</sup> Thus, depending upon the facts, these “knowing endangerment” crimes could be classified as either Concrete Endangerment or Concrete Harm crimes.

Although the “knowing endangerment” crimes are ambiguous, a number of the environmental Sentencing Guidelines seem to focus more clearly on the actual threat of harm. For example, the Guidelines suggest more stringent sentences for discharges of hazardous or toxic materials or pesticides than for other types of materials,<sup>96</sup> which might reflect the conclusion that the listed materials present an actual threat of environmental harm.<sup>97</sup> The same could be said for the Guidelines provisions that consider a discharge, release, or emission more serious if it is ongoing, continuous, or repetitive.<sup>98</sup> Furthermore, because “contamination” does not necessarily mean “harm” to the environment,<sup>99</sup> the Guidelines also suggest that sanctions be adjusted “[d]epending upon . . . the quantity and nature of the substance or pollutant, the duration of the offense and the risk associated with the violation . . . .”<sup>100</sup> Finally, the Guidelines adopt what may be a surrogate measure for a threat of environmental harm, suggesting increased penalties if there was a disruption of public utilities.<sup>101</sup>

environment. *E.g.*, United States v. Ferrin, 994 F.2d 658 (9th Cir. 1993) (regarding a RCRA prosecution for disposing of waste into a dumpster). The environment remains threatened in these situations because of the danger that the pollutant will ultimately escape containment.

95. *See infra*, Part II.C.1. (discussing approaches to defining environmental “harm”).

96. *Compare generally*, U.S. SENTENCING GUIDELINES MANUAL § 2Q1.2 (regarding hazardous or toxic substances of pesticides) *with* 2Q1.3 (regarding other pollutants) (2008).

97. On the other hand, the Guidelines could reflect the conclusion that the environment was, in fact, harmed by such a discharge. The Guidelines are not clear on this point.

98. *Compare* U.S. SENTENCING GUIDELINES MANUAL §§ 2Q1.2(b)(1)(A), 2Q1.3(b)(1)(A) *with* §§ 2Q1.2(b)(1)(B), 2Q1.3(b)(1)(B) (2008).

99. *See* United States v. Cooper, 173 F.3d 1192, 1205 (9th Cir. 1999) (reviewing a conviction under CWA and noting that the guidelines do not require “actual environmental harm”); United States v. Bogas, 920 F.2d 363, 368 (6th Cir. 1990) (reviewing a conviction under CERCLA and noting that here, although “[t]here may have been no actual harm . . . there was . . . visual contamination of the soil at the disposal site, there was readily detectable contamination of the atmosphere above the disposal site, and there must have been some water contamination . . .”). The Guidelines assume that any discharge into the environment causes “contamination.” *See supra* at note 70.

100. U.S. SENTENCING GUIDELINES MANUAL §§ 2Q1.2, cmt. n.5, 2Q1.3, cmt. n.4 (2008) (authorizing the court to depart upward or downward from the guideline sentence).

101. *Id.*, §§ 2Q1.2(b)(3), 2Q1.3(b)(3). *See also id.* §§ 2Q1.2, cmt. nn. 5–7, §§ 2Q1.3, cmt. nn.4–6 (authorizing departures based on the actual degree of risk).

\* \* \*

The previous sub-parts have reviewed the differences between two variations of the Concrete Endangerment. The “presumed endangerment” variation may seem more protective of environmental values in that the threat is presumed; in contrast, in the “demonstrated endangerment” variation, the government must actually prove a threat of harm. The next model—Concrete Harm—presents an even greater challenge, as the prosecution must prove that harm in fact occurred. However, when crimes fitting the Concrete Harm Model have more severe penalties attached to them, these crimes may better reflect environmental values.<sup>102</sup>

### C. Model III: Concrete Harm Crimes with Administrative Predicates

The third model is Concrete Harm Crimes with Administrative Predicates (“Concrete Harm”). As noted above,<sup>103</sup> this model has been added to Faure and Visser’s original approach. Statutes fitting this model are similar to Concrete Endangerment crimes in that they require proof that the actor violated an administrative rule.<sup>104</sup> These crimes, however, go beyond threats and require proof of actual environmental harm.

The identification of crimes fitting Model III can be tricky, as it depends upon the definition of “environmental harm.” As we will show in Part I of this section, some statutory definitions focus on the environment directly, but others adopt an anthropocentric approach to “environmental harm.” These latter definitions seem based on the premise that emissions or releases that threaten or harm human health, safety, or other interests must of necessity also harm the environment. To the extent that this interpretation is accurate, the “knowing endangerment” provisions of the Clean Water Act<sup>105</sup> and Resource Conservation and Recovery Act<sup>106</sup> are

102. See *infra* Part III.A.

103. See *supra* text accompanying note 19.

104. As noted previously, the administrative rule must be lawful to provide a predicate for crimes in this model. See *supra* note 29.

105. § 309(c)(3), 33 U.S.C. § 1319(c)(3) (1994).

106. § 3008(e), 42 U.S.C. § 6928(e) (2000).

examples of Model III crimes. In addition, Europe provides a number of examples of Concrete Harm crimes.<sup>107</sup>

Because we are working toward a graduated punishment approach to environmental crimes, it makes sense to us to differentiate Concrete Harm statutes from the crimes in Model II. Concrete Harm crimes require proof of actual harm, and so it is logical for such statutes to impose higher penalties than those requiring merely a threat of harm. When the government can prove both an administrative violation and actual environmental harm, the authorization and imposition of increased punishment would be expected to further the vindication of environmental values through increased deterrence and retribution.<sup>108</sup> However, Concrete Harm statutes run into conceptual and proof problems that can frustrate these goals. For one thing, the concept of environmental “harm” is difficult to define. A second problem involves causation. We will explore these problems in turn.

### 1. Defining Environmental “Harm”

It is difficult to define what is meant by “harm” to the environment. If mere contact between the environment and a pollutant amounts to a “threat” of harm,<sup>109</sup> where is the threshold at which actual harm begins? How do we measure or describe it? Should all harm be treated equally, or should statutes provide different sanctions for unlawful emissions that result in different degrees of environmental harm? If we are to distinguish, what is the difference between “major” and “minor” environmental harm?<sup>110</sup>

A traditional way of measuring environmental harm is to look through the lens of harm to human beings instead of examining the effect on the environment itself.<sup>111</sup> One variation focuses on

107. See, e.g., statutes cited *infra* notes 134–138.

108. See discussion *infra* Part III.A.

109. See *supra* Part II.B.1.

110. See also, Susan F. Mandiberg, *Locating the Environmental Harm in Environmental Crimes* (2009) (unpublished manuscript, on file with The Utah Law Review) (discussing problems inherent in defining environmental crimes in terms of environmental harm).

111. See, e.g., Albin Eser, *Ökologisches Recht [Ecological Law]*, in *NATUR UND GESCHICHTE [NATURE AND HISTORY]* 349–396 (Hubert Markl ed., 1983) (advocating protection of the environment through criminal law as a precondition for being able to enjoy individual values such as health and property); Prabhu, *supra* note 4, at 699–728 and 731 *et. seq.* (noting a clear relationship between the protection of ecological values through the criminal law and the human right to a healthy and safe environment); Nanci Koser Wilson, *Environmental Ethics*,

threats to human health or safety, as is true of the “knowing endangerment” provisions in CWA, RCRA, and the CAA, which require proof of an administrative violation that “places another person in imminent danger of death or serious bodily injury.”<sup>112</sup> Similarly, many discharge and effluent limits are set with human health and welfare in mind; examples include CAA air-quality based limits<sup>113</sup> and CWA toxic effluent standards.<sup>114</sup> Finally, even for other types of environmental crimes, the Sentencing Guidelines suggest more serious punishments if a community had to be evacuated<sup>115</sup> or if there was a “substantial likelihood of death or serious bodily harm.”<sup>116</sup> Some European statutes also define harm in terms of danger to human health or safety. For instance, in the chapter of the German Penal Code devoted to “Crimes Against the Environment,”<sup>117</sup> a number of provisions punish harm or threat of harm to human health or safety.<sup>118</sup> Similarly, in Portugal, laws

*Criminal Law, and Environmental Crime, in ENVIRONMENTAL CRIME: ENFORCEMENT, POLICY, AND SOCIAL RESPONSIBILITY* 282 (Mary Clifford ed., 1998) (“[O]ur ethical heritage largely attaches values and rights to persons, and if nonpersonal realms enter they enter only as tributary to the personal.”) (citation omitted); Christopher D. Stone, *Should Trees Have Standing?—Toward Legal Rights for Natural Objects*, 45 S. CAL. L. REV. 450, 473–74 (1972) (noting the use of harm to humans in determining injunctive relief).

112. CWA § 309(c)(3)(A), 33 U.S.C. § 1319(c)(3)(A) (1994); RCRA § 3008(e), 42 U.S.C. § 6928(e) (2000); CAA § 113(c)(5)(A), 42 U.S.C. § 7413(c)(5)(A) (2000). See *supra* notes 95–100 and accompanying text (discussing these provisions in the context of the Concrete Endangerment Model).

113. National primary ambient air quality standards (NAAQS) are based on protection of public health. CAA § 109, 42 U.S.C. § 7409 (2000); 40 C.F.R. § 50.2(b) (2007). Similarly, national emission standards for hazardous air pollutants (NESHAPs) are health based. See CAA § 112(f), 42 U.S.C. § 7412(f) (2000) (entitled “Standard to protect health and environment”). Secondary NAAQS are based on protection of public welfare. *Id.* § 7409(b)(2) (“Any national secondary ambient air quality standard prescribed . . . shall specify a level of air quality the attainment and maintenance of which in the judgment of the Administrator, based on such criteria, is requisite to protect the public welfare . . .”). Harm to public welfare includes “hazards to transportation, as well as effects on . . . personal comfort and well-being. . . .” *Id.* § 7602(h).

114. See 40 C.F.R. § 129.2(g) (defining “ambient water criterion” in terms of adverse effects on human health, among other factors).

115. U.S. SENTENCING GUIDELINES MANUAL §§ 2Q1.2(b)(3), 2Q1.3(b)(3) (2008).

116. *Id.* §§ 2Q1.2(b)(2), 2Q1.3(b)(2). In fact, the existence of such a likelihood results in discharges of normal substances being treated as seriously as discharges of hazardous or toxic substances or pesticides. For hazardous or toxic substances or pesticides, the likelihood of death or serious bodily injury adds 9 levels to the base of 8, for a crime level of 17. *Id.* § 2Q1.2(b)(2). For other substances, the likelihood adds 11 levels to the base of 6, for a crime level of 17. *Id.* § 2Q1.3(b)(2).

117. Strafgesetzbuch [StGB] [Penal Code] Nov. 13, 1998, Bundesgesetzblatt [BGBl].

118. *E.g.*, Strafgesetzbuch [StGB] [Penal Code] Nov. 13, 1998, Bundesgesetzblatt [BGBl] 945, 3322, §324a (regarding releases into the soil including those “capable of harming the

against “pollution with common danger” punish situations where the polluting act causes danger to life or to the physical integrity of others.<sup>119</sup> The Netherlands’ Criminal Code takes a similar approach.<sup>120</sup>

Still viewing harm through the effect of pollution on human beings, a second variation is to focus on harm to private property. Air-quality based limitations in the CAA sometimes take this approach.<sup>121</sup> Some of the German statutes mentioned in the previous paragraph include such provisions,<sup>122</sup> and the Portuguese crime of “pollution with common danger” also punishes situations where the polluting act causes or threatens harm to property of a considerable value belonging to third parties.

A final way to look through the lens of harm to human beings is to measure financial costs other than damage to property itself. For example, the United States Sentencing Guidelines speak in terms of a “cleanup requir[ing] substantial expenditure.”<sup>123</sup> Along similar lines, two provisions of the French Environmental Code punish discharges that harm the economic interests of those who

health of another”); StGB § 325 (regarding alterations of the air that are capable of the same); StGB § 330(1)-2 (defining an especially serious case to include activities prohibited under the chapter that “endanger[s] the public water supply”); StGB § 330(3)-2 (punishing activities including those that “endanger[] the health of another”).

119. Código Penal [CP] [Penal Code], Mar. 15, 1995, art. 280 (Port.) (varying the authorized prison terms depending upon mental state); *see* FAURE & HEINE, *supra* note 33, at 281–90; Anabela Rodriguez et al., *in* CRIMINAL PENALTIES IN EU MEMBER STATES’ ENVIRONMENTAL LAW FINAL REPORT 239–246 (Michael G. Faure & Günter. Heine eds., 2002), *available at* <http://www.rechten.unimaas.nl/metro> (follow “English Version Here” hyperlink; then follow “Publications” hyperlink; then follow “Other Publications” hyperlink; then follow “Criminal Penalties in EU Member States’ Environmental Law” hyperlink).

120. *See, e.g.*, Wetboek van Strafrecht [Sr] [Criminal Code] arts. 173a, 173b (Neth.) (defining threat of harm as endangerment to public health or human life). *See also* Faure & Visser, *supra* note 16, at 337 (discussing these provisions).

121. Secondary NAAQS aim to protect public welfare. CAA § 109(b)(2), 42 U.S.C. § 7409(b)(2) (2000). Public welfare harm includes damage to crops, manmade materials, property, and economic values. *Id.* § 7602(h).

122. Strafgesetzbuch [StGB] [Penal Code] Nov. 13, 1998, Bundesgesetzblatt [BGBl], 945, 3322, § 324a (regarding releases into the soil including those “capable of harming . . . animals, plants, [or] other property of significant value”); StGB § 325 (regarding alterations of the air that are capable of the same); StGB § 330(3)-2 (punishing activities that “endanger[] . . . animals that do not belong to [the actor] or property of others of significant value”).

123. U.S. SENTENCING GUIDELINES MANUAL §§ 2Q1.2(b)(3), 2Q1.3(b)(3) (2008). *See* Stone, *supra* note 111, at 476–77 (suggesting that a valid measure of environmental harm might be “the cost of making the environment whole” but noting the difficulties inherent in this approach).

fish and harvest seafood.<sup>124</sup>

At first, it may not be clear that statutes such as these vindicate environmental values at all. After all, the threat or existence of environmental harm is not even mentioned. And yet, these statutes are part of environmental protection schemes. Their placement within such schemes leads to the conclusion that harm to humans is used as a surrogate measure for harm to the environment: if the pollution is extreme enough to threaten human interests, the environment must of necessity also be threatened. The result is that this anthropocentric definition of “harm” addresses two separate types of values: environmental and human. When the offense also includes an administrative violation element, as do Models II and III, the crime implicates three separate types of values.

There are drawbacks to this surrogate approach. One obvious problem is that environmental damage might occur far from populated areas and thus remain outside the scope of statutes that define harm in human terms. However, there is another, more serious drawback.

Consider, for instance, the act of draining a wetland and filling it with soil or rocks. Elimination of wetlands may endanger human health and safety in the long term, for example by changing hydrological patterns and contributing to flooding.<sup>125</sup> Eliminating a wetland, however, does not present the type of short-term danger that occurs, say, in a Bhopal-type situation where toxic chemicals

124. CODE DE L'ENVIRONNEMENT [Environmental Code] art. L432-3 (Fr.) (penalizing “the act of discharging, tipping or letting flow into [specified] waters . . . substances the action or reaction of which has killed fish or damaged their nutrition, reproduction or food value . . .”). The environment is only indirectly protected by this provision as it is clear from the placement of this article in chapter II, which aims at the “conservation of water environments and protection of the fish-farming heritage,” that the main goal of the provision is to protect fishing rights. Art. L218-73 penalizes “the direct or indirect discharge or disposal of substances or organisms harmful to the conservation or reproduction of marine mammals, fish, crustaceans, shellfish, mollusks or vegetation, or of such a nature as to make them unfit for consumption, into the sea or salt-water sections of water ways, canals or lakes.” The drafting of the provision again makes clear that the protected interest is not merely the environment, but also human health and probably economic interests of the producers of seafood. Note that these provisions fit in Model IV, not Model III. *See infra* note 168. They are mentioned in the current discussion only to illustrate the issue of defining harm to the environment.

125. *See, e.g.*, Patrick Parenteau, *Rearranging the Deck Chairs: Endangered Species Act Reforms in an Era of Mass Extinction*, 22 WM. & MARY ENVTL. L. & POL'Y REV. 227, 237–38 (1998) (summarizing the functions served by wetlands).

are emitted into the ambient air.<sup>126</sup> If harm to human health, safety, and property is viewed only in the short term, and statutes use only this surrogate approach, the actor who fills the wetland cannot be prosecuted for a Concrete Harm or Serious Environmental Harm crime; even a Concrete Endangerment crime may be off limits if the threat is viewed in the short term. But this result seems wrong. Environmental harm has, in fact, occurred, as eliminating the wetland certainly has dire consequences—even in the short term—for the flora and fauna in the ecosystem. If we are to use the criminal sanction to address this situation through anything other than Abstract Endangerment crimes,<sup>127</sup> we will have to articulate what we mean by harm to the environment without using human values as a surrogate.

A legislature that wants to address a full spectrum of environmental harm must articulate a standard that reflects purely environmental values. The statute must require proof of something more than mere contact between a pollutant and the environment; otherwise it would be functionally no different from the “presumed harm” variety of the Concrete Endangerment Model.<sup>128</sup> But what more? And how can a legislature define what may be ineffable without violating the principle of legality?<sup>129</sup>

Examples do exist of standards that attempt to go beyond an anthropocentric focus. The CWA, for example, requires the Environmental Protection Agency to list toxic pollutants and develop effluent limitations for each one; the criteria to be used in

126. On December 3, 1984, methyl isocyanate (“MIC”) gas escaped from a Union Carbide pesticide plant in Bhopal, India. The toxic fumes killed thousands of nearby residents and caused physical injuries and mental illness to hundreds of thousands more. The effects are still being felt twenty four years later. Sheila Jasanoff, *The Bhopal Disaster Approaches 25: Looking Back to Look Forward*, 42 NEW ENG. L. REV. 679, 680–81 (2008). See also, e.g., Michael R. Anderson, *Public Interest Perspectives on the Bhopal Case: Tort, Crime or Violation of Human Rights?*, in PUBLIC INTEREST PERSPECTIVES IN ENVIRONMENTAL LAW 154 (David Robinson & John Dunkley, eds., 1995); Ayesha Dias, *Environmental Law, Policy and Practice in India*, in *Environmental Liability (1994)* at 86–92; Marc Galanter, *Bhopal, Past and Present: The Changing Legal Response to Mass Disaster*, in 10 WINDSOR YEARBOOK OF ACCESS TO JUSTICE, 151 (1990); Jona Razzaque, PUBLIC INTEREST ENVIRONMENTAL LITIGATION IN INDIA, PAKISTAN AND BANGLADESH 189 (2004).

127. As to why we might want to have other alternatives, see *infra*, section III.

128. A different situation would exist, of course, if the legislature specifically defined “environmental harm” to exist with *any* contact between a pollutant and the soil, air, or water.

129. The “essence of the principle of legality” is that “a person may not be punished unless her conduct was defined as criminal . . . before she acted.” Dressler, *supra* note 82, at 41. Lack of ambiguity is a component of the legality principle. See generally, *id.* at § 5.01.

making these determinations include the pollutant's effect on aquatic organisms.<sup>130</sup> RCRA may also represent a similar approach,<sup>131</sup> as it prohibits any contact between hazardous waste and the environment and requires facilities to neutralize or clean up contact that occurs accidentally.<sup>132</sup> The failure to mention "environmental harm" directly in the regulatory or criminal statutes masks the relationship to those not familiar with the scheme, but the provisions do define "harm" in an environmentally meaningful way.

An alternative approach to focusing on the regulatory standards might be to define "environmental harm" in the criminal provision itself. A legislature might, for example, vary the seriousness of the criminal sanction based on the toxicity of the substance at issue; the risk versus fact of contact with air or water; the risk versus fact of an effect on flora, fauna, or human populations; and the magnitude of the violation. While such an approach exists for administrative sanctions,<sup>133</sup> we are not aware of criminal statutes that have proceeded in this manner. There are, however, other approaches that are more abstract. Some speak in terms of environmental "harm" or "damage" or authorize differences in sanctions based on degrees of "harm."<sup>134</sup> Others require proof of

130. CWA § 307(a)(1) and (2), 33 U.S.C. § 1317(a)(1) and (2) (1994). *See also* 40 C.F.R. § 129.2(g) (defining "ambient water criteria" to include the "concentration of a toxic pollutant in a navigable water that, based upon available data, will not result in adverse impact on important aquatic life"). Note, however, that § 129.2(g) includes the effect upon, human health and safety.

131. *But see* RCRA § 1002(b)(2), 42 U.S.C. § 6901(b)(2) (2000) (finding that "disposal of solid waste and hazardous waste in or on the land without careful planning and management can present a danger to human health and the environment.") (emphasis supplied).

132. RCRA regulations require facilities to use methods that prevent contact between hazardous waste and the environment. *See, e.g.*, 40 C.F.R. §§ 264.31, 264.171, 264.173(b), 264.176, 264.191(a), 264.221, 264.251, 264.271(a), 264.273, 264.301, and 264.343. Regulations indicate how facilities must respond to leaks or spills. *See, e.g.*, 40 C.F.R. §§ 264.175(b)(5), 264.196, 264.223, 264.263, and 264.304.

133. The RCRA Civil Penalty Policy, for example, determines the gravity of a violation by utilizing a matrix with major, moderate, and minor potential for harm on one axis, and major, moderate, and minor deviation from legal requirements on the other. United States Environmental Protection Agency, RCRA Civil Penalty Policy, June 2003, available at <http://www.epa.gov/compliance/resources/policies/civil/rcra/rcpp2003-fnl.pdf> (last visited April 22, 2009).

134. *E.g.*, Environmental Protection Act of June 6 1991 § 110(2), *modified by* L1999, 373 (Den.), *reprinted in* FAURE & HEINE, *supra* note 33, at 86 (authorizing enhanced penalties upon, among other things, proof of "damage to the environment"); Rikoslaki [Penal Code] 48:1 (Fin.), *available at* <http://www.legislationline.org/> (authorizing more severe punishment for actions causing, among other things, damage to the environment that is of

“pollution.”<sup>135</sup> Still others punish negative changes to the existing environment.<sup>136</sup> While such provisions are laudable for their focus on environmental values, they defer to either the fact finder or appellate case law to make the notion of harm (or “damage,” “suitability,” “detriment,” or even “pollution”) more concrete. The same problem may exist even in provisions that appear at first glance to be quite clear. One German statute, for instance, punishes any actor in a protected natural area who unlawfully “mines or extracts mineral resources or other soil components; makes excavations or heaps; creates, alters or removes bodies of water; drains moors, swamps, marshes or other wetlands; clears a forest; [or] damages or removes plants of a specially protected species . . . .”<sup>137</sup> However this provision adds that the activity must “thereby interfere not insubstantially” with the interest in question, making the definition less useful than it might have been.<sup>138</sup>

Open-ended definitions of environmental harm may be attractive to legislators, but they also create problems. One problem arises if the statute allows the fact finder to equate “harm” with any negative change in the quality of water, air, or soil no matter how minor. This is because any contact between a pollutant and the environment is likely to cause some minor negative change in the latter. Such an interpretation of “harm” conflates Model II,

long duration, or wide effect); CODE DE L'ENVIRONNEMENT [Environmental Code] art. L216-6 (Fr.) (authorizing punishment for emissions leading to “damage to flora or fauna”); Strafgesetzbuch [StGB] [Criminal Code] Nov. 13, 1998, Bundesgesetzblatt [BGBl] I 3045-46, § 330(1)1 (punishing those who harm a body of water, the soil, or a conservation area); U.S. SENTENCING GUIDELINES MANUAL § 2Q1.2 cmt. 5, 6 and 7 (2008) (authorizing departures based on the actual degree of harm); *id.* § 2Q1.3 cmt. 4, 5 and 6 (authorizing the court to depart upward or downward from the guideline sentence “[d]epending upon the harm resulting from the emission, release or discharge. . . .”). See also Miljöbalk [MB] [Environmental Code] 29:1 (Swed.), discussed *supra* note 32 and accompanying text.

135. *E.g.*, Strafgesetzbuch [StGB] [Penal Code] Nov. 13, 1998, Bundesgesetzblatt [BGBl] I 3403, §§ 324(1) (including punishment for persons who pollute a water body without authorization) and 324a(1) (including punishment for whoever unlawfully pollutes soil).

136. *E.g.*, Wet op de bescherming van de oppervlaktewateren tegen verontreiniging [Surface Water Protection Act] Mar. 26 1971, Moniteur Belge [Official Journal of Belgium], May 1, 1971 (concerning emissions that can change the quality of water so that it is less suited for the use that should be made of it); Strafgesetzbuch [StGB] [Penal Code] Nov. 13, 1998, Bundesgesetzblatt [BGBl] I 3403-04, §§ 324 (including punishment for anyone who, “without authorization . . . detrimentally alters” the quality of a body of water) and 325 (punishing unlawful behavior that causes certain “alterations of the air”).

137. Strafgesetzbuch [StGB] [Penal Code] Nov. 13, 1998, Bundesgesetzblatt [BGBl] I 3405, § 328(3).

138. *Id.*

involving a threat of “harm,” with Model III, which requires actual “harm.” A coherent environmental criminal scheme should guide fact finders in distinguishing between these degrees of seriousness. For example, for crimes involving violation of a permit, statutes could establish different maximum sentences according to the degree to which the defendant exceeded the authorized discharge or emission limit; for crimes involving operating without a required permit, statutes could authorize increasingly severe sentences according to the magnitude or frequency of the discharge.

Open-ended definitions of environmental harm raise other problems as well. For one, a relatively undefined concept of environmental harm may not carry enough moral weight to provide the basis for imposing significant criminal sanctions.<sup>139</sup> Lack of direction could thus result in undeserved acquittals or lenient sentences. Not unrelated, insufficient guidance can result in inconsistent treatment of offenders. Nonetheless, the relatively abstract notions of harm reflected in these statutes should not offend the requirement of notice or legality principles generally.<sup>140</sup> For one thing, appellate case law inevitably fleshes out these concepts and provides increased notice over time. In addition, legality principles are not inconsistent with broad fact-finding discretion. As Justice Oliver Wendell Holmes famously said with regards to criminal antitrust provisions,

the law is full of instances where a man’s fate depends on his estimating rightly, that is, as the jury subsequently estimates it, some matter of degree. If his judgment is wrong, not only may he incur a fine or a short imprisonment . . . he may incur the penalty of death. ‘An act causing death may be murder, manslaughter, or misadventure, according to the degree of danger attending it’ by common experience in the circumstances known to the actor. . . .’The criterion in such cases is to examine whether common social duty would, under the circumstances, have suggested a more circumspect conduct.’<sup>141</sup>

139. Nanci Koser Wilson observes that “[b]ecause [our ethical system] was created to deal with harms committed by humans against other humans, our current ethical paradigm—our model for thinking about ethical issues—does not provide a basis for considering crimes against the environment.” Nanci Koser Wilson, *Environmental Ethics, Criminal Law, and Environmental Crime*, in ENVIRONMENTAL CRIME: ENFORCEMENT, POLICY, AND SOCIAL RESPONSIBILITY 281, 283 (Mary Clifford, ed., 1998) (emphasis omitted).

140. See *supra* note 129 (regarding legality principles).

141. *Nash v. United States*, 229 U.S. 373, 377 (1913) (citations omitted, punctuation as in original).

## 2. The Issue of Causation

Concrete harm crimes require the prosecution to prove that the defendant's behavior caused environmental harm, however defined. Some serious Environmental Harm crimes in Model IV, to be discussed below, carry the same requirement. Proving causation is not particularly difficult in the case of a single polluting event that immediately results in clear damage.<sup>142</sup> However, the requirement could present a challenge to prosecutors in other situations, reducing the number of cases in which these result-defined crimes are useful as tools of environmental protection.

Causation problems are likely to be common in prosecutions requiring proof of actual harm. For one thing, the effects of a polluting event may not be clear for a great many years, barring prosecution or (even with long statutes of limitations) making it impractical. Another problem is that a defendant may be able to show that one or more additional actors independently emitted pollutants into the same water, soil, or air, either previously, simultaneously, or subsequently to the defendant's own actions.<sup>143</sup> Of course, similar multiple-cause problems also arise in the context of traditional crimes with result elements, most notably in the prosecution of homicides. Any jurisdiction with a developed criminal law will have worked out solutions that might be applicable,<sup>144</sup> and scholarly material may inform resolution of

142. An example is the spillage of oil into the pristine waters of Prince William Sound, Alaska, when the Exxon Valdez ran aground. *See, e.g.*, Joseph J. Chambers, *In re Exxon Valdez: Application of Due Process Constraints on Punitive Damages Awards*, 20 ALASKA L. REV. 195, 218–221 (2003) (describing the spill and its damage).

143. For a Concrete Harm crime, the government could conceivably charge any of the polluters whose behavior was a violation of regulatory law. For a Serious Environmental Harm crime, the government could charge even lawful polluters as long as the identified harm was extreme.

144. For the United States, *see, e.g.*, Dressler, *supra* note 82, at § 14.02 (summarizing the law of actual cause in the United States); *id.* at § 14.03 (summarizing the law of legal cause in the United States); 1 WAYNE LAFAVE, SUBSTANTIVE CRIMINAL LAW § 6.4(b) (2d ed. 2003) (giving an overview of the law of actual cause in the United States); *id.* at § 6.4(c) (giving an overview of the law of legal cause in the United States); Mandiberg, *supra* note 110 (discussing possible approaches in federal law). For France, *see, e.g.*, JOHN BELL, SOPHIE BOYRON, & SIMON WHITTAKER, PRINCIPLES OF FRENCH LAW 216–217 (Oxford Univ. Press 1998); CATHERINE ELLIOTT, FRENCH CRIMINAL LAW 61–63 (Willan Publishing 2001). For Germany, *see, e.g.*, HANS-HEINRICH JESCHECK, LEHRBUCH DES STRAFRECHTS. ALLGEMEINER TEIL [HANDBOOK OF CRIMINAL LAW, GENERAL PART] 275–89 (BERLIN DUNCKER & HUMBLOT 1996). For England, *see, e.g.*, ANDREW ASHWORTH, PRINCIPLES OF CRIMINAL LAW 483 (Oxford OUP

outstanding issues.<sup>145</sup> Nevertheless, even assuming that it is possible to translate the existing solutions from the vocabulary of homicide (or assault, or other more traditional result-defined crimes) to that of environmental harm, proving causation could be daunting in many environmental situations.

It is valid to ask whether there is really a need to undertake the task of developing a body of causation law in the context of environmental crimes. Why not be content to use Abstract and Concrete Endangerment crimes, which do not require proof that the defendant caused a concrete result? The answer is related to our suggestion of a graduated punishment approach, discussed in Section III. Under such an approach, Concrete Harm crimes would be punished more severely than Abstract or Concrete Endangerment crimes (and Serious Environmental Harm crimes might carry even more severe punishment). Where proof of causation is difficult or impossible, conviction for the lower offense would have to suffice. In cases in which such proof could be made out, however, the more serious crime more accurately reflects the defendant's behavior. Any scheme that lacks offenses requiring actual harm conflates the seriousness of different degrees of criminality.

\* \* \*

This section has addressed a model in which the government must prove both an administrative violation and actual harm to the environment. While there are challenges involved in proving harm and causation, more severe punishment might accompany convictions in which these challenges have been met. But what if the government can prove both harm and causation but no administrative violation? Should compliance with administrative requirements shield polluters from the worst types of

4th ed. 2003).

In addition, in the United States, it is legitimate to look to tort law as a source of insight for actual problems in causation in crimes; the same is not true, however, for proximate cause problems. *E.g.*, Eric A. Johnson, *Criminal Liability for Loss of a Chance*, 91 IOWA L. REV. 59, 87 et. seq. (2005). *But see* Dressler at § 14.01[C] (taking a more skeptical approach to use of tort concepts in criminal cases). *C.f.* RESTATEMENT (THIRD) OF TORTS § 26 and 27 (Proposed Final Draft No. 1, 2005).

145. *E.g.*, Johnson, *supra* note 144. For a detailed discussion of causation in English criminal law, *see e.g.*, MICHAEL ALLEN, TEXTBOOK ON CRIMINAL LAW 32–44 (Oxford OUP 7th ed. 2003).

environmental damage? The next section addresses that issue.

D. Model IV: Serious Environmental Pollution: Eliminating the Administrative Link<sup>146</sup>

This model, which we will call “Serious Environmental Pollution” for ease of reference, aims to punish very serious pollution regardless of whether there is any underlying regulatory violation. In fact, statutes following this model impose criminal sanctions despite the defendant having obeyed license or permit conditions or other regulatory laws.<sup>147</sup> Thus, this model differs from Model III (Concrete Harm) in that it severs the connection between the criminal law and existing administrative decisions: crimes fitting this model are independent in the sense that the criminal law can intervene irrespective of administrative law.

The administrative link is broken for a reason: crimes following this model are based on the assumption that the environmental harm at issue is of a magnitude beyond that contemplated by the administrative rules with which the entity complied. The assumption is, in other words, that the administrative regulation never actually allowed the risks or harms at issue. This means that the effects of the release, emission, or other problem should be extreme in nature, and the statute must make that clear for a variety of reasons.<sup>148</sup> For one, more extreme harm is a pre-requisite for more severe punishment, especially given the elimination of administrative values from the equation.<sup>149</sup> For another, some regulatory schemes anticipate that accidents will happen and provide some margin of safety for entities responding appropriately;<sup>150</sup> severing the administrative link when these incidents cause relatively minor harm would be contradictory. In any case, severing the link for less serious harms undoubtedly faces

146. See generally, Faure & Visser, *supra* note 16 at 340–45.

147. *Id.* at 340.

148. As to the relevance of legality principles to such clarity, see *supra* text accompanying note 129. As to the notion of environmental harm, see *supra* text accompanying notes 97–116. See also Faure & Visser, *supra* note 16 at 341 (discussing both issues).

149. See *infra* Part III.

150. For example, under RCRA, a transporter of hazardous waste can be exposed to criminal liability as a discharger for causing or allowing contact between the waste and land or water, but only if the transporter neglects to take the required responsive action. See 40 C.F.R. § 260.10 (2008) (defining discharge or hazardous waste discharge); 40 C.F.R. § 263.30(a) (2007) (outlining a transporter’s response duties in the event of a discharge).

strong political opposition from regulated industry, which understandably fears open-ended liability, and such crimes are thus more difficult to enact.

Crimes following this model are relatively rare.<sup>151</sup> However, the following examples show that they do exist. The existing crimes vary in the way they eliminate the link to administrative rules. Some eliminate the “permit shield.” Others eliminate the “unlawfulness” element from the crime’s definition. A third variation is the use of traditional crimes, as opposed to specifically environmental criminal provisions. The remainder of this section will describe those variations, followed by a general discussion of implications accompanying these distinctions.

## 1. Ways of Severing the Administrative Link

### a. Eliminate the “Permit Shield”

One way to sever the link with administrative rules is to provide that compliance with such rules is not a defense. This approach exists on both the United States federal level and in Europe, but it is brought about quite differently in these two places.

In the United States, the examples come from the CWA and RCRA.<sup>152</sup> The CWA permit shield provision indicates that, for purposes of enforcement, “[c]ompliance with a permit issued pursuant to this section shall be deemed compliance with . . . [listed administrative requirements] *except any standard imposed under section 1317 of this title for a toxic pollutant injurious to human health.*”<sup>153</sup> As a result of this language, a person can be exposed to criminal sanctions notwithstanding compliance with an operating permit. If the permit sets a standard less demanding than that required under § 1317, or if a § 1317-related rule is omitted from the permit entirely,<sup>154</sup> a person could comply with the permit,

151. Faure & Visser, *supra* note 16, at 340.

152. For a discussion of the situation under the CAA, *see infra*, text accompanying notes 169 and 170.

153. CWA § 402(k), 33 U.S.C. § 1342(k) (1994) (emphasis supplied). § 1317 requires the Environmental Protection Agency to promulgate a list of toxic pollutants and pretreatment standards applicable to them. In addition, it makes operation in violation of those standards unlawful.

154. A rule’s absence from the permit could result from administrative oversight, from an affirmative decision, or because the regulation was adopted after issuance of the permit. If the rule involved any of the other listed sections, however, the “permit shield” will provide

violate the law, and be exposed to sanctions. A similar dynamic exists under RCRA, whose permit shield does not protect against enforcement actions for violation of certain requirements<sup>155</sup> or against “any injury to persons.”<sup>156</sup>

Some European jurisdictions take a potentially much broader approach to elimination of the permit shield by giving courts judicial review of an operating permit or license.<sup>157</sup> In systems adopting this method,<sup>158</sup> if specific conditions are met, the judge can examine the permit and find it to be unlawful. Belgium provides an example of a system in which this type of judicial power is relatively broad.<sup>159</sup> There, the judge in an enforcement action

protection.

155. 40 C.F.R. § 270.4(a) (2007) (providing that compliance with a permit does not constitute compliance with certain requirements not included in the permit).

156. 40 C.F.R. § 270.4(c) (2007). Note that although the shield provision also states that a permit does not authorize injury to property, neither the CWA nor RCRA contain a “property injury” crime. Note that RCRA does not contain a crime whose elements include actual injury. Should such injury occur, the government would have to address it using the “knowing endangerment” provision.

157. Such judicial review of administrative acts is common in European administrative law. *See generally*, ADMINISTRATIVE LAW OF THE EUROPEAN UNION, ITS MEMBERSTATES AND THE UNITED STATES. A COMPARATIVE ANALYSIS, (R.J.G.H. Seerden, ed., Antwerp Intersentia 2d ed. 2007) (regarding the powers of the judge to review the legality of administrative acts).

158. In fact, European jurisdictions vary in the amount of power afforded judges to engage in judicial review of an operating permit. For example, in German administrative law, the possibility for the judge in a criminal court to test the lawfulness of administrative acts in a criminal court is considered quite restricted. *See generally*, M. Schröder, *Administrative Law in Germany*, in *id.* at 93–153. From the German perspective, allowing the judge in a criminal case to test the lawfulness of administrative acts would give too much discretion to the judge. Indeed, many arguments are advanced in Germany against allowing criminal courts to test the lawfulness of administrative decisions at all. *See* K. Kühl, *Probleme der Verwaltungsakzessorietät des Strafrechts, insbesondere im Umweltstrafrecht* [*Problems with the Administrative Dependency of Criminal Law, particularly Environmental Criminal Law*], in FESTSCHRIFT FÜR KARL LACKNER ZUM 70. GEBURTSTAG [FESTSCHRIFT ON THE OCCASION OF 70TH BIRTHDAY OF KARL LACKNER] 842–57 (W. Küper, ed. Berlin/New York De Gruyter 1987) (summarizing these issues); Rudolphi, *supra* note 72, at 193–98 (articulating arguments). *See also* M. Faure & J.C. Oudijk, *Die Strafrechtliche Überprüfung von Verwaltungsakten im Umweltrecht* [*The Penal Review of Administrative Acts in Environmental Law*], JURISTENZEITUNG 86–91 (1994) (comparing the situation in Belgium, Germany, and the Netherlands).

159. BELGISCHE GRONDWET [Belgian Constitution], art. 159 *available at* <http://www.fed-parl.be/gwuk0009.htm> (providing that “[c]ourts and tribunals may apply decisions and general, provincial, or local rulings only inasmuch as these are in conformity with the law.”). The legal doctrine and case law hold that this constitutional provision requires a criminal court to control the legality of administrative acts it applies. *See generally*, S. Lust, *Administrative Law in Belgium*, in ADMINISTRATIVE LAW OF THE EUROPEAN UNION, ITS MEMBER STATES AND THE UNITED STATES. A COMPARATIVE ANALYSIS 40–44 (R.J.G.H. Seerden ed., 2d ed., Antwerp Intersentia 2007).

may determine whether the permit was issued in accordance with a correct and lawful procedure and thus whether the permit complies with underlying statutory law.<sup>160</sup> As a result of this judicial review, the judge might hold that the defendant relied on an unlawful permit.<sup>161</sup> Such a finding will mean that the criminal provision can apply notwithstanding the existence of a facially valid permit. If the permit was in fact unlawful, activity complying with the permit is also unlawful. Nevertheless, the criminal liability of the defendant in that particular case will depend upon the circumstances. If the defendant did not know and should not have known that his permit was unlawful—that is, if he cannot be blamed for his ignorance or mistake on this issue—the error will serve as an excuse, and an acquittal will follow. On the other hand, if the defendant had a role in causing the procedural irregularities, or if it should have been clear to the defendant that the environmental permit was unlawful, the existence of the permit will not provide a defense.<sup>162</sup>

b. Eliminate the “Unlawfulness” Element from the Environmental Crime.

Another way to eliminate the administrative link is to define an environmental crime without the element of “unlawfulness.” If the legislature takes this approach, the criminal law can be applied

160. Many examples can be found in the area of building permits where, e.g., a defendant relied on a building permit to construct his house, but the permit is subsequently attacked for, e.g., violating essential procedural requirements or statutory provisions. *See, e.g.*, Court de Cassation (Supreme Court) (Belgium), Decision of 2 December 1981, *Arresten van het Hof van Cassatie* (Official Journal) 455 (1981–82) (holding that a nullification of a building permit has retroactive force, as a consequence of which the defendant can in theory be condemned for building without a permit, unless the defendant can be excused from being unaware of the unlawfulness). *See also* Faure & Vanheule, *supra* note 29 at 292–97 (discussing this case law).

161. For a discussion of the procedural consequences of this control of legality under Belgian and Dutch law *see* M.G. Faure, *De gevolgen van de ‘administratieve afhankelijkheid’ van het milieustrafrecht: een inventarisatie van knelpunten* [*The consequences of the Administrative Dependence of Environmental Criminal Law: An Inventory of Bottlenecks*], in ZORGEN VAN HEDEN. OPSTELLEN OVER HET MILIEUSTRAFRECHT IN THEORIE EN PRAKTIJK [CURRENT CONCERNS: ESSAYS IN ENVIRONMENTAL CRIMINAL LAW IN THEORY AND PRACTICE] 91–150 (M.G. Faure, J.C. Oudijk & D. Schaffmeister eds., Antwerp Gouda Quint 1991).

162. In these situations, the defendant should have known that that particular permit could not provide him any rights. *Accord*, Criminal Court of Gent (Belg.) Mar. 14, 2000, *Tijdschrift voor milieurecht* 244 (2000). For a general discussion of the consequences under which unlawfulness of the permit can still give rise to criminal liability *see* M. Faure and J. van Heule, *Milieustrafrecht*, *supra* note 29, at 292–97.

irrespective of whether there is compliance with a permit or any other regulatory rule.

Eliminating the “unlawfulness” element is a prevalent approach in Europe. One example<sup>163</sup> comes from § 330a of the German Criminal Code,<sup>164</sup> which provides that “[w]hoever diffuses or releases substances which contain or can generate poisons and thereby causes the danger of death or serious health damage to another human being or the danger of health damage to a large number of human beings, shall be punished. . . .”<sup>165</sup> The French Penal Code provides a second example in its crime of “ecological terrorism.”<sup>166</sup> Art. 421-2 provides:

The introduction into the atmosphere, on the ground, in the soil, in foodstuff or its ingredients, or in waters, including territorial waters, of any substance liable to imperil human or animal health or the natural environment is an act of terrorism where it is committed intentionally in connection with an individual or collective undertaking whose aim is to seriously disturb public order through intimidation or terror.<sup>167</sup>

Although this crime applies in very limited situations, its elimination of an administrative predicate is clear. Other examples from France may include the statutes, discussed above, that address environmental harm while focusing on protections to the fishing and seafood industry.<sup>168</sup>

In the United States, the CAA presents an example of this approach. A person can be convicted under the CAA’s “negligent

163. See also, Faure & Visser, *supra* note 16, at 340–41 (providing the additional example of the Council of Europe Draft Convention, art. 2.1a, regarding “[t]he discharge, emission or introduction of a quantity of substances or ionising radiation into air, soil or water, which. . . causes death or serious injury to any person, or creates a significant risk of causing death or serious injury to any person”). Although the Convention has not yet entered into force, it potentially covers a large number of countries and indicates that the proposed approach is taken seriously on an international level.

164. Strafgesetzbuch [StGB] [Penal Code] Nov. 13, 1998, Bundesgesetzblatt [BGBl.] I 3045–46, § 330a. See Faure & Visser, *supra* note 16, at 340 (labeling this as the “classic” example).

165. Strafgesetzbuch [StGB] [Penal Code] Nov. 13, 1998, Bundesgesetzblatt [BGBl.] I 3045–46, § 330a. The authorized punishments vary in range depending on different factual situations.

166. See PRIEUR, *supra* note 90, at 903–04 (discussing this example in greater depth).

167. CODE PÉNAL [Penal Code] art. 421-2 (Fr.).

168. CODE DE L’ENVIRONNEMENT [Environmental Code] art. L432-2 and art. L218-73 (Fr.) (the latter discussed *supra* note 124). Neither of these provisions require the discharge at issue to be unlawful. However, the French environmental criminal law literature does not discuss these statutes, possibly due to their emphasis on economic values.

endangerment” or “knowing endangerment” crimes without having violated a permit or some other administrative rule.<sup>169</sup> This is because the provisions criminalize “release[] into the ambient air [of] any hazardous air pollutant listed pursuant to section 7412 of this title or any extremely hazardous substance listed pursuant to section 11002(a)(2) of this title that is not listed in section 7412 . . . that . . . thereby places another person in imminent danger of death or serious bodily injury . . . .”<sup>170</sup>

### c. Use Traditional Crimes to Address Serious Environmental Pollution<sup>171</sup>

Another approach to the Serious Environmental Pollution Model is to move outside the context of environmental crimes themselves and into the context of traditional crimes. That is, when a release, emission, or other pollution activity causes serious actual damage to property or harm to people, a prosecutor might charge the responsible parties with assault, homicide, property destruction, or some other traditional crime. Assume, for example, a situation in which an entity violates statutes regarding water pollution, and people drink the polluted water and die. Although the prosecution might present difficulties in some cases,<sup>172</sup> there is often no reason why this situation could not be addressed through traditional criminal charges such as homicide.

#### 1. United States

In the United States, most traditional crimes are within the purview of the States, not the federal government. Thus, it is most fruitful to examine whether the “traditional crime” approach exists under state laws. There are, in fact, a small number of published cases in which states have used traditional crimes to address harms caused by environmental pollution.<sup>173</sup>

169. *C.f.* *United States v. Grace*, 504 F.3d 745 (9th Cir. 2007) (holding in part that for a knowing endangerment prosecution the substance emitted need not be one for which EPA has established work practice standards the violation of which are illegal).

170. CAA § 113(c)(4) and (5)(A), 42 U.S.C. § 7413(c)(4) and (5)(A) (2000).

171. *See also* Faure & Visser, *supra* note 16, at 341 (mentioning this approach).

172. Such difficulties might include proof of causation (*c.f. supra* Part C.2) or permit shields worded broadly enough to provide defenses for non-regulatory crimes (*see infra* Part D.2).

173. In addition to the cases discussed below, we have been able to find one other state that has used a traditional crime to address serious environmental pollution: Ohio has used

An example of the use of traditional homicide law is found in two cases from New York. In *People v. Roth*,<sup>174</sup> an employee who was cleaning a truck trailer died when petroleum vapors exploded.<sup>175</sup> The defendants, charged with manslaughter and negligent homicide, were a petroleum transport company, its district manager, and the operations manager of the facility where the deceased worked. The State's theory was that defendants were responsible for the unsafe conditions and improper practices that led to the explosion. The court affirmed dismissal of the charges, finding that the evidence presented to the Grand Jury was insufficient to show foreseeability that death would occur in the manner it did, a requirement of New York's causation law.<sup>176</sup> However, the earlier case of *People v. Polvino* shows that the manslaughter prosecution could have proceeded if the State had presented sufficient evidence to the Grand Jury.<sup>177</sup> In *Polvino*, the defendant knew the proper way to dispose of corrosive and hazardous chemicals that were on his property. Evidence showed, however, that the defendant did not follow such procedures, instead hiring another man to haul the barrels away in a trailer. The contents spilled, and the hauler died at the scene of the spill from resulting lung damage. The court found that evidence of foreseeability was sufficient to allow the case to continue.<sup>178</sup>

Prosecutors may also have general felony options available for environmentally related harms less extreme than death. Perhaps the most interesting case is *People v. Thoro Products Co.*<sup>179</sup> The

its criminal endangering misdemeanor, OHIO REV. CODE ANN. § 2909.06 (West 2006), in this manner. See *State v. Chen*, No. 69334, 1996 WL 170109 (Ohio Ct. App. Apr. 11, 1996) (unreported) (regarding probation conditions for person convicted of criminal endangering in conjunction with arson fire at facility containing illegally stored toxic waste); *State v. Denune*, 612 N.E.2d 768 (Ohio Ct. App. 1992) (finding search-and-seizure violations fatal to convictions for criminal endangering, among other crimes, associated with illegal transportation, disposal, and storage of hazardous waste).

174. 604 N.E.2d 92 (N.Y. 1992).

175. Petroleum vapors contain, for example, benzene and toluene, both of which are hazardous air pollutants under the CAA. CAA § 112(b)(1), 42 U.S.C. § 7412(b)(1) (2000). A stationary source is limited in the amount of these substances it may emit, and may be subject to criminal penalties for emissions over those limits. See CAA § 113(c)(1), 42 U.S.C. § 7413(c)(1) (2000) (imposing criminal penalties for knowing violations of § 7412). While the emission at issue in *Roth* may not have been subject to a CAA prosecution, the case demonstrates that traditional homicide law and the CAA may overlap in some fact situations.

176. 604 N.E.2d at 93-94.

177. 580 N.Y.S.2d 616 (1991).

178. *Id.* at 617.

179. 45 P.3d 737 (Colo. Ct. App. 2002), *aff'd on other grounds*, 70 P.3d 1188 (Colo. 2003).

company stored and disposed of hazardous waste without a permit. A quantity of the substance leaked, causing contamination to the soil of down-gradient property owners. Even after learning of the problem, the company did nothing to clean up its property or stop the contamination. The statute of limitations barred prosecution for environmental crimes, as the actual leaks occurred decades earlier. However, the court affirmed the company's conviction for criminal mischief, a generally applicable felony.<sup>180</sup> The statute of limitations problem did not prevent this prosecution because the defendant's act—failure to clean up the contamination<sup>181</sup>—was ongoing.<sup>182</sup>

Another example is *Roth*, discussed above.<sup>183</sup> Although the evidence was insufficient for the homicide counts, the court allowed a general reckless endangerment prosecution to continue.<sup>184</sup> Under that statute, the State did not have to prove injury, and so the defendant's inability to foresee the manner in which injury occurred was immaterial.<sup>185</sup> Similarly, in *People v. Macellaro*<sup>186</sup> the court allowed a reckless endangerment prosecution where evidence showed that the defendant dumped two 35-gallon drums on the side of a roadway. One drum was leaking, and when the defendant attempted to remove the "hazardous" warning label by burning it with a lighter, the substance ignited.

180. See COLO. REV. STAT. § 18-4-501(1) (2009) ("Where the aggregate damage to the real or personal property is twenty thousand dollars or more, the person commits a class 3 felony").

181. It is well accepted in U.S. criminal law that omission to perform a legal duty can fulfill the act element of a crime. LaFave, *supra* note 144, at § 6.2. In *Thoro*, the court turned to Colorado's environmental protection statutes and regulations for the source of the legal duty. *Thoro*, 45 P.3d at 746. This case fits within the current discussion, however, because the conviction was for a generally applicable crime, not an environmental crime.

182. *Thoro*, 45 P.3d at 745–46 (noting prosecution based on defendant's "knowing failure to remediate or clean up its own property so as to stop the process by which the solvent-laden soils contaminated the property of down-gradient owners").

183. See *supra* text accompanying notes 174–76.

184. N.Y. PENAL LAW § 120.20 (2004) (indicating that "[a] person is guilty of reckless endangerment in the second degree when he recklessly engages in conduct which creates a substantial risk of serious physical injury to another person").

185. *Roth*, 604 N.E.2d at 94. Note, however, that causation problems may arise in a "reckless endangerment" prosecution. See, e.g., *Einaugler v. Supreme Court of New York*, 918 F.Supp. 619, 627 (E.D.N.Y. 1996), *aff'd*, 109 F.3d 836 (2d Cir. 1997).

186. 516 N.Y.S.2d 950 (N.Y. App. Div. 1987), *appeal denied*, 522 N.Y.S.2d 119 (N.Y. 1987).

## 2. Europe

Europe also provides examples of traditional crimes applied to pollution-related harms. Articles 418–20 of the Belgian Penal Code<sup>187</sup> authorize punishment of anyone who negligently causes harm to another. Case law provides several examples of application of these provisions in an environmental context. One well known case involved toxic waste that was illegally exported from the Netherlands to the Walloon region of Belgium and subsequently discharged on a disposal site.<sup>188</sup> Citizens living close to the site claimed to have suffered health damage as a result of the presence of the toxic waste. Unfortunately for the prosecution, a court-ordered expert examination<sup>189</sup> did not support the conclusion that pollution at the waste disposal site caused the health damage claimed by the victims.<sup>190</sup> On the other hand, a successful application of the mentioned articles occurred in the Criminal Court of Mechelen, Belgium, which applied these provisions to convict the manager of a corporation whose activities producing manure caused the surrounding neighbors to suffer respiratory diseases, stomachaches, and kidney problems.<sup>191</sup> A similar possibility exists under articles 300–03 of the Netherlands Criminal Code, which punish assaults with various sanctions (depending upon the consequences). Article 304, in particular, authorizes a one-third increase in the prison sanction if the crime has been committed by substances which are harmful to human health or life. Although in theory these provisions could be applied in case of environmental pollution, there are in fact no examples where

187. The *Strafwetboek* [SWB] [Penal Code], June 9, 1867, *Moniteur Belge* [Official Journal of Belgium], available at [http://www.juridat.be/cgi\\_loi/loi\\_N.pl?cn=1867060801](http://www.juridat.be/cgi_loi/loi_N.pl?cn=1867060801).

188. For a more detailed discussion of this case see L. Lavrysen, *Judicial Responses in the Nineties to Dutch (and German) Shipments of Waste to Belgium in the Eighties*, 2 *MAASTRICHT JOURNAL* 3 (1995).

189. Court of Appeals of Antwerp, June 23, 1995, *Tijdschrift voor Milieurecht* 489 (1995).

190. Court of Appeals of Antwerp, 10th Chamber, June 30, 2003, the Mellery case (unpublished).

191. Criminal Court of Mechelen, 3d Chamber, Jan. 29, 1988, in the case of public prosecutor, Manpaey and Vercauteren against Van Meersbeeck and N.V. Kemira (unpublished), discussed by Faure & Visser, *supra* note 16, at 334–35. At the time of the prosecution, Belgium did not yet recognize the criminal liability of corporations, which was only introduced with an Act of 4 May 1999. See also, e.g., P. MORRENS, *DE GOLF EN DE ZWEMMER* [THE GULF AND THE SWIMMER] 50–70 (De Standaard, 1990) (explicitly dealing with the question whether provisions of the criminal code dealing, *inter alia*, with assault could be applied to environmental pollution).

this has been done.<sup>192</sup>

## 2. Issues in Severing the Administrative Link

The previous section explored three ways to sever the administrative link in prosecutions for pollution-related harm. The first was to overtly disallow compliance with a permit or license as a defense, specifically eliminating the “permit shield.” However, the status of the permit shield is less clear in the context of the other two methods—eliminating the “unlawfulness” element and using traditional crimes. Assume, for example, a defendant who, consistent with a permit or license, released a listed hazardous air pollutant into the ambient air and thereby placed another person in imminent danger of serious bodily injury. Will the permit shield provide a defense to a CAA “endangerment” prosecution?<sup>193</sup> Or imagine using a traditional assault statute to prosecute a person who discharged or emitted pollutants into air, water, or soil. If the release complied with the operating permit held by the defendant (or the defendant’s company), will the permit shield provide a defense to such a prosecution?

The answer in the United States is probably “no,” at least with regards to the federal permit shields provided in RCRA, the CWA, and the CAA. RCRA’s permit-shield provision states that “[t]he issuance of a permit does not authorize . . . any infringement of State or local law or regulations.”<sup>194</sup> The CWA provision<sup>195</sup> works differently to get to the same result. While the permit shield applies to state-issued permits,<sup>196</sup> compliance with the permit is deemed to be compliance for purposes of federal enforcement only.<sup>197</sup> The CAA’s provision<sup>198</sup> is different yet again and less clear

192. See Faure & Visser, *supra* note 16, at 381–83 (discussing the theoretical applicability).

193. CAA §§ 113(c)(4), 113(c)(5)(A), 42 U.S.C. §§ 7413(c)(4), 7413(c)(5)(A) (2000). See *supra* text accompanying notes 169–170 (discussing the lack of “unlawfulness” requirement in these provisions).

194. 40 C.F.R. § 270.4(c) (2009).

195. CWA § 402(k), 33 U.S.C. § 1342(k) (1994).

196. The CWA shield involves “[c]ompliance with a permit issued pursuant to this section.” CWA § 402(k), 33 U.S.C. § 1342(k) (1994). “[T]his section” refers to § 1342—the NPDES system—which includes state-issued permits. See CWA § 402(b), 33 U.S.C. § 1342(b) (1994).

197. Compliance with the permit is deemed compliance “for purposes of sections 1319 and 1365 of this title,” the federal enforcement and citizen-suit provisions respectively. 33 U.S.C. § 1342(k).

198. CAA § 504(f), 42 U.S.C. § 7661c(f) (2000). For a discussion of the legislative history

on the point under discussion than RCRA or the CWA. Under the CAA, compliance with a federal- or state-issued permit is deemed compliance with § 7661a, which declares that it is unlawful to operate except in compliance with a permit.<sup>199</sup> Compliance with the permit will also provide a shield regarding other provisions that are specifically addressed in the permit.<sup>200</sup> Thus, the relevance of the permit to state requirements is variable. However, it would be unusual for the permit to shield an entity from liability under traditional criminal statutes.

In Europe, general penal code provisions regarding negligent or intentional injuries to persons should, in theory, apply to pollution-related harms even if the defendant met the conditions of a license.<sup>201</sup> Insufficient cases exist, however, to test whether this conclusion is accurate. In the Belgian cases discussed above,<sup>202</sup> for example, the defendant did not raise the permit shield as a defense, and the court did not discuss whether the license would have any justificative effect.<sup>203</sup>

An additional problem exists, however, notwithstanding technical legal analysis. Defendants whose actions complied with an operating permit might object that such compliance led them to expect freedom from any liability, including criminal liability. They might argue, in other words, that failure to credit their compliance changes the rules of the game.

In the United States, such an objection might be phrased as a lack of notice<sup>204</sup> or in terms of retroactivity concerns. As to the

of the CAA permit shield, see D.R. van der Vaart & John C. Evans, *Compliance Under Title V: Yes, No, or I Don't Know?*, 21 VA. ENVTL L.J. 1, 17–22 (2002).

199. 42 U.S.C. § 7661c(f). Knowing violation of § 7661a leads to federal criminal penalties. *Id.* 42 U.S.C. § 7413(c)(1).

200. 42 U.S.C. § 7661c(f) (requiring the permit to include the applicable requirements of the provisions in question or the specified alternative determination of the permitting authority).

201. Faure & Visser, *supra* note 16 at 341 n.111 and accompanying text.

202. See *supra* text accompanying notes 188–192.

203. A few more examples of prosecutions against managers of corporations for bodily harm caused by environmental pollution can be found in Belgium. See Faure & Visser, *supra* note 78 at 385–89. See generally, Faure & Van Heule, *supra* note 29 at 204–19 (regarding the applicability of these provisions to environmental pollution under Belgian law).

204. The principle of legality, see *supra* text accompanying note 140, includes the notion that legislative enactments must give fair warning of their meaning and effect. The requirement of fair warning allows actors the choice to conform their conduct to the requirements of the law and thus furthers retribution and deterrence rationales for punishment. Adequate notice also helps limit discretion in law enforcement. The requirement of notice is reflected in various provisions of the United States Constitution as

latter, a defendant would argue that elimination of the “permit shield” defense amounts to punishing behavior that was not a crime at the time it occurred. If the defense was eliminated by later enacted statute, it would violate one of the Ex Post Facto clauses.<sup>205</sup> Elimination by judicial interpretation of a pre-existing statute or by common law would violate due process if the interpretation was “unexpected and indefensible.”<sup>206</sup> While an in-depth examination of this issue is beyond the scope of this article, it is likely that such objections would fail in at least some situations in which a court denied applicability of the permit shield defense. As noted above,<sup>207</sup> the CWA permit shield provision specifically lists the administrative requirements to which it applies. This list arguably provides notice that there is no shield from other types of requirements and laws. RCRA’s permit shield does not protect against “any injury to persons”<sup>208</sup> and “does not authorize . . . any infringement of State or local law or regulations.”<sup>209</sup> Finally, as noted above, the CAA’s permit shield has never provided a secure defense to all potential criminal charges, and any “notice” issues that might arise would vary with the intricacies of each permit.<sup>210</sup>

Similarly, notice is not a problem in Europe to the extent that defendants are deemed to be aware of the existence of judicial review of administrative actions and the power of courts to decline

well as in principles of statutory construction of criminal laws. *See generally, e.g.*, Joshua Dressler, *Understanding Criminal Law* (LexisNexis 4th ed. 2006).

205. *Collins v. Youngblood*, 497 U.S. 37, 42 (1990) (quoting *Beazell v. Ohio*, 269 U.S. 167, 169–70 (1925)). The *Beazell* Court noted that “any statute which punishes as a crime any act previously committed, which was innocent when done; which makes more burdensome the punishment for a crime, after its commission, or which deprives one charged with a crime of any defense available according to law at the time when the act was committed, is prohibited as *ex post facto*.” *Beazell*, 269 U.S. at 196–70 (first emphasis added).

206. *Rogers v. Tennessee*, 532 U.S. 451, 461 (2001) (internal quotation marks omitted) (holding common law changes that broaden the scope of criminality violate due process if they are unexpected and indefensible); *Bouie v. City of Columbia*, 378 U.S. 347, 354 (1964) (prohibiting retroactive application of any “judicial construction of a criminal statute [that] is unexpected and indefensible by reference to the law which has been expressed prior to the conduct in issue” (internal quotation marks and citation omitted)).

207. *See supra* note 153 and accompanying text.

208. 40 C.F.R. § 270.4(c). Note that although the shield provision also states that a permit does not authorize injury to property, neither the CWA nor RCRA contain a “property injury” crime. Note that RCRA does not contain a crime whose elements include actual injury. Should such injury occur, the government would have to address it using the “knowing endangerment” provision.

209. *Id.*

210. *See supra* text accompanying notes 198–199.

to honor permits that violate the law.<sup>211</sup> In countries in which such judicial review is not reflected in the constitution, case law or commentary are established well enough to provide notice to actors that such review might occur.<sup>212</sup>

In addition to individual fairness arguments, some observers might suggest that it violates the integrity of the system to sever the administrative link. Compliance with a license or operating permit—or, for that matter, with a regulation later found to be unlawful—means that the particular behavior has been authorized by the administrative authority. Why then should the same behavior also be subjected to criminal law?

The answer—at least for crimes that are true to Model IV as we have outlined it—is found in the notion that the crimes severing the administrative link deal only with the most egregious cases of environmental pollution. Administrative law in most legal systems never grants the licensee the right to cause damage to third parties.<sup>213</sup> Also, administrative laws usually allow authorities to impose urgent safety measures upon a licensee when public health and similar interests are at stake, even when the conditions of a license are followed.<sup>214</sup> Because the administrative system is not intended to allow egregious pollution to occur, punishing such pollution does not offend the administrative system.<sup>215</sup>

211. See *supra* text accompanying notes 157–162. In fact, defendants also make use of the judicial power to review the lawfulness of administrative rules, licenses, and operating permits. See *supra* note 29.

212. See generally, e.g., Rodriguez et. al., *supra* note 111, at 239–43 (discussing the situation in Portugal); René Seerden & Frits Stroink, *Administrative Law in the Netherlands, in ADMINISTRATIVE LAW OF THE EUROPEAN UNION, ITS MEMBERS STATES AND THE UNITED STATES* 155–219 (René Seerden & Frits Stroink eds., Intersentia 2d ed. 2007) (discussing the situation in the Netherlands).

213. See Faure & Visser, *supra* note 16 at 342 (discussing German and Flemish legal doctrine on this point).

214. See, e.g., CWA § 504(a), 33 U.S.C. § 1364(a) (1994) (authorizing the government to seek an order restraining discharges and other activities, notwithstanding administrative compliance, when pollution presents specific imminent and substantial dangers).

215. See, e.g., Hans A. Engelhard, *Protection de l'environnement par le droit penal*, 71 REVUE DE DROIT PENAL ET DE CRIMINOLOGIE 295, 304–05 (1991) (Belg.) (reporting the comments of the former German Minister of Justice: “Des dispositions autonomes concernant l’environnement ne devraient donc être introduites que pour faire face à des graves atteintes à l’environnement ayant des conséquences désastreuses pour lesquelles il n’est pas question d’appréciations divergentes entre le droit administratif et le droit pénal,” i.e. “independent environmental crimes should not be introduced except in the face of serious pollution with disastrous consequences, in which case it is not a question that administrative and criminal law have different evaluations.”).

\* \* \*

Part II has described four models of environmental crimes and the advantages and problems associated with each. The premise has been that each model represents a more serious degree of environmental criminality than its predecessor, and that a more severe sentence should accompany a conviction for a crime in a more serious category. It is now time to explore this premise in more detail, to describe a graduated punishment approach, and to evaluate the extent to which modern environmental criminal schemes reflect these dynamics.

## II. HOW WE PUNISH ENVIRONMENTAL CRIMES: COMBINING MODELS TO MAXIMIZE ENVIRONMENTAL PROTECTION

### A. Combining Models: A Graduated Punishment Approach to Environmental Crimes

Environmental criminal law can serve a variety of interests: administrative and human as well as purely environmental. In fact, as we have seen, purely environmental interests are served only indirectly when crimes are defined in terms of disobedience to administrative rules and when harm is viewed through the lens of human health, safety, and property. In order to vindicate all of the relevant interests—and especially to address environmental harm that is not extreme or dramatic—a legislature must promulgate a variety of different environmental crimes. The four models discussed in Section II, along with the variations within each model, suggest the sorts of crimes that might be adopted.

The examples provided in Section II for each model demonstrate that many legislatures have, indeed, adopted a variety of environmental criminal statutes. A legislature should, however, also take a second step and differentiate among the various crimes according to the seriousness of the offense. One reason to do this is to satisfy the demands of the proportionality principle.<sup>216</sup> Environmental crimes certainly do vary in seriousness, and the

216. See Faure & Visser, *supra* note 16 at 324, 332 and 343–44 (discussing proportionality with regard to our Models I, II, and IV). See generally, e.g., Dressler, *supra* note 82 at ch. 6 (discussing proportionality in criminal law).

authorized punishments ought to reflect this reality. However another reason (and one that is perhaps more compelling to legislators) is that a graduated system of crimes is arguably more effective than a flat or incoherent system. The existence of crimes that truly reflect degrees of seriousness saves prosecutors from the burden of overcharging or undercharging defendants in specific cases, and it allows the court to convict guilty defendants of a crime that matches their behavior.

One way to achieve a graduated punishment system is to focus on mental state; an actor who knowingly violated an administrative rule, for example, is more culpable than one who was not aware that the rule existed (but should have been).<sup>217</sup> However, it is also possible to differentiate crimes according to their act elements, that is, according to the type of social harm involved in the offense. This article addresses the act-oriented approach.

To differentiate crimes according to the social harm at issue, it is necessary to agree on some hierarchy of affected interests. For example, most people would agree that the interest in protecting human life is more compelling than the interest in protecting property (and thus that harm to the former is more serious than harm to the latter). Before discussing such a hierarchy for the interests implicated by environmental crimes, however, it is useful to remember why we use the criminal sanction at all.

What does it mean to say that a criminal statute serves or vindicates a certain interest, for example, the interest in avoiding environmental harm? The answer is related to punishment goals or justifications generally. Punishment goals are traditionally seen as being either utilitarian or deontological.<sup>218</sup> Utilitarian goals include deterrence (scaring the actor into refraining from the activity<sup>219</sup>), rehabilitation (changing the actor into one who no longer wishes to engage in the activity), and incapacitation (putting the actor in a situation where the activity cannot occur). The

217. A discussion of the intricacies of a mental-state focus is beyond the scope of this article. For an example of some of the intricacies at issue, see Susan F. Mandiberg, *The Dilemma of Mental State in Federal Regulatory Crimes: The Environmental Example*, 25 ENVTL. L. 1165 (1995).

218. See generally, e.g., Dressler, *supra* note 83 at §§ 2.03–2.05; LaFave, *supra* note 144 at § 1.5.

219. Commentators distinguish between specific and general deterrence. Specific deterrence focuses on the defendant being prosecuted and sentenced; general deterrence focuses on the effect of that defendant, as an example, on others who might be tempted to violate the law. E.g., Dressler, *supra* note 83 at 15–16.

deontological goal is retribution, correcting the moral imbalance caused by the activity in question. The interest in avoiding environmental harm, then, is served when application of a criminal statute deters the defendant or other actors from harming the environment in the future, changes the actor into one who no longer wishes to harm the environment, creates a situation in which the defendant can no longer harm the environment, or inflicts just desserts on the defendant for having harmed the environment in the past. Of course, the interest is served even more when a sentence accomplishes more than one of these goals.

When these goals of punishment are factored into the equation, we see that Abstract Endangerment crimes are quite different from those in the other three models.<sup>220</sup>

As noted above,<sup>221</sup> these crimes directly vindicate only administrative values. Consequently, conviction for an Abstract Endangerment crime may only accomplish utilitarian punishment goals.<sup>222</sup> Retribution is implicated only when it is immoral to

220. Faure and Visser engage in a similar discussion under the rubric of the “subsidiarity principle”, which, “within this context . . . refers to the question of whether criminal liability is needed to reach the goals set.” Faure & Visser, *supra* note 16 at 324. *See also id.* at 332, 343 (concluding that Concrete Endangerment and Serious Environmental Harm crimes are needed to achieve these goals).

221. *See supra* Part II.A.

222. The existence of criminal sanctions presumably deters many actors from violating administrative rules and might deter the defendant from doing so again. *See id.* at 324 (concluding that Abstract Endangerment crimes are needed to add “deterrent, possibly non-monetary sanctions” to administrative sanctions to reach environmental protection goals). In addition, conditions imposed as part of a sentence might bring about the defendant’s rehabilitation. *See generally, e.g.* 18 U.S.C. §§ 3561–66 (2000) and 3601–03 (2000); U.S. SENTENCING GUIDELINES MANUAL, ch. 8, pt. D (2008) (allowing the court to impose probation on corporations convicted of federal crimes, including environmental crimes). In a related but distinct approach, some laws provide for court-ordered rehabilitation of the facility involved in the offense. *E.g.*, CODE DE L’ENVIRONNEMENT [Environmental Code] art. L514-9-III (Fr.) (authorizing the court, in a case of operating a facility without authorization, to “demand the rehabilitation of the premises and set a date limit for performance”). It is difficult to say whether the goal of incapacitation is achieved. Given the nature of the activities in question, such as operating a business, it might be possible for an actor to continue to violate administrative rules while incarcerated. On the other hand, incapacitation would be achieved if an actor were to be banned from engaging in further regulated activities at all. Some environmental crimes provisions provide for this type of sanction. *E.g.*, CODE DE L’ENVIRONNEMENT [Environmental Code] art. L514-9-II (Fr.) (authorizing the court, in a case of operating a facility without authorization, to “forbid the use of the facility”) and L541-46-III (authorizing the court, in cases of specified unlawful waste handling, to “order the temporary or definitive closure of the facility and prohibit its operator from exercising the activity of disposer or retriever”). Note that a sort of partial incapacitation exists in the U.S. provisions barring companies convicted of environmental

violate administrative rules. If the government must prove the defendant's awareness of violating the administrative rule, some retributive value exists in punishing the knowing violation of a law. In addition, in extreme cases, such as operating a nuclear power plant without a license, people might feel moral outrage at the administrative violation itself. When these factors are missing, however, retribution is not involved.

In contrast to Abstract Endangerment crimes, crimes fitting the other three models implicate both utilitarian and deontological goals of punishment. Similarly to the first model, the existence of meaningful punishment serves deterrent, and, perhaps, other utilitarian goals. Unlike the first model, however, retribution also comes into play. This is surely true when environmental harm is defined in terms of danger or harm to human health, safety, or property. In addition, as ethical values develop with regard to the environment, people increasingly feel a moral obligation to prevent even environmental harm that does not directly affect human beings.<sup>223</sup> Still, most people seem to feel more concern about damage that affects human interests than they do about damage that affects only the environment.<sup>224</sup>

Contrasting the interests implicated by environmental crimes in terms of the goals of punishment suggests how we might place our four models along a continuum that represents the seriousness of the offense and the severity of the authorized punishment. First, it makes sense to place Abstract Endangerment (Model I) crimes at

crimes from contracts and grants with federal agencies for a period of time. CWA § 508(a), 33 U.S.C. § 1368(a) (1994); 42 U.S.C. § 706 (2000); in addition, optional debarment and blacklisting possibilities may also exist. *See generally*, John F. Cooney, Judson W. Starr, Joseph G. Block, Thomas J. Kelly Jr., Andrew R. Herrup, Valerie K. Mann, & Gregory Braker, *Criminal Enforcement of Environmental Law: Part III – From Investigation to Sentencing and Beyond*, 25 ELR 10600, 10625–27 (1995)

223. For example, Pope Benedict XVI recently declared that “[t]he wonder of God’s creation reminds us of the need to protect the environment and to exercise responsible stewardship of the goods of the earth.” *Pope Benedict Preaches Environmental Protection at World Youth Day*, ENV’T NEWS SERVICE, July 17, 2008, <http://www.ens-newswire.com/ens/jul2008/2008-07-17-01.asp>. A recent survey of voters living in the state of Oregon found that “73 percent deem it our ‘moral obligation’ and ‘duty as Americans’ to reduce global warming pollution”; support for this position “cuts across party lines, county lines, and income and education levels.” *Moral Obligation, Patriotic Duty*, GRIST, June 17, 2008, <http://www.grist.org/article/moral-obligation-patriotic-duty>.

224. For example, in response to a lack of adequate resources to deal with wildfires, authorities choose to protect human life and property over unpopulated forest areas. *See, e.g., Up to 800 Wildfires Burn in California*, NPR All Things Considered, June 24, 2008, 2008 WLNR 11904926.

the lowest end of the continuum. These crimes vindicate only administrative interests, and they mainly achieve only utilitarian punishment goals. This does not mean, necessarily, that punishment should be a slap on the wrist or a mere cost of doing business. Meaningful sanctions must exist if utilitarian goals are to be met. In addition, Abstract Endangerment crimes often<sup>225</sup> do vindicate environmental (and, perhaps, human) interests indirectly by providing a mechanism for government intervention before these values are actually harmed. In sum, it is desirable to have Abstract Endangerment crimes in the mix with meaningful sanctions attached. The fact that these crimes allow early intervention and are easy to prosecute<sup>226</sup> means that they may end up serving environmental values effectively—and in a more widespread manner than the other models. Nevertheless, they should be punished with milder sanctions than crimes in the other three models, which vindicate more important interests and serve an additional punishment goal.

So where do these other three models fit along the continuum? It is easy to conclude that Concrete Endangerment (Model II) and Concrete Harm (Model III) crimes are both more serious than Abstract Endangerment crimes (Model I). The administrative predicate<sup>227</sup> ensures that these crimes vindicate administrative interests. However, unlike Model I, these crimes vindicate one or two other interests as well. They require proof that the environment was threatened (Model II) or actually harmed (Model III), and thus implicate environmental interests. In addition, anthropocentric interests are implicated if “harm” is defined in terms of human health, safety, or property.<sup>228</sup> As to the goals of punishment, some people become morally outraged when the environment is harmed, and most people do so when human health, safety, or property is harmed. Thus, unlike Abstract Endangerment crimes, crimes fitting these models clearly serve

225. *But see supra* text accompanying note 30 (noting that the environment may be harmed notwithstanding compliance with administrative rules).

226. Abstract Endangerment crimes follow prior administrative decisions. The judge does not need to balance various interests, and reporting and monitoring regimes mean that fact finding is normally straightforward. *See also* Faure & Visser, *supra* note 16, at 326–28. However, the judge may need to address issues regarding the legitimacy of the administrative decision being enforced. *Id.* at 320–21. *See supra* note 29 and text accompanying notes 157–162.

227. *See supra* Parts II.B. and C.

228. *See supra* text accompanying notes 113–21.

both utilitarian and retributive goals.

It is also easy to conclude that Concrete Harm (Model III) crimes are more serious than Concrete Endangerment (Model II) crimes. This ordering reflects the notion that realized harm is more serious than the threat of harm.<sup>229</sup> In addition, it is often difficult to prove that harm actually occurred and that the actor in question caused it; when the government can make such proof, it is likely that the behavior at issue was egregious. All of these factors add up to an argument that Concrete Harm crimes should carry more severe punishments than those authorized for Concrete Endangerment crimes.

This leaves us with the task of positioning crimes in the Serious Environmental Harm Model (Model IV), which require proof of serious environmental harm, but not a violation of administrative rules. Comparing this model with Concrete Harm (Model III) is tricky. Both require proof of harm to the environment, however such harm may be defined.<sup>230</sup> Model IV requires that the harm be extreme, which suggests that these crimes are more serious than those in Model III. On the other hand, as there is no administrative predicate, Model IV crimes implicate one less interest than those in Model III. Based on the number of values implicated, Model IV crimes may be the less serious of the two. The nuances involved in these models, then, create something of a dilemma.

A way out of the dilemma might be found by further sub-dividing the models. This is not an unusual approach: it is common for modern statutory schemes to sub-divide a single crime into degrees of seriousness based on nuances in the social harm at issue. Each degree is defined so as to be slightly more serious than the next lower degree, and the increasing seriousness of the degrees of crime is reflected in the punishments authorized. This approach exists in both the United States<sup>231</sup> and in Europe,<sup>232</sup> and it can be

229. *See supra* text accompanying notes 59–61 (discussing the significance of resulting harm).

230. *See supra* Part. II.C.1.

231. For example, in the state of Oregon there are four degrees of assault that vary in both the act elements and the mental state requirements. Assault in the fourth degree carries a maximum punishment of one year in jail and a \$5,000 fine; assault in the third degree carries a maximum punishment of 5 years in prison and a \$100,000 fine; assault in the second degree carries a maximum punishment of 10 years in prison and a \$200,000 fine; and assault in the first degree carries a maximum punishment of 20 years in prison and a \$300,000 fine. O.R.S. §§ 163.160–163.185 (setting out the degrees of assault); OR. REV. STAT.

applied to the models at issue here. We have already sub-divided Model II into “presumed endangerment” and “demonstrated endangerment” categories.<sup>233</sup> Similarly, we can view Model III as encompassing two degrees of crime: crimes involving harm to the environment only and crimes involving harm to both the environment and to human health, safety, or property. The same division could exist for Model IV.<sup>234</sup> Using this approach, differences in the nature of harm at issue can make up for the absence of administrative values in Model IV.

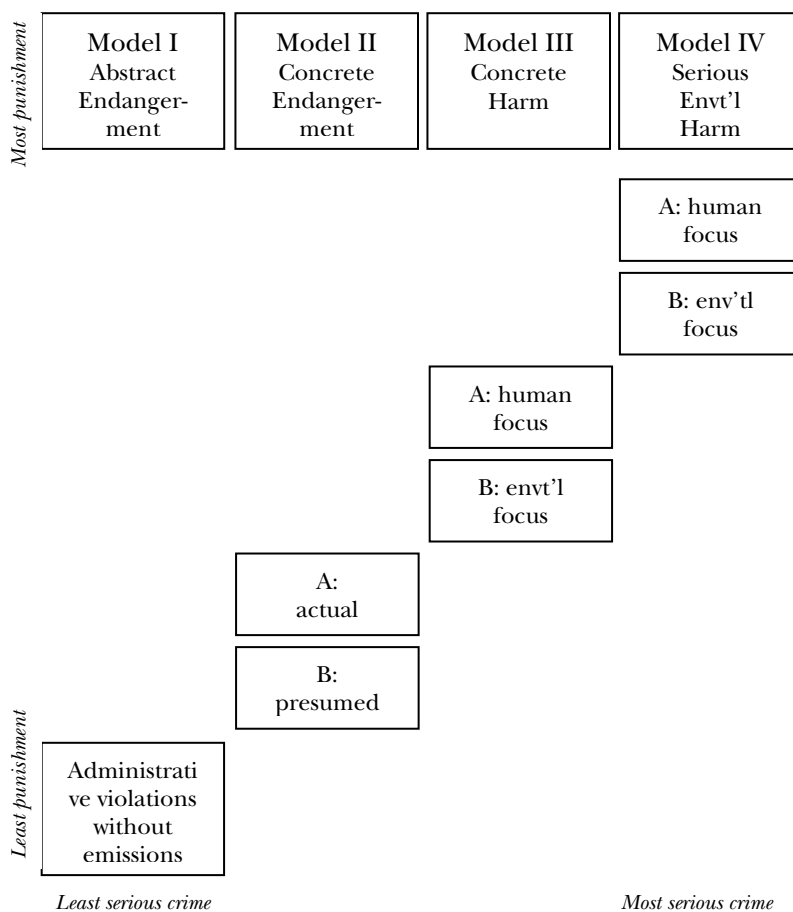
When we sub-divide the Models as suggested, we can rank them in terms of seriousness as follows, with seriousness of criminality increasing as we move from the left to the right and from the bottom to the top of the diagram:

§§ 161.535, 161.555, 161.605, 161.615, 161.625, and 161.635 (2007) (describing classes of offenses and setting forth maximum penalties for each).

232. For example, in France “[a]cts of violence causing mutilation or permanent disability are punished by ten years’ imprisonment and a fine of 150,000.” CODE PÉNAL [Penal Code] art. 222-9. However, in certain aggravating circumstances such violence is punished by fifteen years’ imprisonment. CODE PÉNAL [Penal Code] art. 222-10.

233. *See supra* Parts II.B.1 and 2.

234. Of course, Model I and Model II crimes might also be subdivided. For example, in Model II, a legislature might want to punish demonstrated endangerment crimes more severely than Presumed Endangerment crimes. *See supra* Parts II.B. 1 and 2. These distinctions, however, do not necessarily implicate the differences between Model II and the other models.

Table 1: *A Graduated Punishment Approach*

Reflecting the discussion above, Model II (Concrete Endangerment) is divided into divisions: A (demonstrated endangerment) and B (presumed endangerment). Similarly, Models III (Concrete Harm) and IV (Serious Environmental Harm) are divided into divisions: A (human focus) and B (environmental focus).

With these rankings in mind, a legislature can authorize punishments in ascending degree of severity,<sup>235</sup> with the lowest and

235. An alternative would be to allow judges to follow this approach within the boundaries set by legislatively authorized minimum and maximum punishments. This alternative could, however, raise concerns about predictability and uniformity of

highest punishments having a proportional relationship to other crimes in the system. Of course, the range of possible sentences, as well as the maximum possible punishments, will vary from country to country. In addition, a legislature could create a range of punishments within each of the models or divisions to reflect differences in mental state<sup>236</sup> or the inherent danger of the pollutant at issue.<sup>237</sup> A sophisticated scheme might display overlaps between the most serious crime in one model and the least serious crime in the next model. Nevertheless, the least severe sanction (the maximum authorized for Model I) should be significant enough to accomplish the utilitarian goals associated with this type of offense.<sup>238</sup> In addition, the rationale for the punishment gradation should be logical and transparent.

## B. Evaluating the Current State of Environmental Crimes

This article has suggested a rational hierarchy of environmental crimes based on both the values vindicated and the punishment goals served. It remains to examine the extent to which existing environmental protection schemes reflect the suggested structure. If crimes are missing from certain categories—or if the scheme does not reflect a graduated punishment approach—insights might be gained into more effective use of the criminal sanction to further environmental protection.

The following sections explore the extent to which environmental protection schemes in the United States, France, and Germany reflect the structure suggested above. As will become apparent, if a graduated punishment approach is a desirable way to address environmental crimes, much work remains to be done.

### 1. Federal Environmental Crimes in the United States

The organization and authorized punishments for environmental crimes in the CWA, RCRA, and the CAA do not make sense when

punishment.

236. For example, within Model I, Abstract Endangerment, a crime involving monitoring fraud might carry a higher authorized penalty than a crime involving late submission of an accurate monitoring report. Similarly, crimes in each division of Model II could punish threats to the environment less severely than threats to both the environment and human health and safety.

237. For example, an Abstract Endangerment crime involving chemicals might carry a lower authorized punishment than one involving nuclear waste.

238. *See supra* text accompanying and following note 222.

viewed through the lens of our suggested structure.<sup>239</sup> For example, when viewed graphically, the criminal provisions of the CWA appear like this:

Table 2: CWA

(The years represent the maximum authorized incarceration. Fines are also available.)

	MODEL I	MODEL II	MODEL III	MODEL IV
<i>Most punishment</i>		Knowing Endangerment 15 years	Knowing Endangerment 15 years	Knowing Endangerment (toxics) 15 years
	Knowing violations 3 years	Knowing violations 3 years	Knowing violations 3 years	Knowing violations (toxics) 3 years
<i>Least punishment</i>	Negligent violations 1 year	Negligent violations 1 year	Negligent violations 1 year	
	<i>Least serious crime</i>			<i>Most serious crime</i>

To clarify, first, in the case of toxic discharges, the CWA permit shield is no defense,<sup>240</sup> which removes the administrative predicate; such knowing emissions thus fit Model IV most closely. As discussed above,<sup>241</sup> “knowing endangerment” involving non-toxic discharges fits in Model III when the predicate regulatory violation involved environmental “harm;” however, the crime fits Model II when the regulation involved only a risk of environmental harm. Knowing violations<sup>242</sup> involving non-toxic discharges might fit

239. Because the Sentencing Guidelines are now discretionary (*see supra* note 68), this discussion will focus upon the environmental crimes statutes and their authorized maximum penalties, not on the lower maximums outlined in the Sentencing Guidelines.

240. *See supra* note 153.

241. *See supra* text accompanying notes 91–95.

242. CWA § 309(c) (2), 33 U.S.C. § 1319(c) (2) (1994).

either Model II or Model III, depending upon whether the standard violated was defined to reflect actual harm, for example by using harm to humans as a surrogate. Other knowing violations fit Model I. The same is true of negligent violations.<sup>243</sup> Thus, the CWA displays a full spectrum of environmental crimes, but there is no coherent scheme of graduated punishment.

The situation with RCRA shows the same lack of coherence, but the details are different. Again, Knowing Endangerment crimes can fit into either Model III or Model IV, depending on whether the permit shield is removed; they can fit either Model II or Model III depending upon whether the violation involves pollutant contact with the environment.<sup>244</sup> Most RCRA “knowing violations” carry a maximum authorized penalty of 2 years in prison, but violations of sub-sections (d)(1) and (2) carry a maximum penalty of 5 years.<sup>245</sup> Most of the two-year crimes fit within Model I: Abstract Endangerment,<sup>246</sup> although crimes involving contact between used oil and the environment—also punished by a maximum of two years—probably fit within Model III.<sup>247</sup> The five-year crimes fit into Model I if there is no contact between hazardous waste and the soil, water, or air;<sup>248</sup> if there is such contact, however, the crimes fit Model III or Model IV, depending upon whether the permit shield is eliminated.<sup>249</sup> As with the CWA, there is no coherent graduated punishment approach. The situation can be diagrammed as follows:

243. *Id.* § 1319(c)(1).

244. *See id.*

245. RCRA §3008(d), 42 U.S.C. § 6928(d) (2000).

246. *Id.* §§ 6928(d)(3) (regarding omission of information and false statements); (d)(4) (regarding recordkeeping violations by those who generate, store, dispose of, or transport hazardous waste or used oil); (d)(5) (regarding transportation without a manifest); and (d)(6) (regarding export without consent of the receiving country).

247. *Id.* § 6928(d)(7). These crimes fit Model III if any contact between the environment and used oil not identified as hazardous waste is automatically considered harmful.

248. *E.g. id.* § 6928(d)(1) (regarding transportation of hazardous waste to a facility that lacks a permit). Sub-section (d)(2) would also fit here when applied to storing hazardous waste without a permit.

249. *See supra* text accompanying notes 155–156.

Table 3: RCRA

	MODEL I	MODEL II	MODEL III	MODEL IV
<i>Most punishment</i>		Some Knowing Endangerme	Some Knowing Endangerme	Some Knowing Endangerme
	Knowing violations § (d)(1) or (2) 5 years		Knowing violations § (d)(2) 5 years	Knowing violations § (d)(2) 5 years
<i>Least punishment</i>	Knowing violations §(d)(3)-(7)  2 years		Knowing violations §(d)(7) 2 years	
	<i>Least serious crime</i>			<i>Most serious crime</i>

The bottom line is the same for the CAA, but again, the details are different. The CAA appropriately carves out paperwork and fee violations and punishes them less seriously than the others, but the rest of the crimes do not follow a graduated punishment approach. The CAA “endangerment” crimes fit into Model IV. They do not contain an administrative predicate;<sup>250</sup> in addition, because they require contact between hazardous air pollutants and the environment, it is appropriate to treat them as involving actual environmental harm.<sup>251</sup> However, the CAA has both a “knowing endangerment” and a “negligent endangerment” provision.<sup>252</sup> The “negligent endangerment” provision is punished less severely than most Abstract Endangerment crimes. While the lower mental-state

250. See *supra* text accompanying notes 169–170.

251. Cf. *supra* text accompanying notes 93–96.

252. CAA §§ 113(c)(4) and (5), 42 U.S.C. § 7413(c)(4) and (5) (2000) (criminalizing negligent endangerment and knowing endangerment, respectively).

provision surely justifies a lesser punishment than the one provided for “knowing endangerment,” the act element suggests more serious treatment than the crime receives. Similarly, the catch-all “knowing violations” provision qualifies as a Model I crime in some applications, as a Model II crime in others, and as a Model III crime in others; the classification depends upon whether an emission is involved and, if so, whether it violates limits defined in terms of actual environmental harm.<sup>253</sup> In all cases, however, it carries a maximum penalty of five years for a first offense.<sup>254</sup> If a true graduated punishment scheme were desired, a different punishment should be provided for each of these categories.

Table 4: CAA

(The years represent the maximum authorized incarceration. Fines are also available.)

	MODEL I	MODEL II	MODEL III	MODEL IV
Most punishment				Knowing Endangerment 15 years
	Some Knowing violations 5 years	Some Knowing violations 5 years	Some Knowing violations 5 years	
Least punishment	Paperwork etc. violations 2 years			
	Failure to pay fees 1 year			Negligent Endangerment 1 year
	<i>Least serious crime</i>			<i>Most serious crime</i>

\* \* \*

This review of the major federal pollution-control crimes shows that they fail to adopt a coherent graduated punishment scheme. It is possible to argue that the omissions are countered to some

253. See *supra*, Part II.C.1.

254. 42 U.S.C. §7413(c)(1). See 18 U.S.C. § 3571 (noting the amount of the fine authorized).

extent by Sentencing Guidelines' provisions that take the missing factors into account.<sup>255</sup> The Sentencing Guidelines are now discretionary,<sup>256</sup> however, so uniform application of graduated punishment factors is not guaranteed. Should Congress decide that the approach advocated here makes sense, it will have to amend the current schemes.

## 2. European Environmental Crimes

It is beyond the scope of this article to examine the environmental criminal statutes of every European jurisdiction from which we have drawn the examples used in Section II. Nevertheless, an examination of the laws of two countries—France and Germany<sup>257</sup>—shows that they come no closer than the United States does to the ideal formulation of a graduated punishment approach suggested in Part III.A.

France has a comprehensive Environmental Code with six Books, together containing hundreds of articles.<sup>258</sup> Book II, Title I covers water and aquatic environments, and Chapter 6 addresses sanctions. As represented in Table 5, one provision authorizes up to two years' incarceration and a 18,000 fine for acting without due authorization,<sup>259</sup> a broad statute that can fit in either Model I or Model II depending upon whether an emission is involved. A second provision authorizes the same maximum prison term but a much larger fine—75,000—for discharging “substances of any kind whose actions or reactions cause, even if only temporarily, harmful effects on health, fauna and flora . . . .”<sup>260</sup> Two things of interest to our analysis emerge from an examination of this chapter. First, the full spectrum of environmental crimes is not represented. Second, in terms of authorized incarceration, punishment for Concrete Endangerment crimes is not less severe than punishment for the arguably more serious Concrete Harm

255. See, e.g., *supra* text accompanying notes 68–70..

256. See *supra* note 68.

257. We have chosen to focus upon France and Germany in this discussion because their statutes are more accessible to the average reader in the United States than are those of many other European countries. See *infra* note 13 (citing internet sources for the statutes).

258. CODE DE L'ENVIRONNEMENT [Environmental Code].

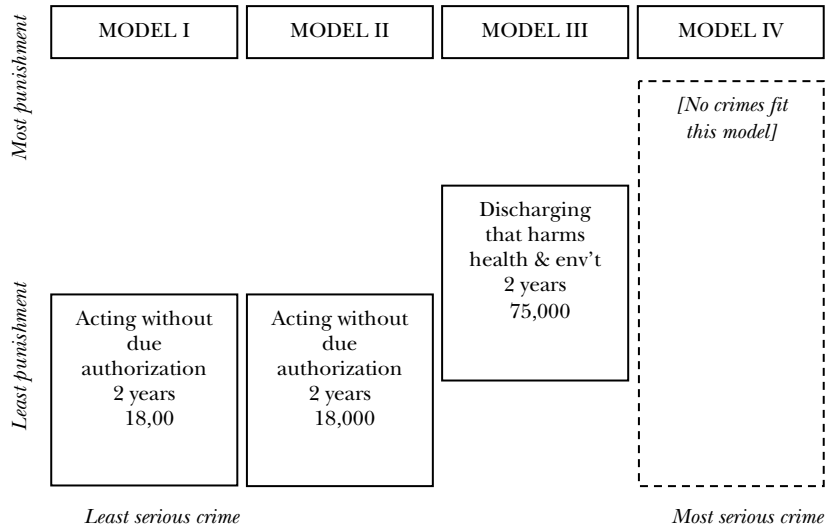
259. *Id.* at art. L216-8 (punishing various activities regarding “an act, an operation, an installation or a structure” that lack due authorization). Second offenses are punished more severely. *Id.*

260. *Id.* at art. L216-6 (addressing both unpermitted discharges and those violating authorizations “by decree”).

crime.

Table 5: *Environmental Code of France, Water and Aquatic Environments.*<sup>261</sup>

(The years represent the maximum authorized incarceration. Fines are also available.)



Another example from France is Book V of the Code (prevention of pollution, risks and nuisances), Title IV (waste), Chapter I (disposal of waste and recovery of materials). The criminal provision for this chapter is Art. L541-46, which sets out Abstract Endangerment crimes,<sup>262</sup> Concrete Endangerment<sup>263</sup> crimes, and Concrete Harm crimes.<sup>264</sup> All of these crimes carry identical authorized punishments.<sup>265</sup> In addition, the chapter contains no Serious Environmental Harm crimes. The absence of a graduated

261. *Code de L'Environnement, Book II, Title I, Ch. 6.*

262. *Id.* at art. L541-46, 1<sup>o</sup> (regarding provision of required information); 2<sup>o</sup> (ignoring stipulations not involving discharges); 3<sup>o</sup> (regarding provision of required information); 5<sup>o</sup> (transporting, brokering, or trading in waste without fulfilling legal requirements); 6<sup>o</sup> (transmitting waste to a non-approved facility); 9<sup>o</sup> (ignoring specified rules); 10<sup>o</sup> (obstructing inspections or other official functions); 11<sup>o</sup> (exporting or importing waste without fulfilling legal requirements); 12<sup>o</sup> (ignoring obligations regarding information).

263. *Id.*, 7<sup>o</sup> (disposing of waste without legal approval); 8<sup>o</sup> (disposing or retrieving waste without fulfilling legal requirements).

264. CODE DE L'ENVIRONNEMENT [Environmental Code] 4<sup>o</sup> (abandoning or depositing waste capable of causing nuisances such as conditions likely to cause harmful effects on soils, flora, and fauna). *See id.* at art. L541-7 (referenced in 4<sup>o</sup> as giving examples of nuisances).

265. *Id.* (authorizing 2 years in prison and a 75,000 fine).

punishment approach is evident in viewing Table 6.

Table 6: *Environmental Code of France, Disposal of Waste & Recovery of Materials.*

(The years represent the maximum authorized incarceration. Fines are also available.)

	MODEL I	MODEL II	MODEL III	MODEL IV
Most punishment				[No crimes fit this model]
Least punishment	Violations not involving discharges  2 years 75,000	Disposal of waste without legal approval  2 years 75,000	Abandoning or depositing harmful waste  2 years 75,000	
	<i>Least serious crime</i>			<i>Most serious crime</i>

The second country to be examined here is Germany. “Crimes Against the Environment” are addressed in Chapter 29 of the German Criminal Code,<sup>266</sup> which contains ten relevant sections, all with sub-sections. Nine of these provisions set forth Abstract Endangerment crimes, three authorizing a maximum of three years in prison,<sup>267</sup> five authorizing five years,<sup>268</sup> and one setting out a range of six months to ten years.<sup>269</sup> Four provisions set forth

266. Strafgesetzbuch [StGB] [Penal Code] Nov. 13, 1998, Bundesgesetzblatt [BGBl] 945. Note that many of these statutes provide for lesser sentences if the defendant acted negligently.

267. *Id.* § 326(3) (regarding failure to deliver radioactive waste); § 327(2) (regarding operating or engaging in other actions at non-nuclear facilities); § 329(1) and (2) (regarding operating facilities contrary to ordinances, enforcement orders, or both).

268. *Id.* § 326(1) (regarding unlawfully treating or storing waste); § 326(2) (regarding unlawfully handling waste within a specified territorial area); § 327(1) (regarding operating or engaging in other actions at a nuclear facility); § 328(1) (regarding keeping, transporting, or engaging in other non-discharge activities with radioactive substances); § 328(2) (regarding delivery of nuclear fuels).

269. *Id.* § 330(1) (regarding engaging in specified unlawful activities under this chapter for profit).

Concrete Endangerment Crimes; most of these authorize five years in prison,<sup>270</sup> but one sets out a range of one to ten years.<sup>271</sup> Five provisions fit the Concrete Harm Model, and most authorize a five-year prison sentence.<sup>272</sup> However, others authorize up to ten years in prison and also establish a minimum sentence.<sup>273</sup> Finally, there is one Serious Environmental Harm provision, which authorizes minimum sentences of various lengths and a maximum sentence of ten years.<sup>274</sup> In sum, although the statutes provide a full spectrum of crimes, there is no coherent system of graduated punishment.

270. *Id.* § 326(1) (regarding dumping, discharging, and disposing of waste); § 328(2) (regarding causing a nuclear explosion); § 328(3) (regarding certain actions that endanger mainly human interests). Note that § 328(3) (setting out Concrete Harm crimes in some circumstances).

271. *Id.* § 330(2)-1 (regarding engaging in unlawful activities specified in the chapter and placing human beings in danger of death or health damage). Note that this statute can be a Concrete Harm crime in certain circumstances.

272. *Id.* § 324 (regarding unauthorized pollution or detrimental alteration of a water body); § 324a (regarding unauthorized soil pollution); § 325 (regarding unauthorized air pollution); § 329(3) (regarding unlawfully engaging in specified activities that alter or otherwise harm protected natural areas). In addition, §328(3) meets this model in some circumstances.

273. *Id.* § 330 (regarding causing especially serious harm or death while engaging in specified unlawful activities under this chapter and setting out a minimum sentence of 6 months); § 330(2) (regarding certain intentional acts that place human beings in danger of death or serious health damage or that cause death, and setting mandatory minimums of one or three years). Note that § 330(2) can fit the Concrete Endangerment Model in some circumstances.

274. *Id.* § 330a (regarding "serious endangerment by release of poisons"). Sub-section (1) sets a minimum sentence of one year if the actor causes the danger of death or serious health damage to humans. Sub-section (2) sets a minimum sentence of three years if the actor actually causes the death of another human being. Sub-section (3) sets less severe sentencing ranges "in less serious cases."

Table 7: *Germany*

(The years represent the maximum authorized incarceration. Some crimes have mandatory minimum terms of incarceration. Fines are also available.)

	MODEL I	MODEL II	MODEL III	MODEL IV
<i>Most punishment</i>	StGB §330(1) 10 yrs	StGB §333(2)-1 10 yrs	StGB §§ 330, 330(2) 10 yrs	StGB § 330a 10 yrs
	StGB §§ 326(1)(2), 327(1), 328(1)(2) 5 yrs	StGB §§326(1), 328(2)(3) 5 yrs	StGB §§ 324, 324(a), 325, 328(3), 329(3) 5 yrs	
<i>Least punishment</i>	StGB §§326(3), 327(2), 329(1)(2)			
	<i>Least serious crime</i>		<i>Most serious crime</i>	

This review of the environmental crimes statutes in France and Germany confirms that the approach advocated here is not in effect. As in the United States, legislatures desiring a full spectrum of environmental crimes with coherent graduated punishments have work to do.

### III. CONCLUSION

In both the United States and Europe, most environmental crime statutes focus on punishing disobedience to administrative rules and decisions. In most cases, the statutes do not require harm—or even a threat of harm—to the environment. Thus, convictions for these Abstract Endangerment crimes vindicate mainly administrative values.

This article has suggested three additional models of environmental crimes. Contrary to the Abstract Endangerment Model, these focus on environmental values. Discussion of these models, including examples of each approach, confirms that it is possible to create statutes reflecting the Concrete Endangerment, Concrete Harm, and Serious Environmental Harm models. In addition, the discussion has shown that it is desirable to provide a full spectrum of environmental crimes and to take a graduated approach to punishing the threat or reality of environmental harm. Nevertheless, both Congress and European legislatures have failed to adopt such a structure. If the approach advocated here is, in fact, where we should be heading as a society, it is time to start down that road.