

# A Fracking Nuisance: How States Can Compel Their Neighbors to Regulate Hydraulic Fracturing with Judicial Equitable Relief

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## ABSTRACT

*Removing natural gas from subsurface bedrock by the process of hydraulic fracturing, or “fracking,” can lead to several environmental harms that are dangerous to human health. Some of these harms have the potential to create externalities beyond the border of the state in which the fracking occurs. Because fracking is not yet federally regulated, regulation of these externalities is at the discretion of the individual states. Piecemeal state regulation often results in regulatory gaps and ignored interstate externalities, as there is no federal body to offer oversight and the states are mostly interested in what goes on within their own borders. The doctrine of common law public nuisance has been used throughout history to counteract regulatory gaps caused by fragmented state regulations. This Note argues that common law public nuisance can be similarly used by states in order to control interstate externalities arising from fracking. The remedies provided by courts in public nuisance suits are equitable, and sometimes compel the defendant state to impose some sort of regulatory control to address the externalities. By requesting these remedies in equity from the courts, states can compel their neighbors to more adequately regulate fracking.*

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## INTRODUCTION

The method of extracting natural gas from subsurface rock known as hydraulic fracturing, or “fracking,” is not federally regulated. The lack of uniform federal regulation has led to a vastly diverse landscape of fracking supervision schemes among the individual states. While each state has the authority to regulate fracking within its own borders, the environmental externalities of fracking often do not stay within those borders. Wastes produced from this method of gas extraction can, and do, spread beyond the originating state’s jurisdiction. Due to the lack of federal regulation, managing and obtaining relief from these interstate externalities is considerably more difficult than if they were federally regulated interstate externalities. However, the old common law theory of public nuisance provides a possible solution to this regulatory gap. The public nuisance doctrine not only allows courts to enjoin a private actor from commencing or continuing a discrete harmful act, but it can also lead to the establishment of court enforced fracking regulation. This Note argues that with no federal structure to settle interstate disputes, states can effectively compel their neighbors to regulate fracking more diligently by utilizing the public nuisance doctrine to obtain court ordered regulation of cross-border negative effects.

The public nuisance doctrine has been used throughout American history to resolve interstate environmental disputes where the federal government does not play the role of supervisor. The public nuisance doctrine is older than the nation itself, but this Note will show how it has been incorporated into modern interstate conflicts where regulation is the ultimate goal, and how it can be similarly applied to fracking. Section I describes the potential environmental harms associated with fracking, pointing out the ways in which these environmental harms can cross state borders. Section II discusses the lack of federal oversight of fracking harms, and therefore the lack of federal recourse for interstate disputes. Section III discusses the history of the public nuisance doctrine as it relates to interstate

environmental and public health conflicts, and how this case law can easily be transferred to interstate fracking externalities. Finally, Section IV demonstrates how states have used similar public nuisance claims in recent years to attempt to prevent and regulate neighboring state behavior that is detrimental to the environment or public health in the plaintiff state. Specifically, this doctrine has been used recently in interstate legal conflicts over marijuana legalization and global warming causing emissions. This Note concludes that the historic public nuisance doctrine can effectively be applied to interstate externalities caused by fracking, and is necessary because of the regulatory gaps present in the state-centric fracking supervision scheme.

### I. CROSS BORDER ENVIRONMENTAL CONSEQUENCES OF HYDRAULIC FRACTURING

Fracking causes contamination of water resources, degradation of air quality, and other dangerous environmental effects. Because of the non-static nature of many of these effects, they can spread beyond the site of the drilling and beyond the originating state's borders.<sup>1</sup> Such out-of-state environmental harms are often classified as "interstate externalities." Interstate externalities are a pervasive problem faced by states interested in preserving the environment.<sup>2</sup> They represent environmental harms sent to a state other than the state originating these harms. Therefore, the originating state unilaterally enjoys the economic benefits of the activity that causes the environmental harm, but does not experience the full breadth of costs.<sup>3</sup> Because of this, the originating state lacks the economic incentive to eliminate all of the environmental costs from the beneficial activity.<sup>4</sup> Fracking provides an almost perfect example of this theory in action.

Fracking is the process of injecting high-powered fluid mixed with particles into bedrock underneath the ground. This is done to fracture rock that contains natural gas so the gas can be captured and used as energy.<sup>5</sup> Fracking of natural gas-bearing shale is typically accomplished by vertically drilling a well bore, a long and narrow channel, into bedrock shale.<sup>6</sup> Then, a metal pipe is inserted into the well bore, which is turned horizontal once it reaches the natural gas-bearing shale or other bedrock.<sup>7</sup> High pressured fluid and particles, called "proppants,"

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1. Cameron Jefferies, *Unconventional Bridges Over Troubled Water – Lessons to be Learned from the Canadian Oil Sands as the U S Moves to Develop the Natural Gas of the Marcellus Shale Play*, 33 ENERGY L.J. 75, 102 (2012).

2. Richard L. Revesz, *Federalism and Interstate Environmental Externalities*, 144 U. PA. L. REV. 2341, 2343 (1996).

3. *Id.*

4. *Id.*

5. MICHAEL D. HOLLOWAY & OLIVER RUDD, *FRACKING: THE OPERATIONS AND ENVIRONMENTAL CONSEQUENCES OF HYDRAULIC FRACTURING*, at xi (2013).

6. *Hydraulic Fracturing* 101, EARTHWORKS, [https://www.earthworksaction.org/issues/detail/hydraulic\\_fracturing\\_101#.WLWUBhIrLEY](https://www.earthworksaction.org/issues/detail/hydraulic_fracturing_101#.WLWUBhIrLEY) (last visited Nov. 7, 2017).

7. *Id.* This horizontal drilling method was the technological breakthrough giving rise to low cost, simple

are then blasted into the shaft to cause fractures in the rock.<sup>8</sup> These fractures are held open by the proppant so that gas or oil can flow back up to the surface well.<sup>9</sup>

Fracking has the potential to result in several different forms of environmental harms. These harms are often not discrete, and their effects are not isolated at or near the well site.<sup>10</sup> A drill site in close proximity to a state border or within a watershed shared by multiple jurisdictions can lead to the migration of fracking waste and other negative environmental externalities into another state.<sup>11</sup> For example, fracking sites and the resulting environmental consequences in areas on the Marcellus Shale in the Northeastern United States demonstrate some of these cross border effects. The Marcellus Shale runs from New York to West Virginia, and touches parts of Pennsylvania, Maryland, and Ohio.<sup>12</sup> Because there is no comprehensive federal regulation to standardize the guidelines for fracking, each of these states maintain a different approach to supervise the industry.<sup>13</sup> Some states near the Marcellus Shale do not engage in the practice of fracking at all because they do not have the resources or have determined it is too dangerous.<sup>14</sup>

This Note will focus on four major effects of fracking that have the potential to cause environmental and public health concerns in multiple jurisdictions. Those effects are (A) water source depletion, (B) wastewater contamination, (C) regional and global air emissions, and (D) seismic activity.

#### A. WATER SOURCE DEPLETION

The fracturing process requires the injection of an enormous volume of water into the shale or other rock formation.<sup>15</sup> An estimated two to ten million gallons of water may be used to fracture each well.<sup>16</sup> This water is usually removed from local sources, which reduces the availability of water resources for the residents of the area surrounding the well.<sup>17</sup> The depletion of water resources for fracking

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fracking. Jason Schumacher & Jennifer Morrissey, *The Legal Landscape of "Fracking": The Oil and Gas Industry's Game-Changing Technique is its Biggest Hurdle*, 17 TEX. REV. L. & POL. 239, 241(2013).

8. Alexander Bukac, *Fracking and the Public Trust Doctrine: This Land Is Their Land, but After Robinson, Might This Land Really Be Our Land?*, 49 U.S.F. L. REV. 361, 363 (2015).

9. EARTHWORKS, *supra* note 6.

10. Jefferies, *supra* note 1, at 102.

11. Schumacher & Morrissey, *supra* note 7, at 354–45.

12. Jefferies, *supra* note 1, at 96.

13. *Id.* at 97–98; see William J. Brady, *Hydraulic Fracturing Regulation in the United States: The Laissez-Faire Approach of the Federal Government and Varying State Regulations*, 14 VT. J. ENVTL. L. 39, 56–60 (2012) (describing the different approaches to fracking regulation used by New York and Pennsylvania).

14. See Brady, *supra* note 13, at 56–57.

15. EARTHWORKS, *supra* note 6.

16. *Id.*; cf. LeRoy Paddock & Jessica Wentz, *Emerging Regulatory Frameworks for Hydraulic Fracturing and Shale Gas Development in the United States*, in THE LAW OF ENERGY UNDERGROUND at 151–52 (Donald Zillman, et al. 2014) (claiming between two and eight million gallons of water are used per well).

17. See EARTHWORKS, *supra* note 6; Paddock & Wentz, *supra* note 16, at 152.

can also deplete resources of the watershed<sup>18</sup> in the area where the well is located.<sup>19</sup> Exhaustion of watersheds brings about several ecological and drinking water-related concerns locally and cumulatively to the watershed.<sup>20</sup> This massive withdrawal of water from local water sources can lead to increased surface water temperatures, increased pollutant concentrations, lower water volume, reduced oxygen in the water, and reduced availability of water from underground sources.<sup>21</sup> These effects are problematic both for species within the watershed and for the human population in the affected area.<sup>22</sup>

The excessive use of water required for the fracking process is especially problematic if there is a shortage of water in a particular region where fracking is prevalent.<sup>23</sup> For example, the Railroad Commission of Texas determined that the groundwater needed for future fracking operations in the Barnett Shale area of Texas could “disproportionately impact rural areas” that rely heavily on groundwater for their water supply.<sup>24</sup> In addition, potential drought in the Appalachian Basin has caused concern over the use of groundwater for fracking.<sup>25</sup> If a region cannot sustain the practice of fracking because of a drought, the fracking company will transport water into the area from other states or regions.<sup>26</sup>

#### B. WASTEWATER CONTAMINATION

During fracking, a massive volume of water is injected into the shale, and the contaminated wastewater is extracted back out of the rock formations by the well.<sup>27</sup> This fluid contains harmful chemicals used in the fracking process,<sup>28</sup> such as proppant, and natural substances found in shale, including heavy metals, volatile organic compounds, and radioactive materials.<sup>29</sup> Many of the chemicals present in injection fluid are toxic or carcinogenic.<sup>30</sup> Because of this, water

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18. Watersheds often exist across several states that share rivers or other flowing bodies of water. Bruce Stutz, *As the Fracking Boom Spreads, One Watershed Draws the Line*, YALE ENV'T 360 (Oct. 20, 2015), [http://e360.yale.edu/features/as\\_the\\_fracking\\_boom\\_spreads\\_one\\_watershed\\_draws\\_the\\_line](http://e360.yale.edu/features/as_the_fracking_boom_spreads_one_watershed_draws_the_line).

19. Paddock & Wentz, *supra* note 16, at 152.

20. EARTHWORKS, *supra* note 6.

21. Hannah J. Wiseman, *Risk and Response in Fracturing Policy*, 84 U. COLO. L. REV. 729, 775–76 (2013).

22. *See id.*

23. Jefferies, *supra* note 1, at 100–01.

24. Wiseman, *supra* note 21 at 776.

25. Jefferies, *supra* note 1, at 101.

26. *Id.*

27. Schumacher & Morrissey, *supra* note 7, at 244.

28. EARTHWORKS, *supra* note 6. Frequently reported chemicals used in fracking injection fluid include, but are not limited to, 2-butoxyethanol, acetic acid, citric acid, and ethanol. ENV'T L PROTECTION AGENCY, ANALYSIS OF HYDRAULIC FRACTURING FLUID DATA AND THE FRACFOCUS CHEMICAL DISCLOSURE REGISTRY 1.0, at 35 (Mar. 2015), [https://www.epa.gov/sites/production/files/2015-03/documents/fracfocus\\_analysis\\_report\\_and\\_appendices\\_final\\_032015\\_508\\_0.pdf](https://www.epa.gov/sites/production/files/2015-03/documents/fracfocus_analysis_report_and_appendices_final_032015_508_0.pdf).

29. Paddock & Wentz, *supra* note 16, at 152.

30. EARTHWORKS, *supra* note 6.

contamination is a great concern.<sup>31</sup>

“Flow back” water, meant to resurface after fracturing the shale, can remain underground and migrate to underground water supplies.<sup>32</sup> It can also resurface and migrate away from the well and into flowing surface water bodies due to spills at the fracking site.<sup>33</sup> This wastewater pollutes both surface and groundwater in the nearby community and the watershed as a whole, and has resulted in cross border contamination in many areas, including states located on the Marcellus Shale.<sup>34</sup> For example, wastewater from fracking that originated in West Virginia has migrated to rivers located near the drill site and subsequently spread to other regions.<sup>35</sup> There is documentation of wastewater from fracking sites near the Monongahela River in West Virginia that accumulated and migrated into Pennsylvania, causing excessive levels of total dissolved solids (“TDS”) in Pennsylvania’s portion of the river.<sup>36</sup>

Fracking within watersheds shared by multiple states is also a demonstrated interstate issue.<sup>37</sup> Pennsylvania, New York, Delaware, and New Jersey share the Delaware River Basin (“Basin”).<sup>38</sup> This watershed provides clean drinking water to fifteen million people in the four states, including parts of New York City.<sup>39</sup> The Delaware River Basin Commission (“Commission”), made up of the governors of these four states, oversees the watershed.<sup>40</sup> Currently, the Commission does not allow fracking within the watershed, even in Pennsylvania where fracking is quite common, but it has indicated it may allow fracking in the future.<sup>41</sup> Opening up the Basin to fracking in Pennsylvania or any of the individual states could lead to watershed-wide consequences in states that do not permit or conduct fracking.<sup>42</sup>

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31. Paddock & Wentz, *supra* note 16, at 152.

32. *Id.*

33. Wiseman, *supra* note 21, at 767.

34. *See id.* at 782.

35. Jefferies, *supra* note 1, at 102.

36. Laura C. Reeder, *Creating a Legal Framework for Regulation of Natural Gas Extraction from the Marcellus Shale Formation*, 34 WM. & MARY ENVTL. L. & POL’Y REV. 999, 1013 (2010). Increased TDS can cause problems such as hindering the functioning of industrial equipment on a river, or harming the palatability of drinking water. *Id.* at 1014 n.134.

37. Schumacher & Morrissey, *supra* note 7, at 249–50.

38. Stutz, *supra* note 18, fig. 2.

39. *Id.*

40. *Delaware River Basin Commission: Battleground for Gas Drilling*, NPR: STATE IMPACT, <https://stateimpact.npr.org/pennsylvania/tag/drbc/> (last visited Oct. 29, 2017).

41. Stutz, *supra* note 18.

42. *Id.*

## C. REGIONAL AND GLOBAL AIR EMISSIONS

While water contamination is perhaps the most alarming environmental consequence of fracking, there are additional potential impacts.<sup>43</sup> Air pollution is also associated with the fracking process. Fugitive emissions of hazardous air pollutants (“HAPs”), including methane and volatile organic compounds, rise to the surface with the natural gas through the well and are released into the air.<sup>44</sup> In addition, the infrastructure related to fracking used at the well site and the use of heavy machinery to transport water and equipment can emit high volumes of emissions in the area surrounding the well.<sup>45</sup> High concentrations of methane and volatile organic compounds are common in fracking regions.<sup>46</sup> Methane is a powerful greenhouse gas<sup>47</sup> and contributor to global climate change.<sup>48</sup>

## D. SEISMIC ACTIVITY

Increased seismic activity has also been attributed to injection methods used in fracking, especially when wells are located close to a fault line.<sup>49</sup> Fracking is suspected of triggering earthquakes in California, Oklahoma, Arkansas, Texas, and Ohio.<sup>50</sup> Since 2008, when the fracking boom began in Oklahoma, both Oklahoma and the Dallas-Fort Worth area of Texas experienced a significant increase in noticeable seismic activity.<sup>51</sup> Most seismic activity attributed to fracking is caused by the injection of waste-water into disposal wells located thousands of feet underground.<sup>52</sup> The injection of water into these wells can cause cracks in fault lines and lead to seismic effects.<sup>53</sup> These earthquakes are not always confined to the states in which the fracking is occurring. Disposal wells in Oklahoma City are thought to be responsible for 20% of all seismic activity in the central United States from 2008 to 2013.<sup>54</sup> Externalities such as this, which permeate beyond the border of the state that ought to be regulating them, are often used as justification for federal regulations capable of addressing

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43. EARTHWORKS, *supra* note 6.

44. Paddock & Wentz, *supra* note 16, at 153.

45. EARTHWORKS, *supra* note 6; Paddock & Wentz, *supra* note 16, at 153.

46. Wiseman, *supra* note 21, at 803–06.

47. *See id.* at 803.

48. *See* Chris Wold, *Climate Change, Presidential Power, and Leadership: “We Can’t Wait,”* 45 CASE W. RES. J. INT’L L. 303, 348 (2012).

49. Schumacher & Morrissey, *supra* note 7, at 252–53.

50. Phelps T. Turner, *To Ban or Not to Ban? The Fight Over Fracking Intensifies*, ABA (Sept. 3, 2014), [https://www.americanbar.org/groups/litigation/publications/litigation-committees/real-estate-condemnation-trust/articles/2014/0814-fight-to-ban-fracking.html.analysis/articles\\_2014/open/0814-fight-to-ban-fracking.html](https://www.americanbar.org/groups/litigation/publications/litigation-committees/real-estate-condemnation-trust/articles/2014/0814-fight-to-ban-fracking.html.analysis/articles_2014/open/0814-fight-to-ban-fracking.html).

51. David Bulgarelli, *Quaking the Foundation: Fracking-Induced Earthquakes and What to Do About Them*, 2017 U. ILL. J.L. TECH. & POL’Y 229, 235.

52. *Id.* at 235–36.

53. *Id.*

54. *Id.*

interstate effects.<sup>55</sup>

## II. FRACKING EXEMPTIONS IN FEDERAL ENVIRONMENTAL LEGISLATION

The fracking industry is not subject to federal oversight such as enforcement by the Environmental Protection Agency (“EPA”) or any other federal entity.<sup>56</sup> This is mostly due to exemptions that have been enacted through post hoc amendments to major environmental legislation. Regulation of fracking and the control of environmental impacts are at the discretion of the individual states, who are less economically interested in controlling interstate environmental harms.<sup>57</sup> The public nuisance doctrine can accomplish some of the objectives of federal regulation regarding the settlement of interstate disputes where Congress has not exercised its legislative and preemptory power.

### A. FRACKING IS EXEMPTED FROM FEDERAL REGULATION

While many federal environmental statutes contain language that on its face applies to fracking practices and environmental impacts, these laws largely exempt fracking from regulation.<sup>58</sup> The most notable exception is the fracking exemption from the Safe Drinking Water Act of 1974 (“SDWA”),<sup>59</sup> which was amended by the Energy Policy Act of 2005 to exclude regulation of the underground injection practices required by fracking.<sup>60</sup> The Energy Policy Act defined “underground injection” to exclude “the underground injection of fluids or propping agents . . . pursuant to hydraulic fracturing operations related to oil, gas, or geothermal production activities.”<sup>61</sup>

Environmental impacts from fracking relating to air pollution are also left unchecked by the EPA under the Clean Air Act of 1963 (“CAA”)<sup>62</sup> because air emissions from fracking do not meet the threshold for regulation under this statute. The CAA directs the EPA to require a “major source” of pollution that has the potential to emit a certain number of HAPs “in the aggregate” to implement

55. Wiseman, *supra* note 21, at 812.

56. Jefferies, *supra* note 1, at 99.

57. See generally Robert D. Cooter & Neil S. Siegel, *Collective Action Federalism: A General Theory of Article I, Section 8*, 63 STAN. L. REV. 115, 117, 138, 144 (2010) (“When activities [spillover] from one state to another . . . the actions of individually rational states [produces] irrational results for the nation as a whole—the definition of a collective action problem.”).

58. Brady, *supra* note 13, at 43.

59. Safe Drinking Water Act of 1974 (SDWA), Pub. L. No. 93-523, 88 Stat. 1660 (codified as amended in scattered sections of 42 U.S.C.).

60. Energy Policy Act of 2005, Pub. L. No. 109-58, 119 Stat. 594 (codified as amended at 42 U.S.C. § 300h(d) (2012)); Brady, *supra* note 13, at 43.

61. 42 U.S.C. § 300h(d)(1)(B)(ii) (2012); This exemption is often referred to as the “Halliburton Loophole” because of Vice President Dick Cheney’s close ties to Halliburton at the time of enactment. Brady, *supra* note 13, at 45.

62. 40 C.F.R. § 63.761 (2017); Brady, *supra* note 13, at 8.

pollution controls and obtain a permit to operate.<sup>63</sup> Fracking emissions, however, are excluded from this “aggregate” requirement because they are not classified as a “major source” by EPA rules implementing these CAA restrictions.<sup>64</sup> This is because individual wells usually do not emit the threshold limit of HAPs under the CAA and therefore are left unregulated.<sup>65</sup>

Language in several other federal environmental statutes also subjects fracking to less stringent regulation than other industries, including the Resource Conservation and Recovery Act (“RCRA”)<sup>66</sup> that regulates the handling and disposal of hazardous wastes;<sup>67</sup> the Emergency Planning and Community Right-To-Know Act (“EPCRA”)<sup>68</sup> that regulates data collection regarding chemical hazards in communities to inform the public of health concerns;<sup>69</sup> the Clean Water Act (“CWA”)<sup>70</sup> that regulates discharges of pollutants into interstate waterways;<sup>71</sup> the Comprehensive Environmental Response, Compensation, and Liability Act (“CERCLA”)<sup>72</sup> that establishes liability for cleanup of hazardous waste sites;<sup>73</sup> and the National Environmental Policy Act (“NEPA”)<sup>74</sup> that requires government agencies to generate environmental impact statements (“EIS”) whenever federal action may “significantly affect the environment.”<sup>75</sup> Because of these exemptions and the resulting limited federal oversight, states have the unitary authority to regulate fracking, which in turn causes interstate externalities to proliferate.<sup>76</sup> Federal oversight would be a more effective method of responding to and preventing interstate environmental harms because polluting states have little economic incentive to check harms that do not directly affect their jurisdiction.<sup>77</sup>

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63. 42 U.S.C. § 7412(a)(1) (2012); *see* 40 C.F.R. § 63.764(f)(2017).

64. *See* 40 C.F.R. § 63.761 (2017).

65. Brady, *supra* note 13, at 51.

66. 42 U.S.C. § 6901 (2012).

67. *See* 40 C.F.R. § 261.4(b)(5) (2017) (Drilling fluids from natural gas and oil production are considered non-hazardous and are subject to less stringent storage restrictions than wastes classified as “hazardous”).

68. 42 U.S.C. §§ 11001–05, 11021–23, 11041–50 (2012).

69. *See* 42 U.S.C. § 11023(b)(1)(A) (2012) (Oil and gas facilities are not subject to EPCRA reporting requirements); Brady, *supra* note 13, at 47.

70. 33 U.S.C. § 1251 (2012).

71. *Id.* § 1342(1)(2) (2012) (Oil and gas production operations do not require permits for storm water runoff).

72. 42 U.S.C. § 9601 (2012).

73. *Id.* § 9601(14) (2012) (Oil, natural gas, and other petroleum byproducts are excluded from CERCLA’s definition of “hazardous substance”).

74. *Id.* § 4321 (2012).

75. *Id.* § 15942(a) (2012) (There is a rebuttable presumption that oil and gas activities are subject to a “categorical exclusion” under NEPA); Brady, *supra* note 13, at 56, 59.

76. *See* Michael Burger, *The (Re)federalization of Fracking Regulation*, 2013 MICH. ST. L. REV. 1483, 1490 (2013) [hereinafter, Burger, *(Re)federalization*].

77. Wiseman, *supra* note 21, at 812–13; Benjamin L. McCready, *Like it or Not, You’re Fracked: Why State Preemption of Municipal Bans Are Unjustified in the Fracking Context*, 9 DREXEL L. REV. ONLINE 94 (2016).

## B. DIVERGENT STATE REGULATORY SCHEMES AND RESULTING REGULATORY GAPS

In the absence of a federal framework, states are left to regulate fracking at various levels of stringency. In some cases, states that share a border have nearly polarized approaches to the regulation of environmental impacts related to fracking.<sup>78</sup> New York and Pennsylvania share a border and are both located along the Marcellus Shale.<sup>79</sup> New York currently has a permanent moratorium on all fracking activities, despite the state's vast natural gas reserves, because of "significant public health risks."<sup>80</sup> Pennsylvania, which began fracking in 2005, passed comprehensive fracking regulation in 2012,<sup>81</sup> and currently has almost 8,000 active wells in the state.<sup>82</sup> These wells are heavily concentrated on the northern border with New York, and their regulation is at the unitary discretion of the Pennsylvania legislature.<sup>83</sup> New York approached the fracking revolution with caution, seeking to ensure safety and protect human health, while Pennsylvania has taken on a reactionary method of supervision that responds to problems after they have manifested.<sup>84</sup>

Leaving regulatory control to the states creates many gaps in supervising the problems caused by fracking.<sup>85</sup> A state-by-state regime does not address interstate externalities,<sup>86</sup> it allows for a "race to the bottom" phenomenon in states that place less value on environmental protection,<sup>87</sup> and fails to take advantage of the economic and technological efficiencies that come from a cooperative federal model that favors information sharing and uniformity.<sup>88</sup> Because of the high volume of wells in fracking states, there is a higher likelihood that wells operate in areas close to interstate borders and, therefore, a higher likelihood that interstate spillover effects will occur.<sup>89</sup> These spillovers will not be addressed by the states in which they originate without a federal enforcement scheme because they lack an economic interest in doing so.<sup>90</sup>

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78. Brady, *supra* note 13, at 10.

79. For a map of the active well sites in Pennsylvania that exist on the New York border, see Chris Amico et al., *Shale Play*, NPR: STATE IMPACT, <http://stateimpact.npr.org/pennsylvania/drilling/> (last visited Oct. 29, 2017).

80. Paddock & Wentz, *supra* note 16, at 163; Thomas Kaplan, *Citing Health Risks, Cuomo Bans Fracking in New York State*, N.Y. TIMES (Dec. 17, 2014), <https://www.nytimes.com/2014/12/18/nyregion/cuomo-to-ban-fracking-in-new-york-state-citing-health-risks.html>.

81. Paddock & Wentz, *supra* note 16, at 162.

82. Amico et al., *supra* note 79.

83. McCreedy, *supra* note 77, at 78–80.

84. Hannah J. Wiseman, *Regulatory Adaptation in Fractured Appalachia*, 21 VILL. ENVTL. L.J. 229, 251–52 (2010).

85. See Michael Burger, *Fracking and Federalism Choice*, 161 U. PA. L. REV. ONLINE 150, 158 (2013).

86. *Id.*; see Burger, *(Re)federalization*, *supra* note 76, at 1490.

87. Jonathan H. Adler, *Jurisdictional Mismatch in Environmental Federalism*, 14 N.Y.U. ENVTL. L.J. 130, 151 (2005).

88. See *id.* at 146; Burger, *(Re)federalization*, *supra* note 76, at 1490.

89. Burger, *(Re)federalization*, *supra* note 76, at 1490.

90. Cooter, *supra* note 57.

For example, Pennsylvania lacks an incentive to regulate fracking practices that cause cross-border contamination of New York State drinking water, degrade air quality across the border, or cause seismic activity within New York.<sup>91</sup> Therefore, these externalities will go unchecked. “Environmental protection efforts are most likely to be optimal where those who bear the costs and reap the benefits of a given policy determine how best, and even whether, to address a given environmental concern.”<sup>92</sup> While this Note argues that public nuisance theory may act as a backstop to environmental harms that arise as a result of divergent state fracking regulations, as will be demonstrated in Section III *infra*, public nuisance theory is not the most efficient or optimal method of dealing with a multistate environmental issue.<sup>93</sup> Federal regulation would be the ideal source of fracking regulation because of its ability to uniformly address interstate environmental concerns.<sup>94</sup> In the meantime, public nuisance theory may be a possible answer for states suffering at the hands of an out-of-state fracking industry.

### C. OUELETTE AND THE FEDERAL PREEMPTION OF ENVIRONMENTAL PUBLIC NUISANCE CLAIMS

State laws and regulations are preempted by federal law if they interfere with “the methods by which [a] federal statute was designed to reach [its] goal.”<sup>95</sup> The federal regulatory scheme can also preempt common law suits where a court ruling would interfere or diverge from the federal regulatory scheme.<sup>96</sup> Because of this, common law public nuisance suits addressing environmental harms generally cannot be brought if Congress has used its legislative powers to address the problem at issue.<sup>97</sup> *International Paper v. Ouelette*, which was litigated in the late 20th century, is the foundation for most of this case law, and now currently acts as a significant barrier for common law public nuisance claims.<sup>98</sup> In *Ouelette*, private Vermont landowners sought to enjoin a New York paper mill that was discharging chemicals into Lake Champlain and polluting the shores of the lake belonging to Vermont, causing the lake to be odorous and unfit for recreation.<sup>99</sup> The environmental harms discussed in *Ouelette* show a clear

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91. *See id.*

92. Adler, *supra* note 87, at 133.

93. *See* Hannah J. Wiseman, *Untested Waters: The Rise of Hydraulic Fracturing in Oil and Gas Production and the Need to Revisit Regulation*, 20 FORDHAM ENVTL. L. REV. 115, 156 (2009) [hereinafter Wiseman, *Untested Waters*].

94. Burger, *(Re)federalization*, *supra* note 76, at 1489.

95. *Int'l Paper Co. v. Ouellette*, 479 U.S. 481, 494 (1987).

96. *Id.* at 495.

97. Emily Sangi, *The Gap-Filling Role of Nuisance in Interstate Air Pollution*, 38 ECOLOGY L. Q. 479, 512–13 (2011).

98. *See* North Carolina ex rel. Cooper v. Tennessee Valley Auth., et al., 615 F.3d 291, 301 (4th Cir. 2010).

99. *Ouelette*, 479 U.S. at 483–84.

example of how one state's environmental regulatory laxities can become a major problem for its neighbors.

This case was brought shortly after the passage of the Clean Water Act that regulated point source water pollution.<sup>100</sup> The *Ouelette* Court was concerned that private actors would be subject to penalties even if they had been compliant with the federal regulations under the Clean Water Act.<sup>101</sup> The Court wanted to prevent confusion over conflicting regulatory regimes and to avoid sanctioning a state's ability to indirectly regulate out-of-state conduct that the federal government was already regulating.<sup>102</sup> This concern led to the conclusion that out-of-state nuisance law was inapplicable to harms that federal statutes already regulated.<sup>103</sup> The *Ouelette* Court held that the federal Clean Water Act preempted a state public nuisance claim against New York in a Vermont court, and that a public nuisance claim must be brought in the source state's own court in order to prevent each source state from being subject to an indeterminable number of regulations from all nearby states and the federal government.<sup>104</sup> Comprehensive federal regulation not only prevents state common law nuisance claims brought in the affected state, but can also preempt federal common law nuisance claims<sup>105</sup> such as those discussed at length in Section III *infra* of this Note. When federal regulations have become so pervasive in a certain area, or have "occupied the field through the establishment of a comprehensive regulatory program," it is no longer up to the courts to create standards through the application of public nuisance and other common law theories.<sup>106</sup>

The federal regulatory scheme exempts fracking, unlike point source water pollution, and Congress has intentionally refused to use its legislative power to address environmental effects of fracking.<sup>107</sup> These exemptions mean that public nuisance litigation is not preempted by federal legislation under the *Ouelette* doctrine. As Section III *infra* will point out, common law public nuisance may be a viable alternative to tackling problems arising from divergent state approaches to fracking regulation.

### III. ENVIRONMENTAL REGULATION COMPELLED BY EQUITABLE RELIEF

The interference by one state on another's autonomy or wellbeing can often be the result of a lack of regulation and a failure to prevent interstate externalities. In

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100. 33 U.S.C. § 1311(a) (2012) prohibits the discharge of any "effluent" into a "navigable body of water" by a point source unless it has obtained an NPDES permit.

101. *Ouelette*, 479 U.S. at 495.

102. *See id.*

103. *Id.* at 496.

104. *Id.* at 499; Sangi, *supra* note 97, at 507.

105. *City of Milwaukee v. Illinois & Michigan (Milwaukee II)*, 451 U.S. 304, 317 (1981).

106. *Id.*; Sangi, *supra* note 97, at 512. This form of preemption is referred to as "field preemption."

107. Brady, *supra* note 13, at 43.

these instances, federal public nuisance claims, made by one state against another, can be the basis for resolving this failure. A state's *parens patriae*, or guardian power, over its own jurisdiction allows it to protect its citizens from harms originating in other jurisdictions. A history of interstate public nuisance case law demonstrates that when a state successfully claims that another is causing it harm, they can compel the originating state to regulate the interstate harm.

#### A. OVERVIEW OF THE PUBLIC NUISANCE DOCTRINE

The Supreme Court has original and exclusive jurisdiction over controversies between two states.<sup>108</sup> States have often sought the Court's authority when its citizens are harmed because of actions perpetrated by actors within another state.<sup>109</sup> In these cases, the plaintiff state often claims that they are experiencing a public nuisance, in an attempt to take advantage of the Court's power to impose equitable and injunctive relief on the defendant state or actor.<sup>110</sup> This requires a determination by the Court that the perpetrator's actions "injuriously affect" the citizens of the plaintiff state.<sup>111</sup>

States have repeatedly put forth the historic legal doctrine of public nuisance as a means of pollution prevention at the state or local level. Remedies in equity for environmental public nuisance claims allow the Court to address the deficiencies of the out-of-state actor's regulatory regime. Injunctions, or other equitable remedies, can limit the behavior of the defendant state or out-of-state private actor in a way that would otherwise be achieved by the defendant state's regulatory body, if that body were responsibly preventing the externalities.<sup>112</sup> The Court has at times prescribed complex solutions to the problem at issue, rather than damages or a simple injunction. For example, the Court's precedent has required a state to handle waste with a certain treatment technology<sup>113</sup> or to strengthen the emission standards for specific facilities.<sup>114</sup> Taken one-step further, this doctrine may hold the key for addressing the interstate externalities of fracking that result from a lack of federal or state regulation.

Federal public nuisance law addresses interstate *parens patriae* pollution disputes.<sup>115</sup> *Parens patriae* means the state's power to "act as a guardian" for its

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108. *State of Missouri v. State of Illinois*, 180 U.S. 208, 225 (1901).

109. *Id.*

110. *See Milwaukee II*, 451 U.S. at 335 ("The Constitution, by Art. III, § 2, explicitly extends the judicial power of the United States to controversies between a State and another State or its citizens, and this Court, in equitably resolving such disputes, has developed a body of "what may not improperly be called interstate common law.").

111. *See State of Missouri*, 180 U.S. at 241.

112. *See North Dakota v. Minnesota*, 263 U.S. 365, 373 (1923).

113. *People of New York v. New Jersey*, 256 U.S. 296, 313 (1921).

114. *Georgia v. Tennessee Copper Co.*, 206 U.S. 230, 239 (1907).

115. Sangi, *supra* note 97, at 501.

citizens where they are being harmed by something out of their control.<sup>116</sup> The public nuisance doctrine recognizes a state's interest in "all the earth and air within its domain," independent of private land ownership.<sup>117</sup> Because of this great interest, states have an enhanced basis for standing under which they can bring a claim when the wellbeing of their citizens is at stake.<sup>118</sup> The federal public nuisance doctrine has been invoked by plaintiff states in disputes between two states, and in disputes with a private actor located and controlled by a neighboring state. Where there is a public nuisance claim brought by one state against another, the plaintiff state often complains about externalities resulting from a legislative or administrative decision of the neighboring state.

The remedy in state-versus-state disputes has been injunctive relief that obliges the defendant state to make regulatory changes or otherwise mitigate the defects in its regulatory scheme that allow the nuisance to occur.<sup>119</sup> Where there is a public nuisance claim brought against a private actor in a neighboring state, the plaintiff state often complains that the jurisdiction in which the private actor is located insufficiently regulates the private actor, creating externalities across the border.<sup>120</sup> The remedy in these state-versus-private actor disputes has been injunctive relief that enforces regulatory controls on the private actor in place of what the state's regulating authority would otherwise enforce.<sup>121</sup> In both state-versus-state and state-versus-private actor suits, the plaintiff state has an opportunity to impose an injunction on the polluter that takes the place of regulatory oversight of externalities that the defendant failed to carry out.

Jurisprudence surrounding interstate environmental disputes developed throughout the early 20th century, but slowed in the wake of the environmental revolution and federalization of environmental protection during the seventies.<sup>122</sup> Now that federal legislation is the predominate source of environmental regulation, common law claims are often preempted<sup>123</sup> and federal enforcement actions are the main avenue to compel industry reforms. Common law claims based on fracking harms avoid this preemption problem because they are not addressed by the EPA or any other federal agency. Fracking, as stated above, is exempted from

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116. *Id.* at 523.

117. *See Tennessee Copper*, 206 U.S. at 237.

118. *See Massachusetts v. EPA*, 549 U.S. 497, 519 (2007) (demonstrating another example of a "parens patriae" case).

119. *See, e.g., Missouri v. Illinois*, 180 U.S. 208, 208 (1901); *Missouri v. Illinois and the Sanitary Dist. of Chicago*, 200 U.S. 496 (1906); *People of New York v. New Jersey*, 256 U.S. 296 (1921); *North Dakota v. Minnesota*, 263 U.S. 365 (1923); *City of Milwaukee v. Illinois & Michigan (Milwaukee II)*, 451 U.S. 304, 304 (1981); *New Jersey v. City of New York*, 283 U.S. 473 (1931).

120. *See, e.g., Tennessee Copper*, 206 U.S. at 237.

121. *See, e.g., id.*; *North Carolina ex rel. Cooper v. Tennessee Valley Auth., et al.*, 615 F.3d 291, 291 (4th Cir. 2010).

122. Alexandra B. Klass, *Common Law and Federalism in the Age of the Regulatory State*, 92 IOWA L. REV. 545, 568–59 (2007).

123. *See Int'l Paper Co. v. Ouellette*, 479 U.S. 481 (1987).

applicable federal regulations. Therefore, the historical common law of public nuisance can be applied to interstate externalities resulting from the regulatory gap concerning pollution from fracking.

#### B. PUBLIC NUISANCE ACTIONS BETWEEN TWO STATES

Every state possesses the power to bring a public nuisance suit against another state whose practices are posing a real and imminent danger to the health and welfare of its citizens.<sup>124</sup> The jurisprudence behind this power often concerns actions that have negative interstate health and environmental consequences. In these cases, the Court can impose injunctions and other equitable relief that effectively compels the defendant state to improve its measures regulating interstate externalities. Therefore, the public nuisance cases *infra* may apply to concerns about the interstate consequences of fracking.

The Supreme Court has original jurisdiction over cases between states, where the policy choices or actions by one state threaten, “the health and comfort of the large communities inhabiting those parts of the [other] state . . .”<sup>125</sup> *Missouri v. Illinois* first expressed this principle in 1901.<sup>126</sup> In 1889, Illinois enacted a law that allowed the Sanitary District of Chicago, a public corporation, to drain sewage into the Mississippi River.<sup>127</sup> Missouri claimed that if the Sanitary District of Chicago executed their plans, Chicago would dump 1,500 tons of untreated sewage into the river, which would eventually migrate to pollute water that Missouri’s citizens used for drinking and other domestic activities.<sup>128</sup> Missouri asked the Court to enjoin Illinois and restrain it from issuing the Sanitary District of Chicago the license to carry out this plan.<sup>129</sup> However, Missouri failed to substantiate that the danger posed to its citizens was “real and immediate” and its request was rejected.<sup>130</sup>

The interstate harms posed by fracking are much more concrete. For example, as described in Section I *supra*, it is well documented: that diluted wastewater from fracking activities in West Virginia led to a change in the TDS levels in

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124. Kenneth S. Boger, *The Common Law of Public Nuisance in State Environmental Litigation*, 4 Bos. C. ENVTL. AFF. L. REV. 368 (1975).

125. *Missouri v. Illinois*, 180 U.S. 208, 241 (1901).

126. *Id.*

127. *Id.* at 213.

128. *Id.*

129. *Id.* at 216.

130. *Id.* at 248. Missouri failed to show that the sewage would reach their shores. *Id.* at 247. Missouri also had the problem of the “unclean hands doctrine.” The Court was unconvinced of Missouri’s perceived harm because Missouri was also involved in the sort of sewage dumping behavior it was attempting to prevent Chicago from doing. Chad DeVeaux & Anne Mostad-Jensen, *Fear and Loathing in Colorado: Invoking the Supreme Court’s State-Controversy Jurisdiction to Challenge the Marijuana-Legalization Experiment* 56 B.C. L. REV. 1829, 1847 (2015).

Pennsylvania,<sup>131</sup> that the diversion of water out of the Delaware River Basin for injection fluid would have effects on a watershed supplying drinking water to several states,<sup>132</sup> and that the chemicals found in injection fluids are dangerous to human health and migrate from well sites.<sup>133</sup> It is also evident that contaminated wastewater from injection wells infiltrates drinking water sources and people have developed illnesses because of that infiltration.<sup>134</sup>

*Missouri* opened the floodgates for litigation of this kind because of its recognition that, given “real and immediate” danger, the Court was prepared to impose a regulatory command onto a state.<sup>135</sup> Twenty years later, New York sued New Jersey and the Passaic Valley sewage commissioners in order to enjoin their intended approval of the discharge of sewage into the New York Harbor (“Harbor”).<sup>136</sup> In *New York v. New Jersey*, the Court noted it had the authority to enjoin regulatory or administrative actions of state agencies, as actions of the state.<sup>137</sup> New York claimed that the sewage treatment methods proposed by the New Jersey agency were inadequate to ensure the purity of the Harbor.<sup>138</sup> The federal government joined New York because of its concern over the proposed treatment methods, and filed a stipulation with which New Jersey should comply if it wanted to construct any sewage discharging facilities.<sup>139</sup> The stipulation contained specific regulatory standards that the sewage discharge program would have to meet.<sup>140</sup> The sewage commission would have to ensure

either through compliance with the requirements of the [government] stipulation . . . or through requisite additional lawful arrangements . . . (1) there will be absence in the New York Bay of visible suspended particles coming from this sewage; (2) there will be absence of deposits caused by it . . . (3) there will be absence of odors due to the putrefaction of organic matter contained in the sewage; (4) there will be absence on the surface of the bay of any grease or color due to the sewage; (5) there will be no injury to public health due to the discharge of the sewage, and no public or private nuisance will be created thereby; (6) no injurious effect shall result to the property of the United States situated upon the bay, (7) there shall not be a reduction in the dissolved oxygen content of the waters . . . .<sup>141</sup>

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131. Reeder, *supra* note 36, at 1013.

132. Stutz, *supra* note 18.

133. EARTHWORKS, *supra* note 6.

134. See Wiseman, *Untested Waters*, *supra* note 93, at 138.

135. See *Missouri*, 180 U.S. at 248.

136. *People of New York v. New Jersey*, 256 U.S. 296, 298 (1921).

137. *Id.* at 302.

138. *Id.* at 304.

139. *Id.*

140. *Id.* at 305.

141. *Id.* at 306.

Though the Court denied the injunction based on a lack of evidence that the sewage would be injurious to the already polluted harbor, it dismissed the case without prejudice leaving the door open for bringing subsequent cases if the sewage proved to be harmful.<sup>142</sup> The Court found that the stipulation was binding on New Jersey.<sup>143</sup> As long as New Jersey complied with the stipulation, the injunction would remain refused.<sup>144</sup>

In *New York v. New Jersey*, the Court demonstrated its willingness to impose comprehensive and complex equitable relief schemes on a state agency that was renegeing on its responsibilities to address externalities. In an amusing turn of events a decade later, New Jersey succeeded in enjoining New York from dumping garbage into their shared waterways.<sup>145</sup> The garbage that was being disposed from New York's Atlantic Ocean shore was ending up on New Jersey beaches.<sup>146</sup> At that time, the New Jersey Atlantic shore was rich in summer resorts, expensive homes, and was a huge draw for tourism and a major part of the New Jersey economy.<sup>147</sup> The Court not only ordered a stop to the dumping, but also mandated that New York initiate its proposed plan to dispose of this waste with incinerators.<sup>148</sup>

As demonstrated *supra*, fracking practices can be harmful to bodies of water shared by multiple states, both by depleting shared waters and by contaminating them. Fracking requires the use of millions of gallons of water.<sup>149</sup> In the Delaware River Basin, for example, the diversion of water from the Delaware River Basin in Pennsylvania stands to deplete the availability of water to New York City and parts of southern New York State.<sup>150</sup> Wastewater migration is also a concern in the Delaware River Basin, as it is a source of drinking water for multiple jurisdictions.<sup>151</sup> State agencies, like the Pennsylvania Department of Energy Protection, allow fracking in Pennsylvania, while New York has a moratorium on the industry's activities.<sup>152</sup> In order to bring a successful public nuisance claim, New York would need to show "clear and convincing evidence"<sup>153</sup> that fracking in Pennsylvania posed a "real and immediate"<sup>154</sup> or

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142. James D. Lawlor, Annotation, *Federal Common Law of Nuisances as Basis for Relief in Environmental Pollution Cases*, 29 A.L.R. FED. 137 § 4[a] (1976).

143. *New Jersey*, 256 U.S. at 307.

144. *Id.* at 305.

145. *New Jersey v. City of New York*, 283 U.S. 473, 483 (1931).

146. *Id.* at 478–79.

147. *Id.* at 478.

148. *Id.* at 483.

149. EARTHWORKS, *supra* note 6.

150. Stutz, *supra* note 18.

151. *See id.*

152. Paddock & Wentz, *supra* note 16, at 163, 165.

153. *North Dakota v. Minnesota*, 263 U.S. 356, 374 (1923).

154. *Missouri v. State of Illinois*, 180 U.S. 208, 248 (1901).

threatened danger that would likely cause “grave injury to the health”<sup>155</sup> of the people of New York. Based on the above case law, if New York proved successful in showing these elements, the Court could require Pennsylvania to more adequately control externalities from fracking that originate in its borders.

C. PUBLIC NUISANCE ACTIONS AGAINST PRIVATE ACTORS WITHIN A NEIGHBORING STATE

In addition to possessing the power to bring an action against a sister state, states can bring a claim against an out-of-state private party who is causing interstate environmental and health concerns. In these cases, the Court’s role can often be to impose sanctions on a private party, effectively regulating the measures they are taking to prevent interstate externalities. This jurisprudence may be applicable to fracking practices being carried out in several states. States use the federal public nuisance doctrine to control the actions of extraterritorial externalities caused by an unregulated private industry. The Court can impose sanctions or injunctive relief on private actors similar to the type of penalty an authorized state regulatory body might otherwise impose.<sup>156</sup> Where regulatory deficiencies impose externalities onto a neighboring state, the suffering states are “not compelled to lower [themselves] to the more degrading standards of a neighbor.”<sup>157</sup> For example, the Court in *Tennessee Copper*<sup>158</sup> strongly imparts the principle that sovereign states have a real interest in the wellbeing of their citizens, even when forces beyond the state’s immediate control are the source of the harms:

When the states by their union made the forcible abatement of outside nuisances impossible to each, they did not thereby agree to submit to whatever might be done. They did not renounce the possibility of making reasonable demands on the ground of their still remaining quasi-sovereign interests; and the alternative to force is a suit in this court.<sup>159</sup>

The defendant industry in *Tennessee Copper* was a group of copper mines that discharged harmful gas into the air, under Tennessee’s approval. Due to wind, the discharge ultimately traveled across the state line into Georgia.<sup>160</sup> This gas, mostly made up of sulfur dioxide, inflicted serious harms on the vegetation and health of citizens within Georgia.<sup>161</sup> The Court determined that the emissions

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155. *People of New York v. New Jersey*, 256 U.S. 296, 298 (1921).

156. *See Boger, supra* note 124, at 367.

157. *Illinois v. City of Milwaukee (Milwaukee I)*, 406 U.S. 91, 107 (1972).

158. *Georgia v. Tennessee Copper Co.*, 206 U.S. 230, 237 (1907).

159. *Id.*

160. *Id.* at 238.

161. *Id.* at 238–39.

were a public nuisance and ordered their abatement,<sup>162</sup> thereby forcing Tennessee and its industry to develop a regulatory scheme to combat this cross border pollution.<sup>163</sup> States can apply this approach to several types of fracking harms that originate in a state outside of a jurisdiction where the harms are occurring.

More recently, North Carolina invoked the federal public nuisance doctrine in an effort to curb emissions from several Tennessee Valley Authority (TVA) coal facilities operating outside of its borders.<sup>164</sup> The North Carolina District Court found the emissions from some of these plants to be a public nuisance and ordered that specific pollution controls, in this case scrubbers, be assimilated into the plants' operations.<sup>165</sup> The court also imposed specific emission limits on the plants for nitrogen oxide and sulfur dioxide.<sup>166</sup> This is perhaps the clearest example of court imposition of equitable relief in the form of regulatory-like requirements. The Fourth Circuit vacated these regulatory obligations on the coal plants based on the *Ouelette* doctrine and preemption by the Clean Air Act.<sup>167</sup> The Fourth Circuit claimed that the district court erred in applying North Carolina law to states outside of its jurisdiction, and that the Clean Air Act already regulated these emissions.<sup>168</sup> North Carolina's petition for certiorari to the United States Supreme Court was dismissed,<sup>169</sup> but only after North Carolina and the TVA settled the case.<sup>170</sup> In the settlement agreement, the TVA agreed to install costly pollution controls and pay North Carolina \$350 million for environmental mitigation projects.<sup>171</sup> Regardless of the Fourth Circuit's rejection of North Carolina's claim, the litigation and certiorari petition seem to have ultimately accomplished the goal of compelling the TVA to address the externalities from its plants.

The preemption problems encountered by North Carolina in this case would not likely be an issue in a similar case attempting to enjoin or regulate fracking activity because of the exemptions present in federal litigation regarding fracking. *Tennessee Copper* and North Carolina's case against the TVA both stand for the principle that a state's interest in the wellbeing of its citizens and its unilateral decisions to uphold a certain environmental quality can trump the interests of a neighboring state threatening those interests.<sup>172</sup> One state's cautionary approach

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162. *Id.*

163. See DeVeaux & Mostad-Jensen, *supra* note 130, at 1833–35.

164. North Carolina *ex rel.* Cooper v. Tenn. Valley Auth., 593 F. Supp. 2d 812, 815 (W.D.N.C. 2009).

165. *Id.* at 829–32.

166. *Id.* at 832–33.

167. North Carolina *ex rel.* Cooper v. Tenn. Valley Auth., 615 F.3d 291, 296 (4th Cir. 2010).

168. Sangi, *supra* note 97, at 505.

169. North Carolina *ex rel.* Cooper v. Tenn. Valley Auth., 564 U.S. 1054 (2011).

170. Laurel Passera, *NC, TVA Settle Clean Air Lawsuit*, INTERSTATE RENEWABLE ENERGY COUNCIL (Apr. 25, 2011), <http://www.irecusa.org/2011/04/nc-tva-settle-clean-air-lawsuit/>.

171. *Id.*

172. See North Carolina *ex rel.* Cooper, 615 F.3d at 298–99; Georgia v. Tennessee Copper Co., 206 U.S. 230, 237 (1907).

to fracking methods can be a strong platform to stand on when fighting threatening practices occurring in a nearby state with a divergent regime, whether the state agency is directly perpetrating, or merely authorizing, the injurious practices.

In both public nuisance actions by plaintiff states against a fellow state and those actions against a private actor, the court has a unique opportunity to impose sanctions, injunctions, or other equitable relief methods that effectively compel the defendant state or organization to better regulate the interstate externalities caused by its activities. While a federal regulatory scheme would likely regulate these interstate externalities, in the case of fracking, a federal regulatory scheme has yet to be conceived. Because of this, the potential measures that may be imposed by public nuisance doctrine claims could play an important role in the regulation of these interstate externalities caused by the fracking industry.

#### IV. MODERN USE OF PUBLIC NUISANCE

Public nuisance is a viable avenue for enforcing increased regulation of fracking and other modern-day interstate externalities that comprehensive federal legislation does not address. Recently, states have brought public nuisance claims regarding neighboring states' divergent regulatory scheme in an effort to regulate (A) marijuana legalization<sup>173</sup> and (B) climate change causing activities.<sup>174</sup> Although these attempts have not yet proven successful, they are examples of the potential applicability of this theory.

##### A. MARIJUANA LEGALIZATION AS AN INTERSTATE PUBLIC NUISANCE

Nebraska and Oklahoma awoke the sleeping giant of the public nuisance doctrine to combat what they saw as a harm imposed on their citizens by Colorado's legalization of recreational marijuana use.<sup>175</sup> Nebraska and Oklahoma requested that the United States Supreme Court grant a declaratory judgment that federal law preempts Colorado's state law.<sup>176</sup> In addition, they asked the Court to enjoin Colorado from applying its law and from implementing any statutes or regulations promulgated pursuant to Colorado's marijuana legalization law.<sup>177</sup> The plaintiffs' brief invokes the history of cases discussed in Section III *supra* of this Note and fervently quotes the powerful language of *Tennessee Copper* that denounces a state's suffering at the hands of its sovereign

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173. See Brief in Support of Motion for Leave to File a Complaint at 12–13, *Nebraska v. Colorado*, 136 S. Ct. 1034 (2016) (No. 144).

174. *Connecticut v. Am. Elec. Power Co.*, 582 F.3d 309 (2d Cir. 2009), *rev'd* 564 U.S. 410 (2011).

175. DeVeaux & Mostad-Jensen, *supra* note 130, at 1831; see Complaint, *Nebraska v. Colorado*, 136 S. Ct. 1034 (2016) (No. 144), 2014 WL 7474136.

176. Complaint, *supra* note 175, at 28.

177. *Id.* at 29.

neighbors.<sup>178</sup> Nebraska and Oklahoma claimed that Colorado’s legalization and laxities towards recreational marijuana caused a public nuisance and harmed their citizens because it led to a “significant increase in the trafficking of marijuana [which] has led to a substantial amount of personnel time, budget, and resources of the Plaintiff State’s law enforcement, judicial system, and penal system.”<sup>179</sup> They further claimed that Colorado’s law threatened the “health and comfort of the inhabitants” of their states,<sup>180</sup> and that the federal government had determined that marijuana use was “sufficient to create a hazard to . . . health or to the safety of other individuals or to the community.”<sup>181</sup>

The types of externalities complained of by Nebraska and Oklahoma are analogous to the migrating pollution, cost infliction, and public health related harms that states in cross-state-line pollution disputes have complained of throughout American history.<sup>182</sup> Similar to the public nuisance case law *supra*, the equitable relief prayed for by Nebraska and Oklahoma was an injunction that would compel regulatory changes in Colorado.<sup>183</sup> They sought to have the Court impose constraints on Colorado’s ability to legalize and regulate marijuana.<sup>184</sup> Like fracking, individual states developed individual and divergent approaches to regulations surrounding the use and sale of marijuana.<sup>185</sup> The Court declined to hear the complaint and therefore did not hold that federal law preempts state regulation of the sale and use of marijuana.<sup>186</sup> Because of this rejection, externalities regarding marijuana regulation can still be the subject of interstate public nuisance claims.<sup>187</sup>

#### B. CLIMATE CHANGE CAUSING EMISSIONS AS AN INTERSTATE PUBLIC NUISANCE

Climate change has also been the subject of a recent state public nuisance claim complaining of a harm that originated beyond the complaining state’s borders.<sup>188</sup> In *American Electric Power Co. v. Connecticut*, the Court ultimately

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178. Brief for All Nine Former Administrators of Drug Enforcement as Amici Curiae in Support of Plaintiff States’ for Leave to File a Bill of Complaint (Amicus Brief), State of Nebraska and State of Oklahoma v. Colorado, 2015 WL 1262747, \*12–13 (2015); Georgia v. Tennessee Copper Co., 206 U.S. 230, 237 (1907).

179. Amicus Brief, *supra* note 178, at 13.

180. Brief for All Nine Former Administrators of Drug Enforcement as Amici Curiae in Support of Plaintiff States’ Motion for Leave to File a Bill of Complaint at 14, Nebraska v. Colorado, 136 S. Ct. 1034 (2016) (No. 144), 2015 WL 1262747 (quoting Missouri v. Illinois, 180 U.S. 208, 241 (1901)).

181. *Id.* at 15 (quoting Notice of Denial of Petition, 66 Fed. Reg. 20,038-01, 20,040 (Apr. 18, 2001)).

182. DeVeaux & Mostad-Jensen, *supra* note 130, at 1838.

183. Complaint, *supra* note 175, at 28–29.

184. *See id.* at 29.

185. Brian M. Blumenfeld, *State Legalization of Marijuana and Our American System of Federalism: A Historio-Constitutional Primer*, 24 VA. J. SOC. POL’Y & L. 77, 79 (2017).

186. *See id.* at 93–95; Nebraska v. Colorado, 136 S. Ct. 1034 (2016).

187. DeVeaux & Mostad-Jensen, *supra* note 130, at 1839.

188. *See Am. Elec. Power Co. v. Connecticut*, 564 U.S. 410, 415, 422 (2011).

determined that existing federal law, the Clean Air Act, preempted the claim.<sup>189</sup> Despite the claim's preemption, the argument that climate change is a federal common law public nuisance incorporates many of the same theories that a complaint against fracking would, without the potential preemption issues.

In 2005, eight separate states brought a joint action against the American Electric Power Company, and several other fossil fuel burning power plants, for their contribution to carbon dioxide emissions and climate change.<sup>190</sup> Before the Supreme Court decided that both the Clean Air Act claim and the public nuisance claim sought to address the same problem thereby preempting the public nuisance claim, the Second Circuit analyzed the alleged public nuisance in detail, determining that the plaintiffs had standing.<sup>191</sup> This analysis showed that federal courts are willing to take these claims seriously.

Like the noxious gas resulting in destruction of natural lands in *Tennessee Copper* and the sewage leading to the poisoning and contamination of the Mississippi River in *Missouri*, the harm complained of by Connecticut and others was “widespread . . . injuring the public at large,” leading to a heightened level of interest by the state and leading to a *parens patriae* claim to protect its citizens from harm.<sup>192</sup> The Second Circuit used the Restatement (Second) of Torts to analyze the public nuisance claim, which establishes that an “interference with a public right” is unreasonable: if (a) the “conduct involves a significant interference with public health, the public safety, the public peace, the public comfort or the public convenience,” if (b) “the conduct is proscribed” by law; or if (c) “the conduct is of a continuing nature or has produced a permanent and long-lasting effect . . . .”<sup>193</sup> This creates a broad classification of a public nuisance. A classification that could likely include fracking consequences based on the potential harms of fracking.

Some have suggested that *American Electric* was an attempt to sue polluters in the face of a federal government that reneged on its obligations to the public.<sup>194</sup> This Note asserts the same regarding fracking. Public nuisance claims can be the source of compelled regulation where a state refuses to address fully the nature of the dangers surrounding the fracking process at the expense of not only its own citizens, but also citizens outside of its borders.

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189. *Id.* at 427–29.

190. *Am. Elec. Power Co. v. Connecticut*, 406 F. Supp. 2d 265, 267 (S.D.N.Y. 2005), vacated, 582 F.3d 309 (2d Cir. 2009).

191. *See Connecticut v. Am. Elec. Power Co.*, 582 F.3d 309, 339 (2d Cir. 2009), *rev'd*, 564 U.S. 410 (2011).

192. *Id.* at 350.

193. *Id.* at 352 (quoting RESTATEMENT (SECOND) OF TORTS § 821B (AM. LAW INST. 1979)).

194. Victor E. Schwartz et al., *Does the Judiciary Have the Tools for Regulating Greenhouse Gas Emissions*, 46 VAL. U. L. REV. 368, 380 (2012).

## CONCLUSION

The exemptions from federal legislation and regulation enjoyed by the fracking industry are almost assuredly going to last throughout the entirety of the current administration. President Trump, with the support of his party, has vowed time and time again to remove any existing regulations regarding the use of federal lands for fracking purposes in an effort to show he is a major fracking proponent.<sup>195</sup> The intention of this Note is not to hold out public nuisance litigation as the ultimate remedy to the consequences of fracking. Public nuisance is a limited and non-uniform method of bringing about regulatory changes. However, while fracking activities continue to be unregulated by the federal government in the coming years, public nuisance can act as a partial manager until the eventual enactment of comprehensive federal fracking regulation. Fracking harms may be better suited for the application of the public nuisance doctrine than the harms complained of in recent litigation described in Section IV *supra*, because fracking harms better parallel the environmental externalities described in the historical case law. They also clearly analogize to the public interest in preventing the contamination of water resources that seem to be at the heart of so many historical public nuisance cases. Modern day application of public nuisance demonstrates that this doctrine is malleable and adaptable. If an interested state can succeed in showing that interstate externalities of fracking are a significant threat to the wellbeing of its citizens, the case law cited throughout this Note shows that there is a real possibility of obtaining equitable relief from the Court.

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195. See Noah Bierman, *Donald Trump Promises to 'Lift the Restrictions on American Energy' in Appeal to Fracking Industry*, L.A. TIMES (Sept. 22, 2016), <http://www.latimes.com/politics/la-fi-trump-fracking-20160922-snap-story.html>.