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## Suction Dredging in the United States: Current Regulations and Potential Paths Forward

Colin Arsenault\*

### Abstract

This note reviews the current regulations that exist to mitigate the environmental impacts of suction dredge mining both globally and in the United States. It begins by discussing suction dredging in the realm of cooperative federalism, and whether California's moratorium will be upheld if a challenge is heard in the Supreme Court.<sup>1</sup>

It then compares the current regulatory structures in four US states. It contrasts the schemes of Oregon and California, which are run by the states, with the schemes of Idaho and Alaska, which rely predominantly on the federal government for enforcement. This section is followed by a discussion of the current lack of enforcement measures of the EPA and argues that these enforcement measures are currently better left to the states.

Lastly, the final section discusses schemes that have been developed in Russia, South Africa, and South America. These countries dredge because of economic factors associated with livelihood and violence, whereas in the United States dredging is recreational. This note also briefly analyzes how the Russian, South African, and South American governments enforce their schemes and why they are not appropriate in the United States.

### Introduction

Since the early 2000s, the price of gold has been on an upward trajectory in the United States.<sup>2</sup> With that upward trajectory has come a renewed interest in Artisanal and Small Scale Mining ("ASM").<sup>3</sup> A particularly popular type of ASM

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1. *People v. Rinehart*, 377 P.3d 818, 820 (Cal. 2016), *cert. denied*, 138 S. Ct. 635 (2018).

2. *Gold Prices—100 Year Historical Chart*, MACROTRENDS (Oct. 10, 2018, 9:23 AM), <https://perma.cc/SPD8-2CVB>.

3. Molly Dischner, *Small-Scale Gold Mining Grows as Prices Remain High*, ALASKA J. OF COM. (Nov. 15, 2012, 7:31 PM), <https://perma.cc/736D-J28Z>.

is called placer mining, or suction dredge mining.<sup>4</sup> Essentially, suction dredge mining is a large vacuum that floats on top of the water.<sup>5</sup> A hose connected to a nozzle comes out of the bottom of the machine, where a diver can use it to vacuum up the sediment from the water's bed.<sup>6</sup> The water and sediment then go through a sluice box where the gold is trapped while the water and other sediment are flushed back into the water.<sup>7</sup> These machines allow miners to access deposits and areas that were unavailable to prospectors of the nineteenth century.<sup>8</sup> Additionally, because suction dredges are efficient and relatively inexpensive to purchase, the deposits do not need to be as rich in gold as they were in the past for miners to make a profit.<sup>9</sup>

Unfortunately, research suggests that the unregulated use of suction dredges can lead to significant environmental harm.<sup>10</sup> Suction dredging can interfere with fish spawning, negatively alter channel topography, and harm sensitive habitats.<sup>11</sup> Globally, ASM has resulted in massive destruction of the South American rainforests, and polluted water sources with dangerous levels of mercury.<sup>12</sup> This practice has also been associated with criminal syndicates, resulting in human displacement, child labor, and armed conflicts.<sup>13</sup>

This note seeks to review the current ways governments, both within the United States and abroad, are tackling the issues associated with suction dredge mining. It begins by reviewing cooperative federalism in the United States, followed by looking at the current regulatory practices within the United States—highlighting the relationship between the states and the federal government. It then describes the inadequacies of the federal government's current regulatory practices, followed by reviewing the systems that have been adopted in Russia, South Africa, and South America. The note also reviews other countries' regulatory practices to demonstrate what other methods are available, and why they

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4. Steve Hershbach, *Steve's Guide to Suction Gold Dredges*, DETECTOR PROSPECTOR (Oct. 11, 2018, 1:19 PM), <https://perma.cc/N3UF-9ARF>.

5. Steve Hershbach, *Steve's Guide to Suction Gold Dredges*, DETECTOR PROSPECTOR (Oct. 11, 2018, 1:19 PM), <https://perma.cc/N3UF-9ARF>.

6. *Id.*

7. *Id.*

8. Dave McCracken, *Covering the Basics of Suction Gold Dredging*, THE NEW 49ERS (Mar. 1993), <https://perma.cc/78PS-XQZJ>.

9. *Id.*

10. Bret C. Harvey & Thomas E. Lisle, *Effects of Suction Dredging on Streams: A review and an Evaluation Strategy*, 23 FISHERIES 8, 9 (1998).

11. *Id.*

12. J. A., *Minecraft - Illegal Mining in Latin America*, THE ECONOMIST (Sept. 16, 2014), <https://perma.cc/2VX9-TEY8>.

13. U.N. Interregional Crime and Justice Research Inst. (UNICRI), Rep. on Strengthening the Security and Integrity of the Precious Metals Supply Chain, at 28, 33 (May 2016).

are not appropriate in the United States. Ultimately, this piece recommends that states, such as California and Oregon, should continue developing their own regulatory schemes and not rely on the federal government for enforcement.

## I. Cooperative Federalism as it Pertains to Environmental Regulation

Before beginning a review of the current systems in place that regulate suction dredge mining at the state level, it is prudent to determine if the states have the power to regulate the act in the first place. Mining interest groups rely on a strict interpretation of the Mining Act of 1872 (“Act”) to find authority to pursue their claims.<sup>14</sup> The Act itself allows a private citizen to explore potential mining opportunities on federal land, and allows them to perfect a new mining claim by properly staking it and complying with other statutory requirements.<sup>15</sup> Morris writes, the Act was “part of [a] larger set of land disposal statutes and it was intended to (and did in fact) encourage settlement and economic activity in the American West.”<sup>16</sup> Before the Act, there was no consistent strategy of licensing claims on federal land.<sup>17</sup> For example, gold was discovered in California shortly after it became an American territory, when it had no official scheme of regulating mining claims. The Act was a means of filling the lack of authority for mining claims in lands that were territories and not yet states.<sup>18</sup>

Under the Supremacy Clause of the United States Constitution, federal laws made in conjunction with one of Congress’ enumerated powers can preempt state laws.<sup>19</sup> The question then becomes whether the Act preempts any state regulation. In *California Coastal Commission v. Granite Rock Co.*, a mining company protested the California Coastal Commission’s requirement of a permit on federal land overseen by the Forest Service.<sup>20</sup> The Court held that the Act did not facially preempt any regulations that may have been imposed by states on federal land authorized by the Act.<sup>21</sup> In its analysis, the Court hypothesized that a state environmental regulation could become “so severe that a particular land use would become commercially impracticable.”<sup>22</sup> This language seems to suggest that if a

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14. *Mining Act of 1872*, ch. 152, §§ 1–16, 17 Stat. 91, 91–96 (1872) (current version at 30 U.S.C.S. § 22 et seq. (LEXIS through Pub. L. No. 115–253, approved 10/3/18)).

15. *Cal. Coastal Comm’n v. Granite Rock Co.*, 480 U.S. 572, 575–76 (1987).

16. Andrew P. Morris et al., *Homesteading Rock: A Defense of Free Access Under the General Mining Law of 1872*, 34 ENV’T L. L. 745, 762 (2004).

17. *Id.* at 761.

18. *Id.* at 762.

19. U.S. CONST. art. VI, cl. 2.

20. *Cal. Coastal Comm’n*, 480 U.S. at 575–76.

21. *Id.* at 582–83.

22. *Cal. Coastal Comm’n*, 480 U.S. at 587.

regulation was commercially impracticable, the Secretary of the Interior would be able to modify his land use plans under the public lands land policy and management statute found in 43 U.S.C. § 1712(c)(9).<sup>23</sup> The Court concluded by noting that state law is only preempted when it conflicts with operation or objectives of federal law, or when Congress gives evidence of intent to occupy the field.<sup>24</sup>

In 2009, California placed a moratorium on all suction dredging activities.<sup>25</sup> In 2012, Brandon Lance Rinehart was cited for operating a suction dredge on federal land within California.<sup>26</sup> The California Court of Appeal found the California dredge moratorium to be “commercially impracticable” as suggested in *California Coastal Commission*.<sup>27</sup> The California Supreme Court reversed the decision of the Court of Appeal—which held the moratorium would be preempted if it rendered mining “commercially impracticable”—seeming to ignore the “commercially impracticable” issue altogether.<sup>28</sup> The court relied primarily on the argument that Congress intended to affirmatively preempt the states from creating laws that had the effect of regulating mining on federal land.<sup>29</sup> The court’s avoidance of discussing the “commercial impracticability” found in *California Coastal Commission* is notable. While the case was denied *certiorari*, in the future it will be interesting to see if the Justices decide to define “commercial impracticability” and what it means for state environmental regulation.

Whatever the court’s reason for not discussing commercial impracticability, it means that currently in California the moratorium is legal. California and other states have begun regulating suction dredging. At the time of writing this, there has been no successful preemption challenge to the regulations.

Another question the Court will have to decide is how far the Tenth Amendment should be extended when it comes to a state banning an activity that seems to be implied under a Congressional Act like the Mining Act of 1872. Under the Tenth Amendment, “[t]he powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people.”<sup>30</sup> Traditionally, conservative members of the Court have read this amendment to mean that any power not enumerated in the

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23. *Cal. Coastal Comm’n*, 480 U.S. at 587.

24. *Cal. Coastal Comm’n*, 480 U.S. at 593–94.

25. See discussion *infra* Section II.B.

26. *People v. Rinehart*, 377 P.3d 818, 820 (Cal. 2016), *petition for cert. filed*, 138 S. Ct. 635 (2018).

27. *People v. Rinehart*, 178 Cal. Rptr. 3d 550, 562 (Ct. App. 2014).

28. Jonathan Rosenthal, *People v. Rinehart: No Preemption of State Environmental Regulations Under the Mining Act of 1872*, 44 *ECOLOGY L.Q.* 555, 558–59 (2017).

29. *Id.*

30. U.S. CONST. amend. X.

Constitution is reserved for state legislatures, giving them more power to regulate things free from the grasp of the federal government.<sup>31</sup>

However, there is also a trend among conservative Supreme Court Justices of writing opinions in favor of industry and expressing skepticism of environmental regulation.<sup>32</sup> The question then becomes, how will the conservative members of the Supreme Court qualify this disparity? Will they follow their ideology and reserve the right of states to regulate how they wish, or will they take a pro industry anti-environmental regulatory view and strike down the California moratorium as an overreach of the government? Justice Kavanaugh was only recently appointed, but all signs point to him being on the far right side of the bench.<sup>33</sup> Based on his first term, Justice Gorsuch will follow in Justice Scalia's footsteps and be an ideologically conservative Justice, leaving the Court in a similar ideological distribution.<sup>34</sup> If the question is eventually heard, it will be interesting to see the Court's reasoning for upholding or dismantling a moratorium like the one in California.

## **II. Current Regulations and Penalties in the United States: California, Oregon, Idaho, and Alaska**

### **A. Introduction**

In the United States, suction dredging is regulated both federally and locally.<sup>35</sup> This section reviews the regulatory systems used in four states where suction dredging has been a point of contention: California, Oregon, Idaho, and Alaska. The regulatory mechanisms used vary greatly between the states; some are completely run by the state, while others are a mix of agencies mainly reliant on the federal government for enforcement.

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31. Garrett Epps, *Constitutional Myth #7: The 10th Amendment Protects 'States' Rights'*, THE ATLANTIC (July 11, 2011), <https://perma.cc/CA68-XXSU>.

32. John Echeverria, *The Fate of Environmental Law in a Trump-Era Supreme Court*, SCI. AM. (Feb. 8, 2017), <https://perma.cc/WL8S-RQ3W>.

33. See Kevin Cope and Joshua Fischman, *It's hard to find a federal judge more conservative than Brett Kavanaugh*, WASH. POST (Sept. 5, 2018), <https://perma.cc/QKS5-ZZSY>.

34. Oliver Roeder, *Just How Conservative Was Neil Gorsuch's First Term?*, FIFTYEIGHT (July 25, 2017, 6:00 AM), <https://perma.cc/6QDY-3D8A>.

35. See discussion *infra* Section II.F.

## B. California

Under current law, it is not possible to legally suction dredge mine in California.<sup>36</sup> In 2009, Governor Schwarzenegger signed Senate Bill (“S.B.”) 670, which banned suction dredge mining in the state until after the California Department of Fish and Wildlife (“CDFW”) could complete a court ordered environmental review of its permit program and existing regulations.<sup>37</sup> In 2012, the CDFW finished the review and concluded that lifting the ban on suction dredging would result in significant and unavoidable environmental consequences beyond the substantive reach of the CDFW’s regulatory power.<sup>38</sup> On April 1, 2013, CDFW submitted a subsequent report to the state legislature, with recommendations for statutory amendments that would give the CDFW the necessary power to regulate suction dredge mining.<sup>39</sup> On October 9, 2015, S.B. 637 was signed into law, which in part amended California’s Fish and Game Code (“FGC”) to incorporate the statutory amendments recommended by the CDFW.<sup>40</sup>

The amended section prohibits the CDFW from issuing permits for suction dredge mining until certain requirements are met.<sup>41</sup> The most significant requirement is that before permits can be issued, a regulatory scheme must be developed that “fully mitigate[s] all identified significant environmental impacts.”<sup>42</sup> It is yet to be seen what a regulatory scheme looks like that would satisfy this requirement. Judging by how extensive the CDFW’s environmental impact report to the state was, the regulatory measures will likely be significant.<sup>43</sup>

Because it is currently impossible for the CDFW to issue a permit for suction dredging, it is also impossible to suction dredge in California violating the FGC. Unless expressly provided otherwise, *any* violation of the FGC is a criminal misdemeanor.<sup>44</sup> In California, unless prescribed as otherwise, a criminal misdemeanor is punishable by imprisonment not exceeding six months, a fine not

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36. *Suction Dredge Permits*, CAL. DEP’T OF FISH & WILDLIFE (Oct. 19 2017, 11:08 PM), <https://perma.cc/KM6Y-M9FH>.

37. S.B. 637, 2015 Leg., Reg. Sess. (Cal. 2015).

38. S.B. 637, 2015 Leg., Reg. Sess. § 1(c) (Cal. 2015).

39. S.B. 637, 2015 Leg., Reg. Sess. § 1(f) (Cal. 2015).

40. Cal. S.B. 637.

41. CAL. FISH & GAME CODE § 5653.1 (2018).

42. CAL. FISH & GAME CODE § 5653.1(b)(4) (2018).

43. *Findings of Fact of the California Department of Fish and Game as a Lead Agency Under the California Environmental Quality Act (Pub. Resources Code, § 21000 et seq.) for the Suction Dredge Permitting Program (Fish & G. Code, § 5653 et seq.) as Analyzed in the Suction Dredge Permitting Program Subsequent Environmental Impact Report S. Comm. Hearing No. 2009112005*, 2012 Legis. (Cal. 2012).

44. CAL. FISH & GAME CODE § 12000(a) (2018).

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exceeding \$1,000, or both.<sup>45</sup> While not as steep a penalty as other jurisdictions,<sup>46</sup> it is noteworthy that the possibility of jail time exists for an act that was legal with an easily obtainable permit just ten years prior.<sup>47</sup>

It is clear from the extent of California's ban and criminal penalties for violation thereof, that the state considers the effects of suction dredging to be a serious issue. This ban has sparked protest among local mining communities and led to the *Rinehart* cases discussed in the previous section.<sup>48</sup> While environmental groups are most likely elated by the California ban, the miners' argument is not unreasonable. The ban has been in place for almost ten years now. If developing a regulatory scheme to suction dredge is a priority for the CDFW, how long should it take?

### C. Oregon

The dredging moratorium in California (2009) prompted many miners to begin operating in Southern Oregon.<sup>49</sup> The migration of miners prompted the Oregon Legislature to pass S.B. 838 in 2013, which, in part, placed a moratorium on suction dredge mining beginning January 2, 2017.<sup>50</sup> About 5 months later on June 14, 2017, S.B. 3 was signed into law replacing the moratorium with a permitting system.<sup>51</sup>

Commenting on the legislation, Senator Michael Dembrow (D-Portland) said, "[i]t is vitally important to protect endangered and threatened fish species in our rivers and streams, but we also recognize that there is a strong mining heritage in our state as well."<sup>52</sup> Senator Dembrow's statement shows the balance of interests at heart in Oregon. The temporary moratorium is a result of environmental concern, but the eventual lifting of the ban and permitting system is an acknowledgment to the people that have been suction dredging in the area for decades.

S.B. 3 codifies a permitting system which will go into effect January 1, 2018.<sup>53</sup> Section 4(2) of the bill prohibits any suction dredging in any river or stream that contains essential indigenous anadromous salmonid habitat.<sup>54</sup> This designation

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45. CAL. PENAL CODE § 19 (2018).

46. *Illegal Mining*, CHAMBER OF MINES OF S. AFR. (Oct. 11, 2018), <https://perma.cc/Z9A9-K52N>.

47. *Gold Non-Rush: California Bans Dredge Mining*, A. P. (Aug. 8, 2009, 5:22 PM), <https://perma.cc/ZG39-9AGY>.

48. See [peoplevrinehart.org](http://peoplevrinehart.org) (for general history of the case, and the appellants support).

49. Tracy Loew, *Senate Oks Suction Dredge Mining Restrictions to Protect Fish*, STATESMAN J. (Apr. 10, 2017, 4:30 PM), <https://perma.cc/U55G-TYFR>.

50. *Id.*

51. *Id.*

52. *Id.*

53. S.B. 3, 79th Leg. Assemb., Reg. Sess. (Or. 2017).

54. S.B. 3, 79th Leg. Assemb., Reg. Sess. (Or. 2017).

covers the vast majority of the rivers and streams within Oregon.<sup>55</sup> Additionally, to qualify for the permit, the inside diameter of the suction dredge hose cannot be wider than four inches.<sup>56</sup> Typically, a small scale suction dredge hose is between two and ten inches.<sup>57</sup> Finally, *to the extent feasible*, the operator must use his equipment in a manner that will not harm freshwater mollusks.<sup>58</sup> If a person operates without a permit, or acts contrary to the requirements of the permit, they are subject to a Class A civil violation, which has a maximum penalty of \$2,000.<sup>59</sup>

Looking between the lines, this legislation appears to balance the interests between environmentalists and miners. The ban on mining in waterways that contain essential salmonid is a huge win for environmentalists, but the section that allows mining near freshwater mollusks is based on a feasibility standard that is beneficial to miners. Furthermore, while violation of the statute carries a penalty up to \$2,000, the legislature decided to make it a civil penalty rather than criminal.

In comparison to California, Oregon took a less aggressive approach to protecting the waterways from suction dredge mining. In the time since California placed a moratorium on suction dredging and began researching how to regulate it, Oregon has placed a moratorium, lifted it, and set up a system of regulation that involves civil rather than criminal penalties. Assuming California's moratorium is eventually lifted and a regulatory scheme is created, it will be interesting to see if California's more aggressive and methodical approach to setting up a scheme will ultimately be more effective in reducing the negative impacts of suction dredging on the environment.

#### D. Idaho

While Idaho also requires a state permit to dredge, it is relatively simple to obtain.<sup>60</sup> Authorized under the Stream Channel Protection Act ("SCPA"), the state provides maps of state water sources where it is permissible to operate a suction dredge.<sup>61</sup> The state closes most of the water ways seasonally to protect fish during spawning season, and to prevent the introduction of invasive species.<sup>62</sup> However, a penalty for violating any provisions of the SCPA is only a fine ranging from \$150

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55. *Essential Salmonid Habitat Maps*, OR. ST. LIBR. DIGITAL COLLECTIONS (Oct. 11, 2018, 1:56 PM), <https://perma.cc/WW79-VANN>.

56. Or. S.B. 3.

57. Dave McCracken, *Covering the Basics of Suction Gold Dredging*, THE NEW 49ERS (Mar. 1993), <https://perma.cc/TK36-F3VX>.

58. Or. S.B. 3 (emphasis added).

59. *Id.*

60. Brian Smith, *Idaho Gold Miners Frustrated by New EPA Permit*, MISSOULIAN (Aug. 24, 2013), <https://perma.cc/62L9-PA3Z>.

61. *Recreational Mining Permits*, IDAHO DEP'T OF WATER RES. (Oct. 11, 2018), <https://perma.cc/P84Y-QZAN>.

62. *Id.*

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to \$500.<sup>63</sup> To put that in perspective, just to obtain a permit to suction dredge in Idaho requires paying \$250.<sup>64</sup> Idaho relies mostly on the Environmental Protection Agency (“EPA”) to enforce dredging under the National Pollutant Discharge Elimination System (“NPDES”) of the Clean Water Act (“CWA”).<sup>65</sup>

In Idaho, the EPA issued a general NPDES permit for all suction dredge operations.<sup>66</sup> The permit has been effective since May 2013, and was recently reissued by the EPA.<sup>67</sup> The permit specifies that a suction dredge cannot have a nozzle wider than five inches, and the equipment must be less than fifteen horsepower.<sup>68</sup> Additionally, the mining cannot take place in any of the following types of waterways: Nationally Protected Areas, Tribal Reservations, National Wild and Scenic Rivers, Endangered Species Habitat Areas, Withdrawn Rivers, State Protected Rivers, and Impaired Streams.<sup>69</sup>

Because NPDES permits get their authority from the CWA, all the penalties for violations of the CWA are applicable here.<sup>70</sup> The NPDES is designed to punish commercial entities as well as private users, so the current maximum penalties are quite high. Currently, the maximum civil penalty is \$53,484 per day of violation, and the criminal penalties for a known violation are a maximum fine of \$50,000 and up to three years imprisonment for a first offense.<sup>71</sup>

However steep these potential penalties may be, it is unlikely the EPA’s enforcement team would execute such a harsh punishment to a private individual. EPA data from October 2013 to September 2016 showed that in Connecticut, of a pool of twenty-nine known polluting entities, only two were fined.<sup>72</sup> Of the twenty-nine polluters, thirteen of them exceeded their discharge levels by over 100 percent.<sup>73</sup> The agency commented that while issuing fines is within their authority,

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63. *Recreational Mining Permits*, IDAHO DEP’T OF WATER RES. (Oct. 11, 2018), <https://perma.cc/P84Y-QZAN>.

64. S.B. 637, 2015 Leg., Reg. Sess. § 1(f) (Cal. 2015).

65. Smith, *supra* note 59.

66. U.S. ENVTL. PROT. AGENCY, GENERAL PERMIT NO. IDG370000, AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM FOR SMALL SUCTION DREDGE PLACER MINERS IN IDAHO (2013).

67. *Id.* (original permit); *NPDES General Permit for Small Suction Dredge Placer Miners in Idaho*, U.S. ENVTL. PROT. AGENCY (Feb. 21, 2018), <https://perma.cc/9WRS-V8H9> (public notice of proposed reissuance of permit).

68. *Id.*

69. U.S. ENVTL. PROT. AGENCY *supra* note 67. at 5–8.

70. U.S. ENVTL. PROT. AGENCY, GENERAL PERMIT NO. IDG370000, AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM FOR SMALL SUCTION DREDGE PLACER MINERS IN IDAHO (2013), at 26–27.

71. *Id.*

72. Gary Stoller, *Few Polluters Penalized for Toxic Wastewater Violations*, *EPA Data Show*, HARTFORD COURANT, (Apr. 7, 2017, 10:27 AM) <http://www.courant.com/news/connecticut/hc-companies-pollutants-exceed-limits-20170330-story.html>.

73. *Id.*

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it is more common to issue notices of noncompliance and warnings, and that the sheer volume of monitoring information they receive “far exceeds the capacity of department staff.”<sup>74</sup>

Even if the EPA did have the capacity to go after individual polluters (or in the case of suction dredging, individuals who increased water turbidity), the agency relies entirely on self-reporting under this general permit.<sup>75</sup> If an individual is knowingly violating the NPDES, it seems highly unlikely they would self-report their illegal behavior.

This system is inefficient at best, and ineffective at worst. The EPA enforcement agency is already stretched thin and being stretched thinner.<sup>76</sup> Additionally, the penalties under the CWA are designed to target large polluting entities, not individuals. It would seem the EPA has little incentive to go after individual dredge miners. If the EPA is not going to enforce the NPDES, there is no deterrence to keep a dredge miner from not complying with the regulations. This is not an ideal regulation scheme.

#### E. Alaska

Obtaining a permit to suction dredge in Alaska is more confusing than the other jurisdictions discussed.<sup>77</sup> If the proposed location is on state land, the miner only needs to purchase an over-the-counter permit and call the Alaska Department of Natural Resources to insure she is not mining during spawning season.<sup>78</sup> However, if the proposed mining location is on land owned by any federal agency, the miner must obtain a separate permit from the agency.<sup>79</sup> The process is complicated further because the EPA has delegated regulatory authority to the Alaska Department of Environmental Conservation (“ADEC”), meaning any environmental questions that would go to the EPA are now directed to the state.<sup>80</sup>

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74. Gary Stoller, *Few Polluters Penalized for Toxic Wastewater Violations*, EPA Data Show, HARTFORD COURANT, (Apr. 7, 2017, 10:27 AM) <http://www.courant.com/news/connecticut/hc-companies-pollutants-exceed-limits-20170330-story.html>.

75. U.S. ENVTL. PROT. AGENCY, GENERAL PERMIT NO. IDG370000, AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM FOR SMALL SUCTION DREDGE PLACER MINERS IN IDAHO (2013), at 12–13.

76. See discussion *infra* Section III.

77. *Fact Sheet Title: Suction Dredging*, ALASKA DEP’T OF NAT. RES. (Feb. 2012), <https://perma.cc/7JLC-DXBT>.

78. *Id.*

79. *Small Scale Mining*, ALASKA DEPT’T OF FISH & GAME (Oct. 11, 2018), <https://perma.cc/5C93-UEYR>.

80. *Fact Sheet Title: Suction Dredging*, *supra* note 76.

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Additionally, the Army Corps of Engineers can recommend the EPA initiate legal action for a violation of the CWA.<sup>81</sup>

One reason for this piecemeal approach to enforcing a permitting scheme in Alaska could be the relatively small number of miners each year. For instance, in 2013, Alaska's Department of Natural Resources only processed 207 offshore<sup>82</sup> suction dredge permits.<sup>83</sup> Of those, it is estimated that only sixty to eighty were actually used.<sup>84</sup> Another reason is that the state of Alaska is so large and has so many water ways, it is virtually impossible to create blanket rules, and the expert advice of the relevant agency will always be required. Regardless, this piecemeal approach to issuing permits leads to a less consolidated enforcement agency than the other states discussed.

## F. Summary and Key Points

Regulatory mining schemes in the United States are either almost entirely state regulated as seen in California and Oregon, or a federally dominant hybrid of state and federal enforcement as seen in Idaho and Alaska. The state dominated regimes benefit from a centrally regulated agency that represents the interests of the permitting schemes in effect. Compare these schemes with the one in Idaho, where although there is a state permitting agency, the penalties are enforced by a separate federal agency. The centrally regulated system seems far more efficient. Alaska's system is the outlier of the group. While it is easy to criticize a piecemeal approach as being confusing and inefficient, it is also important to recognize the complexities of the state. Alaska is many times larger than any of the other states discussed geographically, while being the smallest in population.<sup>85</sup> A complex regulatory scheme may not be appropriate when local agencies are experts in the territory they preside over.

Oregon's scheme seems the most effective at this time for two reasons: (1) it is centrally regulated by one agency, and (2) the scheme balances the needs of constituencies, pleasing both environmentalists and miners. It will be interesting to see what regulatory scheme the CDFW determines will be necessary to enforce effective mitigation of the environmental concerns identified in California.

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81. *Violations and Enforcement*, U.S. ARMY CORPS OF ENGINEERS (Oct. 11, 2018), <https://perma.cc/U74X-2U29>.

82. In Alaska, offshore suction dredge permits refer to rivers as well as oceans and estuaries. *See supra* note 77.

83. *Nome Suction Dredge Study*, DEP'T OF COM., COMMUNITY & ECON. DEV. 1, 11 (April 2015).

84. *Nome Suction Dredge Study*, *supra* note 81.

85. *U.S. and World Population Clock*, U.S. CENSUS BUREAU, [https://www.census.gov/popclock/?intcmp=home\\_pop](https://www.census.gov/popclock/?intcmp=home_pop) (last visited Dec. 10, 2017 2:26 PM).

### III. EPA Enforcement in the United States

This section of the note discusses whether states like Oregon and California should continue developing their new regulatory schemes or allow the federal government to enforce illegal suction dredge mining through agencies like the EPA.

It is no secret the Trump administration is not a fan of federal regulation.<sup>86</sup> During a campaign speech in October 2016, candidate Trump declared that seventy percent of current regulations should go.<sup>87</sup> The anti-regulatory positioning of the campaign and early administration have reverberated down through the various agencies, including the EPA.<sup>88</sup>

Under the Trump administration, EPA enforcement of polluters has declined significantly.<sup>89</sup> An analysis by the *New York Times* shows that during the first nine months of the administration, the number of EPA enforcement claims was about one third fewer than in the Obama administration, and a quarter fewer than in George W. Bush administration over the same period.<sup>90</sup> The *New York Times* also reports that confidential internal EPA documents show that enforcement slow down coincides with policy changes that are favorable to industry.<sup>91</sup> The documents further show that EPA officers no longer have the authority to investigate certain types of pollution without direct permission from headquarters in Washington, D.C.<sup>92</sup> This last part is particularly troubling for the enforcement of illegal dredge mining. In certain states, such as Idaho, the EPA is responsible for the enforcement of illegal dredging.<sup>93</sup> If the EPA enforcement officers are no longer able to act on their own accord, then it is likely regulatory structures that rely on the EPA for enforcement will continue to be under enforced.

The EPA is collecting fewer civil penalties from polluters as well.<sup>94</sup> A report from the Environmental Integrity Project showed that in the first six months of the Trump presidency, about sixty percent fewer civil penalties were collected than in

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86. Exec. Order No. 13,771, 82 Fed. Reg. 9339 (Jan. 30, 2017).

87. Chris Kaufman, *Donald Trump Says 70% of Federal Regulations 'Can Go'*, REUTERS (Oct. 7, 2016, 7:41 PM), <https://perma.cc/KX3R-6ATL>.

88. Nadja Popovich, Livia Albeck-Ripka & Kendra Pierre-Louis, *76 Environmental Rules on the Way Out Under Trump*, N.Y. TIMES (July 6, 2018), <https://perma.cc/5UFJ-3CR7>.

89. Eric Lipton & Danielle Ivory, *Under Trump, E.P.A. Has Slowed Actions Against Polluters, and Put Limits on Enforcement Officers*, N.Y. TIMES (Dec. 10, 2017), <https://perma.cc/C453-AEAC>.

90. *Id.*

91. *Id.*

92. *Id.*

93. Brian Smith, *supra* note 59.

94. Valerie Volcovici, *Trump EPA Lags Behind in Environmental Enforcement: Report*, REUTERS (Aug. 10, 2017, 10:03 AM), <https://perma.cc/7A63-P8BF>.

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the previous three administrations.<sup>95</sup> The EPA's enforcement of suction dredging through the CWA is almost completely based on the distribution of civil penalties. If these are being excised at a slower rate, the enforcement of dredging will be less comprehensive than it already is.

The combination of the Trump administration's policy of anti-regulation and weakening of the EPA's enforcement is a clear indication that the federal government is not the best agency to regulate suction dredge mining. California and Oregon have showed a forward-thinking interest in protecting the environment from suction dredging and should therefore continue to police their own policies. The best way to regulate suction dredging in the current political environment is at the state level, not the federal level. It is unfortunate that the responsibility of protecting clean water, threatened species, and habitat is being marginalized at the federal level. However, it is uplifting to see local governments adopt a burden that is not necessarily their own, and further study the impacts and solutions to suction dredge mining on fragile ecosystems.

#### IV. Global Regulatory Schemes

##### A. Introduction

In contrast to the United States, most gold dredge mining conducted globally is for livelihood, not recreation.<sup>96</sup> The International Council on Mining and Metals estimates that Artisanal Small Scale Mining ("ASM") provides livelihoods for up to 100 million people.<sup>97</sup> Price Waterhouse Coopers estimates that ASM produces 330 metric tons of gold each year, which accounts for about twelve percent of the global market.<sup>98</sup> Once melted down and mixed in with legally mined gold, it is virtually impossible to trace the gold back to the mine of origin.<sup>99</sup> Unlike hard rock mining, dredge mining is much more common on a small scale as it requires less technical knowledge, and can be done relatively cheaply.<sup>100</sup>

There are significant environmental concerns associated with ASM.<sup>101</sup> While most ASM miners sell their gold unrefined to another party, some use an amalgamation process where mercury is vaporized, resulting in health and

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95. Valerie Volcovici, *Trump EPA Lags Behind in Environmental Enforcement: Report*, REUTERS (Aug. 10, 2017, 10:03 AM), <https://perma.cc/7A63-P8BF>.

96. U.N. Interregional Crime and Justice Research Inst. (UNICRI), Rep. on Strengthening the Security and Integrity of the Precious Metals Supply Chain, at 25 (May 2016).

97. *Id.*

98. *Id.*

99. *Id.* at 10.

100. *Id.* at 23.

101. *Id.* at 25.

environmental issues.<sup>102</sup> Amalgamation from ASM is the second worst mercury polluter in the world, accounting for twenty-five percent to thirty-three percent of all mercury pollution.<sup>103</sup> Other hazards include acid mine drainage, improper closure of pits and mines, use of toxic chemicals and toxic effluent dumping in forest clearings.<sup>104</sup> The report illustrates the damage caused:

On the mining aspect, excavating the gold-bearing material has resulted in the destruction of large tracks of land. Deforestation, soil erosion, alluvial river damage, small dam construction, silting up of water streams and rivers, pollution of soil and water and the dumping of processed rock and waste are common to most artisanal and illegal mining sites. Where the gold-bearing material contains significant amounts of sulphides (such as pyrite), acid mine drainage further pollutes and destroys the environment.<sup>105</sup>

In addition to the environmental concerns, there are also serious criminal concerns.<sup>106</sup> In some countries, armed gangs kidnap other miners and force them to work in slave-like conditions.<sup>107</sup> Human trafficking has been reported in South Africa and Peru.<sup>108</sup> Child labor has been reported in the Democratic Republic of the Congo (“DRC”), Peru, Mongolia, South Africa, and Colombia.<sup>109</sup> In some ASM mines, child labor makes up forty percent of the workforce, and the International Labour Organization estimates that as many as one million children work in ASM mines worldwide.<sup>110</sup> Some of these children have prolonged exposure to mercury, which can cause damage to the central nervous system, leading to delirium and suicide.<sup>111</sup>

In response to the seriousness of the problem, countries have created regulatory schemes to address the disparate impacts to the economy, the environment, and human rights. The next section of this article will review the different structures developed globally, what their motivations were for doing so, and why they may or may not be appropriate in the United States.

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102. U.N. Interregional Crime and Justice Research Inst. (UNICRI), Rep. on Strengthening the Security and Integrity of the Precious Metals Supply Chain, at 25 (May 2016).

103. *Id.* at 37.

104. *Id.* at 25.

105. *Id.* at 36.

106. *Id.* at 28.

107. *Gang Wars Erupt over Abandoned Mines in SA*, NEWS24 (Nov. 2, 2015, 9:06 AM), <https://perma.cc/WE5H-JF3H>.

108. U.N. Interregional Crime and Justice Research Inst. (UNICRI), Rep. on Strengthening the Security and Integrity of the Precious Metals Supply Chain, at 33 (May 2016).

109. *Id.* at 34–36.

110. *Id.* at 33.

111. *Id.* at 34.

## B. South Africa

Following the adoption of a new representative South African government in 1994, all previous mineral rights laws were reviewed to represent the inclusion of interests of a larger population.<sup>112</sup> This initiative led to the Mineral and Petroleum Resources Development Act 28 of 2002 (“MPRDA”).<sup>113</sup> In part, the MPRDA has new requirements that focus on, “financial resources, technical ability, environmental concerns, social and labor, as well as health and safety provisions.”<sup>114</sup>

The MPRDA states that its purpose is to promote advancement of economic opportunities for historically disadvantaged people, as well as provide for the security of prospecting and mining operations.<sup>115</sup> The MPRDA defines an illegal act as any action to remove minerals or attempt to conduct technical operations without environmental authorization and the appropriate permit.<sup>116</sup>

South Africa also polices illegal mining through the Second Hand Goods Act (“SHG”) and a sophisticated border control mechanism.<sup>117</sup> The SHG attempts to regulate illegal activity when the metals are changing hands with a merchant, after it has been mined.<sup>118</sup>

### 1. Environmental Authorizations

All environmental authorizations must fall within the environmental principles described in the National Environmental Management Act (“NEMA”).<sup>119</sup> Similar to the United States, South Africa requires that local branches of the national government to create environmental implementation plans unique to their region.<sup>120</sup> Any environmental authorization given to a private party

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112. U.N. Interregional Crime and Justice Research Inst. (UNICRI), Rep. on Strengthening the Security and Integrity of the Precious Metals Supply Chain, at 58 (May 2016).

113. *Id.*

114. *Id.*

115. Mineral and Petroleum Resources Development Act 28 of 2002 § 2(c-f) (updated through 2013) (S. Afr.) (it is noteworthy that security is of such a concern that it made it into the “Objectives” section of the act).

116. Mineral and Petroleum Resources Development Act 28 of 2002 § 5A(a-b) (updated through 2013) (S. Afr.).

117. U.N. Interregional Crime and Justice Research Inst. (UNICRI), Rep. on Strengthening the Security and Integrity of the Precious Metals Supply Chain, at 59–60 (May 2016).

118. Second Hand Goods Act 6 of 2009 (S. Afr.).

119. Mineral and Petroleum Resources Development Act 28 of 2002 § 37(1) (updated through 2013) (S. Afr.).

120. National Environmental Management Act 107 of 1998 § 13(b) (S. Afr.).

must fall within the confines of the environmental plan.<sup>121</sup> NEMA also requires that any loss of biological diversity is avoided, or minimized and remedied.<sup>122</sup> The costs of remedying any pollution or loss of biological diversity is paid for by the responsible party.<sup>123</sup> Any violation of NEMA is subject to criminal proceedings brought by the state.<sup>124</sup> Curiously, NEMA also extends legal standing to any private party that wishes to bring an action in the interest of the public, or in the interest of protecting the environment.<sup>125</sup> This mechanism of allowing a private party to bring an environmental action is frankly astonishing. In the United States, acquiring standing in an environmental suit is a significant hurdle.<sup>126</sup> Allowing a private individual to sue in the interest of protecting the environment is a powerful idea that could have a significant impact in the field of environmental law. Unfortunately, while the number of environmental prosecutions under NEMA has risen recently, there is not one reported case of someone bringing a private action.<sup>127</sup>

## 2. Second Hand Goods Act

The purpose of the Second Hands Goods Act is to combat illegal trade in stolen goods and promote ethical standards in the trade of second hand goods.<sup>128</sup> Part of the act requires dealers that recycle controlled metals (such as gold) to register as a recycler.<sup>129</sup> The metals themselves must also be registered, and if a recycler has suspicion to suspect that the metals have been acquired illegally, the recycler is required to notify the authorities.<sup>130</sup>

## 3. Enforcement

Under the MPRDA, any authorized person may make a routine inspection of a mining operation without a warrant.<sup>131</sup> Penalties for violating the act range from fines of 10,000 to 500,000 rand (approximately \$700 USD to \$35,000 USD as of

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121. National Environmental Management Act 107 of 1998 § 28(5) (S. Afr.).
  122. National Environmental Management Act 107 of 1998 § 2(4)(a) (S. Afr.).
  123. National Environmental Management Act 107 of 1998 § 2(4)(p) (S. Afr.).
  124. National Environmental Management Act 107 of 1998 § 34(1) (S. Afr.).
  125. National Environmental Management Act 107 of 1998 § 32(1) (S. Afr.).
  126. *See* Lujan v. Defenders of Wildlife, 504 US 555 (1992).
  127. Jamil Ddamulira Mujuzi, *Private Prosecution of Environmental Offences Under the South African Environmental Management Act: Prospects and Challenges*, 29 S. AFR. J. OF CRIM. JUST., no. 1, Mar. 2016, at 24.
  128. Second Hand Goods Act 6 of 2009 (S. Afr.).
  129. Second Hand Goods Act 6 of 2009 § 25 (S. Afr.).
  130. Second Hand Goods Act 6 of 2009 § 25(5) (S. Afr.).
  131. Mineral and Petroleum Resources Development Act 28 of 2002 § 92 (updated through 2013) (S. Afr.).
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November 2018), and prison sentences range from six months to ten years.<sup>132</sup> The most severe penalties are reserved for violations of the environmental management provisions.<sup>133</sup> If convicted of an offence under the Second Hand Goods Act, the person may be subject to up to thirty days in prison and a fine.<sup>134</sup>

The laws of South Africa seem to have two main purposes: 1) to protect the environment through steep penalties, and 2) to regulate illegal trade of metals without harming the livelihood of the participants. This approach steers clear of penalizing the individual ASM miners, focusing on big polluters, and the merchants that are trading the gold.

### C. Russia

In Russia, mining of all precious metals is regulated under the Federal Law on Precious Metals and Gemstones 1998.<sup>135</sup> The law gives the state the authority to regulate all transactions related to precious metals and gemstones.<sup>136</sup> Standards are set for each stone based on what the state determines is an appropriate amount that should be available on the market at any given time.<sup>137</sup> The law gives the state the authority to set up a system of administrative courts to adjudicate any violations.<sup>138</sup>

While the law itself gives comprehensive authority to the state, industry insiders emphasize that violations are not strictly enforced.<sup>139</sup> For instance, although there are still Soviet era rules that completely prohibit the trading of gold bars anywhere outside of a state-owned bank, it is common to buy bars outside of

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132. Mineral and Petroleum Resources Development Act 28 of 2002 § 99 (updated through 2013) (S. Afr.).

133. Mineral and Petroleum Resources Development Act 28 of 2002 § 98–99 (updated through 2013) (S. Afr.).

134. Second Hand Goods Act 6 of 2009 §32(3) (S. Afr.).

135. U.N. Interregional Crime and Justice Research Inst. (UNICRI), Rep. on Strengthening the Security and Integrity of the Precious Metals Supply Chain, at 63 (May 2016).

136. Federal'nyi Zakon RF o Dragotsennykh Metallakh I Dragotsennykh Kanalakh [Federal Law on Precious Metals and Gemstones], POSTANOVLENIAA PALAT FEDERAL'NOGO SOBRANIYA [RESOLUTIONS OF THE STATE DUMA AND FEDERATION COUNCIL OF THE FEDERAL ASSEMBLY] I, 2003, No. 41.

137. *Id.*

138. Federal'nyi Zakon RF o Dragotsennykh Metallakh I Dragotsennykh Kanalakh [Federal Law on Precious Metals and Gemstones], POSTANOVLENIAA PALAT FEDERAL'NOGO SOBRANIYA [RESOLUTIONS OF THE STATE DUMA AND FEDERATION COUNCIL OF THE FEDERAL ASSEMBLY] VII, v. XXVIII, 2003, No. 41.

139. Jeff Clark, *Russian Bullion Dealer: Russians Aren't Into Gold – Yet – But Wait Until They Stampede*, CASEY RES. (June 16, 2014), <https://perma.cc/RL4W-8QYR>.

banks with little to no prosecution.<sup>140</sup> The law itself is designed to regulate large scale operations, not the activities of ASM miners.<sup>141</sup>

In Southern Siberia, there is little to no government enforcement of suction dredge mining.<sup>142</sup> Local environmentalists are taking the initiative to combat the mining by documenting where it is happening and putting together a case for local prosecutors.<sup>143</sup> The fact that local environmentalists are putting together cases outside of the government demonstrates a tremendous lack of enforcement. These efforts may be in vain, as the current politics of Russia are opposed to environmental enforcement.<sup>144</sup> It seems that without the political will, the mining regulations that do exist in Russia are toothless.

Currently, the biggest attractor for ASM miners is in Baltic Sea amber, not gold.<sup>145</sup> It is popular in the region as jobs are hard to come by, and digging for the amber is much more lucrative than the jobs that do exist.<sup>146</sup> The Baltic Sea region is rife with reports of corrupt officials and police that look the other way when finding illegal amber mining.<sup>147</sup> Officials are suspected of being paid by local crime syndicates to allow the activity to continue.<sup>148</sup> The penalties are also relatively light, resulting in a small fine and confiscation of equipment.<sup>149</sup> The lack of government enforcement in both the Baltic Sea regions and Southern Siberia demonstrate a gap in Russia's regulatory structure. An outdated regulatory scheme that does not seem concerned with ASM miners is ineffective and undesirable.

#### D. Colombia and Other South American Countries

In Colombia, ninety percent of all mines are unlicensed.<sup>150</sup> Armed militia groups have found their way into the trade, and have had a "positive and significant" effect on murder rates in the areas in which they operate.<sup>151</sup> A common

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140. Jeff Clark, *Russian Bullion Dealer: Russians Aren't Into Gold – Yet – But Wait Until They Stampede*, CASEY RES. (June 16, 2014), <https://perma.cc/RL4W-8QYR>.

141. U.N. Interregional Crime and Justice Research Inst. (UNICRI), Rep. on Strengthening the Security and Integrity of the Precious Metals Supply Chain, at 63 (May 2016).

142. Jennifer Castner, *Protecting Russian Rivers from Illegal Mining*, PACIFIC ENV'T (Dec. 21, 2016), <https://perma.cc/4RB6-B6NR>.

143. *Id.*

144. *Id.*

145. Mansur Mirovalev, *Amber Mining in Russia: Black Market for 'Baltic Gold' Is Booming Despite Dangers*, NBC NEWS (Sept. 11, 2016, 12:32 PM), <https://perma.cc/QM6N-ZAUK>.

146. *Id.*

147. *Id.*

148. *Id.*

149. Mirovalev, *supra* note 145.

150. *Minecraft*, *supra* note 12.

151. *Id.*

issue is the displacement of indigenous peoples from their lands.<sup>152</sup> In 2012 alone, up to eighty people of the Yanomami tribe were reported to have been killed while resisting displacement by local illegal miners in Venezuela.<sup>153</sup>

The environmental impacts have also been severe: A research team found that in one region, some thirty to forty tons of mercury are poured into local rivers each year.<sup>154</sup> Seventy-eight percent of the local population had a mercury concentration three times the average.<sup>155</sup> In the region of Choco more than 19,000 hectares of the rainforest have been destroyed from local mining.<sup>156</sup>

The government responded by creating a 500-man militarized unit.<sup>157</sup> The main tactics include arresting those that are mining and destroying their equipment.<sup>158</sup> A local think-tank believes the strategy is having little to no effect, and the illegal mining and environmental devastation will continue virtually unchecked.<sup>159</sup>

A militarized force similar to the one in Colombia is also active in Peru.<sup>160</sup> Experts say the environmental damage done by illegal mining in Peru is far more destructive than what is done by the mining companies.<sup>161</sup> In less than a year, the Tambopata reserve went from being virtually untouched, to all but destroyed by illegal mining.<sup>162</sup> The government has responded with military raids, attempting to coerce miners to leave the illegal mining camps by force.<sup>163</sup> But the marines involved in the raids are ill equipped, and critics are skeptical of their actual effect.<sup>164</sup>

A study from the Global Initiative Against Transnational Organized Crime claims that the increased involvement of criminal syndicates in illegal gold mining is displacing local populations, and facilitating child labor and sexual exploitation.<sup>165</sup> The study found illegal activities in Bolivia, Brazil, Colombia,

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152. *Minecraft*, *supra* note 12.

153. *Id.*

154. *Id.*

155. *Id.*

156. Bram Ebus, *Illegal Gold Mining in Colombia is Destroying the Rainforest*, NEWSWEEK (Nov. 11, 2016), <https://perma.cc/745G-7MAE>.

157. *Id.*

158. *Id.*

159. Ebus, *supra* note 155.

160. Suzanne Daley, *Peru Scrambles to Drive Out Illegal Gold Mining and Save Precious Land*, N.Y. TIMES (July 25, 2016), <https://perma.cc/JSJ8-9UNJ>.

161. *Id.*

162. *Id.*

163. *Id.*

164. *Suzanne*, *supra* note 160.

165. Sam Jones, *Illegal Gold Mining Drives Human Rights Abuses in Latin America*, *Claims Study*, THE GUARDIAN (April 7, 2016, 11:19 PM), <https://perma.cc/F6LS-WXA9>.

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Ecuador, Guyana, Mexico, Nicaragua, Peru, and Venezuela.<sup>166</sup> Such far-reaching criminal activity explains why Colombia, Peru, and other Latin American countries resort to using military force.

The environmental devastation and violence from illegal mining in South America is unmatched in the other jurisdictions discussed. It is difficult to criticize a regulatory scheme when there are factors present that make administrative remedies seem almost comical. The governments have initiated military operations to curbe the devastation, and they are having little impact.<sup>167</sup> If any regulatory scheme is to be effective, the situation needs to be under government control first. It is inappropriate to criticize the activities of these governments in a situation that is as violent and complex as the one in South America.

### E. Comparing Global Regulatory Schemes in the United States

Based on cursory research, global regulatory schemes seem to fall into three categories: (1) light civil enforcement, as seen in South Africa; (2) codified, but not enforced regulation, as seen in the Russian Federation; and (3) heavy militarized enforcement, as seen in Colombia.

In South Africa, the most severe penalties are saved for environmental infractions, while laws that regulate small transactions, such as the Second Hand Goods Act, have relatively small penalties. One of the fundamental principles of the MPRDA is to “substantially and meaningfully expand opportunities for historically disadvantaged persons.”<sup>168</sup> The principles in the act demonstrate a commitment to helping people mine sustainably while promoting their economic and social welfare.<sup>169</sup>

Compare the fundamental principles of the MPRDA with the militarized enforcement of Colombia, and it becomes quickly apparent how important the driving factors for the regulation are. In all three of the countries reviewed, the driving force for the mining is livelihood, not recreation, as seen in the United States. The limited resources and high cost of living make it impractical to rely on suction dredge mining as a means of living within the United States. Because the driving force of suction dredging in the United States is recreation, the regulatory laws and penalties should be tailored to fit those interests and not ones based on livelihood.

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166. Sam Jones, *Illegal Gold Mining Drives Human Rights Abuses in Latin America, Claims Study*, THE GUARDIAN (April 7, 2016, 11:19 PM), <https://perma.cc/F6LS-WXA9>.

167. Ebus, *supra* note 155.

168. Mineral and Petroleum Resources Development Act 28 of 2002 § 2(d) (updated through 2013) (S. Afr.).

169. Mineral and Petroleum Resources Development Act 28 of 2002 § 2 (updated through 2013) (S. Afr.).

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A large part of the reason the violence around mining exists in Colombia is because of a lack of other economic opportunity.<sup>170</sup> When the issue at hand is survival, the laws and rules of the region become less important to the individual actor. In these situations, government and military intervention may be appropriate. However, when the driving force behind the illegal activity is recreation, not survival, these drastic measures are excessive and inefficient.

For these reasons, this paper argues that if the United States is to look to another country's regulatory scheme for inspiration it should mirror the MPRDA of South Africa. The purpose should be to efficiently manage the industry of ASM, while heavily penalizing any damage to the environment. Heavy environmental penalties that are well enforced deter recreational miners from engaging in illegal behavior while still promoting the activity itself. If miners in the United States are not relying on gold for their livelihood, the moral question shifts from hurting a person's ability to sustain themselves, to protecting the natural world from unnecessary destruction. Criminal penalties and militarization to enforce suction dredge mining in the United States are not appropriate, but what is fitting is deterrence through steep environmental penalties.

## V. Conclusion

In conclusion, states such as California and Oregon should continue to develop their own suction dredging regulatory programs and not rely on the federal government for enforcement. California and Oregon should also continue to study the impacts that suction dredge mining has on local ecosystems, and carefully monitor environmental impacts.

If the Court decides to hear a case concerning state regulation of suction dredge mining, it will be interesting to see if they decide to pick up the "commercial impracticability" standard that was not addressed by the California Supreme Court in *People v. Rinehart*.<sup>171</sup> There is also the question of whether the conservative members of the Supreme Court will recognize the states' rights to regulate suction dredging under the Tenth Amendment, or rule against regulation as an intrusion into federal power.

After reviewing the global regulatory schemes found in Part IV of this paper, the United States should adopt the heavy environmental fines found in South Africa. Steep environmental penalties send the message that it is okay to participate in regulated activity, but operating in a way that harms the environment is not acceptable. Severe criminal penalties and military intervention are not appropriate in the United States because the activity here is recreational in nature.

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170. Ebus, *supra* note 155.

171. Rosenthal, *supra* note 28, at 558–59.

It is necessary to develop enforced suction dredging regulatory programs in the United States because the environmental impact of unregulated dredging is simply unacceptable. If suction dredge mining continues to grow in popularity and the activity is unchecked, it could have devastating impacts on threatened and endangered fish and their habitats. Legislatures should take a hard look at the environments effected by these activities and look to California and Oregon as examples for creating enforced, robust, regulatory programs.