

# INCOMPLETE BANS AND UNCERTAIN MARKETS IN WILDLIFE TRADE

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## I. INTRODUCTION

When Cecil the Lion was killed in Zimbabwe by a dentist from Minnesota, Walter Palmer, social media exploded with disgust and horror.<sup>1</sup> Cecil the Lion achieved an iconic status. In part, the

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<sup>1</sup> Jani Actman, *Cecil the Lion Died One Year Ago—Here’s What’s Happened Since*, NAT’L GEOGRAPHIC (June 30, 2016), <http://news.nationalgeographic.com/2016/06/cecil-african-lion-anniversary-death-trophy-hunting-zimbabwe/>, archived at <https://perma.cc/NL8B-HKPH>; Christina Capecchi & Katie Rogers, *Killer of Cecil the Lion Finds Out That He Is a Target Now, of Internet Vigilantism*, N.Y. TIMES (July 29, 2015), <http://www.nytimes.com/2015/07/30/us/cecil-the-lion-walter-palmer.html>, archived at <https://perma.cc/D5RJ-QM7Q>. For a fuller account of the public outcry, see Myanna Dellinger, *Trophy Hunting Contracts: Unenforceable for Reasons of Public Policy*, 41 COLUM. J. ENVTL. L. 395, 400–03 (2016) (explaining that the public attention and reactions regarding trophy hunting took place at an unprecedented level).

protests were driven by shock at the killing of a beautiful and symbolic animal who was the subject of serious research.<sup>2</sup> Among the social media storm, though, there was also an underlying current: how could the killing of this magnificent animal, which many people understood to be endangered, be legal?

Although initial reports suggested aspects of the hunt were illegal, Zimbabwe's subsequent actions suggest that the hunt was legal or mostly legal under Zimbabwe law.<sup>3</sup> And the protests and challenges did not go unanswered. Supporters of hunting and some conservationists pointed out that trophy hunting is legal in many countries, that it provides support for local communities who would otherwise find no value in their wildlife, and that it should be considered an important tool in our conservation toolbox.<sup>4</sup> Although some of these commentators might acknowledge that the killing of Cecil the Lion did not fit the ideal model, many believe that protests of his death were a reaction driven by excess emotion or hypocrisy, rather than rational conservation thinking or concern for the people of Zimbabwe.<sup>5</sup>

This fierce debate about the role of trophy hunting in conserving endangered species echoes debates in endangered species conservation generally. Despite differences in the form of legal trade, these debates all center on the appropriate role of allowing legal trade in those species, whether by trophy hunting or other means. At stake

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<sup>2</sup> Cecil was being tracked by a conservation group in the United Kingdom, Oxford's Wildlife Conservation Research Unit ("Wildcru"). Actman, *supra* note 1.

<sup>3</sup> Norimitsu Onishi, *Zimbabwe Won't Charge Dentist Who Killed Cecil the Lion*, N.Y. TIMES (Oct. 12, 2015), <http://www.nytimes.com/2015/10/13/world/africa/zimbabwe-will-not-charge-dentist-who-killed-cecil-the-lion.html>, archived at <https://perma.cc/C9KH-5FLB>.

<sup>4</sup> Norimitsu Onishi, *Outcry for Cecil the Lion Could Undercut Conservation Efforts*, N.Y. TIMES (Aug. 10, 2015), <http://www.nytimes.com/2015/08/11/world/africa/outcry-for-cecil-the-lion-could-undercut-conservation-efforts.html>, archived at <https://perma.cc/8YGV-9FMW>.

<sup>5</sup> *Id.* (discussing the reaction of conservationists against the public condemnation toward Cecil's death); Goodwell Nzou, Opinion, *In Zimbabwe, We Don't Cry for Lions*, N.Y. TIMES (Aug. 4, 2015), <http://www.nytimes.com/2015/08/05/opinion/in-zimbabwe-we-dont-cry-for-lions.html>, archived at <https://perma.cc/Z9PC-PNVT> ("The American tendency to romanticize animals that have been given actual names and to jump onto a hashtag train has turned an ordinary situation . . . into what seems to my Zimbabwean eyes an absurdist circus."). See also Wadzanai Mhute, *Readers on Cecil the Lion*, N.Y. TIMES: TAKING NOTE (Aug. 7, 2015, 11:26 AM), <http://takingnote.blogs.nytimes.com/2015/08/07/readers-on-cecil-the-lion/>, archived at <https://perma.cc/3C8P-YZV5> (detailing the contradictory reactions to Cecil's death).

are survival of species, the interests of communities of people living with the species, big money, and cultural sensitivities.

Perhaps surprisingly to many people, some of the most endangered species, threatened by international trade because they or their parts are prized by consumers, are both subject to bans on international trade and subject to exceptions to those bans. What effect do these incomplete bans have on the markets for these species and the species' chances of survival? These incomplete bans and their relationship to the uncertainty of markets for endangered species are the subject of this article.

All sides can acknowledge the tragic loss of a magnificent patriarchal African lion, without endorsing any retaliation or violence against Mr. Palmer. Yet beyond that, the sides quickly move to opposite ends of the spectrum. Nevertheless, the true lesson from the death of Cecil the Lion is more complex and demonstrates that the arguments need to be carefully weighed, always in context. Thousands of wild fauna and flora are traded perfectly legally around the world, with no apparent threat to their long-term survival. However, for some species, demand from international trade is driving poaching and leading to critically endangered populations. For these most endangered species threatened by trade, the Convention on International Trade in Endangered Species (CITES) serves as the mechanism to regulate and potentially end that trade.<sup>6</sup> Yet, for many of those most endangered species, CITES creates a type of dual system referred to in this article as an incomplete ban.

This article examines the arguments surrounding trade in these species and demonstrates that the incomplete bans discussed here exacerbate uncertainties in markets for endangered species. With the level of uncertainty that arises, and the perverse incentives created by incomplete bans, policy-makers should be highly skeptical of positions that would allow legal trade of the most in-demand and endangered species. In practice, these incomplete trade bans exacerbate complexity and can actually fuel illegal trade to the ultimate detriment of the species.

This article does not address animal rights or ethical perspectives that would advocate against hunting or any killing of

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<sup>6</sup> Convention on International Trade in Endangered Species of Wild Fauna and Flora, Mar. 3, 1973, 27 U.S.T. 1087 [hereinafter CITES], <https://www.cites.org/sites/default/files/eng/disc/CITES-Convention-EN.pdf>, archived at <https://perma.cc/3CUM-P6QY>.

wild animals.<sup>7</sup> These perspectives are important, and particularly relevant for some of the species under discussion, such as the African elephant, because of what we know about their relationships, intelligence, and emotional life. However, the article attempts to engage the arguments of proponents of legal trade on their own terms, assessing their own arguments, and leaves to one side counter-arguments that come at the problem with a different set of values.

## II. THE CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES (CITES)

CITES, concluded in 1973, is one of the most significant international conservation treaties, with 183 parties as of September, 2016. Yet it has limited scope and application. It applies only to species whose survival is threatened by being the subject of international trade and regulates that international trade.<sup>8</sup> It does nothing to address threats stemming from habitat loss or other issues. CITES relies on an appendix system, with listing done by the parties to the Convention at their regularly held Conferences of the Parties according to criteria agreed to by the parties.<sup>9</sup>

Appendix I is for the most endangered species, “all species threatened with extinction which are or may be affected by trade.”<sup>10</sup> Species listed on Appendix I will be subject to both export and import permits, both of which require state agencies to make “non-detriment findings” (NDFs) before allowing export and import.<sup>11</sup> NDFs are a critical part of the process of CITES. States have significant capacity problems in determining when trade will be subject to NDFs, which the parties and Secretariat to CITES have begun to try to address in recent years.<sup>12</sup> Nevertheless, these NDFs are key to whether CITES

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<sup>7</sup> See Dellinger, *supra* note 1, at 402 (discussing ethical objections to Cecil’s killing).

<sup>8</sup> CITES, *supra* note 6, art. II.

<sup>9</sup> *Criteria for Amendment of Appendices I and II*, Resolution Conf. 9.24 (Rev. CoP16), CITES Conference of the Parties, Nov. 18, 1994, <https://cites.org/sites/default/files/eng/res/09/E-Res-09-24R16.pdf>, archived at <https://perma.cc/F859-A97A> [hereinafter *Criteria for Listing*].

<sup>10</sup> CITES, *supra* note 6, art. II(1).

<sup>11</sup> CITES, *supra* note 6, arts. III(2)(a), III(3)(a).

<sup>12</sup> See *Non-Detriment Findings*, Resolution Conf. 16.7, CITES Conference of the Parties, Mar. 14, 2013, <https://www.cites.org/eng/res/16/16-07.php>, archived at <https://perma.cc/59JT-MDD9> (“RECOGNIZING that, in accordance with Article III and IV of the Convention, export permits for specimens of species included in Appendices I and II shall be granted only when a Scientific Authority of the State of export has advised that such

can successfully regulate trade in species so that they do not go extinct.<sup>13</sup>

In addition to the requirement for NDFs, the import permit requires that that “specimen is not to be used for primarily commercial purposes.”<sup>14</sup> As a result of the import permit requirement that international trade not be for “primarily commercial purposes,” Appendix I results in an apparent complete ban on international trade in that species and parts of that species.<sup>15</sup> There are around 630 species of fauna listed on Appendix I, including 300 mammals.<sup>16</sup> There are around 300 plants listed on Appendix I.<sup>17</sup>

Appendix II applies to all species “which although not necessarily now threatened with extinction may become so unless trade in specimens of such species is subject to strict regulation in order to avoid utilization incompatible with their survival.”<sup>18</sup> The language is intended to catch species that are not currently at risk of imminent extinction, but that are sufficiently traded across international borders that such trade could rise to a level incompatible with their survival. Appendix II also provides for so-called lookalike species to be added to the list, so that trade in those lookalike species

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export will not be detrimental to the survival of the species . . . ); ROSALIND REEVE, POLICING INTERNATIONAL TRADE IN ENDANGERED SPECIES: THE CITES TREATY AND COMPLIANCE 152–54 (2002) (explaining the process in which several parties had not designated Scientific Authorities, which likely has “long undermined the implementation of CITES”); Soledad Aguilar, *Regulatory Tools for the Management of Fish and Timber Species Through CITES*, 22 RECIEL 281, 283 (2013) (describing capacity problems for developing NDFs); Annecoos Wiersema, *Uncertainty, Precaution, and Adaptive Management in Wildlife Trade*, 36 MICH. J. INT’L L. 375, 403–07 (2015) (stating that in spite of difficulties in effecting compliance with non-detriment finding requirements, recent measures such as the Resolution Conf. 16.7 on Non-Detriment Findings have tried to improve the capacity of state parties).

<sup>13</sup> Aguilar, *supra* note 12, at 283.

<sup>14</sup> CITES, *supra* note 6, art. III(3)(c).

<sup>15</sup> “Primarily commercial purposes” has been defined broadly by the parties. See *Definition of “Primarily Commercial Purposes”*, Resolution Conf. 5.10 (Rev. CoP15), CITES Conference of the Parties, May 3, 1985, <https://cites.org/sites/default/files/eng/res/all/05/E05-10R15.pdf>, archived at <https://perma.cc/4MZ5-HVQN> (stating the principles and examples for assessing whether species in certain transactions are used for primarily commercial purposes). The treaty exempts non-commercial scientific exchange from these provisions, species acquired prior to the treaty’s application to that species, and animals or plants bred in captivity. This latter exception is discussed in the text below. See CITES, *supra* note 6, art. VII (discussing exemptions for certain specimens related to trade).

<sup>16</sup> *The CITES Species*, CITES, <https://cites.org/eng/disc/species.php> (last visited Oct. 12, 2016). These numbers are valid before the Seventeenth CoP, held in September, 2016.

<sup>17</sup> *Id.*

<sup>18</sup> CITES, *supra* note 6, art. II(2)(a).

does not undermine efforts to protect species needing strict regulation.<sup>19</sup>

Once species are listed on Appendix II, they can only be traded internationally if the state has issued an export permit.<sup>20</sup> For these export permits, the state must again have made NDFs.<sup>21</sup> However, no import permit is required. As a result, there is no automatic limit on trade for commercial purposes for Appendix II species and they can be legally traded internationally provided they are accompanied by an export permit. Around 4,800 species of fauna are listed on CITES Appendix II, including around 500 mammals.<sup>22</sup> Around 25,500 plants are listed on CITES Appendix II.<sup>23</sup> Appendix II, therefore, has over seven times as many species of fauna as are listed on Appendix I, and around eighty-five times as many species of plants as are listed on Appendix I.

The quantitative difference between listings on Appendix II and Appendix I is significant because it demonstrates CITES is not a trade ban treaty, but rather a treaty that is set up to regulate trade in species threatened by international trade. The vast majority of the species listed on Appendix II are traded without major uproar or social media attention. These species are not the most highly endangered, or are not primarily threatened by trade, according to current data at least.<sup>24</sup> Nevertheless, between Appendix I and Appendix II, there is a middle ground that has emerged in the practice of the parties to CITES that can cover some of the most iconic and critically endangered species, and result in incomplete bans in international trade in them and their parts.

Listing occurs by agreement of the parties and by vote at the CoPs, held every three years.<sup>25</sup> In substantive terms, listing is governed by criteria that have been developed by the parties.<sup>26</sup> Listing or movement of a species between Appendices I and II

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<sup>19</sup> CITES, *supra* note 6, art. II(2)(b).

<sup>20</sup> CITES, *supra* note 6, art. IV(2).

<sup>21</sup> CITES, *supra* note 6, art. III(2)(a).

<sup>22</sup> *The CITES Species*, *supra* note 16.

<sup>23</sup> *The CITES Species*, *supra* note 16.

<sup>24</sup> Listing debates can still be highly contentious. For discussion of recent listing debates about sharks and polar bears, see Wiersema, *supra* note 12, at 408–15 (discussing the listing debates concerning shark and polar bears populations).

<sup>25</sup> CITES, *supra* note 6, art. XI.

<sup>26</sup> *Criteria for Listing*, *supra* note 9.

requires a two-thirds majority of the parties present and voting.<sup>27</sup> If the threshold for listing is reached, species will be listed and all parties are bound unless they enter a reservation.<sup>28</sup> Parties may enter reservations within ninety days of a listing decision, and they will then be treated as a non-party for purposes of that species.<sup>29</sup> CITES requires the same paperwork or its equivalent when parties trade with non-parties as when parties trade with parties.<sup>30</sup> Thus, if a state wants to be truly free of regulation of a listed species, it will need to find a trading party that is also willing to enter a reservation for that species.

CITES has one additional Appendix, Appendix III, which operates differently.<sup>31</sup> Appendix III listing does not require agreement by all the parties to CITES, but allows an individual state to identify any species “subject to regulation within its jurisdiction for the purpose of preventing or restricting exploitation, and as needing the co-operation of other Parties in the control of trade.”<sup>32</sup> Once a species is listed on Appendix III, export from that state will require an export permit, although no NDFs are required.<sup>33</sup> Importing countries must then monitor the source of that species and require an export permit if the species originated from the listing state.<sup>34</sup> The export permit must only be issued if the specimen has not been obtained contrary to the laws of the listing state.<sup>35</sup>

Thus, although listing on Appendix III does not result in the requirement of an NDF, the Appendix allows parties to use the mechanisms of CITES to control trade of a particular species even if that species has not been listed on either Appendix II or Appendix I. The Appendix also allows parties to ensure that any domestic provisions they have in place for protection can be incorporated into the CITES permitting process. In this sense, Appendix III listing allows for parties to CITES to impose greater regulatory burdens on trade in a particular species than the parties have agreed to.

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<sup>27</sup> CITES, *supra* note 6, art. XV(1).

<sup>28</sup> CITES, *supra* note 6, art. XV(1).

<sup>29</sup> CITES, *supra* note 6, art. XV(3).

<sup>30</sup> CITES, *supra* note 6, art. X.

<sup>31</sup> See CITES, *supra* note 6, arts. II(3), V (focusing on the differences applied for species under Appendix III).

<sup>32</sup> CITES, *supra* note 6, art. II(3).

<sup>33</sup> CITES, *supra* note 6, art. V(2).

<sup>34</sup> CITES, *supra* note 6, art. V(3).

<sup>35</sup> CITES, *supra* note 6, art. V(2)(a).

### III. INCOMPLETE BANS

Incomplete bans are a subset of a dual stream market. When trade in a species is made subject to regulation, it is subject to a dual stream market because it can now be traded legally and illegally. Thus, Appendix II and Appendix III listing create dual stream markets because listing on either brings with it some regulation of international trade in that species. The regulation may appear to be a formality, with a requirement for a document—an export permit in the case of an Appendix II- or Appendix III-listed species. Even so, regulating legal trade creates a category of possible non-compliant trade—illegal trade. Appendix I listing banning commercial trade does not usually create a dual stream market, except to the extent that exceptions for scientific exchange could be seen as a legal form of trade.

Dual stream markets can operate for many species regulated by CITES with no need to resort to an Appendix I listing and its accompanying ban on commercial trade. Indeed, some of the most interesting developments at the last few CoPs involve the listing on Appendix II of species of timber and fish that are part of a robust commercial trade so that the parties can better manage that trade.<sup>36</sup> Nevertheless, the regulation of dual stream markets requires capacity and resources to ensure that illegal sources are limited and do not serve to undermine legal trade. These investments are appropriate and necessary given that there is no serious suggestion that all legal international trade in species of wild animals and plants be stopped.

Yet, within the general regulatory needs of dual stream markets, there is a category of legal trade that raises distinct problems. These are the incomplete bans I focus on in this article. What makes these types of dual stream market distinct is that the species is first treated as warranting a ban on trade. The starting presumption is that trade must be banned or severely curtailed because of the degree of threat to the species' survival from international trade. This can happen either by listing on Appendix I or by listing on Appendix II with added restrictions on trade, as we shall see. Then, one or more narrow exceptions are added, generally by splitting the species or distinguishing captive-bred populations.

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<sup>36</sup> Sara F. Oldfield, *The Evolving Role of CITES in Regulating the International Timber Trade*, 22 RECIEL 291 (2013); Aguilar, *supra* note 12 (discussing fish and timber species).



The use of the word “ban” is important here, because it demonstrates that these species are subject to some kind of trade ban, but that the ban is incomplete because there are exceptions. These exceptions are distinct from exceptions allowing non-commercial exchange for scientific research because they explicitly allow for commercially-related trade, and are, therefore, direct exceptions to limitations on commercial international trade. Thus, these are not species that are simply the subject of regulatory control through the export permit process envisioned in Appendix II. When the exceptions to CITES are relied on, the trade in question is completely legal under CITES.<sup>37</sup>

These species are often most at risk because they are iconic: elephants, rhinoceros, lions, and tigers. Their parts are also in high demand and, in some sense, also iconic: ivory, rhino horn, lion trophies and lion bones, and tiger pelts and bones. Others of these species are less iconic but have parts that are in high demand, such as pangolin species. The price for rhino horn has recently been estimated at \$60,000 per pound, higher than the price for gold, diamonds or cocaine.<sup>38</sup> The market price for pangolin scales has risen from \$300 to \$600 per kilogram in the last eight years in China’s Yunnan Province and ten-fold in the last five years in Nigeria, according to a proposal for transfer of African pangolin species to Appendix I.<sup>39</sup>

What characterizes these species is a level of demand that is unsustainable for the populations of the species. Demand may come from centuries-old traditional uses, but can also stem from newly advertised uses. In addition, demand for wild species is often the product of increasing wealth, either because more people can afford traditionally highly-prized parts or because it can become a form of

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<sup>37</sup> CITES, *supra* note 6, art. VII.

<sup>38</sup> Jennifer Harper, *\$60K a Pound: Illegal Rhino Horn Now Declared More Valuable than Gold, Diamonds and Cocaine*, WASH. TIMES (May 17, 2015), <http://www.washingtontimes.com/news/2015/may/17/rhino-horn-considered-cure-all-and-aphrodesiac-now/>, archived at <https://perma.cc/BZX4-FTVV>.

<sup>39</sup> See Seventeenth Meeting of the CITES Conference of the Parties, *Consideration of Proposals for Amendment of Appendices I and II*, CoP17 Prop. 12, at 2 (Sept. 24–Oct. 5, 2016), <https://cites.org/sites/default/files/eng/cop/17/prop/060216/E-CoP17-Prop-12.pdf>, archived at <https://perma.cc/L8BQ-W9QP> [hereinafter Prop. 12] (proposing the transfer of four species—*Manis tetradactyla*, *M. tricuspis*, *M. gigantea*, and *M. temminckii*—from CITES Appendix II to Appendix I).

conspicuous consumption, as is the case with rhino horn.<sup>40</sup> The level of demand for these species' parts adds an important dimension to questions about the role of trade in their conservation.

The clearest form of incomplete ban is when a species is listed on Appendix I, showing that the parties have considered the threat from trade to warrant a complete ban on commercial trade. Yet, some species listed on Appendix I may still be the subject of international trade. The structure of CITES is significant here.

CITES is structured to assume that a ban is appropriate for the most threatened species. Although some proponents of allowing more trade have challenged the validity of this assumption, it is an assumption embedded within CITES' text.<sup>41</sup> That structure of CITES means that when a species is listed on Appendix I, a nod is being made to the underlying assumption that trade is bad. But when an exception is made, such as split-listing or a captive-breeding program, a nod is also being made to a view that trade can be good for species. That's because these are the species that are most at risk—indeed, trade has already been determined to be a threat—yet the argument is that having a market will help them.<sup>42</sup>

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<sup>40</sup> TOM MILLIKEN & JO SHAW, TRAFFIC, THE SOUTH AFRICA—VIET NAM RHINO HORN TRADE NEXUS 134–36 (2012), [http://www.traffic.org/species-reports/traffic\\_species\\_mam\\_mals66.pdf](http://www.traffic.org/species-reports/traffic_species_mam_mals66.pdf), archived at <https://perma.cc/A2EH-6AF8>.

<sup>41</sup> See, e.g., Chris Huxley, *CITES: The Vision*, in ENDANGERED SPECIES, THREATENED CONVENTION: THE PAST, PRESENT AND FUTURE OF CITES, THE CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES OF WILD FAUNA AND FLORA 3, 10–11 (Jon Hutton & Barnabas Dickson eds. 2000) [hereinafter ENDANGERED SPECIES, THREATENED CONVENTION] (stating that the main goal of CITES is to protect endangered species by setting up a consistent law and enforcing the restrictions on both imports and exports); R.B. Martin, *When CITES Works and When It Does Not*, in ENDANGERED SPECIES, THREATENED CONVENTION, *supra*, at 29, 36 (claiming that changes such as “a quota system” after replacing “the existing system of two appendices” with “a single appendix” of a listing of “all species of international concern” would make possible a “trade ban on any species.”).

<sup>42</sup> The most commonly cited examples where trade appears to have benefited a species are the Nile Crocodile and the Vicuña. See Jon Hutton & Grahame Webb, *Crocodiles: Legal Trade Snaps Back*, in TRADE IN WILDLIFE: REGULATION FOR CONSERVATION 108, 108–18 (Sara Oldfield ed., 2003) (alteration in original) (claiming that “legal trade can displace illegal trade” rather than “legal trade [leading] to illegal trade”); Ryan R.J. McAllister et al., *Legalizing Markets and the Consequences for Poaching of Wildlife Species: The Vicuña as a Case Study*, 90 J. ENVTL. MGMT. 120 (2009) (explaining that the creation of an international market for vicuña can paradoxically assure the species' sustainable population); Henriette Kievit, *Conservation the Nile Crocodile: Has CITES Helped or Hindered?*, in ENDANGERED SPECIES, THREATENED CONVENTION, *supra* note 41, at 88, 93 (arguing that the Nile Crocodile has thrived because of its value as an economic asset for sale of its parts rather than because of CITES). Cf. John Thorbjarnarson, *Crocodile Tears and Skins: International Trade, Economic Constraints and Limits to the Sustainable Use of Crocodilians*, 13 CONSERVATION

This can take a few forms. Some species are listed on Appendix I, but have sub-populations listed on Appendix II. For example, the African elephant (*Loxodonta africana*) is listed on Appendix I, but populations of the same species in Botswana, Namibia, South Africa, and Zimbabwe are listed on Appendix II.<sup>43</sup> These populations are in turn subject to zero export quotas, with provision for periodic sales between designated countries.<sup>44</sup> This split listing and unique treatment of the African elephant is the result of longstanding and bitter disputes about the best way to manage poaching and demand for ivory, and differences in elephant population numbers in different regions of Africa. To date, since the split listing, there have been two sales of ivory between designated countries, one to Japan in 1999 and one to Japanese and Chinese accredited traders in 2008.<sup>45</sup>

Similarly, the White rhinoceros (*Ceratotherium simum*) is listed on Appendix I, with populations of the sub-species *Ceratotherium simum simum* in South Africa and Swaziland listed on Appendix II.<sup>46</sup> This split listing of certain species embodies an incomplete ban, because the split in listing is based on geographical boundaries, not on the particular part or specimen of the species in demand. Ivory and rhino horn from southern African states are not different for purposes of their use or consumption; the differences lie in the politics and conditions of the range states.

For some species listed on Appendix II, the ban on international trade comes from their treatment on that Appendix. Some species listed entirely on Appendix II can be considered to be subject to an incomplete ban because they are subject to stricter requirements than the text of CITES alone would require for Appendix II-listed species, the export permit premised on an NDF.

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BIOLOGY 465 (1999) (stating that the market for crocodilian skins is cyclical, which makes conservation and sustainable habitats vulnerable to fluctuations in price).

<sup>43</sup> See *Checklist of CITES Species*, CITES, <http://checklist.cites.org/#/en>, archived at <https://perma.cc/CVD8-8TC9> (last visited Oct. 13, 2016) (containing the official list of CITES-listed species).

<sup>44</sup> *Id.*

<sup>45</sup> Press Release, CITES, Ivory Auctions Raise 15 Million USD for Elephant Conservation (Nov. 7, 2008), [https://cites.org/eng/news/pr/2008/081107\\_ivory.shtml](https://cites.org/eng/news/pr/2008/081107_ivory.shtml), archived at <https://perma.cc/6BSR-LEU5>; Press Release, CITES, CITES Sets Strict Conditions for Any Possible Future Ivory Sales (Nov. 12, 2002), [https://cites.org/eng/news/pr/2002/021112\\_ivory\\_update.shtml](https://cites.org/eng/news/pr/2002/021112_ivory_update.shtml), archived at <https://perma.cc/ADN6-B73C>.

<sup>46</sup> See *Checklist of CITES Species*, *supra* note 43 (providing information on *Ceratotherium simum* and *Ceratotherium simum simum*).

They may be subject to zero export quotas. Alternatively, annotations may specify that these species can only be traded for certain purposes, such as hunting trophies. Hence, they can be said to be subject to an incomplete ban—no trade is allowed, except in certain circumstances. Although the text of Appendix II does not specifically advocate for quotas as a means of managing international trade in these species, relying instead on NDFs, quotas have become a useful tool for the parties. These quotas even draw an explicit distinction based on the specific consumptive use, as with hunting trophies.

Split listing provides another example of this form of incomplete ban when we focus on the Appendix II-listed populations. Where there is split listing, the populations listed on Appendix II can also be considered to be subject to an incomplete ban because, despite listing on Appendix II, they are subject to stricter requirements than the text of CITES alone would require. The populations of the African elephant that are on Appendix II are subject to a zero export quota, with provision for periodic sales between designated countries. Populations of the sub-species of White rhinoceros listed on Appendix II are also subject to limitations on international trade, with their inclusion on Appendix II “for the exclusive purpose of allowing international trade in live animals to appropriate and acceptable destinations and hunting trophies.”<sup>47</sup> At the Seventeenth CoP in 2016, Swaziland requested an amendment of this annotation to allow it to conduct “a limited and regulated trade in white rhino horn which has been collected in the past from natural deaths, or recovered from poached Swazi rhino, as well as horn to be harvested in a non-lethal way from a limited number of white rhino in the future in Swaziland.”<sup>48</sup>

CITES also provides that captive-bred populations are not subject to the same restrictions as wild-caught populations.<sup>49</sup> If an animal or plant species is included in Appendix I, an individual of that species bred for commercial purposes will be treated as if it were

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<sup>47</sup> *Checklist of CITES Species*, *supra* note 43.

<sup>48</sup> Seventeenth Meeting of the CITES Conference of the Parties, *Consideration of Proposals for Amendment of Appendices I and II*, CoP17 Prop. 7 (Sept. 24–Oct. 5, 2016), <https://cites.org/sites/default/files/eng/cop/17/prop/060216/E-CoP17-Prop-07.pdf>, *archived at* <https://perma.cc/KLT3-MHGR>. Swaziland had expected South Africa to join its proposal, but South Africa decided against it after failing to garner international support for the idea. *Id.* Although the request failed, the form of the requested notation is illustrative.

<sup>49</sup> CITES, *supra* note 6, art. VII(4).

listed on Appendix II.<sup>50</sup> Thus, even species subject to the strongest limits on international trade under Appendix I, or a species subject to restrictions under Appendix II, may have populations that are captive-bred and permitted to be in international trade.

Domestic law also interacts with CITES to create incomplete bans. Species listed on Appendix I and subject to a ban on international commercial trade can nevertheless be traded in domestic markets without implicating CITES. States may choose to close down their domestic markets, but they often do not. Thus, a species and its parts that cannot be traded internationally may still be the subject of commercial activity within a country's borders without any violation of law.

On the other side, domestic law may add restrictions to export through specific requirements related to particular consumptive uses, such as for trophy hunters, or it may limit imports of specimens even where export was permitted by the range state. In these instances, the ban emanates from domestic laws, but the ban does not cover all international trade and is therefore incomplete. Appendix III listing can be a way of achieving this dynamic.

Dual markets require regulatory mechanisms that can identify whether a species or specimen is being traded legally. Legal markets can be subject to fraud, and laundering, and a range of illegal tactics. Corruption is also a significant problem.

Incomplete bans raise all these same problems of dual markets, but also raise a new set of problems. Sometimes, they exacerbate the problems of dual markets; other times, they create distinct problems of their own. The question is whether the tension between the creation of a ban in commercial trade and provisions for some commercial trade in spite of the ban can co-exist so that the purpose behind the ban is not undermined. Logically, the justifications can make sense; for example, some populations of a species do not need the same level of protection, or trade in species can enhance support for their conservation. Yet, the uncertainty surrounding markets for the most endangered species can challenge this logic. Given that we are dealing here with the most endangered species, we should scrutinize the arguments carefully.

Incomplete bans are ultimately a compromise position. In this, they differ significantly from dual stream markets, because the

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<sup>50</sup> CITES, *supra* note 6, art. VII(4).

signals they send to the market are different. Instead of allowing trade up to a certain point or within certain parameters, incomplete bans recognize the role of a ban on trade, yet send mixed signals about the future status of that ban. How, then, do these mixed signals affect the arguments that support legal trade?<sup>51</sup>

#### IV. UNCERTAIN MARKETS FOR ENDANGERED SPECIES

Some of the most logically compelling arguments for allowing some trade in certain species and their parts rely on supply-side economic theories.<sup>52</sup> Supply-side economists point out that the cost of items traded on the black market are extremely high and that, despite the fact that international trade in those items is illegal, demand appears insatiable. With rhino horn estimated to be among the highest-valued commodities—higher than gold, diamonds, and cocaine,<sup>53</sup> an institution like the Natural History Museum in London does not display a real horn on its stuffed rhinoceros exhibit for fear of theft. If the market in these products is legalized, the argument goes, supply can be increased and the price will go down. Once the price goes down, the incentives for poachers will be removed and poachers and those involved in the illegal trade will move out of the market.<sup>54</sup> These arguments seem so logically compelling that they can be easily and quickly presented in opinion pieces in the print

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<sup>51</sup> For additional discussion of the assumptions behind arguments for legal trade in endangered species, see Annecoos Wiersema, *Uncertainty and Markets for Endangered Species Under CITES*, 22 *RECIEL* 239, 241–49 (2013) (assessing the economic arguments of proponents such as demand elasticity for legalizing trade in endangered species under CITES). For additional discussion of uncertainty in wildlife trade, see Wiersema, *supra* note 12, at 378–88 (explaining how information gaps along with complexity and indeterminacy cause uncertainty in deciding whether to legalize trade for species).

<sup>52</sup> See, e.g., Duan Biggs et al., *Legal Trade of Africa's Rhino Horns*, 339 *SCI.* 1038 (2013) (arguing that while legal trade would help conservation efforts, a trade ban limits supply and thus increases prices and poaching.); Kirsten Conrad, *Trade Bans: A Perfect Storm for Poaching?* 5 *TROPICAL CONSERVATION SCI.* 245 (2012) (claiming that trade ban has not resolved the problem of decline of wild populations for some species).

<sup>53</sup> See *supra* note 38 and accompanying text.

<sup>54</sup> See, e.g., Michael 't Sas-Rolfes, *Who Will Save the Wild Tiger?*, PERC POLICY SERIES (Feb. 1998), at 1, 10 (“While legal trade could make it easier for illegal traders to operate, a legal supply could bring down the average market price of tiger products.”); Biggs et al., *supra* note 52 (“A legal trade could simultaneously supply horns, fund rhino protection, and provide an incentive for their sustainable use and long-term survival.”); Conrad, *supra* note 52 (stating that legal trade is a viable tactic for conservation).

media, such as an opinion piece by The Guardian's well-regarded Simon Jenkins.<sup>55</sup>

These supply-side arguments are based on a number of assumptions. For species subject to incomplete bans, species that are at the greatest risk from an unsustainable demand, these assumptions are often questionable, and the predictions based on them are at best uncertain.

#### A. *Market Behavior and Speculation*

Bulte and Damania have argued that the supply-side model relied on by many proponents of legalizing trade assumes perfectly competitive markets.<sup>56</sup> However, as Bulte and Damania point out, markets for endangered species are more appropriately considered to be run as oligopolies.<sup>57</sup> In these markets, it is not clear that creating a legal supply will result in traders leaving the market. Instead, they may increase their activity to try to compensate for the lower per-unit profit made for each specimen due to the newly flooded market.<sup>58</sup>

This in turn leads to a highly significant problem for incomplete bans: the possibility of speculation. If traders are aware that a ban may be temporary and that any ban on commercial trade may be subject to exceptions, there is an incentive to stockpile either legally or illegally.<sup>59</sup> There may even be an incentive to speed up the process of extinction in order to ensure a higher price for stockpiled

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<sup>55</sup> Simon Jenkins, Opinion, *If You Really Want to Save the Elephants, Farm Them*, THE GUARDIAN (Feb. 13, 2014), <https://www.theguardian.com/commentisfree/2014/feb/13/save-elephants-farm-them-ivory-tusks>, archived at <https://perma.cc/44MC-FJY7>.

<sup>56</sup> Erwin H. Bulte & Richard Damania, *An Economic Assessment of Wildlife Farming and Conservation*, 19 CONSERVATION BIOLOGY 1222, 1224 (2005).

<sup>57</sup> *Id.* at 1227. See also R. Craig Kirkpatrick & Lucy Emerton, *Killing Tigers to Save Them: Fallacies of the Farming Argument*, 24 CONSERVATION BIOLOGY 655, 657, 658 (2010) ("Oligopolistic, illicit organizations control illegal tiger markets through complex smuggling networks."); MILLIKEN & SHAW, *supra* note 40, at 81–82 (summarizing the events that drive an escalating illicit trade in rhino horns from South Africa to Vietnam).

<sup>58</sup> Bulte & Damania, *supra* note 56, at 1227. Alternatively, traders may move to other species, creating spillover effects. However, this is less a problem for the species subject to an incomplete ban, so I do not dwell on it here.

<sup>59</sup> See Charles F. Mason, Erwin H. Bulte, & Richard D. Horan, *Banking on Extinction: Endangered Species and Speculation*, 28 OXFORD REV. ECON. POL'Y 180 (2012) (arguing that stockpiling in the hopes of extinction is profitable if current speculators are allowed to collude).

goods.<sup>60</sup> Arguments that current bans have not worked are undermined by the fact that we do not have complete bans. We haven't tried them because so many of our most endangered and iconic species are subject to incomplete bans now or the possibility that the ban will be incomplete in the future.

### B. *Substitutability*

A second significant assumption is that the legal product will substitute perfectly for the illegal product or will be in higher demand. Yet, this is highly context- and species-specific. There is evidence that some buyers prefer wild-caught over captive-bred species or their parts, so if legal supply is to come from ranches or captive-bred species, the legal product may not be substitutable.<sup>61</sup>

The example from trophy hunting is illustrative here. Cecil the Lion was shot in unusual circumstances with aspects that raised legal questions, despite the fact that there are many avenues through which one can legally shoot an African lion in Zimbabwe or several other African countries. Evidence from trophy hunting practices more generally suggests that despite the availability of legal trophy hunting, the community does not always abide by limits. This goes to substitutability because it suggests that once a source is legal, it may no longer hold the same appeal. Indeed, outside of trophy hunting, buyers may prefer wild specimens because the reason for demand is itself reliant on the power and iconic status of the wild animal, as with animal parts used for their supposed aphrodisiac properties. Thus, legalizing a market will not always satisfy those who were willing to engage in the illegal market.

The dynamic between trophy hunting of wild African lions and captive-bred lions adds another layer to the question of substitutability. Because of the ethical concerns raised by captive-bred lion hunts and canned hunts, some trophy hunting operations have distanced themselves from captive-bred lion hunts in order to demonstrate that they are not the same.<sup>62</sup>

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<sup>60</sup> *Id.*; Brian Gratwicke et al., *The World Can't Have Wild Tigers and Eat Them, Too*, 22 CONSERVATION BIOLOGY 222, 223 (2008).

<sup>61</sup> Gratwicke et al., *supra* note 60, at 222.

<sup>62</sup> P. Lindsey, R. Alexander, G. Balme, N. Midlane, & J. Craig, *Possible Relationships Between the South African Captive-Bred Lion Hunting Industry and the Hunting and Conservation of Lions Elsewhere in Africa*, 42 S. AFR. J. WILDLIFE RES. 11, 20 (2012).



Conversely, legalizing trade may fuel illegal poaching if the wild-caught specimens will be cheaper to obtain and therefore can be sold at a reduced price. Evidence on trade in tiger skins suggests that captive-bred tiger skins can sell for 1.5–3 times higher than the price of wild tiger skins.<sup>63</sup> This question of substitutability is then connected to uncertainty about the costs of producing or maintaining a legal supply. When advocates of legal trade suggest the sale of stockpiles, the source may indeed be cheaper than a wild supply. However, if species are to be captively bred, the cost of maintaining a legal supply may be higher and poached parts may undercut the legal market.<sup>64</sup>

Uncertainty abounds here, and each species will be different. Abbot and van Kooten have observed that captive-breeding operations of tigers might produce cheaper products due to economies of scale.<sup>65</sup> However, if this hypothesis is wrong and the output of tiger farms does not affect the price of wild-caught tigers, they posit that tiger farming will have no effect on poaching of wild tigers.<sup>66</sup> The actual outcome cannot be predicted with certainty.<sup>67</sup>

### C. *Laundering*

Concerns about substitutability are significant. Yet, these concerns arise where it is possible to distinguish between the legal and the illegal products. Incomplete bans also create another problem, which is almost the flip side of the substitutability problem, when it is difficult or impossible to distinguish between a legally-sourced product and an illegally-sourced product. In many cases, once a part has been removed from an animal or the animal removed from its natural surroundings, it becomes extremely difficult to distinguish the

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<sup>63</sup> ENVT'L INVESTIGATION AGENCY, HIDDEN IN PLAIN SIGHT: CHINA'S CLANDESTINE TIGER TRADE 7 (2013), <https://eia-international.org/wp-content/uploads/EIA-Hidden-in-Plain-Sight-med-res.pdf>, archived at <https://perma.cc/72G9-FS5T>.

<sup>64</sup> Miranda H. Mockrin, Elizabeth L. Bennett & Danielle T. LaBruna, *Wildlife Farming: A Viable Alternative to Hunting in Tropical Forests?* 15 (Wildlife Conservation Soc'y, Working Paper No. 23, 2005).

<sup>65</sup> Brant Abbott & G. Cornelis van Kooten, *Can Domestication of Wildlife Lead to Conservation? The Economics of Tiger Farming in China* 70 *ECOLOGICAL ECON.* 721, 722 (2011).

<sup>66</sup> *Id.* at 723.

<sup>67</sup> *See id.* at 722 (discussing the uncertainty about how poachers and farmers will behave in response to a legal, farmed supply of wildlife products).

species it has come from, as with pangolin scales.<sup>68</sup> If the species is the same, but one source—a stockpile—is legal, and another—a poached animal—is illegal, it can be difficult for customs officials to distinguish the two groups. Tremendous strides have been made with regard to ivory DNA, so that experts can identify legal and illegal ivory.<sup>69</sup> However, these new techniques cannot be applied across the board.

When it is hard or impossible to verify the source of a specimen, laundering becomes a significant problem. Here, the problem is almost the opposite of substitutability; it is that illegal products can be moved through the legal market without trace. Indeed, traders may still be operating in the perfect market posited by supply-side economists, but they may be addressing the problem either by being willing to take a reduction in overall profit, or by increasing their units so that even if the per-unit price has gone down, their overall profit can be sustained.

This in turn leads to important questions about regulatory needs and the costs of dual stream markets. To address the possibility of laundering, a strong enforcement infrastructure is required. Dual stream markets also require regulatory efforts to ensure that consumers can distinguish between legal and illegal products.

Laundering problems are exacerbated further by incomplete bans. In a regular dual stream market, there are likely to be many legal market actors, all of whom have an incentive to help police the legal market in order to ensure its continued viability and sustainability. The cost of entry to the legal side of a dual stream market may not be negligible—sometimes it is related to family ties or community membership—but it is likely to be lower than the cost of entry to the legal component of an incomplete ban. For example, many sales of stockpiles will involve sale between state entities, and not include private actors. The exceptions to the ban in an incomplete ban are limited enough that the cost of entry to legality is likely to be high. Yet, because an incomplete ban implicitly acknowledges and then in turn feeds demand for the species and its parts, an illegal trader—unable to enter the legal market—has an incentive to

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<sup>68</sup> Prop. 12, *supra* note 39.

<sup>69</sup> Claudia Dreifus, *Samuel K. Wasser, A Scientific Detective Trailing Poachers*, N.Y. TIMES (June 13, 2016), <http://www.nytimes.com/2016/06/14/science/samuel-wasser-dna-elephants-ivory.html>, archived at <https://perma.cc/N2U9-YBWA>.

continue to provide an illegal supply. If legal and illegal specimens are hard or impossible to distinguish, laundering becomes easier.

#### D. Demand

Incentives to launder exist only if there is a market and demand for a species or its parts. Proponents of some legal trade have argued that demand shows no sign of declining.<sup>70</sup> Further, some commentators opposed to bans on trade of certain animal parts have argued that attempts to reduce demand are culturally insensitive because the uses have a long history of cultural significance.<sup>71</sup> Neither of these is always true. Campaigns to reduce demand for ivory and shark fins in China have shown some success and demand for rhino horn in Yemen has dropped dramatically.<sup>72</sup> Uses for animal parts are also not always tied to long histories of culturally significant use. The highest demand for rhino horn in Viet Nam appears to be related to a new (unverified) claim that it can cure cancer and as evidence of new wealth in the form of conspicuous consumption.<sup>73</sup>

The creation of legal markets can limit the effectiveness of efforts to reduce demand because it sends mixed signals. Indeed, because the availability of legal products can destigmatize consumption, demand will often increase.<sup>74</sup> Incomplete bans are particularly problematic because the effectiveness of the ban can be easily undermined by continued or increased demand. Periodic sales can undermine gradually diminishing demand, and because of the

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<sup>70</sup> See, e.g., Conrad, *supra* note 52, at 250 (hypothesizing that demand reduction is probably a “multi-generational process”).

<sup>71</sup> See, e.g., Conrad, *supra* note 52, at 250 (observing that some cultures view trade of some animal parts as part of their tradition or identity).

<sup>72</sup> Lucy Vigne & Esmond Martin, *Demand for Rhino Horn Declines in Yemen*, 47 *ORYX* 323 (2013); *WildAid's Campaign Helps Reduce Shark Fin Demand*, WILDAID (Feb. 6, 2013), <http://www.wildaid.org/news/wildaid-campaign-helps-reduce-shark-fin-demand>, archived at <https://perma.cc/MHE6-A4WJ>. See also SABRI ZAIN, TRAFFIC, BEHAVIOUR CHANGE WE CAN BELIEVE IN: TOWARDS A GLOBAL DEMAND REDUCTION STRATEGY FOR TIGERS 2 (2012), [http://www.traffic.org/species-reports/traffic\\_species\\_mammals71.pdf](http://www.traffic.org/species-reports/traffic_species_mammals71.pdf), archived at <https://perma.cc/P8DV-LVPB> (discussing the years 2010, 2011 and 2012 have seen large-scale ivory seizures).

<sup>73</sup> MILLIKEN & SHAW, *supra* note 40, at 134–36.

<sup>74</sup> See Carolyn Fischer, *The Complex Interaction of Markets for Endangered Species Products*, 48 *J. ENVTL. ECON. & MGMT.* 926, 947 (2004) (alteration in original) (“A trade ban is more likely to be needed when stigma effects . . . are weak and lawful demand is strong.”).

fear that the ban will be put in place again, may increase demand during the windows of time when a legal supply is available.

### *E. Conservation and Local Communities*

Trophy hunting and other legal markets are often seen as a critical tool to generate both support and revenue for conservation.<sup>75</sup> The possibility of revenue from endangered species is important because poachers frequently poach due to a lack of other economic opportunities.<sup>76</sup> Local communities often do not benefit from the conservation of the species.

However, it is unclear that incomplete bans will assist with either conservation or the welfare of local communities. Dual stream markets that create opportunities for local communities to enter the market can add significant support for conservation, as seems to have been the case with the vicuña.<sup>77</sup> However, as discussed above, the legal markets created where there are incomplete bans are tightly controlled and may not be recurring. Even if the ability to profit is opened to more people than the state, as with trophy hunting or captive-breeding, the opportunities to profit will often go to private actors who are not necessarily contributing their own profits to local communities or to conservation efforts. Captive-breeding programs can operate very far from the native habitat of the wild species, thereby limiting any gain for the local community in having legal trade.

Although commentators disagree on the relative merits and risks of trophy hunting for conservation, they generally acknowledge the importance of governance and regulatory structure.<sup>78</sup>

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<sup>75</sup> Peter A. Lindsey et al., *Trophy Hunting and Conservation in Africa: Problems and One Potential Solution*, 21 CONSERVATION BIOLOGY 880, 880–881 (2007). See also Onishi, *supra* note 4 (endorsing the necessity of hunting in Africa).

<sup>76</sup> Cf. Rosaleen Duffy, Freya A.V. St John, Bram Büscher & Dan Brockington, *Toward a New Understanding of the Links Between Poverty and Illegal Wildlife Hunting*, 30 CONSERVATION BIOLOGY 14 (2016) (questioning the idea that local communities engage in illegal wildlife hunting solely due to poverty); Dellinger, *supra* note 1, at 412–416 (discussing evidence that questions the value of trophy hunting to local communities).

<sup>77</sup> McAllister et al., *supra* note 42.

<sup>78</sup> See, e.g., William-Georges Crosmary et al., *The Assessment of the Role of Trophy Hunting in Wildlife Conservation*, 18 ANIMAL CONSERVATION 136, 136–37 (2015) (noting that poor management will damage the sustainability of trophy hunting); Richard B. Harris et al., *Application of the Anthropogenic Allee Effect Model to Trophy Hunting as a Conservation Tool*, 27 CONSERVATION BIOLOGY 945, 949–50 (2013) (arguing that

Commentators also generally agree that more study is needed and more monitoring should be put in place, both of which require capacity and resources.<sup>79</sup> Yet lack of resources can make it hard for restrictions to be policed and benefits to be adequately shared. In addition, corruption and mismanagement can lead to significant problems.<sup>80</sup>

In addition, the risks from some legal activities for those species that are subject to incomplete bans are higher because those species are endangered and populations are at greater risk from careless killing. Populations of species can go down if hunting operations are not carefully managed.<sup>81</sup> Further, even if the numbers targeted fall within conservation goals, trophy hunting does not target animals based on the targets conservation biologists might choose. Again, the story of Cecil the Lion demonstrates this. Although the lion pride Cecil headed appears to have recovered,<sup>82</sup> it is unlikely that any conservationist interested in the survival of wild populations of

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conservation managers should focus on the critical conservation characteristics such as corruption and property rights); S.A.J. Selier & E. Di Minin, Commentary, *Monitoring Required for Effective Sustainable Use of Wildlife*, 18 ANIMAL CONSERVATION 131, 131–32 (2015) (noting the importance of effective monitoring for wildlife sustainability); Lindsey et al., *supra* note 75, at 882 (concluding that the mismanagement of governments and operators is a significant threat to conservation).

<sup>79</sup> See, e.g., R. Buckley & A. Mossaz, *Hunting Tourism and Animal Conservation*, 18 ANIMAL CONSERVATION 133, 133–34 (2015) (acknowledging that a single case study is insufficient); Harris et al., *supra* note 78 (“Those interested in the interaction between trophy hunting and conservation should question models that fail to capture important elements on the systems in question.”); Selier & Di Minin, *supra* note 78 (“However, in order to understand the consequences of management activities such as trophy hunting and to implement an adaptive quota system, based on population trends, long-term monitoring is essential.”).

<sup>80</sup> CRAIG PACKER, *LIONS IN THE BALANCE: MAN-EATERS, MANES, AND MEN WITH GUNS* (2015); Elizabeth L. Bennett, *Legal Ivory Trade in a Corrupt World and Its Impact on African Elephant Populations*, 29 CONSERVATION BIOLOGY 54, 56–58 (2014). See also DEMOCRATIC STAFF OF THE HOUSE COMMITTEE ON NATURAL RESOURCES, *MISSING THE MARK: AFRICAN TROPHY HUNTING FAILS TO SHOW CONSISTENT BENEFITS* (June 13, 2016), <http://democrats-naturalresources.house.gov/imo/media/doc/Missing%20the%20Mark.pdf>, archived at <https://perma.cc/GAG4-DVAB> (concluding that conservation efforts have been marred by corruption in certain regions); Jada F. Smith, *Trophy Hunting Fees Do Little to Help Threatened Species, Report Says*, N.Y. TIMES (June 13, 2016), <http://www.nytimes.com/2016/06/14/us/politics/trophy-hunting-fees-do-little-to-help-threatened-species-report-says.html>, archived at <https://perma.cc/JU3C-EV3B> (explaining the significance of the Democratic Staff’s House report, “Missing the Mark,” in relation to the killing of Cecil in Zimbabwe).

<sup>81</sup> C. Packer, H. Brink et al., *Effects of Trophy Hunting on Lion and Leopard Populations in Tanzania*, 25 CONSERVATION BIOLOGY 142, 151 (2010).

<sup>82</sup> Actman, *supra* note 1.

the African lion would have advocated that Cecil be shot. In species that are not at such risk of extinction, selection through hunting may change the species, but the effects may take longer or may be less significant because the species itself is able to breed and replenish. In species that are endangered, hunting without careful conservation parameters can significantly change and potentially harm the species.<sup>83</sup>

A similar concern can arise for captive-breeding and ranching programs, particularly if those programs are designed for commercial gain. Breeding species domestically can change those species, sometimes intentionally, so that certain traits are highlighted and augmented—picture a scenario where rhino ranching is successful and the goal becomes to breed rhinos that grow horns quickly and perhaps even rhinos that are not difficult when it comes time to dehorn them. This could result in a very different rhino population from the one we have now. While this could be preferable to extinction of the species completely, it is an important consideration when wild populations are low.

## V. CONCLUSION: THE DIFFICULTY OF INCOMPLETE BANS

As we have seen, incomplete bans can exacerbate the uncertainty already inherent in regulating dual stream markets. This is in part because they involve already severely endangered species for whom there is unsustainable demand. Incomplete bans cannot open the market up completely, because that would be too risky in such an unsustainable market. Yet, on the other side, they do not allow for the effects of a complete ban, including the possibility of a dramatic reduction in demand, to work. As such, they are a risky proposition.

One possible response would be to pursue incomplete bans because of the promise they offer, while being aware that they will require stronger regulatory efforts than normal dual stream markets. However, this requires adequate funding of these stronger regulatory efforts to counter the continued demand, laundering, and corruption, while still ensuring good conservation. This will be easier in some

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<sup>83</sup> See Dellinger, *supra* note 1, at 408–09 (discussing potential ecological and species-survival problems arising from killing by hunting).

places than others, and even then will require intensive focus.<sup>84</sup> While the story of Cecil the Lion may demonstrate only that one man can kill one iconic lion, it serves as an important reminder that the existence of legal sources for our most endangered and sought-after species creates pathways for unmonitored killing that does not contribute to overall conservation of the species.

The arguments raised here have been raised at a high level of generality. Every conservation decision should be made carefully, with regard to the species, and in context. Where a species has met the threshold requiring a level of protection under CITES that amounts to a ban on trade, under either Appendix I or Appendix II, more predictability is needed before exceptions are imposed to that ban. For the most endangered species, we should be wary of incomplete bans that exacerbate already unpredictable and uncertain market dynamics.

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<sup>84</sup> PACKER, *supra* note 80; Bennett, *supra* note 80.