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### **Anthropogenic Noise and the Endangered Species Act**

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## Anthropogenic Noise and the Endangered Species Act

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# ANTHROPOGENIC NOISE AND THE ENDANGERED SPECIES ACT

Carolyn D. Larcom\*

In 2016—with the help of the U.S. Coast Guard—the National Oceanic and Atmospheric Administration (NOAA) and Oregon State University sent a titanium encased hydrophone to a depth of more than 36,000 feet.<sup>1</sup> The hydrophone’s mission was simple—to listen.<sup>2</sup> During its three-week commission, at the deepest point in the Mariana Trench,<sup>3</sup> the hydrophone heard ship propellers,<sup>4</sup> the moans of baleen whales, a magnitude five earthquake, and a category four typhoon.<sup>5</sup> Anthropogenic, or human-caused, noise contributes to this underwater symphony in a myriad of ways and poses unique challenges in the marine environment to cetaceans.<sup>6</sup> This feature examines the continued rise of anthropogenic noise and its harmful effects on whale species. It also advocates for the use of the Endangered Species Act (ESA) in litigation as an instrument to quiet anthropogenic noise. The North Atlantic right whale is used as a case study because of its status as a critically endangered species and its close proximity to noise pollution along the Atlantic coast and in the Gulf of Mexico.

Increasing human activity along coastlines is leading to rising levels of anthropogenic underwater noise.<sup>7</sup> This coastal activity overlaps with critical habitat for species like the North Atlantic right whale.<sup>8</sup> In 2010, NOAA created “CetSound,” a working group to guide the agency to a more comprehensive management of ocean noise impacts.<sup>9</sup> Christopher Clark of Cornell University, a marine bioacoustics expert, refers to anthropogenic noise as “acoustical bleaching” of the oceans.<sup>10</sup>

The two major forms of anthropogenic noise are chronic and acute.<sup>11</sup> Chronic noise pollution is the low frequency sound made by ship traffic.<sup>12</sup> The hydrophone sent by NOAA managed to pick up the constant humming of container ships passing overhead some 36,000 feet above.<sup>13</sup> Acute noise pollution is created mostly by ocean exploration for oil and gas and is doubling every decade.<sup>14</sup> The energy from these explosions “fill the oceans with noise.”<sup>15</sup>

Anthropogenic noise disrupts marine life, especially whales, by interfering with their acoustic senses.<sup>16</sup> This interference disrupts their social networks, thus affecting their survival and reproductive success.<sup>17</sup> For the North Atlantic right whale, the reduction of noise pollution is considered essential to ensure their long-term recovery.<sup>18</sup> Whales are acoustically oriented and “see” the ocean through sound.<sup>19</sup> The effects of noise pollution on whale populations have been recognized for over forty years.<sup>20</sup> The exclusive statutory protections for endangered species may provide the best opportunity for stalling detrimental anthropogenic noise in the marine environment.

The ESA makes it unlawful for any person to “take” endangered or threatened species.<sup>21</sup> “Take” means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.<sup>22</sup> The term “take” has been broadly defined to include significant habitat modification or degradation that results in actual injury or death to members of an endangered species.<sup>23</sup> North Atlantic right whales<sup>24</sup> have been observed increasing their call amplitude with the rise of background noise.<sup>25</sup> An increase in stress related fecal hormone metabolites<sup>26</sup> has been correlated with noise pollution.<sup>27</sup> Whales rely on sound to breed, navigate coastlines, and find food.<sup>28</sup> Anthropogenic noise interferes with their ability to eat, mate, and navigate; therefore, it is essential to their survival that these sounds travel the ocean undisturbed.<sup>29</sup> Given this interference, noise pollution should qualify as a “taking” under the ESA as it significantly degrades their habitat.

To satisfy the “injury in fact” test, members of an organization must demonstrate that they are significantly affected by the actions of the noise polluter.<sup>30</sup> Standing is not confined to economic harm.<sup>31</sup> First, a member would need to be personally affected by the decline in the North Atlantic right whale population to qualify for standing. Second, a causal connection between the actions of the noise polluter and the plaintiff’s injury must be established.<sup>32</sup> The effects of noise pollution on whale populations are well understood.<sup>33</sup> A plaintiff would need to associate a specific oil and gas exploration project or ocean freight carrier with the harms suffered by the North Atlantic right whale population. Third, it must be likely that the injury can be redressed by a favorable ruling.<sup>34</sup> The technology to reduce noise pollution exists<sup>35</sup> and implementing these technologies to reduce underwater noise would improve the viability of North Atlantic right whale populations.<sup>36</sup> A favorable ruling that, at a minimum, demands the implementation of these technologies will remedy the injury to North Atlantic right whale populations.<sup>37</sup>

The Trump administration has sought to lift a five-year ban on drilling along the Atlantic coastline, which is critical habitat for North Atlantic right whale.<sup>38</sup> Despite these unfortunate developments that seek to increase the rising rates of anthropogenic noise, litigation has been successful in combatting noise pollution.<sup>39</sup> Litigation has successfully targeted navy sonar, seismic surveys, and offshore oil and gas exploration as a means to combat noise pollution.<sup>40</sup>

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The North Atlantic right whale is a critically endangered species that will undoubtedly be detrimentally harmed by a continued increase in anthropogenic noise.<sup>41</sup> Further litigation is needed to protect threatened whale species, like the North

Atlantic right whale, from total elimination. Litigation that qualifies anthropogenic noise as a “taking” under the ESA will prove to be a significant instrument in combatting this silent killer.



## ENDNOTES

<sup>1</sup> Bill Chappell, *Deep-Sea Audio Recordings Reveal a Noisy Mariana Trench, Surprising Scientists*, NPR (Mar. 4, 2016, 2:27 PM), <http://www.npr.org/sections/thetwo-way/2016/03/04/469213580/unique-audio-recordings-find-a-noisy-mariana-trench-and-surprise-scientists>.

<sup>2</sup> *Id.*

<sup>3</sup> *Mariana Trench*, ENCYCLOPEDIA BRITANNICA (Feb. 14, 2017), <https://www.britannica.com/place/Mariana-Trench> (defining the Mariana Trench as the deepest trench known on Earth and noting that the greatest depth ever reached by humans is located within Challenger Deep, an underwater valley on the floor of the main trench).

<sup>4</sup> Mark Floyd, *Mariana Trench: Seven Miles Deep, the Ocean is Still a Noisy Place*, OR. ST. UNIV. (Mar. 2, 2016), <http://oregonstate.edu/ua/ncs/archives/2016/mar/mariana-trench-seven-miles-deep-ocean-still-noisy-place>.

<sup>5</sup> Chappell, *supra* note 2.

<sup>6</sup> Jason Gedamke et al., *Ocean Noise Strategy Roadmap*, NOAA 1 (2016), [https://cetsound.noaa.gov/Assets/cetsound/documents/Roadmap/ONS\\_Roadmap\\_Final\\_Complete.pdf](https://cetsound.noaa.gov/Assets/cetsound/documents/Roadmap/ONS_Roadmap_Final_Complete.pdf).

<sup>7</sup> *Id.*

<sup>8</sup> *North Atlantic Right Whales*, NOAA FISHERIES (July 20, 2017), <http://www.nmfs.noaa.gov/pr/species/mammals/whales/north-atlantic-right-whale.html> [hereinafter *Right Whales*].

<sup>9</sup> *Id.*

<sup>10</sup> Richard Schiffman, *How Ocean Noise Pollution Wreaks Havoc on Marine Life*, YALE ENV'T 360 (Mar. 31, 2016), [http://e360.yale.edu/features/how\\_ocean\\_noise\\_pollution\\_wreaks\\_havoc\\_on\\_marine\\_life](http://e360.yale.edu/features/how_ocean_noise_pollution_wreaks_havoc_on_marine_life).

<sup>11</sup> *Id.*

<sup>12</sup> *Id.*

<sup>13</sup> Chappell, *supra* note 2.

<sup>14</sup> *Id.*; Sarah Gibbens, *Deafening Blasts Kill These Ocean Animals for Miles*, NAT'L GEOGRAPHIC (June 23, 2017), <https://news.nationalgeographic.com/2017/06/seismic-survey-air-gun-oil-gas-exploration-zooplankton-sp/> (“To find oil and gas lying beneath the ocean floor, petroleum companies emit blasts of compressed air underwater. These seismic blasts penetrate miles into the seabed and reflect information about any valuable deposits buried below.”).

<sup>15</sup> Schiffman, *supra* note 10.

<sup>16</sup> *Id.*

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

<sup>18</sup> *North Atlantic Right Whale 5-Year Review*, NOAA FISHERIES SERV. NE. REG'L OFFICE 11-12 (Aug. 2012), [http://www.nmfs.noaa.gov/pr/pdfs/species/narightwhale\\_5yearreview.pdf](http://www.nmfs.noaa.gov/pr/pdfs/species/narightwhale_5yearreview.pdf) [hereinafter *5-Year Review*].

<sup>19</sup> Schiffman, *supra* note 10.

<sup>20</sup> Gedamke et al., *supra* note 6, at 64.

<sup>21</sup> Endangered Species Act of 1973, 16 U.S.C. § 1538(a)(1)-(2) (1988).

<sup>22</sup> *Id.* § 1532.

<sup>23</sup> *Babbitt v. Sweet Home Chapter of Cmty. for a Great Or.*, 515 U.S. 687, 697 (1995).

<sup>24</sup> *Right Whales*, *supra* note 8 (explaining that the “northern right whale” is listed as two separate species, the North Pacific right whale and North Atlantic right whale — the North Atlantic right whale is critically endangered with its western population estimated at about 465 individuals and the eastern population “nearly extinct”).

<sup>25</sup> *5-Year Review*, *supra* note 18, at 11-12.

<sup>26</sup> *Id.* at 12 (noting elevations of stress related fecal hormones negatively affect growth, immune system response, and reproduction).

<sup>27</sup> *Id.*

<sup>28</sup> Schiffman, *supra* note 10.

<sup>29</sup> *Id.*

<sup>30</sup> *See* *Sierra Club v. Morton*, 405 U.S. 727, 734-35 (1972) (noting that the injury suffered by a plaintiff must be cognizable and individually experienced).

<sup>31</sup> *Id.* at 734-35 (holding that aesthetics and environmental well-being are not excluded from the “injury in fact” test).

<sup>32</sup> *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 560 (1992) (holding that the injury has to be “fairly traceable” to the action of the defendant).

<sup>33</sup> Gedamke et al., *supra* note 6, at 64.

<sup>34</sup> *Lujan*, 504 U.S. at 561 (holding that it must be likely, as opposed to speculative, that a favorable ruling will nullify the harm).

<sup>35</sup> Schiffman, *supra* note 10 (describing a new technology that “uses a sweep of sound that is orders of magnitude quieter” for oil and gas exploration).

<sup>36</sup> *Right Whales*, *supra* note 8, at 11-12 (explaining that the continued viability of the North Atlantic right whale in part depends on the reduction of anthropogenic noise).

<sup>37</sup> *Id.*

<sup>38</sup> Oliver Milman, *Trump Called ‘Threat to Every Coastline’*, THE GUARDIAN (June 30, 2017, 12:04 AM), <https://www.theguardian.com/environment/2017/jun/30/donald-trump-environment-ocean-drilling-atlantic-arctic>; *Right Whales*, *supra* note 8.

<sup>39</sup> *Ocean Noise*, CTR. FOR BIOLOGICAL DIVERSITY, [http://www.biologicaldiversity.org/campaigns/ocean\\_noise/](http://www.biologicaldiversity.org/campaigns/ocean_noise/) (last visited Dec. 20, 2017).

<sup>40</sup> *Id.*

<sup>41</sup> *Right Whales*, *supra* note 8.