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Submitted via email:

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## RE: Testimony in Support of An Act to end the taking of horseshoe crabs for bait (H.898)

Thank you for the opportunity to testify in support of H.898, an act to end the taking of horseshoe crabs for bait. Conservation Law Foundation strongly supports this bill and urges the committee to vote it favorably out of committee.

Horseshoe crabs are a 450-million-year-old species.<sup>1</sup> They have survived all five mass extinctions.<sup>2</sup> However, horseshoe crabs are now facing threats to their existence. Horseshoe crabs are experiencing a loss of spawning and nursery areas due to extreme weather, sea level rise, and coastal development.<sup>3</sup> Climate change will only increase those risks as severe weather events become more frequent and sea level rise accelerates.<sup>4</sup>

The species has also faced historic overfishing in the Commonwealth when towns offered three cent bounties per horseshoe crab.<sup>5</sup> DMF estimates up to 500,000 horseshoe crabs were killed annually from 1960-1970, and the species has yet to recover.<sup>6</sup> The current harvest of horseshoe crabs for bait and use in biomedical laboratories also poses threats to the species. In 2024, DMF

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<sup>1</sup> Mark L Botton et al., *Horseshoe Crabs: "Living Fossils" Imperiled in the Anthropocene*, Imperiled: The Encyclopedia of Conservation, 1 (2021), [https://progyanfoundation.org/admin/download/Horseshoe%20Crabs\\_2021.pdf](https://progyanfoundation.org/admin/download/Horseshoe%20Crabs_2021.pdf).

<sup>2</sup> *Id.* at 1; EarthDate, *Horseshoe Crabs: Living Fossils*, Bureau of Economic Geology, [https://www.earthdate.org/files/000/002/273/EarthDate\\_196\\_BW.pdf](https://www.earthdate.org/files/000/002/273/EarthDate_196_BW.pdf).

<sup>3</sup> Mark L Botton et al., *Horseshoe Crabs: "Living Fossils" Imperiled in the Anthropocene*, Imperiled: The Encyclopedia of Conservation, 3-5 (2021), [https://progyanfoundation.org/admin/download/Horseshoe%20Crabs\\_2021.pdf](https://progyanfoundation.org/admin/download/Horseshoe%20Crabs_2021.pdf).

<sup>4</sup> Mark L Botton et al., *Horseshoe Crabs: "Living Fossils" Imperiled in the Anthropocene*, Imperiled: The Encyclopedia of Conservation, 3-5 (2021), [https://progyanfoundation.org/admin/download/Horseshoe%20Crabs\\_2021.pdf](https://progyanfoundation.org/admin/download/Horseshoe%20Crabs_2021.pdf); David R. Smith et al., *Conservation Status of the American Horseshoe Crab*, 27 *Reviews in Fish Biology and Fisheries*, 135, 155 (2017) <https://link.springer.com/article/10.1007/s11160-016-9461-y>.

<sup>5</sup> MA DMF News Second Quarter 2006, *Responsible Management Strategies Reduce Horseshoe Crab Take in Massachusetts*, 8-9, (2006) <https://www.mass.gov/doc/dmf-news-2nd-quarter-2006/download>.

<sup>6</sup> *Id.*

restricted all harvest of horseshoe crabs from April 15<sup>th</sup> through June 7<sup>th</sup>.<sup>7</sup> However, the closure does not last for the entirety of the horseshoe crabs' spawning season from May to July.<sup>8</sup> As a result, fishermen harvesting horseshoe crabs often pull them from spawning clusters and this practice commonly damage the claspers of unwanted male horseshoe crabs.<sup>9</sup> This hurts the horseshoe crabs directly and threatens their ability to reproduce successfully in the future, which puts the entire species at risk.

Human health also relies on the preservation of horseshoe crabs. Horseshoe crabs' famous blue blood is used to create Limulus Amebocyte Lysate (LAL) which is used for endotoxin testing in vaccines and medical devices.<sup>10</sup> The horseshoe crabs are drained of as much as a third of their blood.<sup>11</sup> DMF cites a 1.3% mortality rate, but there has been little research examining how bleeding impacts reproduction or egg viability in repeatedly bled females.<sup>12</sup> We know that until an alternative is approved in the United States, the biomedical industry needs reliable access to horseshoe crabs to keep our vaccines and medical devices safe.

In 2024, Massachusetts bled 200,000 horseshoe crabs as part of the rent-a-crab system that allows them to lease crabs, bleed them, and then return the crabs to their sellers to be resold as bait.<sup>13</sup> The species cannot recover and thrive while being used as both a biomedical ingredient and bait. The pressure that the bait industry puts on the horseshoe crab species puts the ecosystems that rely on them at risk, including human beings.

The over-exploitation of horseshoe crabs does not just harm their species. Horseshoe crabs are ecologically valuable to Massachusetts's coastal ecosystems and beyond. Horseshoe crabs and their eggs provide food for migratory birds and at least nine commercially valuable fish species.<sup>14</sup> The threatened Red Knot, for example, relies on horseshoe crab eggs as an important food source to help fuel their migrations.<sup>15</sup> The strength of all those species relies on a sustainable population of horseshoe crabs. H898 will therefore not just protect horseshoe crabs, but it will preserve ecosystem health as well.

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<sup>7</sup> MA DMF, *New Regulations Affecting the Harvest of Horseshoe Crabs*, (Apr. 12, 2024), <https://www.mass.gov/doc/41224-new-regulations-affecting-the-harvest-of-horseshoe-crabs/download>.

<sup>8</sup> MA DMF, *Observing Horseshoe Crabs in Massachusetts*, <https://www.mass.gov/info-details/observing-horseshoe-crabs-in-massachusetts>.

<sup>9</sup> Ray MacDonald, *Video of Horseshoe Crab Harvest in Duxbury*, <https://www.ray-macdonald.com/Nature/Horseshoe-Crabs-in-Duxbury/i-Ln9QSGb/A>.

<sup>10</sup> Jordan Krisfalusi-Gannon et al., *The Role of Horseshoe Crabs in the Biomedical Industry and Recent Trends Impacting Species Sustainability*, *Frontiers*, (June 4, 2018) <https://www.frontiersin.org/journals/marine-science/articles/10.3389/fmars.2018.00185/full>.

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

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

<sup>13</sup> MA DMR, *MA 2023 Compliance Report to ASMFC – Horseshoe Crab*, <https://www.mass.gov/doc/massachusetts-2023-compliance-report-to-the-asmfc-horseshoe-crab/download>.

<sup>14</sup> Jordan Krisfalusi-Gannon et al., *The Role of Horseshoe Crabs in the Biomedical Industry and Recent Trends Impacting Species Sustainability*, *Frontiers*, (June 4, 2018) <https://www.frontiersin.org/journals/marine-science/articles/10.3389/fmars.2018.00185/full>.

<sup>15</sup> National Park Service, *The Red Knot*, (last updated Jan, 31, 2023) <https://www.nps.gov/caco/learn/nature/the-red-knot.htm>.

This is especially true given that the use of horseshoe crabs as bait contributes to the depletion of the very fisheries that use horseshoe crabs as bait. The fisheries that generally purchase horseshoe crabs for bait are the eel and whelk fisheries.<sup>16</sup> However, the eel fishery stock is depleted and in 2023, the assessments showed the population at or near historically low levels due to overfishing and habitat loss.<sup>17</sup> Similarly, whelk are continuing to be harvested despite the knowledge that the species is experiencing slower growth rates and thus the legal harvest size is smaller than the size at which whelk reach maturity.<sup>18</sup> As a result whelk are depleted and overfished.<sup>19</sup> **The continued use of horseshoe crab as bait not only threatens its survival but also contributes to the overexploitation of eel and whelk fisheries as well.** Meanwhile, horseshoe crabs take 11 years to mature and begin spawning.<sup>20</sup> The use of such a slow-reproducing species as bait is unsustainable and shortsighted.

H.898 is a comprehensive solution because it prohibits the taking of horseshoe crabs for bait, includes reasonable exceptions for educational and scientific purposes, and protects incidental catch during legal fishing operations. The bill also does not penalize possessing a cast-off exoskeleton. Massachusetts is normally a leader when it comes to protecting our environment and human health, but when it comes to protecting horseshoe crabs, we are behind. New Jersey, Maine, and Connecticut all have more comprehensive protections that ban the taking of horseshoe crabs either outright or during their full spawning season from May to October.<sup>21</sup>

In closing, CLF strongly supports H898 and urges the committee to vote the bill favorably out of committee to protect an iconic Massachusetts species and coastal ecosystems and to ensure that vaccines and medical devices remain safe.

Thank you.

Respectfully submitted,

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<sup>16</sup> MA DMF, *Learn About Atlantic Horseshoe Crab*, <https://www.mass.gov/info-details/learn-about-atlantic-horseshoe-crab>.

<sup>17</sup> ASMFC, *Stock Assessment Overview of American Eel*, (Aug. 2023) [https://asmfc.org/wp-content/uploads/2024/11/AmericanEelStockAssessmentOverview\\_August2023.pdf](https://asmfc.org/wp-content/uploads/2024/11/AmericanEelStockAssessmentOverview_August2023.pdf).

<sup>18</sup> MA DMF, *Whelks and Whelk Management*, <https://www.mass.gov/info-details/whelks-and-whelk-management>; Stephen Wilcox et al., *Spatial Variation in Size and Age at Maturation and Growth of the Channeled Whelk in Southern MA*, Fisheries Research (July 2021) <https://www.sciencedirect.com/science/article/abs/pii/S0165783621000540>.

<sup>19</sup> MA DMF, *Whelks and Whelk Management*, <https://www.mass.gov/info-details/whelks-and-whelk-management>.

<sup>20</sup> Ruth Carmichael et al., *Abundance and Population Structure of the Atlantic Horseshoe Crab in Pleasant Bay, Cape Cod*, Marine Ecology Progress Series, (Jan. 16, 2003) <https://www.int-res.com/articles/meps2003/246/m246p225.pdf>.

<sup>21</sup> NJ Rev Stat § 23:2B-21 (2024); 13-188 C.M.R. ch. 31, § 10; Conn. Acts 23-6 (2023).