

Appendix 1

The Legal Directionality of Protections of Cetaceans, Tuna, and Octopuses

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I. Cetaceans: A Thickening of Diverse Legal Protections

The legal directionality of laws concerning cetaceans in the U.S. is characterized by a “thickening” of diverse legal protections over the last century.¹ Legal regulation of whales started with increasing restrictions on whaling in the late 20th century internationally, codified into U.S. law, and has developed into a broad range of cetacean protections in the United States. Cetaceans are protected from fishing and are subject to several specific laws, including the Marine Mammal Protection Act, the Endangered Species Act, and the Animal Welfare Act. While these protections are significant, they are not absolute, and when cetacean protections have been tested against competing interests such as military operations, U.S. courts have frequently sided with the latter. There has also been a slow but increasing trend towards restrictions on keeping and breeding cetaceans in captivity in specific states, although such restrictions have not been enacted federally. Attempts to assert cetaceans’ own ability to protect their legal right to life, through standing to sue in court, have so far been unsuccessful, but courts have left the door open to legislative enactment of cetacean standing. Nonetheless, cetacean legal protections continue to show significant improvement and diversification overall.

a. Early to Mid-20th Century: The Regulation of Whales as Fishing Stocks

Following centuries of largely unregulated whaling around the world, including large whaling operations off of both the Atlantic and Pacific coasts of the United States, whale population were in steep decline at the turn of the 20th century, with several whale species, including bowhead, gray, and humpback whales brought to the brink of extinction.² The first international attempt to regulate whaling occurred in 1927 when the League of the Nations, the precursor to the United Nations, proposed an international conference to impose restrictions on whale catches. However, the conference was strongly opposed by several whaling nations, most prominently Japan, and the League decided against the conference, concluding that “if hunting becomes unprofitable, it will stop by itself, long before whales are exterminated”.³ Following further falls in whale populations, twenty one whaling nations, including the United States, signed the first international agreement on whaling in 1931, titled the “Convention for the Regulation of Whaling”, which required State parties to enact domestic provisions to limit whaling, but did not set mandated whaling quotas or impose international whaling season restrictions.⁴ This Convention was superseded by stronger provisions in a new convention in

¹References

David Mence, “The Cetacean Right to Life Revisited”, *Int’l J. L. Context* Vol. 11, 17, 18 (2015).

²Gare Smith, “The International Whaling Commission: An Analysis of the Past and Reflections on the Future”, *Natural Resources Lawyer*, Vol. 16, No. 4 (1984); Robert C. Rocha Jr., Phillip J. Clapham, & Yulia V. Ivashchenko, “Emptying the Oceans: A Summary of Industrial Whaling Catches in the 20th Century”, *Marine Fisheries Review*, Vol. 76(4) (2015).

³Christol, Schmidhaver & Totten, “The Law and the Whale: Current Developments in the International Whaling Controversy”, *Case Western Journal of International Law*, Vol. 8 (1976).

⁴*Convention for the Regulation of Whaling*, Sept. 24, 1931, 49 Stat. 3079, T.S. No. 880, 155 L.N.T.S. 349.

1937 signed by the United States and several other whaling nations, which prohibited the catch of certain species, including bowhead and right whales, set minimum size limits on whale catches and imposed a time-limited whaling season for the first time.⁵ Still, several major whaling nations, including Japan, failed to sign on to either convention.

Marking the beginning of the international whaling regime still in effect today, in 1946 fifteen countries, including the United States, signed on to the International Convention for the Regulation of Whaling (ICRW), which formed the International Whaling Commission (IWC), effective as of 1948. The IWC is an oversight body tasked with reviewing catch and setting new whaling regulations and remains the overarching international regulatory body concerning whales, with 88 present signatory nations.⁶ The Convention's original purpose, however, was to manage whale populations for the benefit of the whaling industry. The Convention still defines whales as "natural resources" and in its preamble declares its aims to "achieve the optimum level of whale stocks as rapidly as possible" and to "make possible the orderly development of the whaling industry".⁷ The subsequent 25 years after the IWC's formation were described by whalers as "the Whaling Olympics", as IWC quotas and defined hunting seasons drove nations into competition with each other to capture and kill whales more quickly and using more advanced vessels, particularly in the Antarctic.⁸ Disputes between members States and objections to quota proposals were common, while scientific evidence of whale population depletion continued to show alarming downward trends.

b. The 1970s and Onwards: The Turn Towards an International Prohibition on Commercial Whaling and Trade in Whale Products

The end of the 1960s and early 1970s marked a turn in regulatory approaches towards whales. Following growing environmental protests around whaling, the U.S. Secretary of the Interior Walter Hickel listed all commercially fished whale species on Endangered Species List, which led to an import ban on whale products into the United States.⁹ In announcing the decision, Hickel declared, "We are not going to wait until all these species are on the brink of extinction before we take positive action".¹⁰ The United States proposed a ten-year moratorium on whaling before the IWC in 1972, 1973 and 1974, which failed each time, but the IWC adopted a "New Management Procedure" in 1975, which prohibited hunting of endangered whales until their population was determined to have recovered to sustainable levels.¹¹

Not until 1982, at its 34th Annual Meeting, did the IWC agree to place a moratorium on all commercial whaling beginning in 1986 for an initial period of three years, following rounds of discussions in the IWC's Technical Committees on several topics including "the humaneness

⁵ *Agreement for the Regulation of Whaling and Final Act*, June 8, 1937, 52 Stat. 1460 T.S. No. 933, 190 L.N.T.S. 79.

⁶ *International Convention for the Regulation of Whaling with Schedule of Whaling Regulations*, Dec. 2, 1946, 62 Stat. 1716, T.I.A.S. No. 1849, 161 U.N.T.S. 72. The first fifteen signatories were Argentina, Australia, Brazil, Canada, Chile, Denmark, France, The Netherlands, New Zealand, Norway, Peru, South Africa, USSR, United Kingdom, and the United States.

⁷ *Id.* at preamble, para. 2, 5, 8.

⁸ Smith (1984).

⁹ "Secretary Hickel Bans Imports of Products from Eight Endangered Species of Whales", Department of the Interior News Release (November 24, 1970), <https://www.fws.gov/news/Historic/NewsReleases/1970/19701124.pdf>.

¹⁰ *Id.*

¹¹ Smith (1984).

of whaling.”¹² One example of these discussions prior to the 34th Annual Meeting was a special meeting of the IWC Scientific Committee in 1980 titled “Ethics and Intelligence.”¹³ At the meeting, biologist and long-time IWC Committee member Sidney Holt told attendees: “If whales possess the intelligence and mental properties we assume . . . then whales have a culture. By continuing the current whaling practices, we are denying the future possibilities to discover and understand the culture of whales.”¹⁴ Observers at the 34th Annual Meeting of the IWC, where the decision on the moratorium was taken, included animal rights and welfare groups such as the International Fund for Animal Welfare and the International League for Animal Rights.¹⁵ The final moratorium, which has been in effect ever since, does not, however, mention whale agency or considerations of humaneness in its language and only holds that the “provision will be kept under review, based upon the best scientific advice” and that the Commission would “undertake a comprehensive assessment of the effects of this decision on whale stocks.”¹⁶ Additionally, the IWC also adopted a resolution at the 34th Annual Meeting banning the use of cold grenade harpoons beginning in the 1982/1983 hunting season due to the “broadly held view that the use of the cold grenade harpoon is cruel and attracts adverse criticism of the whaling industry.”¹⁷

Despite being adopted by the IWC with a large majority vote, the whaling moratorium was heavily opposed by major whaling nations, including Japan, the USSR, and Norway, who rejected the moratorium, and Canada, who left the Convention as a result in 1982.¹⁸ To counteract nations opposed to the whaling ban, the United States passed legislation that allowed it to restrict the import of all fisheries products from countries in violation of IWC or other endangered species programs and deny violating nations access to its national waters for fishing,¹⁹ although these provisions have been rarely invoked. Opposition to the IWC’s whaling ban continues among a select few states, and Japan recently left the IWC in 2019, pledging to resume commercial whaling in its coastal waters and continue its “scientific” whaling expeditions in the Antarctic.²⁰

Several cetacean species, including all of the whale species whose catch is prohibited under the IWC, are also protected under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).²¹ While CITES came into effect in 1975, whale

¹² Chairman’s Report of the Thirty-Fourth Annual Meeting, July 1982-Brighton, Report of the International Whaling Commission 33 (1983) at 20.

¹³ Frank Zelko, *Make It a Green Peace!: The Rise of a Countercultural Environmentalism*, Oxford University Press (2013) at 297.

¹⁴ *Id.*

¹⁵ Chairman’s Report of the Thirty-Fourth Annual Meeting at 15.

¹⁶ Chairman’s Report of the Thirty-Fourth Annual Meeting at 21. *See also* John Duff, Hannah Dean, Tsafir Gazit & Christopher T. Taggart, “On the Right Way to Right Whale Protections in the Gulf of Maine - Case Study”, *J. Int’l Wildlife L. & Pol’y* Vol. 16, 229, 248 (2013); Phil Dwyer, “If we care about our oceans, we must protect the whales”, *The Globe and Mail* (September 18, 2018), <https://www.theglobeandmail.com/opinion/article-if-we-care-about-our-oceans-we-must-protect-the-whales/>.

¹⁷ IWC Resolution 1982-4, Resolution on the use of the Cold Grenade Harpoon, 34th Annual Meeting, 1982, Report of the International Whaling Commission 33 (1983).

¹⁸ Smith (1984).

¹⁹ The 1971 Pelly Amendment to the Fisherman’s Protective Act of 1967, 22 U.S.C. § 1978 (1988); 1979 Packwood-Magnuson Amendment to the Fishery Conservation and Management Act of 1976, 16 U.S.C. § 1821(e)(2)(A).

²⁰ Rachel Fobar, “Japan will resume commercial whaling. Get the facts”, *National Geographic* (December 26, 2018), <https://www.nationalgeographic.com/animals/article/japan-considers-leaving-international-whaling-commission>.

²¹ “Appendices I, II and II”, Convention on International Trade in Endangered Species of Wild Fauna and Flora (updated Feb. 14, 2021), <https://cites.org/eng/app/appendices.php>.

species were only listed after the ban on commercial whaling came into effect at the IWC in 1986.²² CITES prohibits trade in cetacean products and complements the IWC's moratorium on commercial whaling. CITES provisions require consultation with the IWC prior to the amendment of its appendices, which list protected species, concerning cetaceans.²³ Norway and Russia maintain reservations to the listing of some whale species on Appendix I of CITES, the list of animals with the most restrictive protections, in addition to maintaining reservations to the IWC.²⁴

Overall, however, there has been a significant “thickening” of international legal protections of whale and other cetacean species in the last few decades, with the international prohibition on catching and killing whales nearing the status of customary international law.²⁵ Some scholars have termed this thickening of legal protection the development of a cetacean “right to life”.²⁶ Persistent objections by certain historical whaling nations stand in the way of the full achievement of this international legal right.

c. Increasing U.S. Protections for Cetaceans

Beginning in the early 1970s, in parallel with its efforts against whaling internationally, the United States passed several domestic laws protecting whales and other cetaceans. The two most notable statutes are the Endangered Species Act and the Marine Mammal Protection Act. There are also several more specific laws concerning cetaceans, both federally and at the state-level, including relating to cetaceans' life in captivity.

i. The Endangered Species Act

The Endangered Species Act (ESA) was passed in 1973,²⁷ superseding the Endangered Species Conservation Act of 1969,²⁸ which was in place when Secretary Hickel first listed all commercial whale species on the Endangered Species List. The ESA also acts as the vehicle for U.S. enforcement of its commitments under CITES, and the federal ESA is complemented by several state-level Endangered Species Acts.²⁹ Currently 19 species of cetacean are listed under the ESA (See Table 1).³⁰ Only one cetacean species has ever been delisted from the ESA: the Eastern Gray Whale, which was delisted in 1994 after it was assessed to have recovered, although the whale remains under a scientific monitoring program.³¹ The ESA prohibits the

²² S.M. Wells & J.G. Barzdo, “International trade in marine species: Is CITES a useful control mechanism?”, *Coastal Management* Vol. 91:1, 135, 144 (1991).

²³ *Id.*

²⁴ Kevin Eldridge, “Whale for Sale: New Developments in the Convention on International Trade in Endangered Species of Wild Fauna and Flora,” *Ga. J. Int'l & Comp. L.* Vol. 24, 549, 554 (1995).

²⁵ Mence (2015) at 18.

²⁶ *Id.*; Anthony D'Amato & Sudhir K. Chopra, “Whales: Their Emerging Right to Life”, *American Journal of International Law* 85(1): 21-62 (1991).

²⁷ 16 U.S.C. § 1531 et seq.

²⁸ Pub. L. 91-135 (Dec. 5, 1969).

²⁹ Duff et al. (2013).

³⁰ “Species Directory: ESA Threatened & Endangered”, National Oceanic and Atmospheric Administration, Fisheries, <https://www.fisheries.noaa.gov/species-directory/threatened-endangered>.

³¹ “Delisting Species Under the Endangered Species Act”, National Oceanic and Atmospheric Administration, Fisheries,

“take” of all endangered species, which it defines as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct”, both within the territorial sea of the United States and on the high seas by a U.S. actor.³²

However, the National Oceanic and Atmospheric Administration Fisheries Division (NOAA Fisheries) or United States Fish and Wildlife Service (USFWS) can issue permits for the “incidental take” of ESA-listed species during offshore infrastructure development or other commercial activities, including fishing, as long as the actor takes “prudent” steps to minimize impact and the take “will not appreciably reduce the likelihood of the survival and recovery of the species in the wild.”³³ The Supreme Court has also limited the definition of “take” to only prohibit habitat modification that foreseeably causes death or injury to the endangered animals concerned.³⁴

Table 1: Cetacean Species Listed under the Endangered Species Act

Common Name	Scientific Name	Year Listed
Blue Whale	<i>Balaenoptera musculus</i>	1970
Bowhead Whale	<i>Balaena mysticetus</i>	1970
Fin Whale	<i>Balaenoptera physalus</i>	1970
Pacific Gray Whale	<i>Eschrichtius robustus</i>	1970
North Atlantic Right Whale	<i>Eubalaena glacialis</i>	1970
North Pacific Right Whale	<i>Eubalaena japonica</i>	1970
Sei Whale	<i>Balaenoptera borealis</i>	1970
Southern Right Whale	<i>Eubalaena australis</i>	1970
Sperm Whale	<i>Physeter macrocephalus</i>	1970
Vaquita	<i>Phocoena sinus</i>	1985
Chinese River Dolphin	<i>Lipotes vexillifer</i>	1989
Indus River Dolphin	<i>Platanista gangetica minor</i>	1991
Killer Whale	<i>Orcinus orca</i>	2005
Beluga Whale	<i>Delphinapterus leucas</i>	2008
False Killer Whale	<i>Pseudorca crassidens</i>	2012
Humpback Whale	<i>Megaptera novaeangliae</i>	2016
Hector’s Dolphin	<i>Cephalorhynchus hectori</i>	2017
Taiwanese Humpback Dolphin	<i>Sousa chinensis taiwanensis</i>	2018
Gulf of Mexico Bryde’s Whale	<i>Balaenoptera edeni (GoM subspecies)</i>	2019

ii. The Marine Mammal Protection Act

The Marine Mammal Protection Act (MMPA) was signed into law in 1972 and also prohibits the “take” of any marine mammal without authorization by permit for either a limited

<https://www.fisheries.noaa.gov/national/endangered-species-conservation/delisting-species-under-endangered-species-act>.

³² 16 U.S.C. §§ 1531-1544.

³³ 16 U.S.C. § 1539(a)(2)(b).

³⁴ *Babbitt v. Sweet Home Chapter of Communities for Great Oregon*, 515 U.S. 687, 708 (1995).

subset of “directed take” or “incidental take”, thereby covering all cetacean species, whether endangered or not.³⁵ The law declares that its policy purpose is based on the finding that “marine mammals have proven themselves to be resources of great international significance, esthetic and recreational as well as economic” and that “the primary objective of their management should be to maintain the health and stability of the marine ecosystem”.³⁶ Many of the MMPA’s provisions focus on minimizing and monitoring bycatch of marine mammals in commercial fisheries, tasking NOAA with placing restrictions on fishing gear and fishing practices to minimize take.³⁷

U.S. Courts have held that military operational activities, such as Navy sonar, incidentally impact marine mammals and therefore require an authorization permit quantifying potential harms and outlining steps to minimize incidental take.³⁸ However, the Supreme Court has placed limitations on the reach of these protections, and when asked to balance military interests against cetacean protection, the Court has often favored allowing military operations.³⁹ In the 2008 case *Winter v. NRDC*, the Supreme Court reversed an injunction preventing the Navy from completing a training utilizing sonar due to potential harms to whales and dolphins, and held that “the balance of equities and consideration of the overall public interest in this case tip strongly in favor of the Navy.”⁴⁰

The MMPA also requires the “humane” treatment of marine mammals, including cetaceans, during any interactions with or directed take of these animals, such as for scientific purposes. The MMPA defines “humane” taking as a “method of taking which involves the least possible degree of pain and suffering practicable to the mammal involved”.⁴¹ The MMPA further bans the import of any marine mammal into the United States if the animal was “taken in a manner deemed inhumane”.⁴² The MMPA further prohibits “feeding or attempting to feed a marine animal in the wild” and disturbing marine animals in the wild,⁴³ but these restrictions are loosely enforced and recreational activities involving wild cetaceans remain common in the United States.⁴⁴

iii. Dolphin-Safe Tuna Laws

Dolphins have received heightened public attention and special legal protection in the United States, a result of advocacy efforts focused specifically on dolphins. When the MMPA was first enacted, tuna fishermen were granted a two-year exemption on the zero-mortality provisions for marine mammals.⁴⁵ The U.S. Senate at the time stated that an immediate

³⁵ 16 U.S.C. § 1361.

³⁶ 16 U.S.C. § 1361(6).

³⁷ Atlantic large whale take reduction plan regulations, 50 C.F.R. § 229.321; Duff et al. (2013).

³⁸ *Natural Resources Defense Council, Inc. v. Evans*, 279 F. Supp. 2d 1129 (N.D. Cal. 2003).

³⁹ David Favre, “Living Property: A New Status for Animals within the Legal System”, *MARQ. L. REV.* Vol. 93, 1021, 1041 (2010).

⁴⁰ *Winter v. Natural Res. Def. Council, Inc.*, 129 S. Ct. 365, 378 (2008).

⁴¹ 16 U.S.C. § 1362(4).

⁴² 16 U.S.C. § 1372(b)(4).

⁴³ 50 C.F.R. § 216.3.

⁴⁴ Chelle Koster Walton, “Where and How to Meet Dolphins in Florida”, Visit Florida, <https://www.visitflorida.com/en-us/things-to-do/outdoors-nature/20-places-swim-with-dolphins-florida.html>; “U.S. Dolphin Regulations”, World Animal Protection, <https://www.worldanimalprotection.us/our-work/animals-wild/marine-animals-captivity/us-dolphin-regulations>.

⁴⁵ Achim K rber, “Why everybody loves Flipper: the political-economy of the U.S. dolphin-safe laws”, *European Journal of Political Economy* 14(3), 475-509 (1998); *Congressional Quarterly Almanac*, 90 (1972) pp. 961-969.

prohibition on killing was infeasible given the cohabitation of dolphins and commercially exploited tuna populations.⁴⁶ A zero-mortality goal was perpetually delayed for the subsequent ten years, until it was replaced with a provision requiring that tuna fishermen employ the “safest possible technology” to prevent harm to dolphins.⁴⁷ While resulting changes in fishing techniques and an observer scheme led to a decline in dolphin mortality in tuna fisheries, the quota for acceptable dolphin deaths remained at 20,500 annually in the 1980s, and the primary purpose of the MMPA’s dolphin regulations was still to facilitate U.S. fishermen’s slaughter of tuna.⁴⁸ However, growing public activism at the end of the decade, spearheaded by the Earth Island Institute, started shifting U.S. legal approaches to dolphins.⁴⁹

In the late 1980s, the number of non-U.S. vessels fishing for tuna in the Eastern Pacific Ocean started increasing, and while the MMPA’s regulations were reducing dolphin mortality in U.S. fisheries, the act only applied limited pressure on foreign fishing vessels through weakly enforced import restrictions.⁵⁰ In 1988, Congress amended the MMPA to require that incidental take of marine mammals on foreign tuna vessels importing tuna into the U.S. be no more than twice as high as in U.S. fisheries, embargoing imports from countries in non-compliance.⁵¹ In 1990, the U.S. also enacted the Dolphin Protection Consumer Information Act, which set requirements that brands labelling their tuna as “dolphin-safe” could only do so if the brand’s fishing vessels, whether foreign or domestic, complied with driftnet restrictions and other MMPA regulations.⁵² In 1991, Mexico contested the U.S. embargo under the General Agreement on Tariffs and Trade (GATT) treaty, claiming the U.S. was improperly extending its regulations beyond its borders, and the dispute settlement panel sided with Mexico, although the two countries opted to resolve the dispute on their own.⁵³

In 1992, ten states involved in tuna fishing in the Eastern Pacific, including the United States and Mexico, signed the “La Jolla Agreement”, seeking to centralize and coordinate efforts to reduce dolphin mortality in purse seine and other vessels through an International Dolphin Conservation Program, with the stated goal of “eliminating dolphin mortality” in tuna fisheries.⁵⁴ The agreement was formalized into a binding international convention in 1995, titled “the Panama Declaration”.⁵⁵ The U.S. implemented these provisions domestically through the International Dolphin Conservation Program Act in 1997.⁵⁶ However, disputes remain, and in 2017 Mexico successfully challenged the U.S. “dolphin-safe” label again before the World Trade Organization, with the panel permitting Mexico to retaliate against the U.S. for economic losses Mexican fisheries have suffered as a result of the labelling scheme.⁵⁷ These ongoing conflicts

⁴⁶ *Id.*

⁴⁷ U.S. Public Law PL 95-136.

⁴⁸ Körber (1998).

⁴⁹ Ian G. Baird & Noah Quastel, “Dolphin-Safe Tuna from California to Thailand: Localisms in Environmental Certification of Global Commodity Networks”, *Annals of the Association of American Geographers*, 101:2, 337-355 (2011).

⁵⁰ Jamie M. Woolsey, “Detailed Discussion of Dolphins under the MMPA”, Animal Legal & Historical Center (2002).

⁵¹ Public Law 100-711 (1988).

⁵² 16 U.S.C. § 1385

⁵³ Woolsey (2002).

⁵⁴ La Jolla Agreement, 33 I.L.M. 936 (1994).

⁵⁵ Woolsey (2002).

⁵⁶ Public Law 105-42, 11 Stat. 1122 (1997).

⁵⁷ Merrit Kennedy, “Mexico Can Seek Millions From U.S. In Dolphin-Safe Tuna Dispute, WTO Says”, NPR (Apr. 26, 2017),

illustrate the ways in which protections of dolphins in fisheries continue to clash with economic interests.⁵⁸

iv. Protections for Cetaceans in Captivity

The primary laws regulating cetaceans held in captivity in the United States are the Animal Welfare Act (AWA), passed in 1966,⁵⁹ and the MMPA, discussed above. The AWA regulates the issuance of licenses to animal dealers and exhibitors.⁶⁰ “Animal” as defined under the AWA includes “warm-blooded animals,”⁶¹ covering all cetaceans.⁶² These regulations require “humane handling, care, or treatment of animals” in captivity, including “handling, housing, feeding, watering, sanitation, ventilation, shelter from extremes of weather and temperatures, adequate veterinary care, and separation by species where the Secretary finds necessary.”⁶³ Additionally, under the MMPA, permits can be issued for “scientific research” and “public display” of marine mammals, the latter of which requires the exhibitor to show that that they offer educational or conservation-based programming, have obtained an AWA license, and that the animal was not captured inhumanely.⁶⁴ However, these minimal and vague standards for “humane” treatment have been criticized by animal rights groups for providing cover for exhibitors keeping cetaceans in unsuitable and biologically inappropriate conditions, a view which gained increasing public traction following the release of the documentary *Blackfish* in 2010.⁶⁵ The Animal Welfare Institute has proposed federal legislation that would ban the public display of all orcas in the United States through the Orca Responsibility and Care Advancement (ORCA) Act, but the bill has failed to gain significant traction.⁶⁶

Several states have passed more specific and stringent cetacean captivity laws in recent years. Since 2000, South Carolina has prohibited the public display of all cetaceans in the state, making it the only state with such a wide-reaching ban.⁶⁷ That prohibition expanded upon a ban on the public display of dolphins passed in 1992.⁶⁸ The South Carolina laws were passed before South Carolina had any captive cetaceans in the state, and were passed in response to plans to build a SeaWorld-style park at Myrtle Beach, following advocacy headed by the NGO the Dolphin Project.⁶⁹ South Carolina State Representative Ken Corbett, who pushed the original law through South Carolina’s legislature, stated that “negative publicity” surrounding dolphin

<https://www.npr.org/sections/thetwo-way/2017/04/26/525701964/wto-says-mexico-can-see-millions-from-u-s-in-dolphin-safe-tuna-dispute>.

⁵⁸ David Sifonios & Andres R. Ziegler, “Tuna-Dolphin Forever? The Development of the PPM Debate Related to Trade and Environment in the WTO”, *Indian J. Int’l Econ. L.* Vol. 12, 106 (2020).

⁵⁹ 7 U.S.C. §§ 2131 – 2156.

⁶⁰ *Id.* at § 2133.

⁶¹ *Id.* at § 2132(g).

⁶² Michael McFadden, Sue Leary & Kathy Hessler, *Animal Welfare Act: Excluded Animals*, 25 *ANIMAL L.* 203 (2019).

⁶³ 7 U.S.C. § 2143(a)(2)(A).

⁶⁴ 16 U.S.C. § 1371(a)(1); 16 U.S.C. § 1374(c).

⁶⁵ Casey Weed, “The World Beyond Seaworld: A Comparative Analysis of International Law Protecting Cetacea in Captivity”, *Ocean & Coastal L. J.* Vol. 23, 218 (2018).

⁶⁶ “Orca Responsibility and Care Advancement (ORCA) Act”, Animal Welfare Institute, <https://awionline.org/content/orca-responsibility-and-care-advancement-orca-act-h-r-1584>.

⁶⁷ S.C. Code § 50-5-2310.

⁶⁸ Weed (2018).

⁶⁹ Michael Blumfield, “Are Dolphin Displays Endangered Industry”, *Orlando Sentinel* (June 6, 1992), <https://www.orlandosentinel.com/news/os-xpm-1992-06-06-9206060228-story.html>.

captivity stemming from public sentiment about the intelligence of dolphins led him to support the law,⁷⁰ although the written law itself does not include an explicit policy justification.

In 2016, California passed the Orca Protection Act, which prohibits holding “in captivity an orca, whether wild-caught or captive-bred, for any purpose, including, but not limited to, display, performance, or entertainment purposes”, as well as breeding orcas in captivity.⁷¹ The law does not, however, require the removal of orcas already kept in captivity to sea pens and does allow for the continued use of captive orcas “for educational purposes” until their death.⁷² California is thereby the first state to ban the breeding of captive orcas. California assembly-member Richard Bloom who introduced the act called ending orca captivity “a fundamental marine mammal welfare issue”.⁷³ The legislation was subject to scientific review before it was passed, during which time lawmakers assessed scientific evidence of orca’s size and intelligence,⁷⁴ but findings of the scientific review are not included in the final text of the law. The Animal Welfare Institute who sponsored the bill has stated they plan to pursue “similar bills pertaining to beluga whales, dolphins, and ultimately, all captive marine mammals”.⁷⁵ Similar bans have also been proposed in Washington and New York, but have so far failed to pass the state legislatures, while Hawaii has proposed a non-binding resolution urging facilities to discontinue the breeding of cetaceans.⁷⁶

d. Attempts to Assert Cetaceans’ Legal Right to Sue

While the ESA and MMPA provide broad protections for many cetacean species, attempts to translate these protections into directly enforceable rights held by the animals themselves have not succeeded, although courts have left the door open to legislative enactment. In 1993, the male dolphin Kama was a named plaintiff in the suit *Citizens to End Animal Suffering and Exploitation v. The New England Aquarium*, challenging his transfer from the aquarium to a naval operation in Hawaii to be studied for his sonar capabilities. Kama, via his lawyers, alleged that the transfer violated the MMPA’s restriction on “taking” a marine mammal. The District Court in Massachusetts dismissed the case, finding that Kama, as a dolphin, does not have standing to sue under the MMPA, which limits standing to “persons”, but that Congress could constitutionally amend the law to include standing for animals.⁷⁷

Later, in 2003, the “Cetacean Community of the world” attempted on their own behalf, through a human guardian lawyer, to sue the United States Navy for current and future violations of the ESA, the MMPA and the National Environmental Policy Act (NEPA) stemming from the Navy’s Surveillance Towed Array Sensor System Low Frequency Active Sonar (SURTASS LFAS), a sonar system set to be deployed during heightened threat conditions or wartime. In

⁷⁰ *Id.*

⁷¹ Cal. Fish & Game Code § 4502.5(a)(1)-(4) (West 2016).

⁷² AB-2305, 2016:S.4502(a)(1)(B).

⁷³ “California Legislator Introduces Landmark Orca Protection Bill”, Richard Bloom, Assembly-member, District 50 (Mar. 16, 2016), <https://a50.asmdc.org/press-releases/20160317-california-legislator-introduces-landmark-orca-protection-bill>.

⁷⁴ *Id.*

⁷⁵ David Kirby, “California Lawmakers Pass Bill Banning Orca Shows, Captive Breeding”, TakePart (Aug. 26, 2016).

⁷⁶ “Cetacean Anti-Captivity Legislation and Laws”, Animal Welfare Institute, <https://awionline.org/content/cetacean-anti-captivity-legislation>.

⁷⁷ *Citizens to End Animal Suffering and Exploitation v. The New England Aquarium*, 836 F.Supp. 45 (D. Mass. 1993).

their filings, the Cetacean Community's lawyers cited to the tissue damage, biological impairment, and disruptions to feeding and mating behaviors that the SURTAS LFAS would cause to any whales, porpoises, or dolphins within range of the system. The filing sought an injunction barring the use of the system and ordering then-President George W. Bush and Secretary of Defense Donald Rumsfeld to comply with risk mitigation requirements under the ESA, MMPA and NEPA prior to deployment of the SURTAS LFAS, which the Navy had failed to do.⁷⁸

Proponents of the suit argued that the legal system has recognized the right of several legal entities, including corporations and ships, to file suit on their own behalf, and that the animals who are the intended beneficiaries of legislation should be entitled to the same right.⁷⁹ However, the District Court of Hawaii dismissed the suit, finding that the Cetacean Community did not have standing to sue under the relevant laws. On appeal, the Ninth Circuit affirmed the ruling, finding that the ESA and the Administrative Procedure Act's definitions of "persons" and "associations" exclude cetaceans. However, the Circuit Court concluded that if "Congress and the President intended to take the extraordinary step of authorizing animals as well as people and legal entities sue, they could, and should, have said so plainly." The Circuit Court held that under Article III of the U.S. Constitution, there is no bar to Congress enacting legislation that explicitly gives animals standing to sue on their own behalf.⁸⁰

The Ninth Circuit's ruling that the Constitution allows for animals to have standing to sue has not been overturned, but Congress has also failed to enact legislation that would explicitly grant such standing. While cetaceans have been awarded significant and increasing protections over the last century, their own intrinsic right to enforce these protections remains undeclared.

II. Tuna: A Singular Focus of Legal Regulation

The legal regulation of tuna in the U.S. has had a largely singular focus for the last century: facilitating the economic exploitation and commodification of these animals and setting rules for fishing and harvesting with the purpose of maximizing fishing potential. Attempts to protect tuna under endangered species regulation have failed⁸¹ and tuna, like all fish, have been excluded from legislation on animal welfare and well-being, such as welfare regulations governing animal slaughter.⁸²

a. The Tuna Overfishing Crisis and Tuna under Fisheries Management

Tuna populations around the world have faced steep declines and increasingly intensive fishing pressure over the last century. Pacific bluefin tuna populations have declined an estimated 97.4% from historic levels,⁸³ while some populations of Atlantic tuna have declined an estimated

⁷⁸ *Cetacean Community v. Bush*, 249 F.Supp.2d 1206 (D. Haw. 2003).

⁷⁹ Anna Green, "When the World's Whales, Dolphins, and Porpoises Tried to Sue George W. Bush", Mental Floss (November 12, 2015),

<https://www.mentalfloss.com/article/71128/when-worlds-whales-dolphins-and-porpoises-tried-sue-george-w-bush>.

⁸⁰ *Cetacean Community v. Bush*, 386 F.3d 1169 (9th Cir. 2004).

⁸¹ Seth Korman, "International Management of a High Seas Fishery: Political and Property-Rights Solutions and the Atlantic Bluefin," *Virginia Journal of International Law* 51 (2011): 697, 716.

⁸² Levenda (2013).

⁸³ Amanda Nickson, "New Science Puts Decline of Pacific Bluefin Tuna at 97.4 Percent", Pew Charitable Trusts (Apr. 25, 2016),

82% from historic levels.⁸⁴ Evidence suggests that artisanal and coastal fishers have been catching small numbers of pelagic species, including tuna, for millennia, but industrial fishing for tuna did not begin until the early 20th century, intensifying after World War II as demand for canned tuna increased.⁸⁵ Enhanced fishing techniques have allowed vessels to travel further and further offshore to catch tuna since the 1950s, putting increased pressure on already vulnerable populations.⁸⁶ International and domestic management schemes have attempted to regulate tuna fisheries, but these animals remain at serious risk and continue to be regulated purely as commodities.

i. International Tuna Management Efforts

Internationally, highly migratory tuna populations that traverse national boundaries and the high seas are managed under five tuna-focused regional fisheries management organizations (RFMOs). The oldest international tuna management organization is the Inter-American Tropical Tuna Commission (IATTC), which came into force initially as an agreement between Costa Rica and the United States in 1950 with the objective of keeping “the populations of fishes covered by the convention at those levels of abundance which will permit the maximum sustained catch”.⁸⁷ The IATTC has since been joined by 19 other members and sets fisheries management efforts for tunas in the Eastern Pacific.⁸⁸ Subsequently, the International Commission for the Conservation of Atlantic Tunas (ICCAT) came into force in 1969⁸⁹, followed by the Commission for the Conservation of Southern Bluefin Tuna (CCSBT) in 1994⁹⁰, the Indian Ocean Tuna Commission (IOTC) in 1996⁹¹, and the Western and Central Pacific Fisheries Commission (WCPFC) in 2004.⁹² The United States is a member of the ICCAT and the WCPFC. Similar to the IATTC, the other tuna-RFMOs are all focused on the maximum exploitation of tuna and are not conservation organizations.

These RFMOs collect catch data from member states and mandate various fisheries management measures across member states, including catch quotas, gear and species

<https://www.pewtrusts.org/en/research-and-analysis/articles/2016/04/25/new-science-puts-decline-of-pacific-bluefin-at-974-percent>.

⁸⁴ “Bluefin Tuna: Species at Risk”, Oceana, <https://usa.oceana.org/bluefin-tuna-species-risk>.

⁸⁵ Angie Coulter et al., “Using harmonized historical catch data to infer the expansion of global tuna fisheries”, *Fisheries Research* Vol. 221, 105359 (2020).

⁸⁶ Will Swartz et al., “The Spatial Expansion and Ecological Footprint of Fisheries (1950 to Present)”, *PLoS One* 5(12): e15143 (2010).

⁸⁷ William H. Bayliff, “Organization, Functions, and Achievements of the Inter-American Tropical Tuna Commission”, *Inter-American Tropical Tuna Commission* (2001); Robin Allen, “International management of tuna fisheries”, *FAO Fisheries and Aquaculture Technical Paper No. 536* (2011).

⁸⁸ List of members, *Inter-American Tropical Tuna Commission*, <https://www.iattc.org/HomeENG.htm>.

⁸⁹ “ICCAT Manual”, *International Commission for the Conservation of Atlantic Tunas* (Jan. 25, 2006), <https://iccat.int/Documents/SCRS/Manual/CH1/CH1-ENG.pdf>.

⁹⁰ “Origins of the Convention”, *Commission for the Conservation of Southern Bluefin Tuna*, <https://www.ccsbt.org/en/content/origins-convention>.

⁹¹ “Basic Texts”, *Indian Ocean Tuna Commission*, <https://www.iotc.org/about-iotc/basic-texts>.

⁹² “About WCPFC”, *Western and Central Pacific Fisheries Commission*, <https://www.wcpfc.int/about-wcpfc>.

restrictions,⁹³ rules around transshipment – the offloading of fish at sea⁹⁴, and fisheries observer programs.⁹⁵ Overall, however, these RFMOs have failed to stem overfishing, with the majority of fish populations under RFMO management still declining.⁹⁶ Discussions to set tuna quotas at the ICCAT have been mired with controversy⁹⁷ and ICCAT has increased quotas for endangered Atlantic bluefin in recent years despite scientific evidence of population decline,⁹⁸ which has already led to further declines in the Gulf of Mexico.⁹⁹ Across all RFMOs, flag states – the countries responsible for enforcing RFMO measures for vessels bearing their flag – often fail to enforce RFMO measures.¹⁰⁰ Industry and corporate actors also play an outsized role in the global fisheries management effort¹⁰¹ and international management measures are not geared towards constraining corporations. There have been recent proposals to close the high seas to fishing¹⁰² given the negligible role that fish caught on the high seas, including tuna, play in global food security.¹⁰³ However, negotiations in 2020 and 2021 for a new treaty under the United Nations Convention on the Law of the Sea to regulate biodiversity beyond national jurisdiction (the BBNJ treaty) have so far sidelined proposals to address the overfishing crisis in draft treaty text and focused on genetic resources in the deep sea.¹⁰⁴

⁹³ Martin Aranda, Paul de Bruyn & Hilario Murua, “A report review of the tuna RFMOs: CCSBT, IATTC, IOTC, ICCAT and WCPFC,” Fisheries Research Network (2010), https://www.researchgate.net/profile/Martin-Aranda-2/publication/312595842_A_report_review_of_the_tuna_RFM_Os_CCSBT_IATTC_IOTC_ICCAT_and_WCPFC/links/5885c93f4585150dde4a7825/A-report-review-of-the-tuna-RFMOs-CCSBT-IATTC-IOTC-ICCAT-and-WCPFC.pdf.

⁹⁴ Christopher Ewell, Sarika Cullis-Suzuki, Mikaela Ediger, John Hocesvar, Dana Miller & Jennifer Jacquet, “Potential ecological and social benefits of a moratorium on transshipment on the high seas,” *Marine Policy* 81 (2017).

⁹⁵ Christopher Ewell, John Hocesvar, Elizabeth Mitchell, Samantha Snowden & Jennifer Jacquet, “An evaluation of Regional Fisheries Management Organization at-sea compliance monitoring and observer programs,” *Marine Policy* 103842 (2020).

⁹⁶ Sarika Cullis-Suzuki & Daniel Pauly, “Global evaluation of high seas fisheries management,” in *Global Atlats of Marine Fisheries: A Critical Appraisal of Catches and Ecosystem Impacts*, Washington, D.C.: Island Press (2016).

⁹⁷ Korman (2011).

⁹⁸ “ICCAT Ignores Science and Increases Quota for Atlantic Bluefin Tuna,” *The Pew Charitable Trusts* (Nov. 20, 2014),

<https://www.pewtrusts.org/en/research-and-analysis/articles/2014/11/20/iccat-ignores-science-and-increases-quota-for-atlantic-bluefin-tuna>; Chris Chase, “NGOs critical of ICCAT rollover of Western Atlantic bluefin quota,”

SeafoodSource (Jan. 28, 2021),

<https://www.seafoodsource.com/news/environment-sustainability/iccat-roll-over-of-western-atlantic-bluefin-quota-has-ngos-crying-foul>.

⁹⁹ Tristan Baurick, “Population of prized tuna species declines as protections ease in the Gulf of Mexico,” *Houma Today* (Sep. 14, 2020),

<https://www.houmatoday.com/story/news/2020/09/14/population-prized-tuna-species-declines-protections-ease-gulf-mexico/5790609002/>.

¹⁰⁰ Gohar A. Petrossian, Monique Sosnowski, Dana Miller & Diba Rouzbahani, “Flags for sale: An empirical assessment of flag of convenience desirability to foreign vessels,” *Marine Policy* 116 (2020).

¹⁰¹ Gabrielle Carmine et al., “Who is the high seas fishing industry?” *One Earth* 3(6) (2020).

¹⁰² Crow White & Christopher Costello, “Close the High Seas to Fishing?” *PLoS Biology* (2014).

¹⁰³ Laurence Schiller, Megan Bailey, Jennifer Jacquet & Enric Sala, “High seas fisheries play a negligible role in addressing global food security,” *Science Advances* 4(8) (2018).

¹⁰⁴ “Revised draft text of an agreement under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction,” UNCLoS (2020),

https://www.un.org/bbnj/sites/www.un.org.bbnj/files/revised_draft_text_a.conf_.232.2020.11_advance_unedited_version.pdf.

ii. U.S. Tuna Fisheries Regulations

The United States has the largest Exclusive Economic Zone (EEZ) in the world, containing 3.4 million square miles,¹⁰⁵ and home to several tuna breeding grounds and migratory pathways.¹⁰⁶ Fishing in U.S. federal waters, including for tuna, is primarily governed under the Magnuson-Stevens Act (MSA), which was passed in 1976.¹⁰⁷ The MSA's stated purpose is to "provide optimum yields on a continuing basis" but also to "prevent overfishing", "insure conservation" and "facilitate long-term protection of essential fish habitats."¹⁰⁸ The MSA requires the use of "best scientific information available" in issuing fishing regulations.¹⁰⁹ Still, the MSA is focused on utilizing fish as a commodity and source of human livelihood and not protecting fish for their own sake. In addition to the MSA, tuna are also regulated under acts codifying U.S. commitments under international agreements, including the Tuna Conventions Act¹¹⁰ and the Atlantic Tunas Convention Act.¹¹¹ The National Marine Fisheries Service implements these acts, assesses fish populations, and issues tuna fishing rules, including setting fishing restrictions and enacting fisheries closures.¹¹²

Domestic tuna regulations have been subject to much controversy over their responsiveness to declining tuna populations. The short-term interests of the fishing industry have often been prioritized and Richard Ellis writes that "commercial fisherman are extremely well represented in the corridors of Washington, where various governmental organizations – such as the National Marine Fisheries Service (NMFS) – decide who can catch how many fish and where they can catch them."¹¹³ Recent NMFS decisions under the Trump Administration in 2020 to loosen fishing restrictions on bluefin tuna and reopen fishing in previously closed areas have led to lawsuits alleging that these decisions are not based on the best available science.¹¹⁴ Broadly, these loosening restrictions indicate that there is not a general trends towards increasing tuna protections despite scientific alarm over population declines.

In addition to commercial fishing, tuna has been a historical target of the American recreational fishing and angling industry. Starting in the 1930s, giant tuna became a prized fish for the International Game Fish Association (IGFA),¹¹⁵ a U.S. based organization which organizes several global International Tuna Cup Matches.¹¹⁶ These tournaments grew in

¹⁰⁵ "The United States is an Ocean Nation," National Oceanic and Atmospheric Administration, https://www.gc.noaa.gov/documents/2011/012711_gcil_maritime_eez_map.pdf.

¹⁰⁶ See, e.g., "Pacific Bluefin Tuna Migration," Smithsonian, <https://ocean.si.edu/ocean-life/fish/pacific-bluefin-tuna-migration>.

¹⁰⁷ "Magnuson-Stevens Act," National Oceanic and Atmospheric Administration Fisheries, <https://www.fisheries.noaa.gov/topic/laws-policies>.

¹⁰⁸ Magnuson-Stevens Fishery Conservation and Management Act, 16 U.S.C. § 1801(a)(5)-(6).

¹⁰⁹ *Id.* at § 1801(c)(3).

¹¹⁰ 16 U.S.C. § 951 et seq.

¹¹¹ 16 U.S.C. § 971 et seq.

¹¹² "West Coast Highly Migratory Species: Management Measures", National Oceanic and Atmospheric Administration Fisheries, <https://www.fisheries.noaa.gov/west-coast/sustainable-fisheries/west-coast-highly-migratory-species-management-measures>.

¹¹³ Richard Ellis, "Sport Fishing for Tuna", in *Tuna: Love, Death, and Mercury*, Vintage Books, New York (2008).

¹¹⁴ Maya Earls, "Looser Restrictions on Fishing Threaten Bluefin Tuna, Suit Says," BloombergLaw (Apr. 30, 2020), https://www.bloomberglaw.com/bloomberglawnews/environment-and-energy/X6PK5DRS000000?bna_news_filter=environment-and-energy#jcite.

¹¹⁵ International Game Fish Association, <https://igfa.org/>.

¹¹⁶ Richard Ellis, "Sport Fishing for Tuna", in *Tuna: Love, Death, and Mercury*, Vintage Books, New York (2008).

popularity through the 1970s despite dropping numbers of tuna catches as wild populations declined.¹¹⁷ While the popularity of these tournaments has waned in recent decades, in large part because of low numbers of catches, there are ongoing recreational tuna tournaments in several major American cities. NOAA still sets annual quotas for recreational fishing of endangered species of tuna such as the Atlantic bluefin¹¹⁸ despite these wild tuna populations already being overfished.¹¹⁹

b. Tuna Ranching and Aquaculture Regulations

Beginning in the 1970s, as a result of rising demand for tuna and declining wild populations, tuna “ranching” operations have become increasingly common in some countries around the world, notably in Australia, Canada, Japan, Mexico, and in the Mediterranean.¹²⁰ In contrast with traditional aquaculture, where humans raise fish from eggs, tuna ranching involves catching small wild tuna and then fattening them up by feeding them wild fish in off-shore holding pens before slaughter. The first of these commercial tuna ranching businesses in the Mediterranean exploited a “loophole” in ICCAT regulations that set strict quotas on harvesting tuna via net or harpoon, but did not cover so called “post-harvesting” techniques that allowed tuna farmers to fatten up tuna of an otherwise commercially unviable size.¹²¹

U.S. lawmakers have attempted numerous times to enact legislation that would regulate and explicitly allow for similar tuna ranching initiatives and other offshore fish farming in the U.S. Exclusive Economic Zone (EEZ). So far, however, these bills have faltered and failed to create an official permitting system.¹²² Although there are some offshore fish farming operations in U.S. waters despite the regulatory uncertainty, there are no commercial tuna ranching operations in U.S. waters.¹²³ In 2005, the Bush Administration submitted the first of these bills, the National Offshore Aquaculture Act, to Congress, which would have granted the U.S. Secretary of Commerce the ability to grant permits to tuna farmers, but the bill failed to receive a vote.¹²⁴ The National Atmospheric and Ocean Administration (NOAA) has also attempted to issue federal regulatory frameworks for offshore fish farms,¹²⁵ but the Ninth Circuit struck down

¹¹⁷ *Id.*

¹¹⁸ “NOAA Fisheries Closes the Atlantic Bluefin Tuna Angling Category Gulf of Mexico Incidental Trophy Fishery”, National Oceanic and Atmospheric Administration (May 4, 2021), <https://www.fisheries.noaa.gov/action/noaa-fisheries-closes-atlantic-bluefin-tuna-angling-category-gulf-mexico-incident-trophy>.

¹¹⁹ Chris Chase, “NGOs critical of ICCAT rollover of Western Atlantic bluefin quota,” SeafoodSource (Jan. 28, 2021), <https://www.seafoodsource.com/news/environment-sustainability/iccat-roll-over-of-western-atlantic-bluefin-quota-has-ngos-crying-foul>.

¹²⁰ Richard Ellis, “Tuna Farming”, in *Tuna: Love, Death, and Mercury*, Vintage Books, New York (2008).

¹²¹ *Id.*

¹²² Harold Upton, “U.S. Offshore Aquaculture Regulation and Development”, U.S. Congressional Research Service (Oct. 10, 2019), <https://crsreports.congress.gov/product/pdf/R/R45952>.

¹²³ *Id.*

¹²⁴ *Id.*; H.R. 2010 (110th): National Offshore Aquaculture Act of 2007, <https://www.govtrack.us/congress/bills/110/hr2010>.

¹²⁵ Steven Hedlund, “U.S. approves open-ocean aquaculture in Gulf”, SeafoodSource (Sept. 3, 2009), <https://www.seafoodsource.com/news/aquaculture/u-s-approves-open-ocean-aquaculture-in-gulf>.

these regulations as outside of NOAA’s administrative power in 2020, stating that offshore fish farming regulations in the U.S. EEZ require explicit congressional enactment.¹²⁶

Recently, members of both the Senate and the House introduced the Advancing the Quality and Understanding of American Aquaculture (AQUAA) Act during the 2019-2020 legislative session, which once again attempts to create specific federal regulations for fish farming in U.S. waters.¹²⁷ While the bill does not mention tuna explicitly, it would create a regulatory system that would allow for tuna ranching as it exists in other countries.¹²⁸ Tuna ranching in the U.S. would, however, raise several concerning and novel regulatory issues that are not addressed in the AQUAA Act. First, tuna, like all fish, are not regulated under the Animal Welfare Act, and tuna would *de facto* join the numerous other farm animals excluded from the AWA despite being subject to industrial-scale captivity.¹²⁹ The AQUAA Act also does not address how to bring tuna and other farmed fish under the regulatory framework of the Humane Methods of Slaughter Act, which requires the humane handling of animals in slaughter plants.¹³⁰ Continuing the trend of previous legal regulations covering tuna, the focus of aquaculture bills remains on facilitating the commodification and economic exploitation of the animal, rather than on animal-centric protections.

c. Failed Attempts to Protect Tuna as an Endangered Species

Efforts to broaden the legal protections of tuna beyond commodification have so far failed, both internationally and domestically. Given the steep declines in bluefin tuna populations in particular, proposals have been put forth to list bluefin tuna species under both the CITES convention and on the U.S. Endangered Species Act, but neither listing has been successfully enacted. The failure to protect bluefin tuna under either measure is antithetical to scientific understanding of bluefin tuna populations. The International Union for the Conservation of Nature (IUCN) classifies Southern bluefin tuna as critically endangered, Atlantic bluefin tuna as endangered, Pacific bluefin tuna as threatened, and highlights continuing population declines for almost all tuna species.¹³¹ The IUCN has stated that greater protections for tuna are urgently needed.¹³²

i. Convention on International Trade in Endangered Species

¹²⁶ Janet McConnaughey, “Appeals court: NOAA can’t make rules for offshore fish farms”, Associated Press (Aug. 3, 2020),

<https://apnews.com/article/ms-state-wire-new-orleans-fish-oceans-gulf-of-mexico-f3c1b2f5d8709ebbb22ab9aa1d3c0f04>; *Gulf Fisherman’s Association v. National Marine Fisheries Service*, Case No. 19-30006 (5th Cir. 2020).

¹²⁷ H.R. 6191 – 16th Congress (2019-2020), Advancing the Quality and Understanding of American Aquaculture Act, <https://www.congress.gov/bill/116th-congress/house-bill/6191/text>; Alexander Carter & Miriam Goldstein, “American Aquaculture”, Center for American Progress (May 13, 2019).

¹²⁸ Carter & Goldstein (2019).

¹²⁹ McFadden, Leary & Hessler (2019).

¹³⁰ Humane Methods of Slaughter Act, United States Department of Agriculture, <https://www.nal.usda.gov/awic/humane-methods-slaughter-act>.

¹³¹ “Tuna”, International Union for the Conservation of Nature Red List (accessed on Jun. 23, 2021), <https://www.iucnredlist.org/search?query=tuna&searchType=species>.

¹³² “Increased protection urgently needed for tunas”, International Union for the Conservation of Nature (Jul. 7, 2011), <https://www.iucn.org/content/increased-protection-urgently-needed-tunas>.

There have been several efforts to list bluefin tuna species under the appendices of the Convention on International Trade in Endangered Species (CITES). The earliest attempt was in 1991, when Sweden proposed listing Western Atlantic bluefin on Appendix I, which would result in complete prohibition on trade, and Eastern Atlantic bluefin on Appendix II, which would require increased monitoring of international trade.¹³³ Sweden cited to a 24% decline in Western Atlantic bluefin populations in the preceding 12 months and projections of even steeper declines by 1995.¹³⁴ The effort was heavily opposed by Japan, despite the fact that an Appendix I listing for Western Atlantic bluefin would likely have suspended only 1% of Japan's total tuna imports, as well as by Canada and the United States.¹³⁵ Following pressure from all three countries, Sweden withdrew the proposal at the Convention on the condition that countries would pursue quota reductions for Atlantic bluefin before the ICCAT.¹³⁶ While quota reductions were subsequently introduced, ICCAT scientists themselves later decried these efforts as insufficient to rebuild tuna populations.¹³⁷ Kenyan CITES delegates once again attempted to introduce a proposal to list Atlantic Bluefin tuna on Appendix I in 1994, after advocacy by the World Wildlife Fund, but Kenya withdrew the proposal before a vote after the Kenyan government stated that Kenyan delegates had not followed proper domestic procedures in proposing the listing.¹³⁸

The next high-profile effort to protect Atlantic bluefin tuna under CITES was in 2009 and 2010, when Monaco spearheaded an effort to list the animal under Appendix I, citing to continuing declines in populations. This time the proposal was supported by the European Union, with the European Commission stating that there was “no doubt about the link between international trade and overexploitation of the species,”¹³⁹ and the United States,¹⁴⁰ and was put up for debate for the first time.¹⁴¹ Assistant Secretary of the Interior Tom Strickland stated, “We understand the dire situation with respect to Atlantic bluefin tuna, and the U.S. intends to vigorously support Monaco's proposal at the upcoming CITES Conference.”¹⁴² Strickland elaborated that given “serious compliance problems that have plagued the eastern Atlantic and Mediterranean fishery and the fact that the 2010 quota level adopted by ICCAT is not as low as we believe is needed, the United States continues to have serious concerns about the long-term

¹³³ Carl Safina, “Bluefin Tuna in the West Atlantic: Negligent Management and the Making of an Endangered Species”, *Conservation Biology* Vol. 7(2) (June 1993).

¹³⁴ *Id.*

¹³⁵ *Id.*

¹³⁶ *Id.*

¹³⁷ Korman (2011).

¹³⁸ Erik Franckx, “The Protection of Biodiversity and Fisheries Management: Issues Raised by the Relationship between CITES and LOSC” in David Freestone, Richard Barnes and David Ong (eds) *The Law of the Sea: Progress and Prospects* (Oxford University Press, 2006) 210, 216 n. 32; Jennifer Telesca, *Red Gold: The Managed Extinction of the Giant Bluefin Tuna*, University of Minnesota Press (2020).

¹³⁹ *Id.* at p.705, n.30.

¹⁴⁰ “Pew Applauds the Obama Administration for Backing Global Trade Prohibition of Atlantic Bluefin Tuna, Urges International Support,” The Pew Charitable Trusts (Mar. 3, 2010), <https://www.pewtrusts.org/en/about/news-room/press-releases-and-statements/2010/03/03/pew-applauds-the-obama-administration-for-backing-global-trade-prohibition-of-atlantic-bluefin-tuna-urges-international-support>.

¹⁴¹ Kristen E. Boon, “Overfishing of Bluefin Tuna: Incentivizing Inclusive Solutions”, *U. Louisville L. REV.* Vol. 52 (2013).

¹⁴² “Assistant Secretary Strickland Announces Support for Listing Atlantic Bluefin Tuna on International Trade Endangered Species List,” U.S. Department of the Interior (Oct. 14, 2009), https://www.doi.gov/news/pressreleases/2009_10_14_releaseB.

viability of either the fish or the fishery.”¹⁴³ In 2009, ICCAT scientist assessments had determined it was “virtually certain” that Atlantic bluefin tuna populations were below 15% of historical levels, qualifying for inclusion on CITES Appendix I, and a United Nations Food and Agriculture Organization also found that the species was significantly overfished and qualified for listing on CITES Appendix I.¹⁴⁴ In November 2009, ICCAT had agreed to a catch limit of 13,500 metric tons for Atlantic bluefin tuna, but U.S. delegates had pushed for a lower quota of only 8,000 metric tons.¹⁴⁵

A CITES Appendix I listing for Atlantic bluefin would have marked the first time a major commercially exploited fish was protected under CITES.¹⁴⁶ The proposal was heavily opposed by Japan, who rallied West African nations and landlocked countries such as Afghanistan, Bolivia, and Mongolia, to oppose the listing, and struck a deal with China for both countries to oppose both the tuna listing and a CITES listing for sharks consumed in shark fin soup.¹⁴⁷ When put to a vote at the 15th Conference in 2010,¹⁴⁸ the proposed listing failed 68 to 20, and a subsequent EU proposal to delay listing following further scientific review also failed 72 to 43.¹⁴⁹ No tuna species has subsequently been listed on any CITES appendix, and international tuna regulation remains solely within the ambit of exploitation-focused fisheries conventions.

ii. Endangered Species Act

Despite United States support for prohibiting bluefin tuna trade under CITES in 2010, the federal government has resisted implementing more stringent protections for bluefin tuna domestically. Following the Gulf of Mexico oil spill, which significantly harmed Atlantic bluefin tuna breeding habitats, the Center for Biological Diversity filed a petition with the U.S. Secretary of Commerce to have the Atlantic bluefin tuna protected under the Endangered Species Act (ESA) in 2010.¹⁵⁰ The petition cited to a 60% decline in eastern Atlantic tuna populations in the preceding ten years, a 82% decline in western Atlantic tuna populations since 1970, and to the fact that both populations were below 15% of their historic population baseline.¹⁵¹ A listing under the ESA would prohibit all fishing for Atlantic bluefin tuna and require federal agencies to prioritize protections Atlantic bluefin tuna populations when issuing permits for offshore oil

¹⁴³ Patrick Reis, “U.S. Backs Proposed Tuna Trading Ban on Bluefin Tuna,” *The New York Times* (Mar. 3, 2010), <https://archive.nytimes.com/www.nytimes.com/gwire/2010/03/03/03greenwire-us-backs-proposed-trading-ban-on-bluefin-tuna-74803.html>.

¹⁴⁴ “CITES Proposal 19: Atlantic Bluefin Tuna,” *The Pew Charitable Trusts* (2010), https://www.pewtrusts.org/-/media/legacy/uploadedfiles/peg/publications/fact_sheet/cites20201020fact20sheetsallenglishpdf.pdf.

¹⁴⁵ *Id.*

¹⁴⁶ Nathaniel Gronewold, “Is the Bluefin Tuna an Endangered Species?” *Scientific American* (Oct. 14, 2009), <https://www.scientificamerican.com/article/bluefin-tuna-stocks-threatened-cites-japan-monaco/>.

¹⁴⁷ Korman (2011).

¹⁴⁸ “Proposal to include Atlantic Bluefin Tuna (*Thunnus thynnus* (Linnaeus, 1758)) on Appendix I of CITES in accordance with Article II 1 of the Convention,” Fifteenth meeting of the Conference of the Parties, Doha (Qatar) (Mar. 13-25 2010), <https://cites.org/sites/default/files/eng/cop/15/prop/E-15-Prop-19.pdf>.

¹⁴⁹ “CITES Member Countries Strike Down Bluefin Tuna Ban,” *International Centre for Trade and Sustainable Development* (Mar. 19, 2010), <https://ictsd.iisd.org/bridges-news/biores/news/cites-member-countries-strike-down-bluefin-tuna-ban>.

¹⁵⁰ “Petition to List the Atlantic Bluefin Tuna (*Thunnus thynnus*) as Endangered Under the United States Endangered Species Act”, *Center for Biological Diversity* (May 24, 2010), https://www.biologicaldiversity.org/species/fish/Atlantic_bluefin_tuna/pdfs/BluefinTunaPetition-5-24-2010.pdf.

¹⁵¹ *Id.*

drilling and other infrastructure.¹⁵² The Obama administration denied the petition, and instead stated it would classify Atlantic bluefin as a “species of concern”, which indicated further monitoring but did not entail meaningful new protections.¹⁵³

In 2016, a variety of environmental organizations, including the Center for Biological Diversity and Greenpeace, submitted another petition to the federal government, this time to have the Pacific bluefin tuna protected under the ESA.¹⁵⁴ Proponents cited to the declines of over 97% in Pacific bluefin populations from pre-fishing levels and the extensive practice of fishing juvenile Pacific bluefin before they have had a chance to reproduce,¹⁵⁵ as well as the significant impacts of plastic pollution, oil and gas development, and climate change on the animals.¹⁵⁶ In 2017, the Trump Administration rejected the petition and refused to classify Pacific bluefin as threatened or endangered, arguing that Pacific bluefin tuna are not at risk of extinction.¹⁵⁷ The Center for Biological Diversity subsequently sued the Trump administration in 2019 for failing to release public records detailing its reasoning for denying protections for Pacific bluefin, a case which is still pending.¹⁵⁸ It remains to be seen whether the Biden administration will be more receptive to efforts to protect tuna populations.¹⁵⁹ So far, there have been no statements from the new administration about enacting novel legal protections for tuna.

III. Octopus: Nascent and Underdeveloped Law

Octopus are subject to only few and limited legal regulations. While octopus are being fished at an increasing rate in numerous countries around the world, there are no international agreements focused on octopus fisheries or octopus protections. This may be in part because octopuses, unlike whales and whales, are not highly migratory animals and do not traverse long distances crossing territorial sea boundaries. However, the octopus trade spans the globe and consumer demand for octopus in one country can lead to overexploitation many miles away in another country. According to the UN Food and Agriculture Organization (FAO), global octopus captures have almost doubled from 179,042 tons in 1980 to 355,239 tons in 2014, and many wild

¹⁵² Catherine Kilduff, “Feds Deny Endangered Species Act Protection for Atlantic Bluefin Tuna”, Center for Biological Diversity (May 27, 2011),

https://www.biologicaldiversity.org/news/press_releases/2011/atlantic-bluefin-tuna-05-27-2011.html.

¹⁵³ Felicity Barringer, “U.S. Declines to Protect the Overfished Bluefin Tuna”, The New York Times (May 27, 2011), <https://www.nytimes.com/2011/05/28/science/earth/28tuna.html>.

¹⁵⁴ Alastair Bland, “Should Pacific Bluefin Tuna Be Listed as an Endangered Species?”, NPR (June 29, 2016), <https://www.npr.org/sections/thesalt/2016/06/29/483835875/should-pacific-bluefin-tuna-be-listed-as-an-endangered-species>.

¹⁵⁵ *Id.*

¹⁵⁶ “Center for Biological Diversity v. National Oceanic & Atmospheric Administration”, Climate Case Chart (2019),

<http://climatecasechart.com/climate-change-litigation/case/center-for-biological-diversity-v-national-oceanic-atmospheric-administration/>.

¹⁵⁷ “Listing Endangered and Threatened Wildlife and Plants; Notice of 12-Month Finding on a Petition to List the Pacific Bluefin Tuna as Threatened or Endangered under the Endangered Species Act,” National Oceanic and Atmospheric Administration, 82 FR 37060 (Aug. 8, 2017), <https://www.federalregister.gov/documents/2017/08/08/2017-16668/listing-endangered-and-threatened-wildlife-and-plants-notice-of-12-month-finding-on-a-petition-to>.

¹⁵⁸ *Center for Biological Diversity v. National Oceanic and Atmospheric Administration*, Case No. 2:19-cv-01082 (C.D. Cal. 2019).

¹⁵⁹ Megan Hill, “What Do the Next Four Years Have in Store for Wildlife?” Sierra (Dec. 3, 2020), <https://www.sierraclub.org/sierra/what-do-next-four-years-have-store-for-wildlife>.

octopus populations have started to decline due to overfishing.¹⁶⁰ There are some nascent signs of change, including some proposals for regional cooperative fisheries management initiatives for octopus, such as in the Indian Ocean where octopus are fished primarily for consumption in Europe,¹⁶¹ but these regimes have not developed into legally binding treaties. Rather, octopus captures are largely regulated under domestic laws, including in the United States, although U.S. legal regulations are sparse. There have also been increasing advocacy initiatives in the U.S. to increase the legal protections of octopus in research, captivity, and aquaculture, areas where octopus are currently excluded from legal protections, attempting to mirror successfully advocacy in other countries. So far, none of these proposed protections in the U.S. have been successfully enacted.

a. Regulations of U.S. Octopus Fisheries

In the United States, octopus are mainly caught in fisheries in Alaska, Hawaii, California, and Florida. Each of these states have limited legal regulations covering octopus captures, but these fishing regulations are not showing significant signs of increasing in stringency and there is only limited population monitoring through stock assessments.¹⁶²

In Alaska, the at least nine octopus species found in the Gulf of Alaska, Bering Sea and Aleutian Islands are only regulated as “incidental catch” caught in trawl, longline and pot fisheries as bycatch, but about two thirds of the animals are retained and sold for human consumption or used as bait.¹⁶³ Up until 2011, octopus were managed as part of an “other species” catch category, along with sharks, squids, and sculpins, but a 2011 fisheries management amendment required a specific catch limit for octopus alone, in compliance with the Magnuson-Stevens Act.¹⁶⁴ Once the amount of octopus caught as “incidental take” reaches the annual capture limit, determined through an annual stock assessment, Alaskan fisheries are instructed to close.¹⁶⁵ However, the National Oceanic and Atmospheric Administration (NOAA) has been proposing keeping Alaskan capture fisheries open for longer and increasing incidental catch limits for octopus in the Gulf of Alaska, arguing that octopus caught in bycatch in Alaska are better “survivors” than anticipated based on a study conducted with “industry partners”.¹⁶⁶ This indicates that there is no clear trend of increasing regulations and protections for Alaskan octopus species.

¹⁶⁰ Warwich H. Sauer et al., “World Octopus Fisheries”, *Reviews in Fisheries Science & Aquaculture* (2019); “Tight supply situation continues”, Food and Agriculture Organization of the United Nations (Jan. 14, 2019), <http://www.fao.org/in-action/globefish/market-reports/resource-detail/en/c/1176219/>.

¹⁶¹ “Octopus Fishery Management Initiatives: A Promising Approach for Managing Coastal Fisheries”, Indian Ocean Commission – SmartFish (2014), <http://www.fao.org/3/br820e/br820e.pdf>.

¹⁶² Olav A. Ormseth, M. Elizabeth Conners, Kerim Aydin & Christina Conrath, “Assessment of the Octopus Stock Complex in the Bering Sea and Aleutian Islands”, Alaska Fisheries Science Center (2020), <https://apps-afsc.fisheries.noaa.gov/refm/docs/2020/BSAIOcto.pdf>; Olav A. Ormseth, “Assessment of the Octopus Stock Complex in the Gulf of Alaska”, Alaska Fisheries Science Center (2019), <https://apps-afsc.fisheries.noaa.gov/refm/docs/2019/GOAocto.pdf>.

¹⁶³ *Id.*

¹⁶⁴ *Id.*

¹⁶⁵ *Id.*

¹⁶⁶ “A New Study Finds That Octopus are Survivors, and That Could Mean Fisheries Stay Open Longer”, NOAA Fisheries (Oct. 9, 2017), <https://www.fisheries.noaa.gov/feature-story/new-study-finds-octopus-are-survivors-and-could-mean-fisheries-stay-open-longer>.

In Hawaii, commercial octopus fisheries mainly focus on two species, the day and night octopus, collectively known as *He'e* in Hawaiian.¹⁶⁷ These octopus fisheries are managed by the Hawaii Division of Aquatic Resources (HDAR), because the octopus are fished on nearshore coral reefs in state waters.¹⁶⁸ The HDAR classifies octopus as not overfished but it does not conduct large-scale stock assessments for the octopus, meaning that the impacts of increasing consumer demand on the animal's population are unclear.¹⁶⁹ The HDAR also does not mandate a catch limit for octopus, and only sets a requirement for a minimum size of one pound for any captured octopus.¹⁷⁰ Moreover, there is a significant undocumented recreational catch of octopus in Hawaii that is likely putting further pressure on octopus populations.¹⁷¹ Monterey Bay Aquarium's SeafoodWatch warns that there are signs that Hawaiian octopus populations are declining,¹⁷² and according to Hawaii Division of Aquatic Resources commercial fishing reports the number of *He'e* caught in Hawaii has declined from 13,410 in 2013 to only 4,061 in 2019, despite increasing demand.¹⁷³ Hawaii's legal protections for octopus have not kept up with this reality and Hawaiian octopus are likely at serious risk.

In California, there are no formal fisheries management plans for octopus, such as catch limits or size restrictions, but commercial capture of octopus is permitted with a Trap Vessel Permit and the California Fish and Game Commission monitors octopus catches.¹⁷⁴ Octopus can be captured as "incidental take" in traps intended for other animals, such as lobster and crabs.¹⁷⁵ There is no defined fishing season for rock crab traps, where octopus is often an incidental catch.¹⁷⁶ Since no formal stock assessments are conducted for octopus in California, there is no reliable data on the health of exploited octopus populations.¹⁷⁷

In Florida, octopus are designated as a non-restricted commercial food and bait species for commercial fisheries, which means the species is not subject to catch limits or restrictions, but a commercial saltwater license is required for commercial capture.¹⁷⁸ Official scientific assessments of octopus populations are not conducted. There are separate regulations for recreational fishing of octopus, which requires a recreational saltwater fishing license.¹⁷⁹ Recreationally fished animals must be landed and kept alive in circulating aeration system to

¹⁶⁷ Lisa Max, "Day Octopus and Night Octopus: Hawaii", Monterey Bay Aquarium SeafoodWatch (Jan. 23, 2014), http://www.seachoice.org/wp-content/uploads/2014/03/MBA_SeafoodWatch_HIOctopusReport.pdf.

¹⁶⁸ *Id.*

¹⁶⁹ *Id.*

¹⁷⁰ Hawaii Administrative Rules, § 13-95-55.

¹⁷¹ Max (2014).

¹⁷² "Big blue octopus", Monterey Bay Aquarium SeafoodWatch, <https://www.seafoodwatch.org/recommendation/octopus/yellow-octopus-big-blue-octopus-united-states-hawaii-east-ern-central-pacific-ocean-handlines-and-hand-operated-pole-and-lines?species=212>.

¹⁷³ "Annual Stock Assessment and Fishery Evaluation Report: Hawaii Archipelago Fishery Ecosystem Plan 2019", Western Pacific Regional Fishery Management Council (2019) at Table 18, <http://www.wpcouncil.org/wp-content/uploads/2020/07/Hawaii-FEP-SAFE-Report-2019-Final-v5.pdf>.

¹⁷⁴ "2019 California Commercial Fishing Regulations Digest", California Fish and Game Commission (2019) at p.18; "Giant Pacific Octopus", SeaGrant California, <https://caseagrants.ucsd.edu/seafood-profiles/giant-pacific-octopus>.

¹⁷⁵ FGC § 8250.5; California Fish and Game Commission (2019).

¹⁷⁶ SeaGrant California.

¹⁷⁷ *Id.*

¹⁷⁸ "Restricted Species", Florida Fish and Wildlife Conservation Commission, <https://myfwc.com/license/commercial/saltwater/restricted-species/>.

¹⁷⁹ "Requirements for Recreational Marine Life Harvest", Florida Fish and Wildlife Conservation Commission, <https://myfwc.com/fishing/saltwater/recreational/marine-life/>.

keep the animal “in a healthy condition” for a maximum of 2 days.¹⁸⁰ All octopus species other than the Common Octopus are restricted to 5 individuals of a species and 20 animals total per day.¹⁸¹ Common Octopus are restricted to either 100 pounds or two animals per day, whichever is greater.¹⁸²

b. Octopus in Captivity and Research

Octopus, along with all invertebrates and most marine life, are not covered under U.S. legal protections for animals held in captivity and used in research. Two of the key animal welfare laws, the Animal Welfare Act (AWA) and the National Institutes of Health (NIH) requirements for the humane treatment of animals in federally funded research, also known as the Public Health Service Policy on Humane Care and Use of Laboratory Animals (PHS policy), both exclude octopus.¹⁸³ The AWA’s definition of “animal”, as discussed above, is limited to specific “warm-blooded animal[s]”, and thereby systematically excludes most marine life, including the octopus, from any legal protections granted under the act.¹⁸⁴ Meanwhile, the NIH’s PHS policy, which has been adopted by several U.S. agencies, only applies to vertebrates, which means that it includes fish, but still excludes octopus.¹⁸⁵ Here, the United States lags behind other Western countries, such as the European Union, which have classified octopus, along with all cephalopods, as “honorary vertebrates”¹⁸⁶ for legal purposes since 2010 and provide cephalopods with the same protections as vertebrates in scientific studies.¹⁸⁷ The EU Directive cites to “scientific evidence of [cephalopods’] ability to experience pain, suffering, distress and lasting harm.”¹⁸⁸ Some U.S. universities already require welfare evaluations and humane treatment for octopuses and other cephalopods in their internal policies, but these scattered protections are not uniform or subject to independent government oversight.¹⁸⁹ For example, the Woods Hole Marine Laboratories are already raising octopus and other cephalopod species as part of research modelling the effects of gene manipulation without legally required consideration of the welfare outcomes for the animals involved.¹⁹⁰

There have been legal advocacy efforts to grant octopus greater protections in captivity and research. In June 2020, the Harvard Animal Law & Policy Clinic submitted a petition to the

¹⁸⁰ *Id.*

¹⁸¹ *Id.*

¹⁸² *Id.*

¹⁸³ McFadden, Leary & Hessler (2019) at 219.

¹⁸⁴ Animal Welfare Act, 7 U.S.C. § 2132(g).

¹⁸⁵ *Public Health Service Policy on Humane Care and Use of Laboratory Animals*, Office Of Lab. Animal Welfare, Nat’l Institutes Of Health, U.S. Dep’t Of Health & Human Servs (2015), <https://olaw.nih.gov/policies-laws/phs-policy.htm>. Statutory authority is granted through the Health Research Extension Act of 1985. *Id.*

¹⁸⁶ Kevin Underhill, “The Octopus: Honorary Vertebrate?”, *Lowering the Bar* (May 20, 2015), <https://loweringthebar.net/2015/05/octopus-honorary-vertebrate.html>.

¹⁸⁷ Directive 2010/63/EU Of The European Parliament And Of The Council Of 22 September 2010 On The Protection Of Animals Used For Scientific Purposes, <https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:276:0033:0079:EN:PDF>.

¹⁸⁸ *Id.*

¹⁸⁹ Jennifer Mather, “Why Are Octopuses Going to Be the ‘Poster Child’ for Invertebrate Welfare?”, *Journal of Applied Animal Welfare Science* (2020).

¹⁹⁰ B.J. King & L. Marino, “Octopus minds must lead to octopus ethics”, *Animal Sentience* (2019) at 263.

NIH to include cephalopods in its PHS policy, mirroring the EU's approach.¹⁹¹ The petition was submitted on behalf of the New England Anti-Vivisection Society (NEAVS), several cephalopod scientists, and other organizations, including the Physicians Committee for Responsible Medicine and the Humane Society of the United States.¹⁹² The petition cited to the increasing use of cephalopods, particularly octopus, in federally funded research and the welfare concerns raised by the mental and behavioral capacities of octopus.¹⁹³ So far, the NIH has not responded to the petition.

c. Octopus Farming

Octopus aquaculture is gaining increasing attention from the seafood industry as consumer demand for octopus continues to grow, although these octopus aquaculture efforts have been limited by technological and cost constraints, particularly in early stages of the animal's life cycle.¹⁹⁴ The only commercial octopus farm currently operating in the United States is the Kanaloa Octopus Farm located on the Big Island of Hawaii, a self-designated cephalopod aquaculture research facility with the aim of studying octopus life cycles to facilitate propagation for "ornamental and aquatic food production".¹⁹⁵ Kanaloa also has a visitor center and markets itself as a tourist destination.¹⁹⁶ The facility is permitted by the Hawaii State government, and is a partner of the Hawaii Ocean Science & Technology Park administered by the Natural Energy Laboratory of Hawaii Authority.¹⁹⁷ Since octopus are not regulated under the AWA or NIH standards for animal research, the octopuses held in the facility are not subject to any specific federal legal protections.¹⁹⁸ Outside the U.S., attempts to operationalize commercial octopus farms are underway in countries such as Spain, Portugal, Greece, Mexico, Chile, and Japan.¹⁹⁹

There have been several calls for octopus farming bans, citing octopuses' complex behavior, cognitive skills, and resulting welfare concerns for life in captivity, as well as environmental implications of farming a predatory species and the limited contribution that octopuses provide to food security as a primarily luxury food.²⁰⁰ In 2019 over 100 scholars signed an open letter arguing that raising octopus for food is both unethical and environmentally

¹⁹¹ "Harvard Law Clinic calls on National Institutes of Health to require humane handling of octopuses used in research", The Humane Society of the United States (June 18, 2020), <https://www.humanesociety.org/news/harvard-law-clinic-calls-national-institutes-health-require-humane-handling-octopuses-used>.

¹⁹² "Physicians Committee Joins Coalition in Petitioning NIH to Protect Octopuses Used in Research Labs", Physicians Committee for Responsible Medicine (June 23, 2020), <https://www.pcrm.org/news/news-releases/physicians-committee-joins-coalition-petitioning-nih-protect-octopuses-used>.

¹⁹³ *Id.*

¹⁹⁴ Erica A.G. Vidal et al., "Cephalopod Culture: Current Status of Main Biological Models and Research Priorities", *Advances in Marine Biology* 67 (2014).

¹⁹⁵ Kanaloa Octopus Farm, Cephalopod Research Center, <https://www.kanaloaoctopus.com/>.

¹⁹⁶ Tiffany Hill, "Hang with Hee at the Kanaloa Octopus Farm", *Hawai'i Magazine* (Aug. 30, 2018), <https://www.hawaiimagazine.com/hang-with-hee-at-the-kanaloa-octopus-farm/>.

¹⁹⁷ "Kanaloa Octopus Farm", Hawaii Ocean Science & Technology Park, Natural Energy Laboratory of Hawaii Authority, <https://nelha.hawaii.gov/our-clients/kanaloa-octopus-farm/>.

¹⁹⁸ McFadden, Leary & Hessler (2019).

¹⁹⁹ Kelsey Piper, "Octopuses are smart, inventive creatures. Farming them would be a disaster", *Vox* (Jan. 31, 2019), <https://www.vox.com/future-perfect/2019/1/31/18203959/octopus-factory-farms>.

²⁰⁰ Jennifer Jacquet, Becca Franks, Peter Godfrey-Smith & Walter Sánchez-Suárez, "The Case Against Octopus Farming", *Issues in Science and Technology* Vol. XXXV(2) (Winter 2019).

damaging.²⁰¹ Proponents have also suggested preemptively banning the sale of farmed octopus in specific cities, as a more achievable first step before a nationwide farming ban.²⁰² So far, none of these proposals have translated into octopus farming bans anywhere in the United States.

IV. Conclusion

The legal directionalities of protections for cetaceans, tuna, and octopuses are contrasting and varied. Cetaceans have been subject to increasing legal protections over the last several decades across a wide variety of areas, beginning with fishing prohibitions in the 1970s, protections requiring “humane” treatment of cetaceans in the 1980s, and developing into some state-level bans on keeping cetacean species in captivity in recent years. Tuna, on the other hand, have been continually regulated purely as a fisheries commodity since the first international management agreements came into force in the 1950s. Numerous efforts to expand the protections of tuna beyond fishing have failed. Octopus, meanwhile, are currently subject to very few legal regulations, but nascent proposals could lead to more wide-reaching legal protections.

Overall, the influence of scientific understanding about cetacean, tuna and octopus welfare on the legal regulation of these animals appears to have been limited. Only very few laws relating to cetaceans, tuna or octopus explicitly include language on animal agency, sentience, or cognition (See Table 2). Moreover, even when the legislative history or the laws themselves reference agency, sentience, or cognition science, such as the state specific anti-captivity laws for cetaceans, these laws do not cite to any specific scientific studies or papers. An important caveat is that lawmakers may simply not include explicit reference to scientific research in regulations but still be generally influenced by the findings of scientific studies. The most recent piece of major legislation in this area, the California Orca Protection Act, signals some positive progress to counter this reality, since the ban on orca captivity and breeding underwent scientific review on orca behavior and sentience prior to its enactment, although specific studies are still not cited. There are also several pieces of proposed U.S. legislation covering octopus that are explicitly based on octopuses’ agency, cognition and sentience, which may be enacted in the coming years.

Table 2: Timeline of Major Laws Concerning Cetaceans, Tuna, and Octopuses

Legislation	Domestic/International	Summary	Cetaceans/Tuna/Octopus Covered	Year	Reference to Agency/Sentience/Cognition
Convention for the Regulation of Whaling	International	Required State parties to enact domestic provisions to limit whaling	Cetaceans	1931	None
Agreement for the Regulation of Whaling and Final Act	International	Prohibited the catch of certain species, set minimum size limits on whale catches and imposed a time-limited whaling season	Cetaceans	1937	None
International Convention for	International	Formed the International	Cetaceans	1946	None

²⁰¹ Jennifer Jacquet, Becca Franks & Peter Godfrey-Smith, “The octopus mind and the argument against farming it”, *Animal Sentience* 26(19) (2019).

²⁰² Piper (2019).

the Regulation of Whaling		Whaling Commission to monitor and regulate whaling			
Convention for the Establishment of an Inter-American Tropical Tuna Commission	International	Sets regulations for tuna fisheries in the Eastern Pacific	Tuna	1949	None
Tuna Conventions Act	Domestic	Sets regulations for U.S. tuna fisheries in the Eastern Pacific	Tuna	1950	None
Animal Welfare Act	Domestic	Sets requirements for the treatment of warm-blooded animals in captivity and in research	Cetaceans	1966	Requires "humane handling, care, or treatment of animals" in captivity, including "housing, feeding, watering, sanitation, ventilation, shelter from extremes of weather and temperatures, adequate veterinary care, and separation by species where the Secretary finds necessary."
Convention for the Conservation of Atlantic Tunas	International	Establishes the International Commission for the Conservation of Atlantic Tunas and sets regulations for tuna fisheries in the Atlantic	Tuna	1969	None
Endangered Species Conservation Act	Domestic	Prohibits import of endangered species	Cetaceans	1969 (Cetaceans first listed in 1970)	None
Marine Mammal Protection Act	Domestic	Provides domestic protections for marine mammals	Cetaceans	1972	If the directed "take" of a marine mammal is approved, the taking must be "humane" and involve the "least possible degree of pain and suffering practicable to the mammal involved"
Endangered Species Act	Domestic	Provides domestic protections for endangered species	Cetaceans	1973	None
Atlantic Tunas Conventions Act	Domestic	Sets regulations for U.S. tuna fisheries in the Atlantic	Tuna	1975	None
Convention on International Trade in Endangered Species	International	Bans trade in listed species	Cetaceans	1975 (Cetaceans first listed in 1986)	None
Magnuson-Stevens Act	Domestic	Regulates all fisheries in U.S. waters	Tuna	1976	None
International Whaling Commission Moratorium	International	Bans all commercial whaling beginning in 1986	Cetaceans	1982	None in the text of the moratorium, but discussion topics leading up to the moratorium included the "humaneness of whaling" and a

					special meeting on whale intelligence.
Health Research Extension Act of 1985	Domestic	Statutory basis for the National Institutes of Health (NIH) Public Health Service Policy on Humane Care and Use of Laboratory Animals (PHS policy), which sets requirements for the treatment of vertebrates in scientific research	Cetaceans, Tunas	1985	Requires the “proper treatment” of vertebrate animals being used in research, including “appropriate tranquilizers, analgesics, anesthetics, paralytics, and euthanasia” and “appropriate pre-surgical and post-surgical veterinary medical and nursing care for animals.”
1988 Amendment to the MMPA	Domestic	Requires that incidental take of marine mammals on foreign tuna vessels importing tuna into the U.S. be no more than twice as high as in U.S. fisheries	Cetaceans	1988	Did not add additional humaneness requirements beyond those in the core text of the MMPA.
Dolphin Protection Consumer Information Act	Domestic	Sets requirements for brands labelling their tuna as “dolphin-safe”	Cetaceans (only Dolphins)	1990	None
South Carolina Code § 50-5-2310	Domestic	Bans keeping cetaceans in captivity in South Carolina	Cetaceans (Dolphins since 1992, all Cetaceans since 2000)	1992	South Carolina State Representative Ken Corbett, who pushed the original law through South Carolina’s legislature, stated that “negative publicity” surrounding dolphin captivity stemming from public sentiment about the intelligence of dolphins led him to support the law.
Convention for the Conservation of Southern Bluefin Tuna	International	Sets regulations for Southern Bluefin Tuna fisheries	Tuna	1994	None
The Panama Declaration	International	Goal of eliminating dolphin mortality in tuna fisheries	Cetaceans (only Dolphins)	1995	None
Agreement for the Establishment of the Indian Ocean Tuna Commission	International	Sets regulations for tuna fisheries in the Indian Ocean	Tuna	1996	None
International Dolphin Conservation Program Act	Domestic	Provides protections for dolphins impacted by tuna fisheries	Cetaceans (only Dolphins)	1997	None
Hawaii Administrative Rules, § 13-95-55	Domestic	Prohibits catch of octopus smaller than one pound in Hawaii	Octopus	2002	None

Convention for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean	International	Sets regulations for tuna fisheries in the Western and Central Pacific Ocean	Tuna	2004	None
California Fish and Game Code § 8250.5	Domestic	Allows for incidental take of octopus in lobster and crab traps in California	Octopus	2008	None
2011 Amendment to Bering Sea and Gulf of Alaska Fisheries Management Plan	Domestic	Requires the separate assessment of octopus populations incidentally caught in Alaskan fisheries	Octopus	2011	None
California Orca Protection Act	Domestic	Prohibits keeping orcas in captivity for entertainment purposes and breeding orcas in captivity in California	Cetaceans (only Orcas)	2016	Legislation was subject to scientific review before it was passed, during which time lawmakers assessed scientific evidence of orca's size and intelligence. The studies reviewed are not specified.