Protecting Terrapins with TEDs in Virginia:
Lessons from Other States

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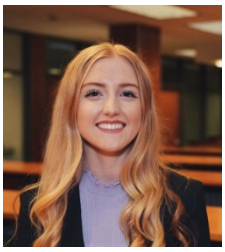

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About the Virginia Coastal Policy Center

The Virginia Coastal Policy Center (VCPC) at William & Mary Law School provides science-based legal and policy analysis of ecological issues affecting the state's coastal resources, providing education and advice to a host of Virginia's decision-makers, from government officials and legal scholars to non-profit and business leaders.

With two nationally prominent science partners – the Virginia Institute of Marine Science and Virginia Sea Grant – VCPC works with scientists, local and state political figures, community leaders, the military, and others to integrate the latest science with legal and policy analysis to solve coastal resource management issues. VCPC activities are inherently interdisciplinary, drawing on scientific, economic, public policy, sociological, and other expertise from within the University and across the country. With access to internationally recognized scientists at VIMS, to Sea Grant's national network of legal and science scholars, and to elected and appointed officials across the nation, VCPC engages in a host of information exchanges and collaborative partnerships.

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VCPC grounds its pedagogical goals in the law school's philosophy of the citizen lawyer. VCPC students' highly diverse interactions beyond the borders of the legal community provide the framework for their efforts in solving the complex coastal resource management issues that currently face Virginia and the nation.

I. INTRODUCTION

The diamondback terrapin is a species of turtle native to the Chesapeake Bay,[1] and other nearshore environments such as saltwater marshes, and lagoons, from Massachusetts to Texas.[2] Terrapin habitats extensively overlap with the areas in which commercial-style crab pots are used by both recreational and commercial blue crab fisheries.[3] The abundance of crab pots in their habitats threatens their survival because terrapins frequently enter crab traps in search of food and can drown if they do not escape within a few hours.[4] In one especially harrowing example of this threat, a single crab pot in Georgia was found with over ninety drowned terrapins in it.[5] Because over 500,000 crab pots are fished daily in Virginia waters from March through November, the potential risks that crab pots pose to terrapins is significant.[6]

Fortunately, Virginia can implement several policies to reduce the harm that crab pots pose to terrapins. In 2021, the Virginia Marine Resources Commission (VMRC) considered proposed regulatory amendments that would have required the recreational crab fishery in Virginia to use terrapin excluder devices (TEDs),[7] also known as bycatch reduction devices (BRDs), on their crab pots.[8] These draft amendments were discussed at a VMRC meeting,[9] but were ultimately sent to the Crab Management Advisory Committee (CMAC) for further discussion.[10] The CMAC did not make a recommendation concerning the amendments, and no further action has been taken by the VMRC on this issue.

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[1] Megan A. Rook, Romauld N. Lipicus, Bret M. Bronner, & Randolph M. Chambers, *Bycatch Reduction Device Conserves Diamondback Terrapin Without Affecting Catch of Blue Crab*, 409 MARINE ECOLOGY PROGRESS SERIES 171, 172 (2010); *Northern Diamond-backed Terrapin*, VA. HERPETOLOGICAL SOC'Y, https://www.virginiaherpetologicalsociety.com/reptiles/turtles/northerndiamond-back-terrapin/northern_diamond-backed_terrapin.php (last visited Oct. 19, 2021).

[2] Rook et al., *supra* note 1, at 172.

[3] *Id.*

[4] *Id.*

[5] Elise Pautler Bennett, George L. Heinrich, & Joseph Butler, *Petition to Protect Diamondback Terrapins (*Malaclemys Terrapin*) From Mortality in Blue Crab Pots By Requiring Bycatch Reduction Devices in Recreational and Commercial Fisheries*, CTR. BIOLOGICAL DIVERSITY 1, 12 (Jan. 28, 2020), https://www.biologicaldiversity.org/species/reptiles/pdfs/Petition-Florida-DiamondbackTerrapin-BRD-2020-01-28.pdf [hereinafter CBD Petition].

[6] *Derelict Crab Pots in the Chesapeake Bay*, RIVERS & COAST NEWSL. (Ctr. Coastal Res. Mgmt., Gloucester, Va.), Fall 2010, at 2, http://www.ccrm.vims.edu/publications/pubs/rivers&coast/vol5_no3_marine_debris_1.pdf [hereinafter CCRM Newsletter].

[7] In Virginia a "TED" usually refers to a "terrapin excluder device," while elsewhere a "TED" refers to a "turtle excluder device."

[8] *See Commission Meeting Minutes*, VA. MARINE RES. COMM'N (June 22, 2021), https://mrc.virginia.gov/Commission_Minutes/VMRC_final_minutes_06-22-2021.pdf [hereinafter VMRC June Minutes].

[9] *See id.*

[10] *Id*. at 18794. VRMC staff indicated that further action by CMAC is unlikely without some indication that the commissioners would be supportive of it. E-mail from Alexa Galvan, Fisheries Management Specialist, Virginia Marine Fisheries Commission to VCPC (Apr. 5, 2022, 9:46 EST) (on file with author). VMRC can act on TEDs without any CMAC recommendation. *See* VA. CODE ANN. § 28.2-201 (2020) (vesting authority in the VMRC to adopt regulations "necessary to promote the general welfare of the seafood industry and to conserve and promote the seafood and marine resources of the Commonwealth." *Id.* at Subsection (1).

This paper highlights case studies about other states' efforts to require or incentivize the use of TEDs and recommends policies for Virginia to adopt that have proven successful elsewhere. First, it outlines the threats to terrapins at large, as well as the threat posed by commercial and recreational crabbing, specifically. Next, it details the efforts that other East Coast states have made to combat the problem, including policies that require or incentivize the use of TEDs on crab pots, and discusses the regulatory framework currently in place in Virginia. Finally, this paper concludes by analyzing the approaches taken by other states and recommending specific policies that Virginia can pursue to reduce the deaths terrapins face from crab pots.

II. THE THREATS TO TERRAPINS

Diamondback terrapins live in brackish saltwater marshes, coastal bays and lagoons from Cape Cod, Massachusetts, to Corpus Christi, Texas.[11] They were once abundant in the Chesapeake Bay.[12] However, threats to terrapins and their environment have caused their numbers to decline.[13] Diamondback terrapins are classified as a "vulnerable" species by the International Union for the Conservation of Nature[14] and as a "Species with Very High Conservation Need" in Virginia.[15] Virginia's 2005 Wildlife Action Plan, which served as a guiding force in the State's wildlife conservation from 2005 to 2015,[16] identified no research or management opportunities specific to the diamondback terrapin species.[17] However, non-profit organizations have identified that diamondback terrapins are an increasing species of concern, and have included them in the second highest tier for conservation need in Virginia.[18]

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[11] *The Diamondback Terrapins: Virginia's Coastal Native*, VA. INST. MARINE SCI., https://www.vims.edu/research/units/projects/terrapin_brds/_docs/terrapin_brochure.pdf (last visited Oct. 19, 2021), [hereinafter VIMS Diamondback Terrapins].

[12] *Id.*

[13] *25 Years of Terrapin Conservation and Research*, WETLANDS INST., https://wetlandsinstitute.org/conservation/terrapin-conservation/20-years-of-terrapin-conservation-and-research/ (last visited Oct. 19, 2021).

[14] *Id.*; *see also* Elise Bennett, *Top 10 Nomination Form*, ENDANGERED SPECIES COAL., https://www.endangered.org/assets/uploads/2020/05/Diamondback-terrapin-CBD.docx.pdf (last visited Oct. 17, 2021) (recommending that the Diamondback Terrapin be considered an endangered species in the United States).

[15] VIRGINIA DEPARTMENT OF WILDLIFE RESOURCES, SPECIAL STATUS FAUNAL SPECIES IN VIRGINIA 8 (2022), https://dwr.virginia.gov/wp-content/uploads/media/virginia-threatened-endangered-species.pdf; *see also Diamondback Terrapin: Diamondback Terrapin By-Catch Reduction Strategies for Commercial and Recreational Blue Crab Fisheries,* VA. INST. MARINE SCI., https://www.vims.edu/ccrm/research/ecology/fauna/terrapin/index.php (last visited Oct. 16, 2021) [hereinafter VIMS By-Catch Reduction]; *see also Species of Greatest Conservation Need,* BE WILD, VA.!, http://bewildvirginia.org/species/SGCN-List-July-2016.pdf (last visited Mar. 6, 2022) (indicating the diamondback terrapin as a Tier 2 species of conservation need, the second highest tier).

[16] Virginia's 2015 Wildlife Action Plan, *BE WILD, VA!*, http://bewildvirginia.org/wildlife-action-plan/ (last visited Dec. 9, 2021).

[17] *Species of Greatest Conservation Need, supra* note 15.

[18] *Id.*

Terrapins face many threats.[19] Through the beginning of the twentieth century, terrapins were considered a delicacy to eat and were hunted almost to extinction.[20] Commercial harvests decimated the terrapin population along the East Coast, as harvesters sought to satisfy the demand for turtle soup.[21] In 1930, a single seafood purveyor at the Fulton Fish Market in Manhattan reported selling 2,000 quarts of diamondback terrapin soup a year.[22] However, demand for terrapin meat dropped due to Prohibition and the Great Depression, allowing terrapin populations to make a marginal recovery.[23] Today, a patchwork of laws and regulations keep terrapins from being served as soup, but additional threats to terrapins still exist.[24] For instance, because diamondback terrapins have beautiful shells and markings, they are often poached and sold as pets.[25] Though many states have banned the capture and sale of this species, illegal wildlife trafficking of the species still occurs.[26]

Additionally, coastal development has destroyed terrapin habitats and caused terrapin nesting areas to be located next to dangerous roads.[27] Terrapins also face threats from natural predators.[28] Nesting terrapin females are vulnerable to predation by raccoons, while eggs and hatchlings are preyed upon by a wide variety of animals including crabs, crows, gulls, herons, rats, muskrats, foxes, raccoons, skunks, and mink.[29] Terrapins also potentially face injury or death from collisions with boats.[30]

But one of the greatest threats to terrapins might be avoided, specifically, drowning in crab pots.[31] Active recreational and commercial blue crab fisheries exist from Cape Cod, Massachusetts to Corpus Christi, Texas, which are also terrapin habitat areas.[32] Blue crab fisheries are most active in the Mid-Atlantic States from New Jersey to North Carolina,[33] due to the extensive, relatively

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[19] For a summary of the threats to the terrapin, *see* Curtis Badger, *From Delicacy to Decline: A Tale of the Diamond-Backed Terrapin*, VA. DEP'T OF WILDLIFE RES., https://dwr.virginia.gov/blog/from-delicacy-to-decline-a-tale-of-the-diamond-backed-terrapin/ (last visited Oct. 20, 2021).
[20] Joseph McClain, *A New Oval Bycatch Reduction Device Might Spell Relief for Diamondback Terrapins*, WM. & MARY (Sept. 22, 2021), https://www.wm.edu/news/stories/2021/a-new-oval-bycatch-reduction-device-might-spell-relief-for-diamondback-terrapins.php?utm_source=wmdigest&utm_medium=email&utm_campaign=news.
[21] *Id.*
[22] *Id.*
[23] *Great Bay Terrapin Project*, CONSERVE WILDLIFE FOUND. OF N.J., http://www.conservewildlifenj.org/protecting/projects/terrapin/ (last visited Mar. 13, 2022). Sherry, a key ingredient in terrapin soup, was banned during Prohibition. *Id.* Additionally, during the Great Depression less people were able to afford terrapin. *Id.*
[24] *See* Bennett, *supra* note 14.
[25] *See id.*
[26] *Id.*; *see also* Badger, *supra* note 19.
[27] VIMS Diamondback Terrapins, *supra* note 11.
[28] *See Diamondback Terrapin*, NAT'L AQUARIUM, https://aqua.org/explore/animals/diamondback-terrapin (last visited Mar. 6, 2022).
[29] *Id.*
[30] *Id.*
[31] *See id*; DIAMONDBACK TERRAPIN WORKING GRP., *Position Statement on The Negative Effects of Blue Crab Traps / Pots on Diamondback Terrapin Populations and the Use of Bycatch Reduction Devices as a Practical, Inexpensive Solution*, https://www.dtwg.org/_files/ugd/91947e_b7be01dadc384f21805bd39a65791436.pdf (last updated Nov. 3, 2020) [hereinafter Position Statement].
[32] CBD Petition, *supra* note 5, at 3.
[33] *Id.*

shallow habitat for crabs throughout the open water of the Chesapeake Bay.[34] Virginia boasts the second-highest intensity of crabbing, with more than 3,100 kilograms of crabs harvested per kilometer of shoreline in 2011,[35] and a total 2019 Chesapeake Bay blue crab harvest of 61 million pounds.[36]

Crab pots are dangerous for terrapins because they, like crabs, are attracted to the bait in crab pots.[37] Terrapins enter crab traps the same way crabs do, by crawling into them through openings that allow entry but not escape.[38] However, unlike crabs, terrapins are air-breathing animals, and thus can die within hours if they become trapped in a crab pot, unable to breathe.[39] Terrapin drownings in crab pots can potentially rapidly reduce the species' population.[40] For example, while the death of fifty terrapins in a single crab pot might represent only a small fraction of the total number of terrapins in an estuary, locally, those fifty dead terrapins could comprise the majority of adult terrapins in a section of tidal wetland.[41] For a species like the terrapin that exhibits strong nest and home site fidelity, such a loss could cause reduced population growth and increased local extinction, also known as extirpation.[42] Extirpation tends to make the extinction of a given species more likely by reducing that species' population, genetic diversity, and geographic range.[43]

Likewise, derelict crab pots that both recreational and commercial crabbers lose track of because of storms, propellers slicing through float lines, and for other reasons, are another cause for concern.[44] These "ghost pots" may be death traps for terrapins, because they are no longer checked by crabbers who might be able to save them, especially when the traps get carried into shallow water by storms.[45] Decomposition of terrapin carcasses in crab traps is rapid and estimated to take less than three weeks.[46] The only portions of the terrapin skeleton that may persist are very difficult to detect in a fouled crab trap and may only be identifiable by someone familiar with turtle anatomy.[47] Such rapid decay makes it difficult to prove that crab pots kill terrapins.

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[34] Position Statement, *supra* note 31.
[35] BENJAMIN K. ATKINSON ET AL., ECOLOGY AND CONSERVATION OF THE DIAMOND-BACKED TERRAPIN 233 (Willem M. Roosenburg & Victor S. Kennedy, eds., 2019).
[36] *Blue Crab Stock Remains Within Healthy Range*, VA. INST. MARINE. SCI. (May 20, 2020), https://www.vims.edu/newsandevents/topstories/2020/wbcds_2020.php (explaining that in 2019 the Chesapeake Bay blue crab harvest totaled 61 million pounds, and that Virginia's commercial harvest totaled 28 million pounds with a dockside value of $34 million.).
[37] Amy J. Upperman, Timothy M. Russell & Randolph M. Chambers, *The Influence of Recreational Crabbing Regulations on Diamondback Terrapin By-catch*, 21 NE. NATURALIST 12, 19 (2014).
[38] CBD Petition, *supra* note 5, at 9.
[39] Upperman et al., *supra* note 37, at 19.
[40] CBD Petition, *supra* note 5, at 5.
[41] *See* VIMS By-Catch Reduction, *supra* note 15.
[42] *Id.*
[43] Larry Gilman, *Extinction and Extirpation*, ENCYCLOPEDIA.COM, https://www.encyclopedia.com/environment/energy-government-and-defense-magazines/extinction-and-extirpation (last visited Dec. 9, 2021).
[44] *See* Position Statement, *supra* note 31; McClain, *supra* note 20.
[45] *See* McClain, *supra* note 20.
[46] Willem M. Roosenburg, Ohio Univ. Ctr. for Ecology and Evolutionary Stud., Presentation to the Gulf States Marine Fisheries Comm'n: Terrapins, TEDs, and Disintegration Timelines (Oct. 18, 2017), https://fdocuments.us/document/terrapins-teds-and-disintegration-timelines-roosenburg-terrapins-teds.html.
[47] *Id.*

III. HOW OTHER STATES HAVE ADDRESSED THIS ISSUE

While Virginia grapples with deciding which regulations to adopt to better protect its terrapins, other states have adopted successful measures to do so. This section evaluates how other states have adopted policies to protect their terrapins and what lessons Virginia can learn from these undertakings. Specifically, it investigates how New Jersey, New York, Maryland, Delaware, and North Carolina have adopted regulations to protect terrapins from crab pots.

A. New Jersey

Since 1969, the Wetlands Institute, a private, non-profit organization located along the salt marshes of New Jersey, has been a key advocate for the conservation of diamondback terrapins.[48] For example, in 1989, the serious decline in New Jersey's terrapin population due to increased mortality from road kills prompted the Wetlands Institute to launch a Terrapin Recovery/Conservation Project that still exists today.[49] Researchers who work on this project engage in hands-on conservation, including around-the-clock road patrols during the terrapin nesting season in June and July to minimize the number of road kills of nesting females, as well as the removal of potentially viable eggs from the carcasses of unavoidable road kills.[50] Removed eggs are incubated and, after hatching, nurtured for a time at a nearby university and then released into the salt marsh.[51]

To combat terrapins getting stuck in crab traps, Wetlands Institute scientists developed a simple, inexpensive, and effective solution.[52] They created the first terrapin excluder device, an insertable rectangle which is to be attached to the inner narrow end of the entrance funnel on crab traps.[53] The Wetlands Institute, the New Jersey Division of Fish, Game and Wildlife, and commercial crabbers studied the effectiveness of TEDs.[54] These studies proved several things:[55] first, that TEDs are highly effective at preventing terrapins from entering commercial crab traps;[56] second, that there is no decrease in the number or size of marketable crabs caught in excluder-equipped traps;[57] and third, and most surprisingly, that there is actually an increase in the number of marketable-sized crabs caught when excluders are used.[58] This increase is thought to be due to the fact that excluders reduce the dimensions of the inner funnel opening, making it more difficult for crabs to find their way out of the trap once they have entered it.[59]

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[48] *Terrapin Conservation at the Wetlands Institute*, N.Y. TURTLE AND TORTOISE SOC'Y, http://nytts.org/terrapinconservation/home.htm (last visited Dec. 9, 2021) [hereinafter *Terrapin Conservation*].
[49] *Id.*
[50] *Id.*
[51] *Id.*
[52] *Excluder Devices on Commercial Crab Traps*, WETLANDS INST., https://wetlandsinstitute.org/conservation/terrapin-conservation/excluder-devices-on-commercial-crab-traps/ (last visited Oct. 15, 2021).
[53] *Id.*
[54] *Terrapin Conservation*, *supra* note 48.
[55] *Id.*
[56] *Id.*
[57] *Id.*
[58] *Id.*
[59] *Id.*

This research helped convince New Jersey legislators to enact the state's first TED regulation.[60] In 1998, New Jersey became the first state to regulate the use of TEDs on crab traps.[61] New Jersey's regulation states that all commercial crab pots set "in any body of water less than 150 feet wide from shoreline to shoreline at mean low water or in any man-made lagoon shall contain terrapin excluder devices" attached to the inside of all pot entrance funnels.[62] This regulation applies to recreational crabbers who use commercial-style crab pots because recreational crabbers place pots off their docks on the shoreline, which is where diamondback terrapins are most prevalent.[63] Best available estimates show that there may be 10,000 or more traps annually used by recreational crabbers in New Jersey.[64] Furthermore, the regulation applies to commercial-style crab pots, because they are the type that cause terrapin drowning.[65]

B. New York

Similarly, in 2018, New York's Department of Environmental Conservation adopted a regulation that required recreational crabbers to use TEDs.[66] New York's regulation states that TEDs "must be used on all non-collapsible, Chesapeake-style crab pots or traps" that are used in the areas detailed in the regulation.[67] These areas include waters of the Long Island Sound, the Hudson River, and other harbors and bays in the State.[68] Such a regulation seeks to require TEDs in ideal terrapin habitats, like creeks and harbors, but does not require them in other waters where terrapins are less common.[69]

This regulation was in response to widespread outcry from conservation organizations and citizens.[70] A few months prior, New York had ended the commercial harvest of diamondback terrapins in state waters.[71] More than sixty scientists had signed a letter explaining that commercial harvests put New York's terrapins at risk and supporting a ban on such practices.[72] While the ban was a crucial step in protecting terrapins, conservation organizations were not content to stop there.[73] Carl LoBue, Acting Director of the New York State Department of Environmental Conservation's Marine Crustacean Unit at the time, knew that other states had begun requiring the

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[60] *Id.*
[61] *Excluder Devices on Commercial Crab Traps*, *supra* note 52.
[62] N.J. ADMIN. CODE § 7:25.14.6(c) (2022); *see also* N.J. ADMIN. CODE § 7:25-14.1 (2022) (defining the specifications for terrapin excluder devices).
[63] *Terrapin Conservation*, *supra* note 48.
[64] *Id.*
[65] The New Jersey regulation does not cover crab traps designed for recreational use, with sides that flip up when the trap cord is pulled, because they do not drown terrapins. *Id.*
[66] *New York Rule Will Prevent More Turtles from Drowning in Coastal Crab Traps*, CTR. BIOLOGICAL DIVERSITY (Mar. 29, 2018), https://www.biologicaldiversity.org/news/press_releases/2018/diamondback-terrapin-03-29-2018.php.
[67] N.Y. COMP. CODES R. & REGS. tit. 6, § 44.2(d)(1)-(d)(1)(v) (2022).
[68] *Id.*
[69] Matthew L. Miller, *Saving Terrapins from Drowning in Crab Traps*, COOL GREEN SCI. (Mar. 27, 2018), https://blog.nature.org/science/2018/03/27/saving-terrapins-from-drowning-in-crab-traps/.
[70] *Id.*
[71] *Id.*
[72] *Id.*
[73] *Id.*

use of TEDs and sought to have similar regulations implemented in New York.[74] LoBue recalls that the key to getting crabbers to support the regulation was having an open and honest dialogue:

> While some crabbers obstinately denied ever seeing or catching terrapins, others were more forthcoming, admitting they caught them and expressing remorse about unintentionally drowning them.[75] A key moment occurred when a professional crabber testified with his experiences based on a year of using the excluder devices.[76] After testing several, he found one that even increased his blue crab catch.[77]

C. Maryland

Since 1999,[78] Maryland has required TEDs on recreational crab pots in the state's waters.[79] Maryland's regulation requires "all recreational waterfront property owners who set crab pots attached by rope, line or pole in front of their property or privately owned pier or dock to attach a Crab Pot Turtle Reduction Device to each funnel or entrance to the lower chamber of the crab pot."[80] It is likely that Maryland adopted a regulation that only applies in front of riparian properties rather than a broader requirement because waterfront property owners in Maryland are legally allowed to use two recreational crab pots without a license.[81] To help enforce the TED regulation, Maryland has since required recreational waterfront property owners who set crab pots along the Chesapeake Bay to register their crab pots.[82] Registration is free and is an opportunity to notify recreational crabbers about steps they can take to ensure terrapin safety.[83]

D. Delaware

Delaware also focuses on recreational crab pots in their TED regulations.[84] The state implemented these regulations in 2001.[85] According to Delaware's regulation, "[i]t shall be unlawful for the owner of any non-commercial [recreational] crab pot to place said crab pot in the

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[74] *Id.*
[75] *Id.*
[76] *Id.*
[77] *Id.*
[78] *See* Thomas A. Radzio, Jaclyn A. Smolinsky, & Willem M. Roosenburg, *Low Use of Required Terrapin Bycatch Reduction Devices in a Recreational Crab Pot Fishery*, 8 HERPETOLOGICAL CONSERVATION & BIOLOGY 222, 223 (2013); MD. CODE REGS. 08.02.03.07(B)(5) (2022).
[79] *Attention Maryland Crabbers: You Can Help Save Our State Reptile*!, MD. DEP'T NAT. RES., https://dnr.maryland.gov/wildlife/Documents/TerrapinBrochure.pdf (last visited Mar. 6, 2022).
[80] *Recreational Crab Pot Requirements*, MD. DEP'T NAT. RES., https://dnr.maryland.gov/fisheries/Pages/regulations/crabpot.aspx (last visited Mar. 6, 2022).
[81] *Id.*
[82] *Recreational Crab Pot Registration Information*, MD. DEP'T NAT. RES., https://dnr.maryland.gov/fisheries/Documents/Recreational_Crab_Pot_Registration_Information.pdf (last visited Mar. 6, 2022).
[83] *Id.*
[84] CBD Petition, *supra* note 5, at 23.
[85] 2017 Delaware Turtle Brochure, DEL. DEP'T NAT. RES. & ENV'T CONTROL, https://documents.dnrec.delaware.gov/fw/Fisheries/Documents/2019%20Turtle%20Brochure%20-%20FINAL.pdf (last visited March 6, 2022).

tidal waters of this State unless said crab pot has a by-catch reduction device."[86] Crabbers who violate this provision are guilty of a class D environmental violation, subjecting them to a fine of fifty to one hundred dollars as well as court and prosecution costs[87] and the revocation of their license.[88] Delaware has fully prosecuted violations of their crab pot regulations in the past.[89] In 2016, the Delaware Division of Fish and Wildlife arrested a recreational crabber for violations of Delaware crab pot laws.[90] The crabber pled guilty in a Justice of the Peace Court and was fined $2,558, court costs, and had his crabbing license revoked for one year.[91] As enforceability of TED regulations is an area of concern,[92] prosecuting violators to the full extent possible may prove to be an effective and strategic deterrence mechanism and encourage crabbers to more seriously consider the costs of failing to comply with TED requirements.

E. North Carolina

North Carolina passed regulations to protect terrapins through its Marine Fisheries Commission in 2020.[93] North Carolina's approach features Diamondback Terrapin Management Areas.[94] The state has identified two terrapin management areas in the southern coastal waters of the state, where crabbers are required to use TEDs on their crab pots.[95] The State delineated these areas based on their populations of diamondback terrapins, as well as their depth and distance from shore that identified them as potential interaction zones.[96] The management measures took effect in early 2021, coinciding with the closed season so fishermen could have time to modify their gear.[97] The State plans to add additional Diamondback Terrapin Management Areas in the future.[98]

IV. VIRGINIA'S APPROACH TO TERRAPIN PROTECTION

To reduce bycatch of terrapins in crab pots, the VMRC proposed an amendment to the existing licensure regulations to require TEDs for recreational crabbers.[99] However, when the

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[86] 7 DEL. ADMIN. CODE. § 3721 (2008).
[87] DEL. CODE ANN. Tit. 7 § 1304(g) (2021).
[88] DEL. CODE ANN. Tit. 7 § 1912 (2021).
[89] *See Sussex Waterman Nabbed for Multiple Crabbing Violations*, DELMARVA NOW. (May 20, 2016, 4:30 PM), https://www.delmarvanow.com/story/news/local/delaware/2016/05/20/sussex-waterman-arrested-mutiple-commercial-crabbing-violations/84669824/.
[90] *Id.*
[91] *Id.* The violations were: "10 counts of tending more than two recreational crab pots, 10 counts of improperly marked recreational crab pots, and six counts of failure to tend recreational crab pots at least once within the required 72-hour timeframe . . . ." *Id.* While the charges did not include a violation of Delaware's TEDs law, the above charges all carry the same penalty as a TEDs violation.
[92] *See infra* text accompanying notes 148-51.
[93] *See* 15A N.C. ADMIN. CODE 3L.0204 (2014) (authorizes Fisheries Director to require BRDs); 15A N.C. ADMIN. CODE 10I.0105(7)(E) (2021) (designates diamondback terrapin as a special concern species).
[94] *Marine Fisheries Commission Establishes First Two State Diamondback Terrapin Management Areas*, N.C. DEP'T ENV'T QUALITY (May 15, 2020), https://deq.nc.gov/news/press-releases/2020/05/15/marine-fisheries-commission-establishes-first-two-state-diamondback.
[95] *Id.*
[96] *Information on Blue Crab Fishery Management Plan*, N.C. DEP'T ENV'T QUALITY, http://portal.ncdenr.org/web/mf/blue-crab-topic (last visited Dec. 9, 2021).
[97] *Id.*
[98] *Id.*
[99] VMRC June Minutes, *supra* note 8, at 18794.

matter came up for a vote, the VMRC voted to send the measure back to its CMAC instead of enacting the regulation.[100] One point of debate at the CMAC meeting was whether the imposition of a regulation on recreational crabbers, but not commercial crabbers, would be unfair.[101] Additionally, questions were raised as to the differences in terrapin mortality rates attributable to recreational versus commercial crabbers.[102] While the VMRC thus far has failed to act to require TEDs in Virginia's waters, TEDs have been successful elsewhere, as discussed below.

Currently, Virginia allows recreational crabbers to place up to two crab pots in Virginia waters without obtaining any sort of registration or license.[103] Crabbers who want to use more than two pots must obtain a thirty-six dollar license that requires them to use TEDs on their traps–or pay an additional ten dollars to bypass the regulation.[104] The records have shown that almost sixty-percent of the licenses sold have been those that do not require TEDs.[105]

Virginia has also implemented season limits that restrict the number and type of crab traps that can be used during certain months.[106] These season-limits were not adopted to benefit terrapins; however, they may have the unintended benefit of doing so by restricting crabbing during terrapin mating season in early spring.

V. POTENTIAL SOLUTIONS

Consultation between crabbers, scientists, and resource managers is essential to ensuring that recreational and commercial crabbing can be compatible with terrapin conservation. Beyond the ecological concerns of the declining terrapin population, there are also economic reasons to act. The Monterey Bay Aquarium's Seafood Watch, a rating system that grades the sustainability of fisheries, recommends buyers avoid Virginia crabs, and blue crab specifically, because "regulations to protect terrapins haven't been implemented" in the Commonwealth.[107] A rating of "avoid" seemingly has had tangible effects on the seafood market, because reportedly "some processers have trouble selling Virginia blue crab because of the rating."[108]

A. Requiring TEDs Solely for Recreational Crabbers

Because they do not always need a license to crab, the number of Virginia recreational crabbers is unknown but is believed to be distributed broadly along the State's developed

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[100] *Id.*
[101] *Id.*
[102] *Id.*
[103] VA. CODE ANN. § 28.2-226(1) (2016).
[104] VA. CODE ANN. § 28.2-226.2(B)(2) (2016) ("Up to 10 crab pots with turtle excluder devices, $36; up to 10 crab pots without turtle excluder devices, $46"). However, VMRC has limited recreational crabbers to a maximum of five pots. 4 Va. Admin. Code § 20-670-30(C) (2019).
[105] VMRC June Minutes, *supra* note 8.
[106] *See infra* Appendix 2; *Recreational Crabbing Rules,* VA. MARINE RES. COMM'N, https://mrc.virginia.gov/regulations/VA-recreational-crabbing-rules.shtm (last updated Apr. 10, 2020).
[107] Virginia Blue Crab Recommendation, MONTEREY BAY AQUARIUM SEAFOOD WATCH, https://www.seafoodwatch.org/recommendation/crab/blue-crab-29041?species=38 (last visited Mar. 6, 2022).
[108] *Crab Management Advisory Committee (CMAC) Minutes*, VA. MARINE RES. COMM'N at 2 (Oct. 5, 2020), https://mrc.virginia.gov/CMAC/2020/CMAC-2020-10-05-Minutes.pdf [hereinafter *CMAC October 2020 Minutes*].

coastlines.[109] Researchers estimate there are over 20,000 docks in the tidal waters of Virginia.[110] In contrast, commercial crabbing is distributed broadly across open water.[111] Therefore, overall, for commercial crabbing, a smaller percentage of a very large total number of pots intersects with terrapin habitat, whereas for recreational crabbing, a larger percentage of a smaller total number of pots intersects with terrapin habitat.[112] Moreover, and more concerning for the terrapin population, recreational crabbers often go for extended periods of time without checking their crab pots.[113] For trapped terrapins, any delay while they are trapped and cannot breathe can be deadly.[114]

If VMRC elects to implement a TED requirement for recreational crabbers, enforcement could be challenging for several reasons. First, the number and locations of unlicensed, recreational crab pots in Virginia are essentially unknowable.[115] Without a sense of where the crab pots are, who is using them, and how many crab pots are in Virginia waters, enforcement could be immensely difficult. It is possible that a legislative increase in funding would be necessary to properly enforce such a regulation. Furthermore, research suggests that compliance with TED requirements in other states unfortunately is sometimes low.[116]

Regardless, efforts to enact a TED requirement for recreational crabbers in Virginia have been unfruitful. Further, when they have been considered, they have been assailed for various reasons. For instance, when the matter was considered at a CMAC meeting discussing TEDs, a VMRC member complained that requiring recreational crabbers to use TEDs without also requiring commercial crabbers to do so would be unfair,[117] and improper for other reasons.[118] The objecting VMRC member did not point to what tenets of fairness he thought would be violated. The member also complained that such a requirement would be illegal, though he did not specify how or why, despite staff assurances otherwise.[119] Regardless, since the fairness concern raised by the VMRC member may reflect a concern also held by recreational crabbers, this white paper evaluates the viability of a potential challenge under the equal protection guarantees of the state and federal constitutions.

The Equal Protection Clause of the Fourteenth Amendment to the federal constitution prevents states from denying persons "equal protection of the laws"[120] without sufficient

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[109] For instance, Virginia law allows each person to use two crab pots for recreational use without a license. Under this law, a family of four can use eight crab pots off their dock. VA. CODE ANN. § 28.2-226(1) (2016).
[110] Upperman et al., *supra* note 37, at 20.
[111] CBD Petition, *supra* note 5, at 8.
[112] *Id.*
[113] Upperman et al., *supra* note 37, at 20.
[114] Rook et. al, *supra* note 1, at 172.
[115] *See* VA. CODE ANN. § 28.2-226 (2016) (recreational crabbers with less than three pots do not need a license).
[116] *See* Radzio et al., *supra* note 78, at 224 (focusing on recreational TEDs use in Maryland).
[117] *See CMAC October 2020 Minutes*, *supra* note 108 ("Mr. Tom Powers opposed this measure, suggesting it would be difficult to educate all recreational crab potters, that it would be challenging to enforce, and that it is unfair to require recreational users to use TEDs without also requiring TEDs for commercial crabbers.").
[118] *Crab Management Advisory Committee (CMAC) Minutes*, VA. MARINE RES. COMM'N (June 2, 2021), https://mrc.virginia.gov/CMAC/2021/CMAC-2021-06-02-Minutes.pdf.
[119] *Id.* ("Mr. Powers stated that he is against mandatory TEDs for recreational crab pots, and that he believes it is not legal for VMRC to write such a regulation based on the Code of Virginia.").
[120] U.S. CONST. amend. XIV, § 1.

justification.[121] Laws or regulations that make classifications, or otherwise treat groups differently, may be subject to judicial review.[122] Suspect classifications, like race, are subject to strict scrutiny, which requires that the state prove a compelling state interest in the law, that the law is necessary to meet that purpose, and that the law is narrowly tailored.[123] Classifications that are not suspect receive a more deferential review, the rational basis review.[124] Rational basis review only requires the state to prove that the law is rationally related to a "legitimate government purpose."[125] This is a much easier standard for the government to satisfy than strict scrutiny.[126] Accordingly, success or failure on an Equal Protection claim often depends on the determination of the classification as suspect or not.[127]

If a court considered an equal protection challenge like the one the VMRC member raised at a VMRC meeting, the court would first determine which level of constitutional scrutiny to apply. Courts that have considered this issue have held that legal requirements that treat different classes of fishers differently do not implicate a suspect classification and that fishing is not a fundamental right.[128] Therefore, because no suspect class is implicated by a rule requiring recreational crabbers to use TEDs but not commercial crabbers, and because fishing is not a fundamental right entitled to heightened scrutiny, the court would apply the rational basis test to a challenge to the constitutionality of a TEDs requirement for recreational crabbers.[129]

Under a rational basis analysis, a court will uphold a law so long as there exists a rational basis for the law in furtherance of a legitimate state interest.[130] Here, a proposed TED requirement for recreational crabbers is aimed at decreasing terrapin mortality. Further, the requirement is aimed at recreational crabbers instead of all crabbers for several specific reasons, including the typical location of recreational crab pots and how often they are usually checked by their owners compared with commercial pots.[131] Accordingly, because it is likely that a court would determine that a TED requirement for recreational crabbers is rationally related to the legitimate state purpose

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[121] Marcy Strauss, *Reevaluating Suspect Classifications*, 35 SEATTLE U. L. REV. 135, 135 (2011).
[122] *See* Louisiana *ex rel*. Guste v. Verity, 853 F.2d 322, 333 (5th Cir. 1988).
[123] Strauss, *supra* note 121, at 136-37. Race, national origin, and citizenship are examples of suspect classifications.
[124] *Id.* at 135.
[125] *Id.* at 136.
[126] *Id.* at 138.
[127] *Id.*
[128] State v. Weaver, 805 So. 2d 166, 170 (La. 2002) ("Notwithstanding defendants' claims to the contrary, their status as commercial fishermen does not constitute a suspect class, nor does commercial fishing amount to a fundamental right."); Lane v. Chiles, 698 So. 2d 260, 263 (Fla. 1997) ("Because fishing is not a fundamental right, and commercial fishermen do not constitute a suspect class, the rational basis test rather than the strict scrutiny standard applies in the instant case.").
[129] Instead, the Virginia Constitution specifically states that its "people have a right to hunt, fish, and harvest game, subject to such regulations and restrictions as the General Assembly may prescribe by general law." VA. CONST. art. XI, § 4.
[130] Marshall v. United States, 414 U.S. 417, 422, 94 S. Ct. 700, 704, 38 L. Ed. 2d 618 (1974) (explaining that "equal protection as embodied in the Due Process Clause of the Fifth Amendment, see Bolling v. Sharpe, 347 U.S. 497, 74 S.Ct. 693, 98 L.Ed. 884 (1954), does not require that all persons be dealt with identically, but rather that there be some 'rational basis' for the statutory distinctions made, McGinnis v. Royster, 410 U.S. 263, 270, 93 S.Ct. 1055, 1060, 35 L.Ed.2d 282 (1973), or that they 'have some relevance to the purpose for which the classification is made.'").
[131] *CMAC October 2020 Minutes, supra* note 108.

of protecting the Commonwealth's wildlife, a court would likely uphold this law and determine that it does not run afoul of equal protection or other constitutional protections.

B. Requiring TEDs for Recreational and Commercial Crabbers

An alternative approach would be to require the use of TEDs by both recreational and commercial crabbers. VMRC has the legal authority to issue regulations pertaining to crabbing, and already exercises this power.[132] Arguably, this would be most effective in achieving the goal of preserving the terrapin population. Although studies indicate that recreational crabbers likely pose a larger threat to terrapins,[133] commercial crabbers are not immune from causing harm.[134] For example, because commercial crabbers use large numbers of durable pots, "ghost pots" that get lost at sea can persist for long periods of time, drowning the terrapins inside.[135] Regulating both recreational and commercial crabbing would provide greater protection for terrapins than regulating one or the other, but commercial crabbers would likely object to, and lobby strongly against, an additional rule requiring the use of TEDs by both commercial crabbers.

Beyond resistance from the crabbing community, this solution also faces problems with enforcement. A TEDs requirement on its face seems to be the swiftest and most powerful solution, but without effective enforcement, the rule would be ineffective. In the case of crab pot enforcement, VMRC Marine Police Officers would enforce the requirement in the State's waters.[136] The sheer number of commercial crab pots and crabbers in the State would pose challenges for VMRC – increases in funding would likely be necessary to sustain such a robust enforcement scheme.[137] It is unclear whether it is feasible to raise fees sufficiently to support successful enforcement of this regulation.

C. Implementing Near-Shore/Hot-Spot Restrictions

Crab pots present the greatest threat to terrapins when they are placed in shallow waters during the terrapin nesting season.[138] Studies have shown that pots placed in shallow waters close to shore during terrapin nesting season capture more terrapins than pots in deeper water.[139] Accordingly, one potential solution is to focus on hot-spots and require the use of TEDs by all who

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[132] *See Agency Overview*, VA. MARINE RES. COMM'N, https://mrc.virginia.gov/mrcoverview.shtm (last visited Dec. 14, 2021); *see also* VA. CODE ANN. § 28.2-201 (2020).
[133] *See Terrapin Conversation*, *supra* note 48.
[134] CBD Petition, *supra* note 5, at 11.
[135] *Id.*
[136] VA. CODE ANN. § 28.2-900 (2012) (outlining the VMRC officers' jurisdiction to enforce the Commonwealth's fisheries laws and regulations).
[137] VMRC has faced inconsistent funding and budget cuts in recent years. *Id.*
[138] *See* ATKINSON ET AL., *supra* note 35, at 236. During their nesting season, terrapin are more active in shallow, near shore waters. *Id.* Studies have shown that pots placed in these waters during terrapin nesting season capture more terrapins than pots in deeper water. *See* Kristen M. Hart & Larry B. Crowder, *Mitigating By-Catch of Diamondback Terrapins in Crab Pots*, 75 J. WILDLIFE MGMT. 264, 270 (2011); *see also* Charles C. Davis, *A Study of the Crab Pot as a Fishing Gear*, 53 CHESAPEAKE BIOLOGICAL LAB'Y 16-17, 19 (1942). One such study found that shallow, near-shore pots accounted for ninety-three percent of terrapin bycatch in the months coinciding with nesting season. *See* James M. Bishop, *Incidental Capture of Diamondback Terrapins by Crab Pots*, 6 ESTUARIES 426, 427-29 (1983).
[139] *Id.*

crab in those waters, both recreational and commercial crabbers. This solution is like the law in North Carolina, which identifies two terrapin conservation areas.[140] Specifying where TEDs are required would give VMRC discrete boundaries to monitor, rather than requiring Marine Police to go to each dock in the State to check for TEDs.

However, to adequately implement a hot-spot regulation, VMRC would need to engage in mapping and assess the most at-risk areas for terrapin populations in Virginia.[141] This undertaking could require a massive Geographic Information System (GIS) effort, which would be expensive, and for which VMRC might not have the capacity.[142] Additionally, although confining the requirement of TEDs to a smaller area would ultimately reduce the burden on VMRC in terms of enforcement, enforcement would still be necessary. In states that have enacted laws requiring the use of TEDs on crab pots, compliance typically lags in the absence of significant enforcement.[143] For example, in Maryland, a state that requires TEDs on all recreational crab pots, a study found that less than thirty-five percent of recreational pots in tidal creeks had TEDs.[144] Effective enforcement might require an increase in funding or reallocation of current funds to monitor designated areas. States currently without TEDs regulations, such as Virginia, may be postponing implementation due to concerns about the ability to enforce the new requirements.[145]

Instead, Virginia could require TEDs on crab pots in waterways of certain widths because terrapins are more likely to live closer to shore.[146] VMRC staff have considered this approach.[147] This option would mirror the approach New Jersey has taken in implementing their TEDs regulations.[148] For example, Virginia could require all crab pots on creeks 100 feet wide or narrower to be fitted with TEDs. This regulation would affect recreational crabbers more than commercial crabbers, based on where these crabbers are located.[149] Although this approach is scientifically grounded, it would require additional work by VMRC staff to measure the width of water bodies[150] and to develop a standard for measuring the width.[151] They also would need to develop a standardized approach to regulating crab pots on creeks and rivers that get wider and narrower. If this is the path the VMRC elects to follow, more mapping will be required to determine what areas are in the realm of the regulation.[152]

If this regulation were to be implemented, notice and enforcement would also be difficult. For instance, crabbers may not know when they have moved into water that is narrow enough to be in the purview of a TEDs requirement.[153] Additionally, some areas may be challenging for

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[140] *See Marine Fisheries Commission Establishes First Two State Diamondback Terrapin Management Areas*, *supra* note 94.
[141] E-mail from Alexa Galvan, *supra* note 10.
[142] *Id.*
[143] ATKINSON ET AL., *supra* note 35, at 239.
[144] Radzio et al., *supra* note 78, at 224. This study also concluded that there was "a need for improved enforcement, with penalties that will motivate compliance." *Id.* at 225.
[145] *See* ATKINSON ET AL., *supra* note 35, at 239.
[146] CBD Petition, *supra* note 5, at 8.
[147] Videoconference Interview with Pat Geer, Chief of Fisheries, Va. Marine Res. Comm'n (Oct. 13, 2021).
[148] *See* N.J. ADMIN. CODE §§ 7:25-14.1, 7:25.14.6(c) (2022).
[149] *See* CBD Petition, *supra* note 5, at 11.
[150] *See* § 7:25.14.6(c) (New Jersey selected 150 feet).
[151] *See id.* (New Jersey opted to measure at mean-low water mark).
[152] Videoconference Interview with Pat Geer, Chief of Fisheries, Va. Marine Res. Comm'n (Oct. 13, 2021).
[153] *Id.*

Virginia Marine Police vessels to access due to low bridges or other obstructions to passage. Despite these concerns, width of water restrictions could provide protection in areas where terrapins are most commonly found and thus, most commonly at risk.[154]

D. Increasing Prices of Crab Pot Licenses

Recreational crabbers in Virginia who want to use more than two pots must obtain a thirty-six dollar license that requires them to use TEDs on their traps, or pay an additional ten dollars to avoid this requirement.[155] However, the majority of licenses sold typically are the type that do not require TEDs.[156] One potential way to increase the use of TEDs on crab pots in Virginia waters is for VMRC to use an incentive-based approach by choosing to charge *significantly* more for a license without a TED requirement than for a license that mandates using TEDs.[157] For example, Virginia could ask recreational crabbers to pay closer to one hundred dollars for a license that does not require the use of a TED. This solution would allow recreational crabbers to choose whether to comply with a stricter TED requirement, while monetarily incentivizing their use.

E. Increasing Public Education and Outreach

If VMRC determines that the challenges to enforcing new regulations outweigh the benefits, there are still several actions they could take. Public education and outreach are enormously effective tools that have been used by other states and non-profit organizations.[158] Public education could include meeting with commercial crabbers to explain the risks to the terrapin population and seeking assistance from conservation groups dedicated to the wellbeing of the terrapin. In the past, even university professors have produced pamphlets on TEDs and how to retrofit crab pots with them.[159] They also have produced posters on TEDs, including information regarding where crabbers can buy TEDs and crab pots with TEDs already installed.[160]

In addition to providing information, VMRC could purchase TEDs and then provide them to crabbers for free at community events or during the crabbing season. Alternatively, individuals who purchase recreational crabbing licenses could receive free TEDs from VMRC when they purchase their licenses. In 2020, VMRC staff proposed supplying waterfront landowners in Virginia with a set of four TEDs, zip ties, and a brochure about the importance of terrapin conservation.[161] However, this effort was put on hold in 2021 due to COVID-19.[162]

Further, three-dimensional printers (3-D printers/printing) can be used to design and print TEDs.[163] In fact, this approach could produce TEDs at minimal cost compared to traditional

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[154] *See* CBD Petition, *supra* note 5, at 11.
[155] *Id.*
[156] VMRC June Minutes, *supra* note 8 ("In 2019, almost 60% of the 839 recreational 5-pot licenses sold were without the turtle excluder requirement.").
[157] *Id.*
[158] *See 25 Years of Terrapin Conservation and Research*, *supra* note 13.
[159] E-mail from Randy Chambers, Professor of Biology, Wm. & Mary (Dec. 2, 2021) (on file with author).
[160] *Id.*
[161] E-mail from Alexa Galvan, *supra* note 10.
[162] E-mail from Randy Chambers, *supra* note 159.
[163] *Id.*

manufacturing techniques,[164] because printing TEDs is an inexpensive process, costing about fifty cents each.[165] In fact, in 2021, North Carolina had success convincing commercial crabbers to create their own TEDs using 3-D printing.[166] The notion was that crabbers often construct their own pots, so putting them in charge of constructing their own TEDs via 3-D printing would make sense logistically.[167] While each of these solutions requires funding, education would cost less than a large enforcement effort that TED-requirement rules would need to be effective.

VI. CONCLUSION AND RECOMMENDATIONS

Diamond terrapin mortalities remain a lesser known but enduring problem in Virginia's coastal waterways. The VMRC requiring TEDs on recreational crab pots, either through a mandatory TEDs regulation for all recreational crabbers or through an incentive-based licensing regime that charges recreational crabbers much more for licenses without TEDs, would be a cheap, relatively low effort, common sense way for Virginia to reduce terrapin bycatch and mortality. While hot-spot and width of water regulations offer many benefits in terms of ease of enforcement, this option might be hindered by the necessary GIS modeling costs associated with it. Virginia also should continue to track the efforts of North Carolina and its Diamondback Terrapin Management Areas, which appear to be an effective way to reduce terrapin deaths without significantly hampering the commercial and recreational crab fisheries. If VMRC does not decide to implement these recommendations, the agency could still focus on public education and TEDs dispersal to recreational crabbers, and then potentially commercial crabbers, to reduce terrapin mortality. Virginia is one of the only East Coast states to fail to act on this issue. Taking any steps to regulate recreational crabbing would have an important beneficial impact on the diamondback terrapin species.

[164] *See* Stephen Patrick. Grubbs et al., *To BRD or Not to BRD? A Test of Bycatch Reduction Devices for the Blue Crab Fishery*, 38 N. AM. J. FISHERIES MGMT. 18, 22 (2018), https://www.wm.edu/as/kecklab/documents/research/wm/Grubbs%20et%20al%202018.pdf. If manufacturers were to produce crab pots with appropriate TEDs already built in it would: (1) lower both financial and time costs; (2) prevent installation mistakes; and (3) reduce or eliminate the choice of whether to use TEDs on crab pots. *Id.*
[165] E-mail from Randy Chambers, *supra* note 159.
[166] *Id.*
[167] *Id.*

Appendix 1 – State Terrapin Excluder Device Regulations

State	Regulation or Law	Who it applies to
Delaware	Mandatory TEDs	Recreational crabbers
New Jersey	Mandatory TEDs	Recreational crabbers
New York	Mandatory TEDs	Commercial and recreational crabbers
Maryland	Mandatory TEDs	Recreational crabbers
North Carolina	Terrapin Management Area - required TEDs in certain areas	Commercial and recreational crabbers
South Carolina	No law in place	N/A
Florida	No law in place	N/A
Connecticut	No law in place	N/A
Rhode Island	No law in place	N/A
Alabama	No law in place	N/A
Rhode Island	No law in place	N/A
Mississippi	No law in place	N/A
Louisiana	No law in place	N/A
Texas	No law in place	N/A
Massachusetts	No law in place	N/A

Appendix 2 – 2020-2021 Crab Seasons in Virginia

Up to 2 crab pots	March 17 - November 30
Licensed 3-5 crab pots	June 1 - September 15
Crab trotline or pound/trap	April 1 - October 31
Hand line, collapsible recreational traps, cast net	All year