The Commonwealth of Massachusetts
Division of Marine Fisheries
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MEMORANDUM

TO: Marine Fisheries Advisory Commission (MFAC)

FROM: Daniel J. McKiernan, Director

DATE: December 12, 2025

SUBJECT: Public Hearing Proposal on Horseshoe Crab Quota Management

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Proposal

This memo serves to inform the MFAC that I intend to go out to public hearing later this winter to reduce the bait crab quota from 140,000 crabs to 100,000 crabs and reallocate these 40,000 crabs to the biomedical sector at a 1:2 ratio thereby increasing the biomedical quota from 200,000 crabs to 280,000 crabs.

Rationale

This proposal responds to increasing demand for horseshoe crabs from the biomedical sector coupled with decreasing effort in the state's conch pot fishery reducing the local demand for bait crabs. These dynamics have produced a situation whereby biomedical demand is driving bait harvest through the rent-a-crab program even when there is limited concurrent demand for bait crabs. This speaks to a misalignment in the quantity of horseshoe crabs allocated to each fishery that may be corrected by transferring quota between the sectors to better match demand. Further, this action will reduce overall mortality to the horseshoe crab stock.

DMF has analyzed effort trends in the state's conch pot fishery (Figure 1) and determined that the current local bait crab demand approximates 75,000 – 90,000 horseshoe crabs annually. Accordingly, reducing the bait quota from 140,000 crabs to 100,000 crabs will provide a more than sufficient supply of crabs for the state's conch pot fishery. Given the poor status of the channeled whelk resource in Massachusetts, DMF does not anticipate the conch pot fishery will rebound to prior peak effort levels (e.g., 2012), but it is conceivable this fishery could nominally rebound should market conditions improve and the proposed quota would provide bait at levels sufficient to meet such demand. See section below titled "Overview of the Conch Pot Fishery" for more information.

The 40,000 horseshoe crabs taken off the bait quota will be reallocated to the biomedical fishery at a ratio of 1:2. This will result in the biomedical quota increasing from 200,000 horseshoe crabs annually to 280,000 horseshoe crabs annually — a net increase of 40,000 horseshoe crabs potentially available to the biomedical industry[1]. When developing the biomedical quota in 2023, DMF used a 1:6 ratio when reallocating bait quota for biomedical purposes. This conversion factor was based on the estimated 15% mortality rate for the biomedical fishery. At present, I propose using the more conservative 1:2 conversion factor because there remains some uncertainty around the recapture[2] of these animals and the sublethal impacts of biomedical processing on horseshoe crabs. Finally, there is an undeniably strong public interest in managing horseshoe crabs for abundance, and if DMF is going to increase overall harvest, then it should be done in a manner that will not increase overall mortality. In this instance, the proposal will actually reduce overall mortality by about 28,000 crabs annually, assuming a 15% biomedical mortality rate.

DMF has heard from industry on a variety of potential alternative or additional management changes for 2026 and have spent the last several months engaging stakeholders in the interest of due diligence. Ultimately, I have decided to move forward to rulemaking with only the most straightforward option — the proposed quota reallocation — as it is the simplest way to address current market misalignment, is beneficial to conservation, and provides the various industries involved in the horseshoe crab fishery with the greatest amount of certainty for expectations in 2026. I worry that trying to address too many concerns or taking increasingly novel approaches to management will ultimately create additional issues. Instead, my preference is to make this single change and analyze its performance and then consider additional or alternative approaches only if warranted. See section titled “Additional Considerations” for more details.

Background

Development of Biomedical Quota

In 2023, DMF established a first ever biomedical horseshoe crab quota of 200,000 horseshoe crabs annually to be split evenly among permitted biomedical processors. This was done in response to concerns about increasing horseshoe crab mortality driven by growing biomedical demand in Massachusetts. The adoption of this quota effectively allowed DMF to cap overall mortality at 2022 levels, which the available data suggests would allow horseshoe crab abundance to continue to increase. Since the adoption of the biomedical quota, DMF has

[1] At present, the biomedical industry has access to 340,000 horseshoe crabs annually through the 200,000 crab biomedical quota, as well as the 140,000 crab bait quota through the rent-a-crab program. The proposed adjustment would provide the biomedical industry access to 380,000 horseshoe crabs through a 280,000 crab biomedical quota and a 100,000 crab bait quota.

[2] Note that biomedical harvest is primarily occurring within the northeastern portion of Nantucket Sound by mobile gear vessels. Fishery participants have expressed concern to DMF that there may be an over-reliance on this small area. As the biomedical crabs are released alive and are marked to identify it as a bled crab in season, future at-sea monitoring to determine the recapture of bled crabs would tell us if removals from this area become excessive.

received persistent comments from biomedical processors, dealers, and fishers requesting DMF increase the biomedical quota.

Demand for Horseshoe Crabs as Bait

Horseshoe crabs are the preferred bait in the conch pot fishery. Therefore, bait demand is a function of bait use per pot haul. DMF's understanding is that conch pot fishers generally mix between one-quarter and one-third of a horseshoe crab[3] with other bait per pot haul. Accordingly, with the state's conch pot fishery conducting fewer than 300,000 pot hauls annually since 2020 (Figure 1), DMF estimates the bait need for this fishery to be in the range of 75,000 to 90,000 horseshoe crabs annually.

This level of estimated bait demand is substantially lower than the current bait quota of 140,000 horseshoe crabs. Despite this, Massachusetts' routinely approaches fully utilizing its horseshoe crab bait quota (Table 1). This is occurring because biomedical demand for these crabs —through the rent-a-crab program — is driving bait harvest. As a result, DMF is receiving reports that crabs harvested against the bait quota often do not have a viable bait market and several whelk processors who provide bait to their conch pot fishers already have an ample quantity of horseshoe crabs in frozen storage. This speaks to a misalignment that could be remedied through a reduced bait quota and enhanced biomedical quota.

Overview of Conch Pot Fishery Performance

Effort in the conch pot fishery increased in the mid 2000s — in response to environmental related declines in the abundance of Southern New England lobster and displacement from the that fishery — before peaking at about 600,000 pot hauls annually in 2012 (Figure 1). Effort has steadily declined since then and for the past six years (2019-2024) it has been at or below 300,000 pot hauls annually[4]. This decline is likely driven by several factors — reduced abundance of channeled whelk, regulations to raise the size-at-harvest to protect spawning stock biomass, and more recently, unstable domestic and international market conditions.

Even within the context of this recent period of reduced productivity, 2024 was an extremely challenging year for the conch pot fishery (Table 2). Market conditions constrained effort and landings and our fishery conducted just over 200,000 pot hauls and the fishery landed only about 700,000 pounds of channeled whelk valued at about $2M. While market conditions reportedly remain tenuous, 2025 landings data suggest the fishery has nominally rebounded. As of December 11, 2025 almost 820,000 pounds of channeled whelk have been landed this year with an ex-vessel value of nearly $2.6 million. Assuming fairly static catch per unit effort this year compared to the past five years, DMF estimates the fishery will likely conduct about 250,000 pot hauls in 2025.

[3] The amount of horseshoe crab used per pot haul is generally dictated by the size of the horseshoe crab. This is informed by a 2015 DMF survey, observations of bait use while sea sampling, and informal conservations with bait dealers and conch pot fishers.

[4] 300,000 trap hauls annually is also consistent with where effort was in this fishery prior to the spike in the mid-2000s.

There is some tempered optimism among whelk dealers and processors that the market can support 2025-levels of effort and landings moving forward. However, I am skeptical that the fishery will soon return to prior peak levels — not just because of market conditions — but because the resource is depleted throughout its range within Massachusetts waters, as evidenced by a lack of larger whelk in the observed catches. Accordingly, I anticipate the conch pot fishery will continue to operate around (and more likely below) 300,000 pot hauls annually for the foreseeable future. The bait demand for this level of activity will be sufficiently met by the proposed quota, notwithstanding any improvements in the development and availability of alternative bait sources that may further reduce bait demand moving forward.

Additional Considerations

As a matter of routine due diligence, DMF networks with stakeholders to inform the development of regulatory proposals. This fall, DMF heard extensive concerns regarding a variety of issues related to the performance of the horseshoe crab fishery and the bait market. I do not intend to address these concerns and frustrations through regulatory actions at this time. However, I do want to acknowledge these issues to benefit of the MFAC's deliberation on this subject.

<u>Eliminating the Rent-A-Crab Program</u>

It has been suggested that DMF should prohibit the rent-a-crab program. Proponents argue this program has evolved beyond its intended function (i.e., use crabs harvested as bait for biomedical purposes) and is now driving bait harvest and warping the relationship between bait demand and bait harvest. This is further complicated by the fact that the rent-a-crab program is primarily pursued during the early summer months[5] — a time of year when the conch pot fishery is less active. This creates a further disconnect between bait harvest and bait demand and results in product being placed in frozen storage.

I support the continuation of the rent-a-crab program as it allows nearly all Massachusetts bait crab harvest to be repurposed for biomedical use thereby supplementing biomedical demand and optimizing the utility of each crab harvested. Eliminating this program would be wasteful and would likely also increase demand for additional biomedical quota. Further, biomedical demand has elevated the ex-vessel value of horseshoe crabs to the benefit of all bait fishers. If this value were to be lost, vessels may not target horseshoe crabs for bait purposes thereby reducing the overall supply of horseshoe crabs to market. Reduced profitability may lead to vessels leaving inshore mobile gear fisheries impacting the supply of other locally caught fish (e.g., squid, summer flounder, black sea bass, scup, quahogs).

[5] DMF has observed that it is common for inshore draggers to pursue the bait quota during the summer months when other profitable species like summer flounder are targeted on the same trip. This allows these boats to make profitable trips combining their summer flounder limit with the 300 horseshoe crabs bait fishery trip limit. Then in the fall, when summer flounder migrate out of the Sounds, some draggers switch over to target the biomedical horseshoe crab quota at the higher 1,000 crab biomedical trip limit.

Constraining Commercial Fisher Access to Participating in this Quota Managed Fishery

As the management and performance of the horseshoe crab fishery has evolved in recent years, there are persistent concerns about access. Historically, the fishery was prosecuted by hand harvesters and required limited capital investment. Over time, changes in management and fishery economics shifted harvest towards mobile gear fisheries. With the adoption of the spawning closures in 2025, hand harvest opportunities are now extremely limited, and bait harvest is almost exclusively conducted by mobile gear fishers. Additionally, the 2023 adoption of the biomedical processor quota further shifted the use of this resource towards more capitalized entities. These concerns persist as DMF is now proposing to allocate additional quota to the biomedical processors.

Given the biomedical fishery is catch and release, I think it is critical for participants to have working relationships with biomedical dealers and have their vessels outfitted in a manner that maximizes the survival of horseshoe crabs. I also recognize the logistical benefit provided to biomedical dealers and firms by working with a smaller number of reliable harvesters. However, I do think it is beneficial to have the economic benefits derived from the biomedical use of horseshoe crabs extend along the waterfront. To this goal, I continue my support for the rent-a-crab program and encourage biomedical dealers and processors to accommodate the greatest number of harvesters as practical. However, access remains a concern, and I anticipate further rule making may be warranted in the future to address it.

Dynamic Quota Adjustments and Trip Limit Management

As heard at the November MFAC business meeting, there is interest among the regulated community to have DMF adopt “dynamic management” program to address horseshoe crab quotas. My understanding is that there are several ways DMF could accommodate dynamic management. First, are in-season transfers of quota from the bait fishery to the biomedical fishery based on quota usage by a date certain. Alternatively, DMF could allow horseshoe crabs to be harvested for either purpose by any permitted commercial holder and then grant the purchasing dealer the discretion to determine their fate of each crab and which quota the crab counts against.

There has been some interest in reducing bait fishery trip limits or implementing additional in-season quota use triggers to reduce trip limits. The perceived benefits of these adjustments would be to slow bait quota usage to prevent market gluts. Lastly, there was some discussion of reducing the biomedical trip limit (particularly for trawlers) from 1,000 crabs to a lower number in line with the bait fishery limit. The argument for this is that it would force biomedical dealers to work with more vessels thereby addressing access concerns.

These are interesting concepts that may merit future analysis. However, at present, I worry they would introduce too many new variables to the management program for 2026, will further complicate management, and may contribute to or exacerbate existing fishery management challenges.

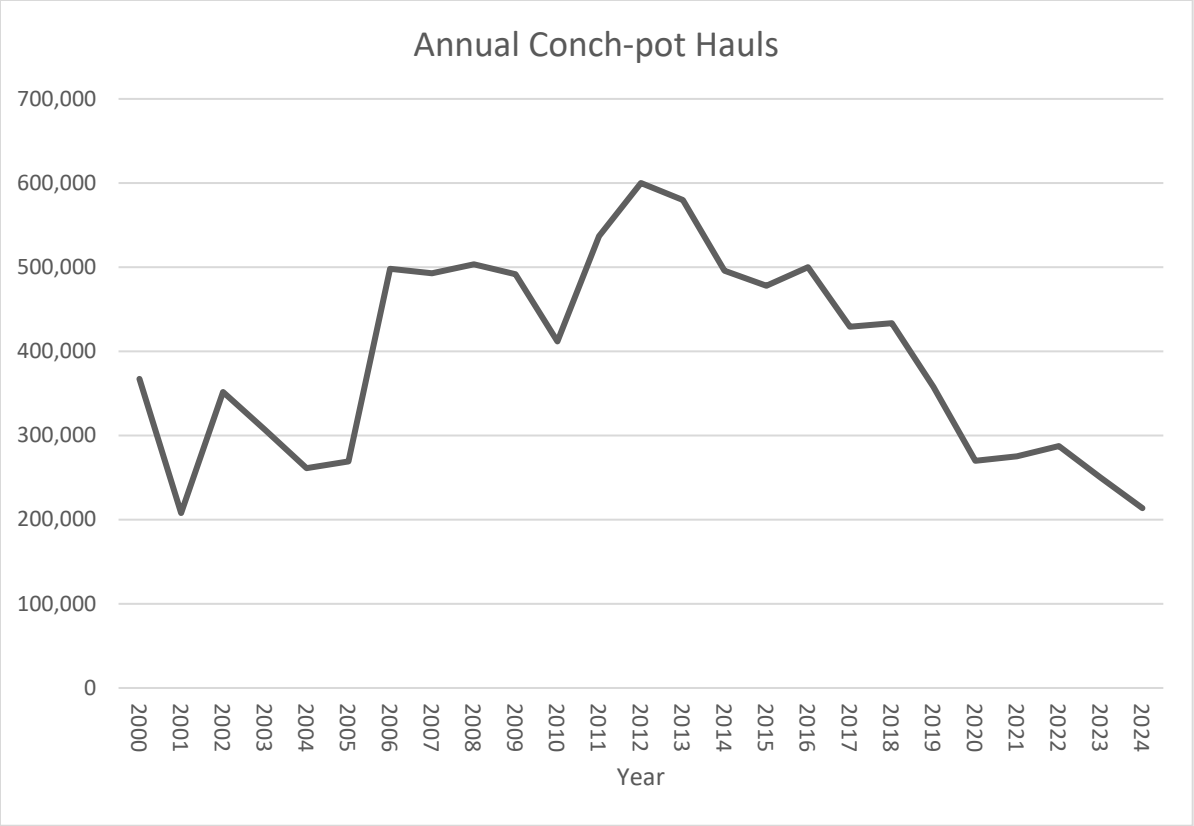

Figure 1. Annual Pot-Hauls in the Massachusetts Conch Pot Fishery, 2000 – 2024.
Data Source: Massachusetts commercial catch reports and federal vessel trip reports as of October 2025. Data for 2024 is preliminary and subject to change. Data for all years may be inflated as permit holders do not distinguish between conch pot and lobster trap hauls and lobster traps may produce some bycatch of channeled whelks.

Year	Bait Crabs Landed	Total Ex-Vessel Value	Average Ex-Vessel Price per Crab
2022	134,753	$287,347	$2.13
2023	139,846	$335,386	$2.40
2024	139,970	$404,331	$2.89
2025*	137,171	$446,853	$3.26

Table 1. Dealer reported Massachusetts horseshoe crabs landing by count, total annual ex-vessel value, and average price per crab, 2022 – 2025. Data source: SAFIS Dealer Database as of December 11, 2025. *Data for 2025 is preliminary and subject to change. Only includes landings reported through December 11, 2025.

Year	Channeled Whelk Landings	Total Ex-Vessel Value	Average Ex-Vessel Price Per Pound
2022	917,700	$3,803,336	$4.14
2023	919,284	$2,993,633	$3.26
2024	718,156	$2,041,735	$2.84
2025*	818,906	$2,599,282	$3.17

Table 2. Dealer reported Massachusetts channeled whelk landings, total annual ex-vessel value, and average ex-vessel price per pound. Data source: SAFIS Dealer Database as of December 11, 2025. *Data for 2025 is preliminary and subject to change. Only includes landings reported through December 11, 2025.