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Director

# Commonwealth of Massachusetts

## Division of Marine Fisheries

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### MEMORANDUM

**TO:** Marine Fisheries Advisory Commission

**FROM:** David E. Pierce, Ph.D., Director

**DATE:** March 3, 2017

**SUBJECT:** Whelk Gauging and Minimum Legal Size

#### Recommendations

I recommend amending 322 CMR §6.21 to adopt regulations that will enhance the spawning stock biomass of knobbed and channeled whelks (collectively “whelks”). The recommendation follows:

1. All whelks shall be measured using the “any orientation” method of measurement (Fig. 1). This requires that whelks be gauged with the operculum facing down and as flat on the gauge as possible, and the siphonal canal at any angle to the side wall of the chute gauge.
2. Due to the asymmetry of these animals, eliminate the concept of a minimum shell size and instead establish a minimum internal chute gauge width.
3. To increase the size of whelks that may be harvested through setting minimum internal chute gauge widths:
  - a. For 2017, set a minimum internal chute gauge width of 2 7/8”. This corresponds to an approximate 1/10” minimum size increase from the current 3” minimum size. Note: all female whelks at this size are sexually immature.
  - b. Future internal chute gauge width increases will begin in 2019. At present, staff is developing a schedule to increase the internal chute gauge width. This schedule will approximate the biennial 1/8” size increases to a 3 7/8” terminal minimum size proposed at public hearing. We will have to go back out to public hearing to implement this gauge schedule. Note: At 3 7/8” approximately 50% of all female whelk are sexually mature.
4. For 2017, specify that all chute gauges be made of sheet metal with minimum dimensions of: 6” length; 1.5” chute gauge wall height; and 2 7/8” internal chute gauge width. All commercial fishermen will be required to possess a chute gauge that meets these minimum specifications when fishing for or in possession of whelks. This chute gauge may not be modified in any manner that may affect properly gauging whelks; this does not include modifications like fastening the gauge to a gunwale.
5. Exempt dealers from having to possess whelks that meet the 2 7/8” minimum internal chute gauge width, provided that those whelks were lawfully harvested outside of MA waters and all containers

**Fig. 1 Any Orientation Method of Measurement**



have shellfish tags demonstrating the state of origin. Also, clarify that all MA harvesters must tag containers of whelks with shellfish tags.

### Rationale

Around 2010 DMF became concerned that the whelk resource was becoming depleted in Massachusetts waters. There were numerous trends (e.g., relative abundance, increased fishing effort and reduction in catch per unit effort) in the state's fishery that were similar to that observed in other marine snail fisheries worldwide that subsequently collapsed.

As we had little biological information regarding our whelk species, DMF commissioned a size-at-maturity study. This study found that in the main area of harvest, Nantucket Sound, female knobbed and channeled whelk both begin to sexually mature at 3 1/2" and 50% are mature at 3 7/8" (Figure 2). Similar size at maturity trends were found in female whelks taken from other harvest areas (e.g., Vineyard Sound and Buzzards Bay).

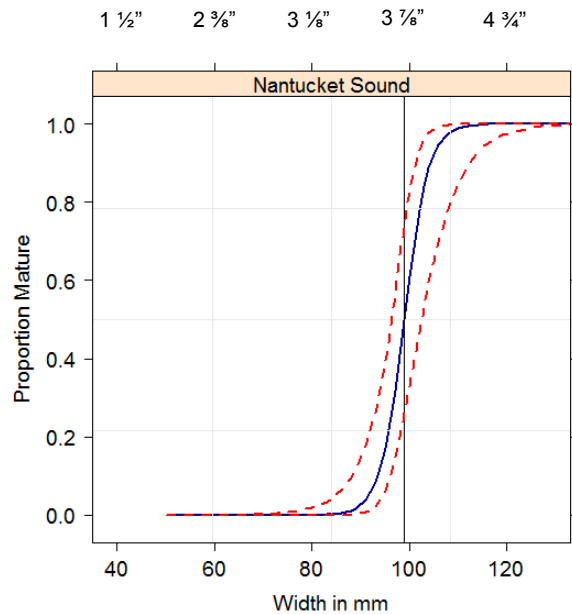
At this time, the state's minimum size for whelks was 2 3/4". This size was set in the 1980s based on the smallest sized whelks that the dealers wanted to process; it had no biological basis. Accordingly, DMF began working towards increasing the minimum size towards 50% size at maturity. In 2013, DMF developed the chute gauge and required the whelks be aligned so that an imaginary straight line between the shell's apex and siphonal canal were in a parallel orientation to the sides of the chute gauge. Then the minimum size was increased annually by 1/8" in 2014 and 2015.

The MFAC did not approve additional minimum size adjustments beyond this increase to 3". Instead they preferred that DMF sample additional whelks to verify the 2010 size at maturity study. This study was completed in 2015 and confirmed the findings of the initial study.

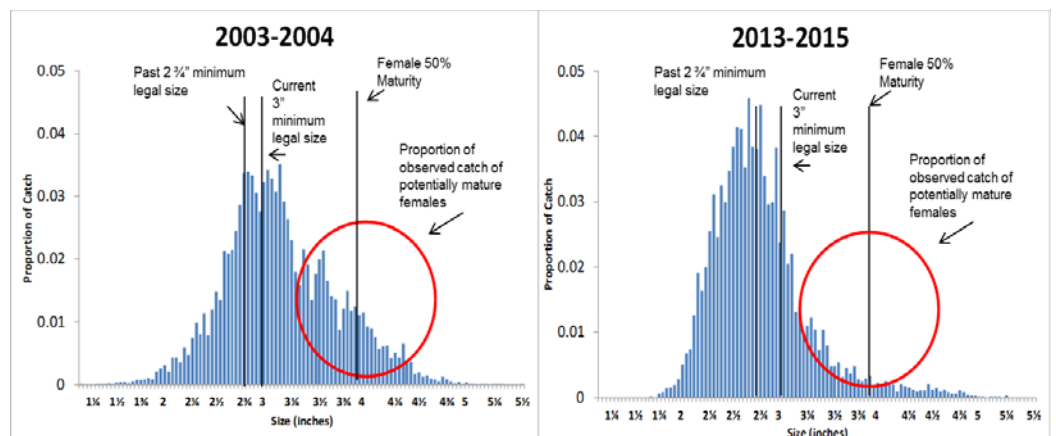
In the interim our sea sampling data demonstrated an issue of additional concern: the truncation of the catch (including sublegal channeled whelk) around the

minimum size, demonstrating the larger (sexually mature) female whelks comprised a smaller and smaller proportion of the total catch (Figure 3). As a result of the size at maturity study and the various concerns related to the resource, I proposed to gradually increase the minimum size from 3" to 3 7/8".

**Fig. 2 Size at Maturity for Female Whelks**



**Fig. 3 Proportion of Total Catch Comprised of Larger Whelks (DMF Sea Sampling Data)**



Additionally, I proposed moving from the parallel orientation method of measurement to the “any orientation” method of measurement. With minimum size management being the core of our whelk conservation strategy, it is necessary to have a well-understood and repeatable gauging requirement. The parallel orientation method seemed to create confusion due to the animal’s asymmetry.

Furthermore, enforcement actions show that some harvesters may have been manipulating the parallel method in order to allow them to take undersized whelks. By moving to the any orientation method of measurement the asymmetry no longer becomes a factor when gauging the animal. This any-orientation technique produces a more consistently repeatable method. To further ensure compliance with the standardized gauging technique, it is necessary to require all harvesters possess a legal gauge when fishing for whelks.

Public comment generally supported minimum size increases. However, there were concerns regarding the rate of the increase. Particularly, there were objections to maintaining the 3” gauge, but going to the any-orientation method of measurement. Due to the animal’s asymmetry, this would result in an approximate 3/16” minimum size increase. DMF estimated that harvest across the fleet could be reduced by up to 30% with this adjustment. Fishermen strongly preferred a more incremental change. My staff reviewed potential options and determined that using a 2 7/8” width gauge (previously used in 2014) and the any-orientation method of measurement will result in an approximate 1/10” minimum size increase. This corresponds to an estimated 10% reduction in harvest. *For economic reasons only, I recommend the use of a 2 7/8” gauge and any orientation method of measurement in 2017. If not for our economic concerns, I would propose a much larger increase.*

My staff is developing gauge width adjustments that will approximate future 1/8” minimum size increases. We will have to go back out to public hearing in the future to adopt these gauge-width adjustments. I expect we will set the next gauge increase for 2019 and will continue forward with biennial adjustments. One important consideration when moving forward with these gauge increases is that male whelks typically do not grow to reach 3 7/8” shell width. A fishery on larger whelks will result in predominant harvest of females. In the future, this may prompt DMF to consider the development of output controls.

It is noteworthy that I am moving away from the use of minimum size. Considering the asymmetry of these animals if we were to continue to have a minimum size under the any orientation method of measurement, the minimum size would not be the same as the required gauge width. This could potentially complicate minimum size compliance and enforcement. To ensure that our rules are as simple to comply with as possible, we are going to instead determine if a whelk is legal through the method of measurement.

Lastly, my staff and I considered the potential impacts these gauge changes may have on interstate commerce. New Bedford is a major seafood hub where seafood processors accept whelks transported from states along the Atlantic coast. These states may not have the same gauging standards as Massachusetts. Therefore, to not unduly impact interstate commerce resulting in the processing of out-of-state whelks in Massachusetts, I recommend dealers be exempt from our gauging standard when in possession of whelks lawfully harvested outside of the Commonwealth. To ensure that this can be enforced, we will reinforce through regulation the statutory requirement that all containers of whelks (at both the harvester and dealer level) have shellfish harvest tags that demonstrate the products’ origin. This is similar to exemptions we provide for surf clam processors.

### Attachments

Strikethrough regulatory language

## 6.21: Whelk Conservation and Management

(1) Definitions. For the purpose of 322 CMR 6.21, the following terms shall have the following meanings:

Channeled Whelk means that species known as *Busycotypus canaliculatus*.

**Chute gauge means an open top rectangular gauge made of sheet metal.**

Commercial Fisherman means any person fishing under the authority of a permit issued in accordance with M.G.L. c. 130, § 80 and 322 CMR 7.01(2): *Commercial Fisherman Permits* for the purpose of sale, barter or exchange, **or to keep for personal or family use any fish or shellfish caught under the authority of the commercial fisherman permit.**

Knobbed Whelk means that species known as *Busycon carica*.

Operculum is the lid that closes the aperture of the shell when the animal is retracted.

Recreational Fishing means the non-commercial taking or attempted taking of knobbed or channeled whelks for personal or family use, which are not to be sold, bartered or exchanged.

Shell width means the diameter of the shell measured across its greatest width perpendicular to the long axis of the shell.

Standard Fish Tote means a container that does not exceed the volume of 6,525 cubic inches.

Trip means that period of time that begins when a fishing vessel departs from a dock, berth, beach, seawall, ramp or port to carry out commercial fishing operations and that terminates with a return to a dock, berth seawall, ramp or port.

### **~~(2) Minimum Size.~~**

~~(a) It shall be unlawful for any person to possess a knobbed or channeled whelk with a shell width less than three inches for a period longer than is necessary for immediate measurement and return to the sea.~~

~~(b) Method of Measurement. The minimum size for all knobbed and channeled whelks shall be determined by measuring the shell width with the operculum facing down and laying as flat as possible on the gauge in an orientation such that a line drawn through the shell's apex and siphonal canal would be parallel with the sides of the gauge.~~

~~(c) Processing. For the purpose of compliance with 322 CMR 6.21, all knobbed whelk and channeled whelk shall be landed whole in the shell and processed at a facility licensed for that purpose.~~

**(2) Possession of Legal Sized Knobbed and Channeled Whelks.**

**(a) Purpose.** To increase spawning stock biomass of knobbed and channeled whelks, the legal harvest size limit for these species will be gradually increased to correspond to a size where 50% of female knobbed and channeled whelks are sexually mature. The asymmetry of these animals and the propensity for their siphonal canals to break during handling limits the effectiveness of managing harvest with a traditional shell width or shell length minimum size standards. Consequently, legal sized knobbed and channeled whelks shall be determined through the use of a chute gauge meeting the specifications and by applying the methodology in 322 CMR 6.21(2)(b) and (c) respectively.

**(b) Minimum Chute Gauge Width and Chute Gauge Specifications.** The chute gauge used to determine the legal size for knobbed and channeled whelks shall measure at least 2 7/8" internal width, by 6" length and by 1 1/2" height. No person shall modify the specified chute gauge in any manner that may affect the gauging of knobbed or channeled whelks. It shall be prima facie evidence of a violation of 322 CMR 6.21(2)(c) if a commercial fisherman is not in possession of a chute gauge meeting these minimum specifications when fishing for or in possession of knobbed or channeled whelks.

**(c) Methodology of Determining Legal Sized Whelk with the Chute Gauge.** Knobbed and channeled whelks shall be oriented to the chute gauge with its operculum facing down and laying as flat on the chute gauge as possible. A knobbed or channeled whelk shall be unlawful to take or possess if it can pass through the chute gauge in this required orientation with its siphonal canal at any angle to the side walls of the gauge. The required orientation of the knobbed or channeled whelk to the chute gage is depicted in the image below:



1. **Exemptions for Dealers.** Notwithstanding the requirements of 322 CMR 6.21(2)(c), a dealer permitted in accordance with 322 CMR 7.01(3) may obtain, possess and process knobbed and channeled whelks that are not legal sized if such knobbed or channeled whelks were lawfully harvested in the jurisdiction of another state. All containers of such knobbed and channeled whelks shall bear a shellfish tag, as required by M.G.L. c. 130 §§81 and 82.

**(d) Tagging of Knobbed and Channeled Whelks by Commercial Fishermen.** Because knobbed and channeled whelks are shellfish as defined in G.L. c. 130 §2, commercial fishermen who retain such whelks harvested in accordance with the requirements of 322 CMR 6.21(2)(c) shall place them in containers that bear a shellfish harvester tag as required by 322 CMR 16.03.

**(e) Prohibitions.** Except as provided in 322 CMR 6.21(2)(c)1., it shall be unlawful for:

1. any person to possess a knobbed or channeled whelk that is less than the legal size as determined in accordance with 322 CMR 6.21(2)(b) and(c) for longer than it is necessary for immediate measurement and return to the sea.
2. any person-to modify the chute gauge specified in 322 CMR 6.21(2)(b) in any manner that may affect the method of measurement of knobbed and channeled whelks.
3. any person to manipulate the orientation of a knobbed or channeled whelk to the chute gauge so that it is measured in a manner other than the method of measurement prescribed at 322 CMR 6.21(2)(c).
4. any commercial fisherman to not possess on their vessel a chute gauge meeting the specifications in 322 CMR 6.21(2)(b) when fishing for or in possession of knobbed or channeled whelk.
5. to possess any knobbed or channeled whelk in a condition other than whole in-shell, except by a dealer licensed in accordance with 322 CMR 7.01(3) .
6. to process whelks at any location other than at a facility of a dealer licensed in accordance with 322 CMR 7.01(3) for that purpose.

(3) Possession Limit.

(a) Coastal Access Permit Holders. For commercial fishermen fishing with mobile gear under the authority of a Coastal Access Permit regulated fishery permit endorsement, issued in accordance with 322 CMR 7.05: *Coastal Access Permit (CAP)*, it shall be unlawful to take, possess or land more than 1,000 pounds of channeled whelk and knobbed whelk combined during any single fishing trip or 24-hour day, whichever period of time is longer.

(b) SCUBA or Hand Harvest. For commercial fishermen fishing with SCUBA or hand harvest gear, it shall be unlawful to take, possess or land a combination of channeled and knobbed whelk that exceeds one level filled standard fish tote.

(c) Recreational Fishing Limit. It shall be unlawful for any person engaged in recreational fishing to possess or land more than 15 channeled or knobbed whelk combined during any calendar day.