



# Friends of Casco Bay

## Casco BAYKEEPER

February 25, 2026

Committee on Environment and Natural Resources  
c/o Legislative Information Office  
100 State House Station  
Augusta, ME 04333

**RE: Friends of Casco Bay Testimony in Support of LD 2187, “An Act to Update Certain Water Quality Standards and to Reclassify Certain Waters of the State.”**

Dear Senator Tepler, Representative Doudera, and Distinguished Members of the Environment and Natural Resources Committee,

Please accept Friends of Casco Bay’s (FOCB) testimony in support of LD 2187 and vote that this bill OUGHT TO PASS. We specifically support those aspects of LD 2187 that update Maine’s Water Quality Standards to: (1) modernize Maine’s fresh water dissolved oxygen criteria; and (2) set pH criteria for marine waterbodies.

Friends of Casco Bay works to improve and protect water quality in Casco Bay and its watershed. We collect data and use it to identify problems and inform solutions. In the course of our work, we participated in a collaborative project to monitor water quality in the lower Presumpscot River. While monitoring, we noted that Maine’s fresh water criteria for dissolved oxygen needed to be updated to reflect modern technology, consider natural cycles, and be clearer to apply. The recommended changes address these concerns. We also have worked with the State for over a decade to better understand ocean acidification (OA). Our data documents a continuing trend of declining pH in the Bay, which can be harmful to shellfish. Our OA monitoring has led us to support the addition of pH criteria to marine water quality standards.

### Adding pH to Maine’s Water Quality Standards

This bill adds pH criteria to Class SB and SC marine waters: Except as provided in section 464, subsection 4, paragraph C, the pH of Class SB [and SC] waters must fall within the 7.0 to 8.5 range. pH serves as a useful proxy for the chemical conditions that determine whether marine organisms can survive and reproduce. When pH drops, carbonate ion availability decreases, making it harder for shellfish, oysters, and other calcifying organisms to build and maintain their shells because carbonate ions are an essential component of calcium carbonate. pH is currently dropping worldwide<sup>1</sup> because the ocean absorbs excess carbon dioxide from the atmosphere, forming carbonic acid and lowering seawater pH – harming marine

<sup>1</sup> Garcia-Soto, C., *et. al.*, An Overview of Ocean Climate Change Indicators: Sea Surface Temperature, Ocean Heat Content, Ocean pH, Dissolved Oxygen Concentration, Arctic Sea Ice Extent, Thickness and Volume, Sea Level and Strength of the AMOC (Atlantic Meridional Overturning Circulation), *Frontiers in Marine Science*, Volume 8, September 2021, <https://doi.org/10.3389/fmars.2021.642372>.

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life that relies on carbonate-based shells and skeletons, damaging organisms sensitive to acidity, and disrupting food chains that depend on those vulnerable species.<sup>2</sup>

We maintain three continuous monitoring stations in Casco Bay that collect various water quality parameters such as pH, dissolved oxygen, temperature, chlorophyll, turbidity, and salinity. Our station in Yarmouth has been collecting data every hour for 8 years, and every 15 minutes for 2 years, 10 years total. The pH data from that station indicate a statistically significant decline. We also collect bottle samples of marine water that we pair with the station data to understand how saturated the water is with calcium carbonate. Our data indicate that for approximately half the year, the water is not saturated enough for healthy shell-building.

The addition of pH criteria aligns with EPA guidance and is also consistent with other coastal states; for example, Oregon has adopted an identical marine pH standard of 7.0–8.5.<sup>3</sup> While we support the proposed addition of pH criteria, Maine should contemplate more stringent criteria in the future. Peer-reviewed research finds that damage to shellfish and pteropods begins at pH levels well above 7.5, meaning waters could remain legally compliant while harming marine organisms.<sup>4</sup> Through a collaborative that we help lead, DEP is actively participating in how best to address ocean acidification. The addition of pH criteria provides an iterative step toward properly protecting marine organisms.

### Amending Dissolved Oxygen Criteria in Maine’s Water Quality Standards

In 2024, FOCB petitioned DEP to amend the dissolved oxygen (DO) criteria in its freshwater quality standards per DEP’s Triennial Review process. Our reasoning explained that the standards contain confusing language regarding how dissolved oxygen (DO) criteria must be met, fail to account for naturally fluctuating conditions, and do not reflect the modern and preferred method of continuously monitoring water quality conditions.

The proposed changes to Classes A, B, and C waters eliminate confusion by clarifying a specific DO concentration and percent saturation that must be met. The current standards are as follows:

For Class A and B waters, “the dissolved oxygen content [...] may not be less than 7 parts per million or 75% of saturation, whichever is higher ... .”

For Class C waters, “the dissolved oxygen content [...] may not be less than 5 parts per million or 60% of saturation, whichever is higher ... .”

This language causes confusion because concentration and saturation cannot be directly compared in determining “which is higher.” By eliminating that phrase, and clarifying that both concentration and saturation must be met, the confusion is resolved. The additional proposed change to Class B

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<sup>2</sup> United States Environmental Protection Agency. "Effects of Ocean and Coastal Acidification on Marine Life." *EPA*, 22 Apr. 2025, [www.epa.gov/ocean-acidification/effects-ocean-and-coastal-acidification-marine-life](http://www.epa.gov/ocean-acidification/effects-ocean-and-coastal-acidification-marine-life). Under conditions of severe acidification, shells may even dissolve.

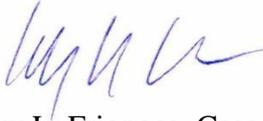
<sup>3</sup> Oregon Department of Environmental Quality. "Water Quality Standards: Beneficial Uses, Policies, and Criteria for Oregon." *Oregon Administrative Rules*, ch. 340, div. 41, §§ 340-041-0001–340-041-8033, Oregon Secretary of State, [secure.sos.state.or.us/oard/displayDivisionRules.action?selectedDivision=1499](http://secure.sos.state.or.us/oard/displayDivisionRules.action?selectedDivision=1499).

<sup>4</sup> Weisberg, Stephen B., *et. al.*, Water quality criteria for an acidifying ocean: Challenges and opportunities for improvement, *Ocean & Coastal Management*, Volume 126, 2016, Pages 31-41, <https://doi.org/10.1016/j.ocecoaman.2016.03.010>.

water allows for DO data to be calculated as a daily average instead of finding that a single reading below a numeric limit violates water quality standards. Modern science uses continuous monitoring methods that capture the natural diurnal swings in DO. In the early morning hours, before photosynthesis ticks up and after a long night of respiration, DO levels can sometimes dip for short periods of time. These natural short term dips do not affect biota and are not caused by dischargers. Because the proposal allows for a daily average while simultaneously adding an additional minimum criterion, biota will still be protected. Further, this change will no longer preclude a Class C water body from being upgraded to Class B when a single data point falls below the Class B DO criteria.

For the foregoing reasons, if the committee chooses to revise any portions of LD 2187, we respectfully request that the revisions to Maine's water quality standards remain intact and garner your support. Thank you for considering our testimony.

Respectfully submitted,



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