

HOUSE No. 3835

The Commonwealth of Massachusetts

PRESENTED BY:

Dylan A. Fernandes

To the Honorable Senate and House of Representatives of the Commonwealth of Massachusetts in General Court assembled:

The undersigned legislators and/or citizens respectfully petition for the adoption of the accompanying bill:

An Act to overcome coastal and environmental acidification and nutrient pollution.

PETITION OF:

NAME:	DISTRICT/ADDRESS:	DATE ADDED:
<i>Dylan A. Fernandes</i>	<i>Barnstable, Dukes and Nantucket</i>	<i>2/19/2021</i>
<i>Mathew J. Muratore</i>	<i>1st Plymouth</i>	<i>2/22/2021</i>
<i>Sarah K. Peake</i>	<i>4th Barnstable</i>	<i>2/26/2021</i>
<i>Susan Williams Gifford</i>	<i>2nd Plymouth</i>	<i>2/26/2021</i>
<i>Bruce E. Tarr</i>	<i>First Essex and Middlesex</i>	<i>2/26/2021</i>
<i>Antonio F. D. Cabral</i>	<i>13th Bristol</i>	<i>2/26/2021</i>
<i>Josh S. Cutler</i>	<i>6th Plymouth</i>	<i>2/26/2021</i>
<i>Kay Khan</i>	<i>11th Middlesex</i>	<i>3/2/2021</i>
<i>Jessica Ann Giannino</i>	<i>16th Suffolk</i>	<i>3/3/2021</i>
<i>Brian W. Murray</i>	<i>10th Worcester</i>	<i>3/4/2021</i>

HOUSE No. 3835

By Mr. Fernandes of Falmouth, a petition (accompanied by bill, House, No. 3835) of Dylan A. Fernandes and others relative to coastal and environmental acidification and nutrient pollution. Environment, Natural Resources and Agriculture.

The Commonwealth of Massachusetts

**In the One Hundred and Ninety-Second General Court
(2021-2022)**

An Act to overcome coastal and environmental acidification and nutrient pollution.

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

1 SECTION 1. Chapter 6 of the General Laws is hereby amended by inserting after Section
2 15LLLLLL the following section:-

3 Section 15MMMMMM. The governor shall annually issue a proclamation setting apart
4 the third full week in August as Ocean Acidification Awareness Week and recommending that
5 the day be observed in an appropriate manner by the people, promoting citizen science initiatives
6 and action by the general public not only to preserve the health of the coastline but also to
7 generate valuable scientific data for the commonwealth.

8 SECTION 2. Section 1 of chapter 21N of the General Laws, as appearing in the 2018
9 Official Edition, is hereby amended by inserting after the definition of “Carbon dioxide
10 equivalent” the following 4 definitions:-

11 “Coastal acidification”, the acidification of coastal waters driven by background ocean
12 acidification, eutrophication, freshwater inputs, atmospheric deposition and any other natural or
13 anthropogenic stressor.

14 “Coastal stressors”, eutrophication, nutrient pollution, freshwater inputs and atmospheric
15 deposition from the coast acidifying coastal waters.

16 “Coastal waters”, any waters and associated submerged lands of the ocean, including the
17 seabed and subsoil, lying between the coast and the seaward boundary of the commonwealth, as
18 defined in 43 U.S.C. 1312.

19 “Coastal watershed”, the Merrimack, Parker, Ipswich, North Coastal, Mystic, Neponset,
20 Charles, South Coastal, Cape Cod, Islands, Buzzards Bay, Taunton and Narragansett watersheds.

21 SECTION 3. Said section 1 of said chapter 21N, as so appearing, is hereby further
22 amended by inserting after the definition of “Entity” the following definition:-

23 “Eutrophication”, a condition of coastal or fresh waters having elevated nutrient
24 concentrations.

25 SECTION 4. Said section 1 of said chapter 21N, as so appearing, is hereby further
26 amended by inserting after the definition of “Nature-based solutions” the following definition:-

27 “Ocean acidification”, the acidification of the greater Atlantic ocean driven by
28 atmospheric carbon deposition independent of coastal stressors.

29 SECTION 5. Section 10 of said chapter 21N, as so appearing, is hereby amended by
30 inserting after the word “surge”, in line 9, the following words:- , ocean and coastal acidification.

31 SECTION 6.. Said chapter 21N is hereby amended by adding the following section:-

32 Section 12. (a) There shall be an ocean acidification council to consist of 11 members:
33 the secretary of energy and environmental affairs, who shall be the chair; the director of coastal
34 zone management or a designee; the commissioner of environmental protection or a designee;
35 the director of the Massachusetts environmental policy act office or a designee; the director of
36 marine fisheries or a designee, the director of ecological restoration or a designee; the
37 commissioner of agricultural resources or a designee; and 4 public members to be appointed by
38 the governor, 1 of whom shall be a member of a private monitoring organization in the state, 1
39 of whom shall be a member of the state shellfishing industry, 1 of whom shall be a scientist
40 specializing in coastal conservation and 1 of whom shall be a member of the Massachusetts
41 Municipal Association, Inc.

42 (b) The council shall: (i) work to further understand and take action against the threat
43 posed by ocean and coastal acidification; (ii) engage with and, to the extent practicable,
44 coordinate public and private monitoring efforts; (iii) harmonize data gathering; (iv) provide
45 monitoring hardware and technical training; (v) maintain a central repository for acidification
46 data; and (vi) recommend mitigative interventions for coastal stressors or adaptive technologies
47 for aquaculture, prioritizing nature-based solutions to manage stormwater and reduce nutrient
48 pollution. The council may direct monies from the Ocean Acidification Fund established in
49 section 2PPPPPP of chapter 29 to target existing programs and novel approaches to restore and
50 buffer marine habitats and resources impacted by acidification.

51 (c) Within 1 year of the council's formation, the council shall perform and publish a gap
52 analysis for ocean monitoring with recommended measures for creating an appropriate spatial

53 and temporal resolution to model ocean acidification in coastal waters and project acidification
54 trends. The council shall convene a public workshop with local ocean monitoring groups to
55 ascertain monitoring needs and inform the analysis, and hold 2 public hearings. The analysis
56 shall identify appropriate monitoring technologies and select coastal waters where ocean
57 acidification monitoring equipment shall be placed. The ocean acidification monitoring system
58 shall enable modeling for long term pH changes in coastal waters and permit short-term
59 monitoring of aragonite saturation in variable and sensitive coastal waters to protect critical
60 habitat and shellfish.

61 (d) The council shall coordinate implementation of the ocean acidification monitoring
62 system, implementing the system within 3 years of the effective date of this section. The council
63 shall ensure that data derived from the monitoring system is publicly accessible in a standardized
64 format useful for public and private research.

65 (e) The council may commission independent studies and agency reports to fill
66 acidification knowledge gaps. The council shall commission the studies and reports as soon as
67 practicable, beginning at a later date if dependent on data derived from the ocean acidification
68 monitoring system described in subsection (d). The council shall avoid duplicating regional
69 efforts, incorporating best available science with data from the ocean acidification monitoring
70 system established in subsection (d) and data from local and private monitoring efforts where
71 available. These efforts shall include, but shall not be limited to:

72 (i) modeling ocean and coastal acidification trends in coastal waters and project
73 acidification trends;

74 (ii) studying the effects of acidification on marine species that are ecologically or
75 economically important or understudied. The study shall examine the impact of multimodal
76 stress and shall include, at minimum, a study of acidification effects on the American lobster,
77 Eastern oyster, sea scallops, quahogs and fin fish;

78 (iii) clarifying the causal relationship between nutrient pollution, eutrophication and
79 coastal acidification in coastal waters;

80 (iv) determining how different coastal stressors contribute to coastal acidification;

81 (v) estimating the economic impacts of modeled and projected acidification on the
82 commonwealth's economy;

83 (vi) determining if current total maximum daily loads under the Massachusetts estuaries
84 project are sufficient to keep acidity in Massachusetts embayments within the ranges required by
85 314 CMR 4.05 through 2050 and proposing changes to 314 CMR §§ 4 and 5 and total maximum
86 daily loads if needed, taking into account ocean and coastal acidification as particularized
87 stressors;

88 (vii) performing cost-benefit analyses of intervention strategies to determine where
89 pollution reductions will most efficiently resilience acidification; and

90 (viii) developing best adaptive practices for the shellfishing industry to use to adapt to
91 acidification.

92 (f) If the council determines that eutrophication has more than a de minimis impact on
93 coastal acidification in any given embayment or coastal zone, the council may implement
94 necessary improvements in the most efficient manner to reduce eutrophication. The council may

95 target funds from the Ocean Acidification Fund established in section 2PPPPPP of chapter 29 to
96 existing state programs or proposed municipal projects for the purposes of:

97 (i) financing necessary upgrades to publicly owned treatment works located in coastal
98 watersheds to achieve enhanced nutrient removal;

99 (ii) replacing septic systems in nutrient sensitive coastal watersheds with connections to
100 new or existing publicly owned treatment works, or upgrading existing systems to nitrogen-
101 reducing systems; and

102 (iii) implementing other appropriate measures, including but not limited to installing
103 permeable reactive barriers and funding salt marsh restoration.

104 SECTION 7. Chapter 29 of the General Laws is hereby amended by inserting after
105 section 2000000, as inserted by section 13 of chapter 358 of the acts of 2020, the following
106 section:-

107 Section 2PPPPPP. (a) There shall be established and set upon the books of the
108 commonwealth a separate fund to be known as the Ocean Acidification Fund. The ocean
109 acidification council shall administer the fund. Notwithstanding any general or special law to the
110 contrary, there shall be credited to the fund any revenue subject to appropriations or other money
111 authorized by the general court and specifically designated to be credited to the fund and any
112 gifts, grants, private contributions, investment income earned by the fund's assets and any
113 designated funds from other sources. No expenditures from the fund shall cause the fund to be in
114 deficiency at the close of the fiscal year. Any money in the fund at the end of the fiscal year shall
115 not revert to the General Fund, shall be available for expenditure in the subsequent year and shall
116 not be subject to section 5C.

117 (b) Amounts credited to the fund shall be expended, without further appropriation, for the
118 purposes of restoring and buffering marine habitats and resources impacted by acidification and
119 financing infrastructure improvements to reduce eutrophication as provided in section 12 of
120 chapter 21N.

121 SECTION 8. Section 61 of chapter 30 of the General Laws, as appearing in the 2018
122 Official Edition, is hereby amended by inserting after the word “rise”, in line 16, the following
123 words:- and coastal ocean acidification.