

# THE VALUE of Nature

massaudubon.org/valueofnature

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# Grasslands & Farmlands

In Massachusetts, grasslands are created and maintained by natural or human-caused disturbances. Grasslands provide crucial habitat for wildlife, including pollinators like bees, butterflies and birds. Farms and gardens support local food production.

## ECONOMIC & HEALTH

### Community Gardens

help increase community cohesion, connecting people with nature and accessible, healthy food.<sup>1</sup> Additional benefits include their important role in stormwater management.<sup>2</sup>



**POLLINATORS  
CONTRIBUTE  
\$24B  
TO THE U.S.  
ECONOMY<sup>3</sup>**

**22-35%**

Profit increase from practicing organic farming instead of conventional, based on 40 years of studies covering 55 crops on five continents.<sup>4</sup>



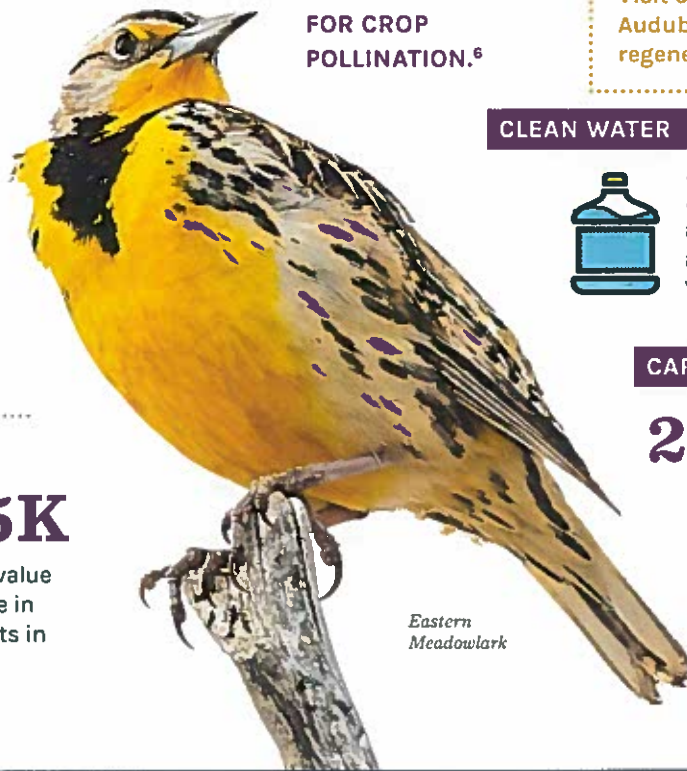
**\$475K**

Total market value for agriculture in Massachusetts in 2017.<sup>5</sup>



**45%**

**OF OUR  
AGRICULTURAL  
COMMODITIES IN  
MASSACHUSETTS  
RELY ON THE  
RICH DIVERSITY  
OF POLLINATORS  
FOR CROP  
POLLINATION.<sup>6</sup>**



*Eastern  
Meadowlark*

## FARMING FOR THE FUTURE



Regenerative agriculture is a crucial piece of the sustainability puzzle.

While conventional farming employs large amounts of pesticides, fertilizers, energy, and water, regenerative agriculture centers on soil health and productivity through methods like composting—minimizing environmental impact.<sup>7</sup> Regenerative agriculture often goes hand in hand with "carbon farming" to improve conversion of atmospheric CO<sub>2</sub> to organic material.<sup>8</sup>

Visit our website to read about how Mass Audubon's Drumlin Farm is employing regenerative methods.

## CLEAN WATER



**12M GALLONS** Estimated amount of stormwater retained annually by raised beds alone in New York City's community gardens.<sup>9</sup>

## CARBON CAPTURE & STORAGE

**280M  
TONS**

Additional CO<sub>2</sub> stored by increasing perennial vegetable acreage from 3.3 mil. hectares today to 26 mil. hectares by 2050, the emissions equivalent of 60 million cars. Perennial agriculture is a particularly effective carbon farming practice utilizing crops that do not need to be replanted.<sup>10</sup>

**KEY TERMS** | **Ecosystem Services:** Nature provides countless benefits to people, along with intrinsic values. These components of nature are enjoyed, consumed, or used by humans to support our wellbeing. | **Climate Resilience:** The ability of a natural or human community to prepare for and respond to the impacts of climate change.



# Grasslands & Farmlands

## CLIMATE RESILIENCE

Climate change threatens our ability to produce food, and food insecurity is already present in Massachusetts.<sup>11</sup>

**\$2.4B** POTENTIAL SAVINGS/YEAR in medical treatment costs by addressing food insecurity in Massachusetts.<sup>12</sup>

**Over \$2M** Benefit to participants in Massachusetts' Healthy Incentives Program (HIP) in the program's first seven months, demonstrating demand for healthy, local food. HIP makes buying fruits and vegetables from farmers markets and other qualified local vendors more cost-effective for eligible low-income residents.<sup>13</sup>



**53 species** OF THE GREATEST CONSERVATION NEED make their home in Massachusetts' grassland habitats, including the eastern meadowlark and bobolinks.<sup>14</sup> Maintaining agricultural lands benefits several species that have declined significantly in New England over the past 50 years.<sup>15</sup>

## A NEW ENGLAND FOOD VISION, FOR 50 BY '60

Experts from universities around New England have created a plan to grow 50% of our food locally by 2060. The 2 million acres of farmland in New England provide only 12% of our food, while 10 to 15% of households report food insecurity. New England has the capacity to responsibly expand its farmland to 6 million acres while reducing our farm footprint and leaving 70% of the region forested.<sup>16</sup>



## GREEN CITY GROWERS

Green City Growers, an organization that converts unused spaces into urban farms, has grown more than **175,000 pounds of organic produce** over less than 2 acres. Based on these production levels, it is estimated that just **1.6% of Boston's 57,363 acres of land would be needed to meet the needs of at-risk Bostonians.**<sup>17</sup>

## RECREATION & TOURISM

Participants in agri-tourism (a growing trend) and wildlife observers interested in grassland species spend money on classes and programs in local communities.

**\$259K** Amount spent annually by visitors to 611 acres of grasslands managed by Mass Audubon.<sup>18</sup>

**125K** people visit and participate in educational programs annually at Mass Audubon's Drumlin Farm.<sup>19</sup>

## Threats

Climate change and development are two of the biggest threats facing grasslands and farmlands.

### CLIMATE CHANGE



**2.9°F RISE IN TEMP** since 1895



**11" SEA LEVEL RISE** since 1922, as measured in Boston Harbor



**55% STRONGER STORMS** since 1958<sup>20,21</sup>

Grasslands and agricultural fields are experiencing climate change impacts like summer drought, freeze damage to early buds, and faster spread of invasive species.

### DEVELOPMENT



Grasslands and farmlands are often prime targets for development, since the land is open, relatively flat, and has soils that are easily manipulated.

See our *Losing Ground* report and community planning resources for ways to reduce development impacts.

These fact sheets were produced as part of the Integrating Ecosystem Services Functions and Values into Land-Use Decision Making in the Narragansett Bay Watershed project.

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