

State Reclamation and Mosquito Control Board 2016 Annual Report

STATE AGENCY MEMBERS:

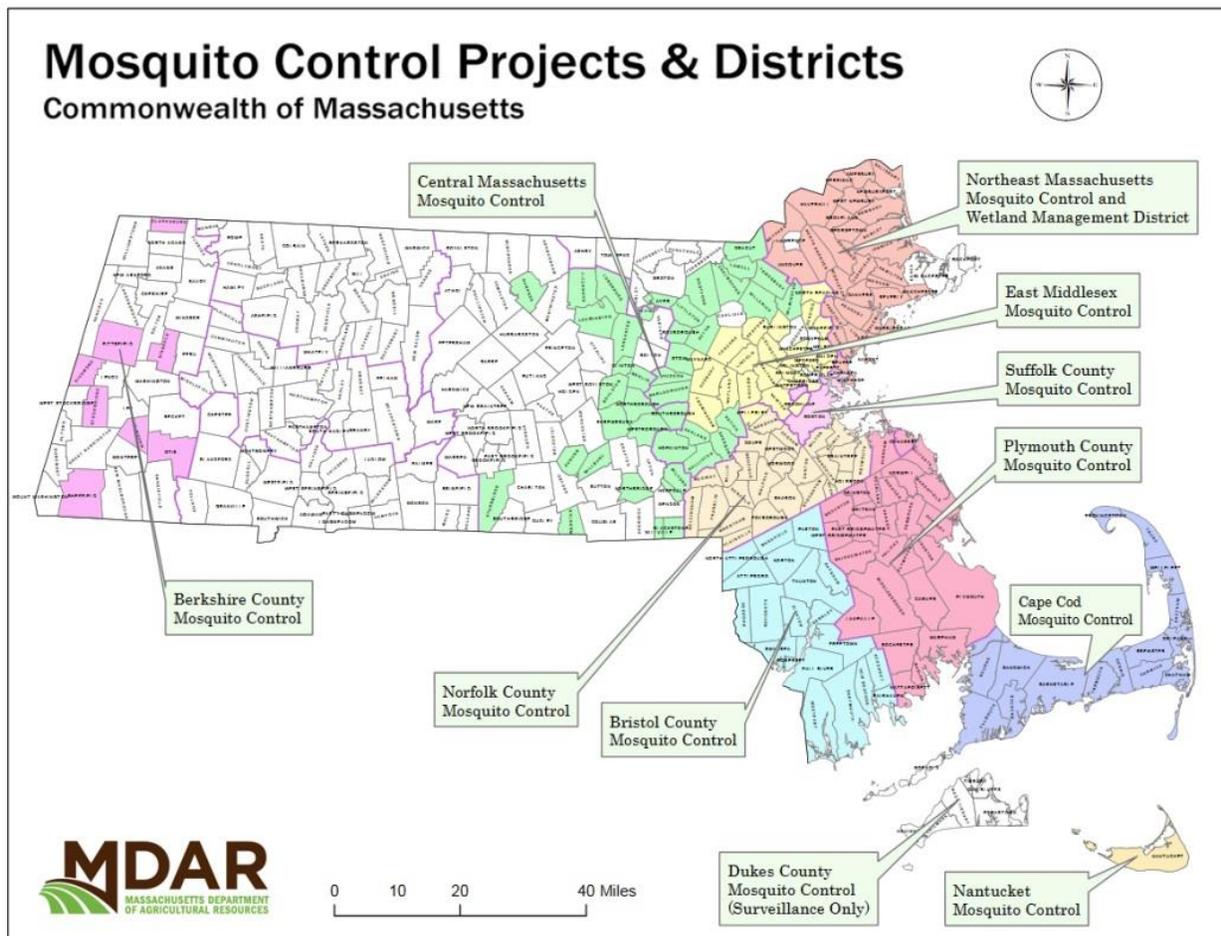
Alisha Bouchard, designee Commissioner John Lebeaux, DAR
Gary Gonyea, designee Commissioner Martin Suuberg, DEP
Jim Straub, designee Commissioner Leo Roy, DCR

STAFF:

Jennifer Forman Orth, Environmental Biologist
Juan Carlos Gutierrez, Operations Coordinator
Jessica Burgess, Legal Counsel
Alexander Gill, Contracts Manager

Mosquito Control Districts/Projects, and Member Municipalities

There are currently 11 regional mosquito control districts/projects in the Commonwealth, providing mosquito control or surveillance services to 205 (58%) of the state's 351 municipalities. In 2016, the Sherwood Green Road Improvement and Maintenance District (part of the town of Becket) opted to join the Berkshire County MCD. The towns of Deerfield and Greenfield (Franklin County) also began contracting out for mosquito surveillance and arbovirus testing services (not included in the count or shown on map).



2016 Mosquito Control Season

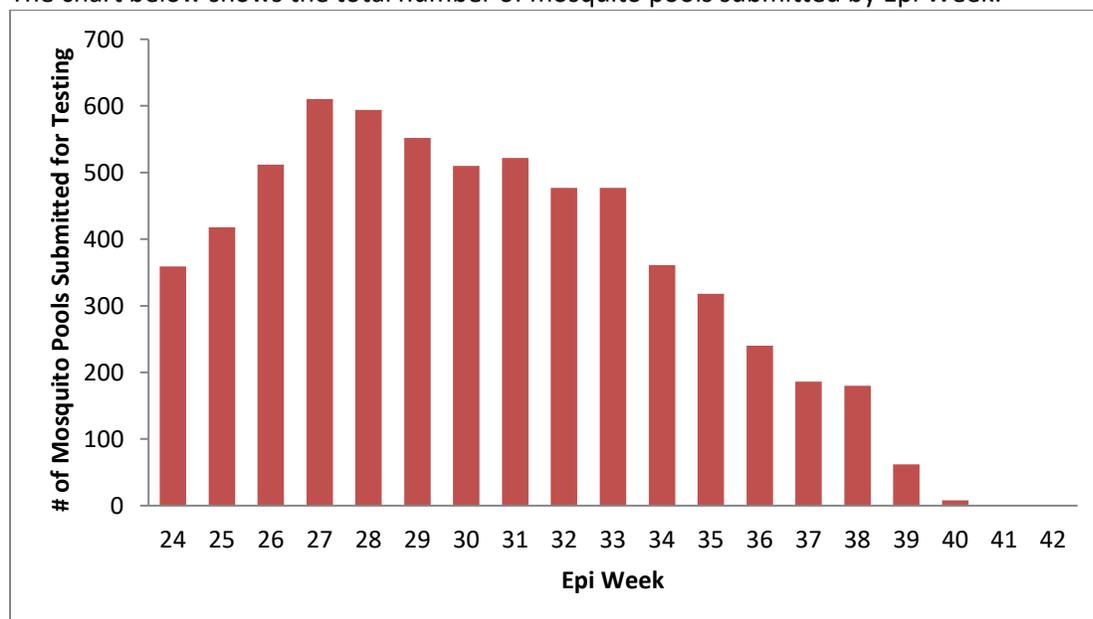
The 2016 mosquito season got off to a slow start, with dry conditions translating into a lack of habitat and a lack of floodwater species. As the season progressed, drought conditions spread across the entire state, and worsened until more than 50% of the state was in Extreme Drought.

Over the course of the 2016 season, the districts/projects collected over 360,000 mosquitoes from surveillance traps, about 10,000 fewer mosquitoes than in 2015. More than 145,000 of these were submitted for arbovirus testing, vs. 121,000 in 2015. See the table below for more details:

Mosquito Control District/Project/Area	Total mosquitoes collected	Total pools submitted	Total mosquitoes tested	Total mosquitoes not submitted
Berkshire	26,673	335	14,001	12,672
Bristol	26,633	389	9900	16,733
Cape Cod	25,212	341	10,737	14,475
Central	52,623	1345	35,811	16,812
Martha's Vineyard	380	25	380	0
East Middlesex	36,801	252	8624	28,177
Nantucket*	17,054	51	1210	15,844
Norfolk	867	539	22,409	21,542
Northeast	108,802	1324	17,764	91,038
Plymouth	43,799	392	16,672	27,127
Suffolk	12,713	138	4731	7982
Greenfield/Deerfield	3255	109	1290	1965
Northampton	7891	64	1598	6293
TOTAL	362,703	5304	145,127	260,660
AVERAGE	27,900	408	11,164	20,051

*Nantucket specimens were not tested by DPH

The chart below shows the total number of mosquito pools submitted by Epi Week:



Similar to 2015, drought conditions dried up swamp habitat in 2016, making it a very quiet year for *Culiseta melanura* and EEEv, with only 4 EEEv-positive mosquito pools reported for the entire season and no human or animal cases. However, the same drought conditions also contributed to a spike in WNV, mainly focused in the East Middlesex Mosquito Control Project area, with 189 WNV-positive mosquito pools reported, and 15 human cases.

Asian Tiger Mosquito (ATM)

Given the continued interest in Asian tiger mosquito (*Aedes albopictus* or ATM) due to Zika Virus, this species continued to be under close scrutiny in 2016. Bristol County Mosquito Control and DPH expanded surveillance efforts in and around the New Bedford area, and ATM was detected in Dartmouth, Fall River, and Wareham, indicating that the population in that part of the state is becoming established and is expanding. There were 838 adult ATMs collected in 2016, compared to 238 collected in 2015 (though note this is also related to the increase in trapping).

Mosquito Management

Aerial adult mosquito control operations by aircraft were not necessary during 2016. The districts/projects were able to keep mosquito populations suppressed (and arbovirus load low) using standard techniques of larviciding accompanied by ULV spraying of adulticide in response to finds of arbovirus-positive mosquitoes. Several districts/projects also provided ULV-spraying to property owners by request. In 2016, the majority of districts that take larviciding and adulticiding requests saw a decrease in those service requests vs. 2015.

Some districts/projects also performed ditch maintenance and other water body management techniques proven to reduce mosquito-breeding habitat, including clearing brush, removing debris from drainage systems, or excavating as part of more extensive restoration of drainage systems. In 2016, 9 districts performed freshwater management (over 691,000 linear feet managed), and 5 performed salt water management (about 65,000 linear feet managed).

The Catch Basin Applicator Permit Program, put in place in 2015, allows government employees (state, city or town) to apply for a permit to use MDAR-registered dry formulation mosquito larvicides in storm drains and catch basins, provided the employees are working under the supervision of a certified or licensed pesticide applicator. There were 8 people who signed up for an exam in 2016, down from 19 in 2015. Those who pass the exam receive the option to submit a renewal request each year.

Arbovirus Detections

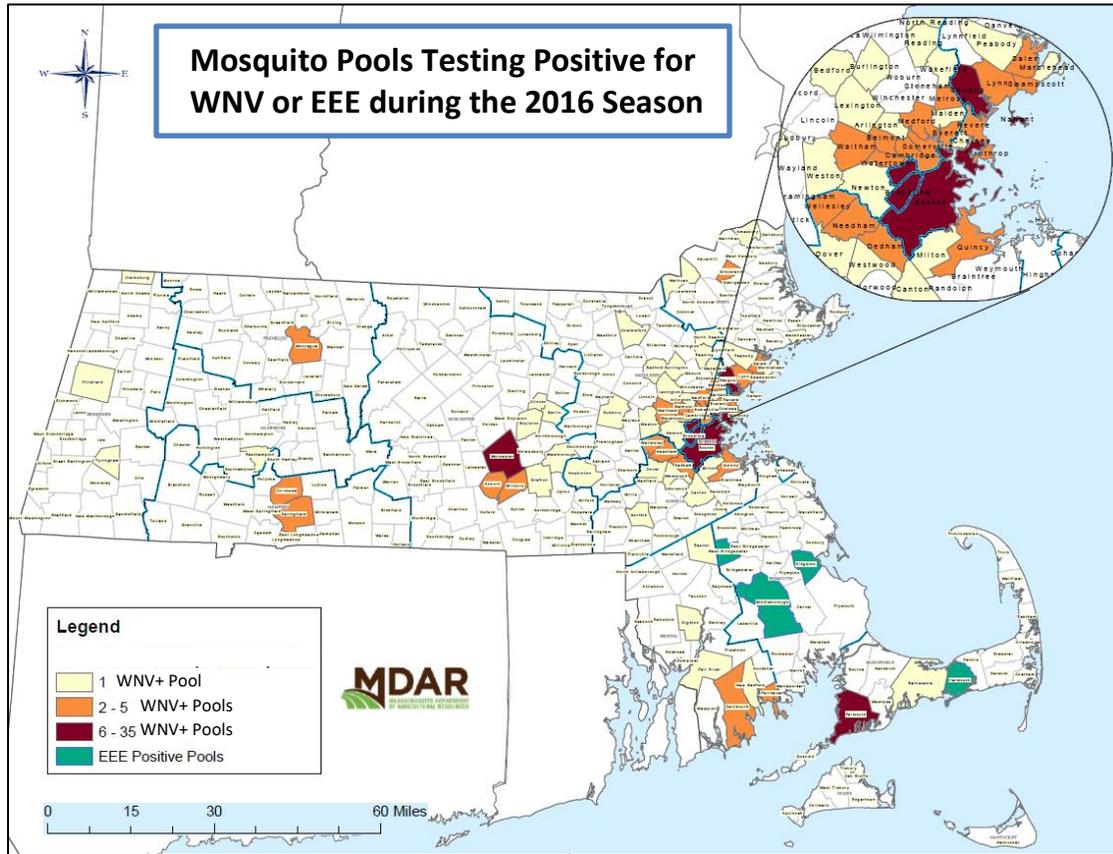
The first 3 WNV+ mosquito pools of 2016, detected through supplemental DPH surveillance, were found in the city of Worcester in Epi Week 26, in *Culex pipiens/restuans*. The first EEEv detection of 2016 occurred in Epi Week 28 in the town of Middleborough (Plymouth County), and was found in *Culex pipiens/restuans*, an unusual find since EEEv is typically found first in bird-biting species like *Culiseta melanura*. Arbovirus levels in 2016 were similar to 2015, even though 30% more pools were submitted:

Mosquito testing and arbovirus levels, 2016-2012*:

Year	# Pools Submitted	# WNV+	# EEEv+	Total Mosquitoes Submitted	% WNV+	% EEEv+
2016	6386	189	4	186,947	3%	0.06%
2015	4527	164	1	137,253	4%	0.02%
2014	5038	56	33	132,776	1%	0.7%
2013	6090	335	61	171,390	5.5%	1%
2012	6746	305	262	150,565	4.5%	4%

*This table has been updated to reflect the latest numbers from the DPH database, and may not exactly reports from previous years or the weekly reports from MDAR or DPH.

Below is a map showing all WNV+ and EEE+ mosquito pools found in 2016. Again, it was a very quiet year for EEE, with only 4 detections overall (one per municipality marked on the map). Note the concentration of WNV in the East Middlesex and Suffolk area:



In late 2015, reports began to emerge from Brazil regarding a possible outbreak of Zika Virus tied to cases of microcephaly in infants. Although Zika Virus remained in the public eye during much of 2016, there has yet to be any cases of this virus being locally transmitted to humans via mosquitoes outside of Florida and Texas.

Legal Updates

In 2016, changes to 333 CMR 13.03 were put into place that allow an individual to request an exclusion from wide area pesticide applications, giving property owners the ability to exclude their property from adulticiding and/or larviciding treatments covering areas larger than 1 acre at any time of year (except in the case of a public health emergency). Requests (either electronic or hard copy) will now be sent to the Department instead of to the municipality the property is in, and mosquito control districts/projects will have 14 days from the date of a submission to begin excluding the property from the requested applications.

Communications

Throughout 2015 and 2016, talks continued with Board of Health officials from several municipalities in Franklin, Hampden and Hampshire Counties regarding the potential of forming a Mosquito Control District in the Pioneer Valley region. As of the end of 2016, the communities of Deerfield, Greenfield, East Longmeadow Montague, Palmer, South Hadley, and Southampton, received word that they had received a state Community Compact grant to fund a consultant to assist them with the formation of a District.

In the summer of 2016, members of the SRB, MDAR staff, and staff from the Plymouth County Mosquito Control District met with representatives from Mass Audubon and other environmental groups to discuss a no spray request from Mass Audubon that led to the exclusion of a large acreage of mosquito habitat. Discussions are expected to continue in the future to address potential arbovirus issues as well as the concerns of the potential negative impact of pesticides on wildlife.

In the fall of 2016, members of the SRB, MDAR staff and staff from several mosquito control districts/projects met with representatives from the US Army Corps of Engineers, Dept. of Environmental Protection (DEP), Mass. Environmental Policy Act staff (MEPA), Coastal Zone Management (CZM), MDAR and others to discuss issues related to the open marsh water management (OMWM) monitoring requirements. The meeting concluded with an agreement that maintenance of pre-existing OMWM projects could be done without treating them as entirely new OMWM project, allowing the districts/projects to employ a less resource-intensive set of monitoring requirements, provided that they first cleared the work through an advisory committee.

FY16 (July 2015 – June 2016) and FY17 Budget (July 2016 – June 2017)

The FY16 budgets for the 9 regional programs plus the SRB Administrative Fund totaled \$11,917,200, an increase of about 3% over FY15 (\$11,608,459). FY16 budget increases for the districts/projects ranged from 0% to 4%. The SRB budget increased about 14% due to the backfilling of positions that remained open during much of FY15. The FY17 budget for the 9 regional programs plus the SRB Administrative Fund totaled \$12,258,032, an increase of 2.9% vs. FY16. FY17 budget increases ranged from a small decrease (-.02%) to 7% (the SRB budget adjusted following new hires).

The following table highlights the FY16 and FY2017 budget amounts certified by the SRMCB:

District	FY2016 SRMCB Certified Budget	FY2017 SRMCB Certified Budget	% Change
Berkshire	\$249,403	\$249,358	-.02%
Bristol	\$1,322,814	\$1,388,955	5%
Cape Cod	\$1,961,964	\$2,017,423	3%
Central Mass	\$2,079,795	\$2,171,306	4%
East Middlesex	\$681,782	\$702,677	3%
Norfolk	\$1,669,691	\$1,711,433	2%
Northeast	\$1,589,540	\$1,589,540	0%
Plymouth	\$1,685,369	\$1,719,076	2%
Suffolk	\$265,264	\$265,264	0%
SRB Admin	\$411,578	\$443,000	7%
Total:	\$11,917,200	\$12,258,032	3%

Full versions of the SRMCB annual reports, as well as the annual operational reports for each district/project, are archived at <http://www.mass.gov/eea/agencies/agr/pesticides/mosquito/annual-operation-reports.html>