

Mosquito Monitoring and Surveillance, 2016 – UW Campus

Prepared by: Jessica Breitbach, Mosquito Technician

5 January 2017

Background:

In 2016, the University of Wisconsin – Madison Campus, along with other community partners authorized Public Health for Madison and Dane County (PHMDC) to monitor and control the breeding activity of targeted mosquito species on public property. Targeted mosquito species include those in the *Culex* genera because they are the most likely to spread West Nile Virus infection. Mosquito larvae sampling was performed by PHMDC staff from late May into September to locate water sources producing large numbers of mosquito larvae. Larvicide applications were made as needed in water sources found to produce high levels of target mosquito larvae.

This report summarizes the results of mosquito monitoring and treatment in the UW Campus during the season. The following map provides locations of the sites sampled and results of mosquito larvae sampling at these sites. Some water sources in the campus area were not monitored or treated because the sites were inaccessible to PHMDC staff. Accessibility is determined based on several factors including land ownership, safety, and physical barriers.

Table 1. Types of water sources on the UW Campus

Water Source	Count	Percentage
Creek	1	6%
Ditch	5	29%
Marsh	4	24%
Retention pond	7	41%
Total	17	100%

Site Descriptions:

The UW Campus has a total of 17 water sources; specific sites were monitored throughout the summer by field technicians. Table 1 gives a count and percent of the water sources identified. The UW Campus drainage system is comprised of retention ponds, ditches, marshes, and a creek.

Investigation Results:

Table 2 and the attached map give the results of PHMDC's water source investigations for the UW Campus in 2016 and in the previous 2015 mosquito monitoring season to allow comparison of findings. Table 3 provides definitions for each of the categories.

Table 2. Results of UW Campus mosquito larvae investigations

Area Number	2015 Results	2016 Results	Investigations in 2016	Area Number	2015 Results	2016 Results	Investigations in 2016
272	No larvae	No larvae	3	621	No larvae	Low larvae	3
273	Low larvae	No larvae	3	622	Low larvae	No larvae	2
320	No larvae	Low larvae	3	702	No larvae	No larvae	3
589	No larvae	No larvae	3	703	Low larvae	No larvae	3
592	No larvae	No larvae	2	704	No larvae	No larvae	3
593	No larvae	No Larvae	3	801	No larvae	No larvae	3
594	No larvae	Low larvae	3	8511	No larvae	No larvae	3
595	Inaccessible	No larvae	3	8899	High Culex	High Culex	11
596	No larvae	No larvae	2				

Findings and Recommendations:

Low levels of Culex and Aedes larvae were identified in multiple water sources on the UW-Madison campus. One site (site no. 8899) reported high levels of Culex during multiple site checks and was subsequently treated once in June, July, and early August. This site is near Lake Mendota and collects storm water as it drains from higher ground to the lake. We continue to look for options for long term control of mosquito breeding at this location but the proximity to the lake and the terrain make it difficult to get the site to drain completely dry in a short period of time or expand the water source so it can support a more developed ecosystem including mosquito larvae predators.

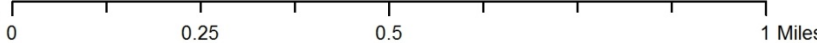
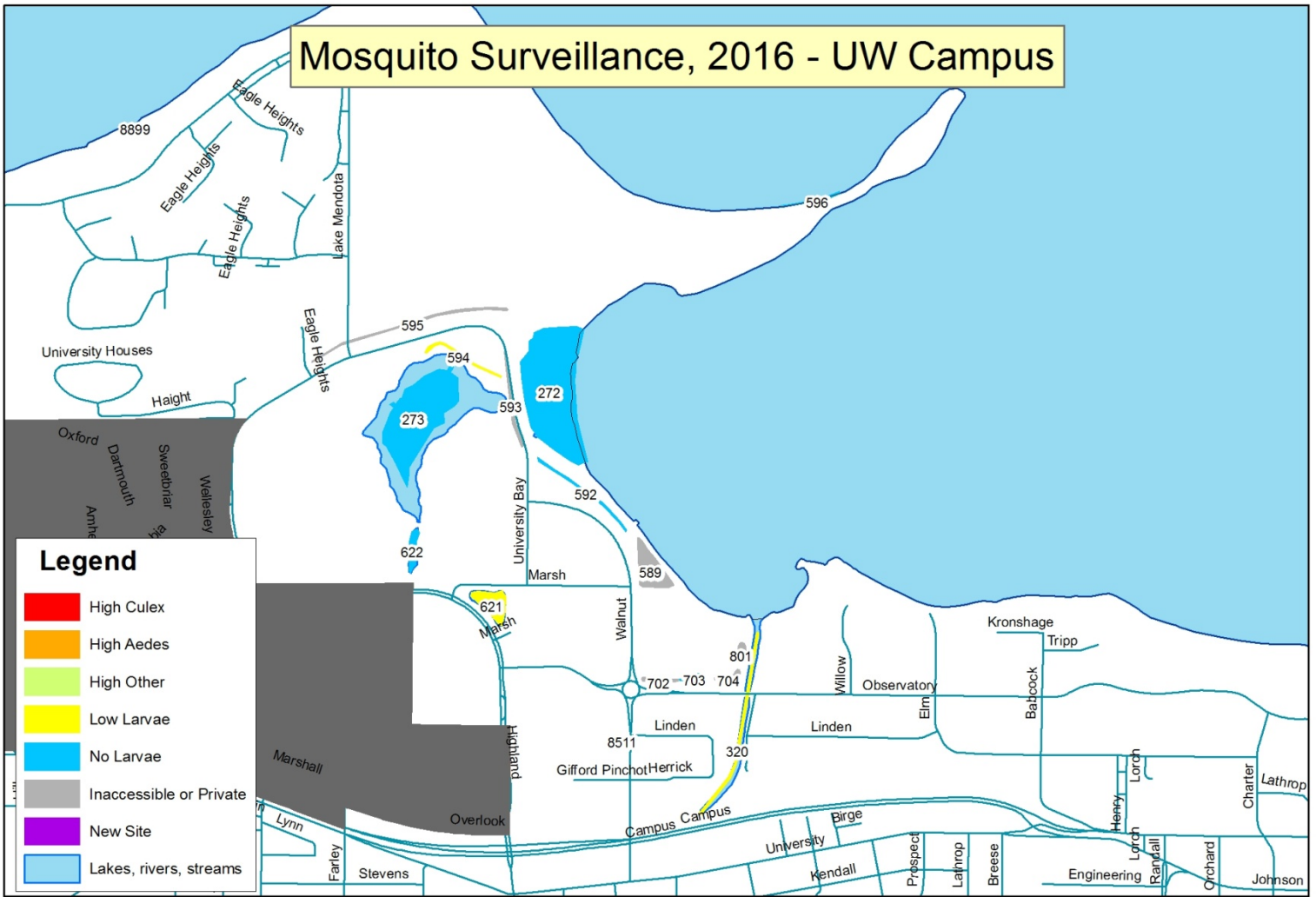
Site 595 had demonstrated high level of Culex larvae in 2014 but was inaccessible during both the 2015 and 2016 monitoring seasons. Construction kept four sites (sites 702, 703, 704, and 801) from being dipped more than once.

Although the level of mosquito activity was limited during the current monitoring season, weather conditions in subsequent years may better support suitable environments for higher levels of activity of the targeted species. For this reason, continued monitoring is recommended to detect any emerging mosquito activity.

Table 3. Definition of investigation result categories

High <i>Culex</i>	One or more investigations during the season found 3 <i>Culex</i> larvae / dip or more.
High <i>Aedes</i>	One or more investigations during the season found 3 <i>Aedes</i> larvae / dip or more. Other mosquito larvae species may have been present at lower numbers.
High Other	One or more investigations found 3 larvae / dip of a mosquito other than <i>Culex</i> or <i>Aedes</i> .
Low larvae	One or more investigations found fewer than 3 larvae / dip of any mosquito species.
No larvae	Staff did not find mosquito larvae during any of the investigations or visually determined that the site was unsuitable for mosquito breeding.
Site dry	Site was dry on all investigations during the season.
Inaccessible	Staff is unable to access due to physical barrier or safety concern.
Private	Source located on private property.

Mosquito Surveillance, 2016 - UW Campus



Map prepared by:
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 Public Health Madison and Dane County
 23 September 2016

Mosquito Monitoring and Surveillance, 2016 – UW Arboretum

Prepared by: Jessica Breitbach, Mosquito Technician

23 September 2016

Background:

In 2016, the University of Wisconsin – Madison Arboretum, along with other community partners authorized Public Health for Madison and Dane County (PHMDC) to monitor and control the breeding activity of targeted mosquito species on public property. Targeted mosquito species include those in the *Culex* genera because they are the most likely to spread West Nile Virus infection. Mosquito larvae sampling was performed by PHMDC staff from late May into September to locate water sources producing large numbers of mosquito larvae. Larvicide applications were made as needed in water sources found to produce high levels of target mosquito larvae.

This report summarizes the results of mosquito monitoring and treatment in the UW Arboretum during the current season. Some water sources in the metropolitan area were not monitored or treated because they were inaccessible to PHMDC staff. Accessibility is determined based on several factors including land ownership, safety, and physical barriers.

Table 1. Types of Water Sources in the UW Arboretum

Water Source	Count	Percentage
Creek	7	32%
Detention pond	1	5%
Marsh	2	10%
Retention pond	10	48%
River	1	5%
Total	21	100%

Site Descriptions:

The UW Arboretum has a total of 21 water sources. Eight sites were inaccessible to PHMDC staff and were not evaluated during the 2016 season. The remaining 13 were monitored throughout the summer. Table 1 gives a count and percentage of the water sources identified. The UW Arboretum is comprised primarily of retention ponds and creeks, but also includes two marshes, a detention pond, and a river.

Table 2. Results of the Arboretum mosquito larvae investigations

Area Number	2015 Results	2016 Results	Investigations in 2016	Area Number	2015 Results	2016 Results	Investigations in 2016
138	No larvae	No larvae	2	150	No larvae	Low larvae	2
139	No larvae	Low larvae	3	151	No larvae	No larvae	2
142	Inaccessible	No larvae	1	154	No larvae	No larvae	3
144	No larvae	No larvae	3	280	No larvae	No larvae	3
146	No larvae	No larvae	2	1551	No larvae	No larvae	3
147	No larvae	No larvae	2	1552	No larvae	No larvae	3
149	No larvae	No larvae	2				

Investigation Results:

Table 2 gives the results of PHMDC’s water source investigations for the UW Arboretum in 2016. For comparison, the table also provides the results from investigations in 2015. Table 3 provides definitions for each of the result categories. Sites that were not accessible during both 2015 and 2016 are not included in the Table 2.

Findings and Recommendations:

In 2016, field technicians found low levels of mosquito larvae in two Arboretum water sources (sites 139 and 150). From past years we know that mosquito breeding activity will vary from season to season and within a season. It is unclear at this time why little to no larvae were found in the Arboretum.

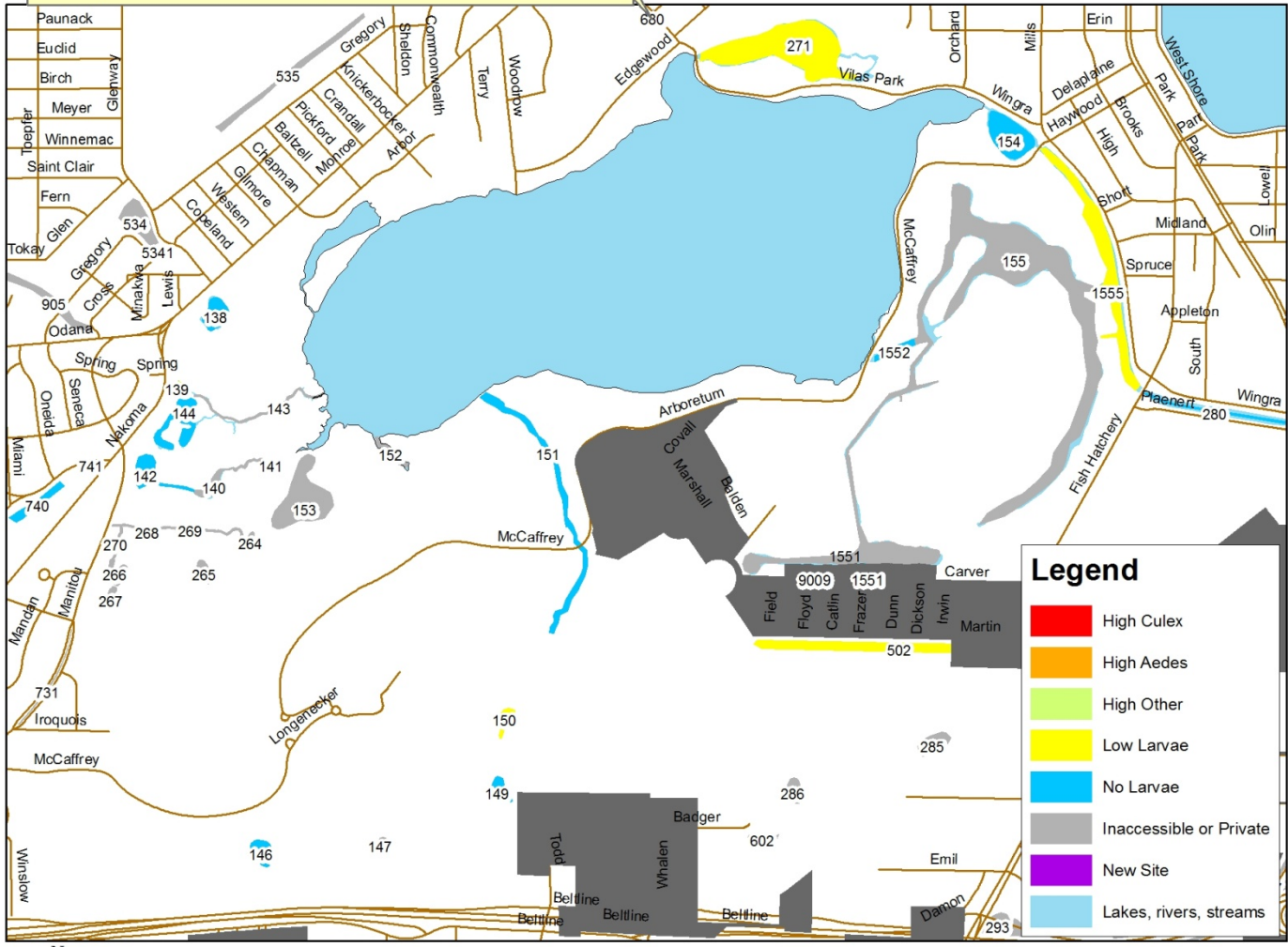
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subsequent years may support suitable environments for higher levels of activity. For this reason, continued monitoring is recommended to detect any emerging mosquito activity.

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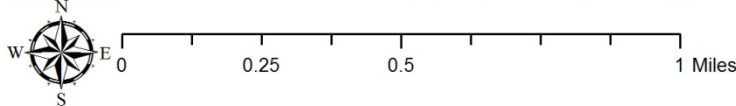
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Low larvae	One or more investigations found fewer than 3 larvae / dip of any mosquito species.
No larvae	Staff did not find mosquito larvae during any of the investigations or visually determined that the site was unsuitable for mosquito breeding.
Site dry	Site was dry on all investigations during the season.
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Private	Source located on private property.

Mosquito Surveillance, 2016 - UW Arboretum



Legend

- High Culex
- High Aedes
- High Other
- Low Larvae
- No Larvae
- Inaccessible or Private
- New Site
- Lakes, rivers, streams



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 23 September 2016