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I. **Season Perspective**

This is the annual report for the City of Brookfield, detailing the implementation of the year 2006 Mosquito Monitoring and Control program. Included are details on mosquito brood production, larval inspections, adult light trap survey results (including numbers of males and females, identification to species and location of traps) and gravid trap survey results.

Thirteen (13) mosquito broods were produced during April, May, June, July and September. There was not enough rainfall at one time to trigger a treatment in 2006.

Extensive data collection was done on a bi-weekly basis (as permitted by protocol) to determine the mosquito population dynamics in the City of Brookfield. This included the following:

1. Mosquito larval monitoring of:
 - a. Designated wetland areas
 - b. Random monitoring of ephemeral breeding sites
2. Adult mosquito monitoring
 - a. 4 CDC-CO2 traps and 1 gravid trap are used at various locations
 - b. Samples collected 2 times/week (CDC), 1 time/week for the gravid trap
 - c. Trap catches are counted and identified to species
 - d. Gravid trap catches are tested – “Vectest” to determine if WNV pos

II. Mosquito Brood Prediction

Rainfall events of greater than .4 inches will trigger the hatch of a new floodwater mosquito brood (primarily *Aedes vexans*). Thirteen (13) broods were predicted during the months of April, May, June, July and September of 2006. Listed below are the dates and rainfall amounts (Waukesha station) for the 2006 season.

Weather Station	Date	Rain Amount	Brood Number
Waukesha	4/2/06	1.50	4/16/06
	4/30/06	0.50	5/15/06
	5/11/06	1.01	5/25/06
	5/12/06	0.41	5/28/06
	5/30/06	0.76	6/13/06
	7/09/06	1.60	7/22/06
	8/24/06	0.85	9/7/06
	8/26/06	0.50	9/9/06
	9/4/06	0.98	9/18/06
	9/11/06	0.54	9/26/06
	9/12/06	1.25	9/27/06
	9/17/06	0.42	9/30/06
	9/22/06	0.79	10/7/06

III. Operations Summary

A. Mosquito larval inspections

Starting on 5/22/06, weekly mosquito larval inspections were started on all declared sites in the City of Brookfield and ran until 9/30/06. When larvae are present, a representative sample is kept for laboratory species analysis. As per the "experimental protocol", an average number of mosquito larvae greater than three (3) per dip may trigger a treatment.

Mosquito larval species collected during these inspections include:

Culiseta inornata
Aedes vexans
Anopholes quadrimaculatus
Anopholes punctipennis
Culex restuans
Culex territans
Culex pipiens
Culex tarsalis

Brookfield Inspection Log 2006

Inspection # Date of Inspection	Site #	Average per dip	Species found
#1 5/15-5/26	08-03	0.7	<i>Culiseta inornata</i> <i>Culex restuans</i> <i>Aedes vexans</i> <i>Culex territans</i> <i>Anopholes punctipennis</i> <i>Pupae</i>
	05-01	0.2	
	11-01	0.8	
	29-01	3.95 (<i>pupae</i>)	
	08-01	0.4	
	20-03	0.25	
	21-03	0.35	
#2 5/29-6/9	21-03	0.1	<i>Culex restuans</i> <i>Aedes vexans</i> <i>Culex territans</i>
	14-05	2.15	
	11-01	0.95	
	08-02	0.2	
	05-01	0.2	
	08-03	2	
#3 6/12-6/23	20-02	0.15	<i>Anopholes punctipennis</i> <i>Culex restuans</i> <i>Aedes vexans</i> <i>pupae</i>
	08-02	0.15	
	21-03	0.1	
	14-05	0.45	
	20-03	0.2	
	19-02	1.05	
	02-01	2.55	
	08-01	0.45	
#4 6/26-7/7	02-01	0.3	<i>Anopholes punctipennis</i> <i>Anopholes quadrimaculatus</i> <i>Culex restuans</i> <i>Culex territans</i> <i>Aedes vexans</i> <i>pupae</i>
	02-02	0.2	
	04-03	0.35	
	08-01	0.35	
	08-02	0.4	
	33-01	0.2	
	07-02	0.1	
#5 7/10-7/21	21-03	0.75	<i>Anopholes quadrimaculatus</i> <i>Aedes vexans</i> <i>Culex territans</i> <i>Culex restuans</i> <i>Culex tarsalis</i>
	08-03	1.5	
	08-02	0.6	
	33-01	0.1	
	07-02	3.15	
	02-01	1.2	
	14-05	3.95	
	19-02	0.15	

Inspection # Date of Inspection	Site #	Average per dip	Species found
#6 7/24-8/4	19-02	0.05	<i>Culex territans</i> <i>Culex pipiens</i> <i>Anopholes quadrimaculatus</i> Pupae
	20-03	3.2	
	07-02	0.05	
	08-01	0.15	
	32-01	0.2	
	02-01	0.15	
	21-03	0.45	
	08-02	0.45	
	14-05	1.5	
	33-01	0.65	
	32-03	0.10	
#7 8/7-8/18	04-03	0.15	<i>Culex pipiens</i> <i>Anopholes punctipennis</i> <i>Culex territans</i> <i>Anopholes quadrimaculatus</i> <i>Aedes vexans</i> Pupae
	07-02	0.65	
	21-03	0.75	
	08-02	4.45	
	08-03	0.4	
	15-02	0.1	
	14-05	2.25	
	02-01	0.35	
#8 8/21-9/1	20-03	1.1	<i>Culex territans</i> <i>Anopholes quadrimaculatus</i> <i>Aedes vexans</i> <i>Culex restuans</i> <i>Anopholes punctipennis</i>
	33-01	0.7	
	08-01	0.1	
	14-05	0.1	
	02-01	0.4	
	07-02	0.1	
	04-03	0.2	
	21-03	1.15	

Inspection # Date of Inspection	Site #	Average per dip	Species found
#9 9/4-9/15	20-02	0.15	<i>Culex territans</i> <i>Aedes vexans</i> <i>Anopholes punctipennis</i>
	32-03	0.1	
	04-03	0.35	
	02-01	1.45	
	07-02	0.05	
	21-03	1.35	
#10 9/18-9/29	14-05	0.8	<i>Aedes vexans</i> <i>Anopholes punctipennis</i> <i>Anopholes quadrimaculatis</i> <i>Culex territans</i> <i>Culex resuans</i> <i>Culex pipiens</i>
	02-01	1.35	
	08-03	0.55	
	04-03	0.1	
	33-01	0.95	
	08-02	13	
	11-01	13.5	
	21-03	1.7	

B. Adult Mosquito Population Analysis – Light Trap Surveys

As per the “contract protocol”, four (4) ABC-CO2 baited light traps were placed in the City of Brookfield. Traps are set each Monday and Thursday (Monday holidays are the exception) and are picked up each Tuesday and Friday. Light trap catches are counted and sexed. Mosquito specimens are then forwarded to the Laboratory at Clarke Mosquito Control in Roselle, Illinois. They are then identified to species. Traps ran from 5/19/06 until 9/28/06.

City of Brookfield Trap Counts

Date	Trap	# of Females	#of Males
5/19	1B	3	0
	2B	0	0
	3B	0	0
	4B	0	0

Date	Trap	# of Females	#of Males
5/24	1B	1	0
	2B	6	0
	3B	0	0
	4B	0	0

Date	Trap	# of Females	#of Males
5/26	1B	0	0
	2B	5	0
	3B	0	0
	4B	4	0

Date	Trap	# of Females	#of Males
5/30	1B	0	0
	2B	0	0
	3B	0	0
	4B	0	0

Date	Trap	# of Females	#of Males
6/1	1B	0	0
	2B	11	0
	3B	0	0
	4B	2	0

Date	Trap	# of Females	#of Males
6/6	1B	0	0
	2B	10	0
	3B	18	0
	4B	10	0

Date	Trap	# of Females	#of Males
6/8	1B	3	0
	2B	0	0
	3B	0	0
	4B	8	0

Date	Trap	# of Females	#of Males
6/13	1B	0	0
	2B	0	0
	3B	0	0
	4B	3	0

Date	Trap	# of Females	#of Males
6/15	1B	2	0
	2B	0	0
	3B	0	0
	4B	2	0

Date	Trap	# of Females	#of Males
6/20	1B	5	0
	2B	0	0
	3B	0	0
	4B	1	0

Date	Trap	# of Females	#of Males
6/22	1B	63	1
	2B	0	0
	3B	4	0
	4B	65	0

Date	Trap	# of Females	#of Males
6/27	1B	0	0
	2B	0	0
	3B	0	0
	4B	2	0

Date	Trap	# of Females	#of Males
6/29	1B	0	0
	2B	0	0
	3B	0	0
	4B	2	0

Date	Trap	# of Females	#of Males
7/6	1B	0	0
	2B	0	0
	3B	1	0
	4B	0	0

Date	Trap	# of Females	#of Males
7/12	1B	0	0
	2B	1	0
	3B	0	0
	4B	0	0

Date	Trap	# of Females	#of Males
7/14	1B	1	0
	2B	0	0
	3B	0	0
	4B	0	0

Date	Trap	# of Females	#of Males
7/19	1B	0	0
	2B	7	0
	3B	1	0
	4B	0	0

Date	Trap	# of Females	#of Males
7/20	1B	0	0
	2B	7	0
	3B	1	0
	4B	0	0

Date	Trap	# of Females	#of Males
7/26	1B	48	0
	2B	28	0
	3B	0	0
	4B	7	0

Date	Trap	# of Females	#of Males
7/27	1B	22	0
	2B	26	0
	3B	2	0
	4B	2	0

Date	Trap	# of Females	#of Males
8/1	1B	8	0
	2B	0	0
	3B	0	0
	4B	2	0

Date	Trap	# of Females	#of Males
8/3	1B	0	0
	2B	0	0
	3B	0	0
	4B	0	0

Date	Trap	# of Females	#of Males
8/8	1B	16	0
	2B	45	0
	3B	0	0
	4B	3	0

Date	Trap	# of Females	#of Males
8/10	1B	75	0
	2B	24	0
	3B	27	0
	4B	71	0

Date	Trap	# of Females	#of Males
8/15	1B	78	0
	2B	40	0
	3B	37	0
	4B	22	2

Date	Trap	# of Females	#of Males
8/17	1B	61	1
	2B	21	0
	3B	23	0
	4B	4	0

Date	Trap	# of Females	#of Males
8/25	1B	0	0
	2B	1	0
	3B	0	0
	4B	0	0

Date	Trap	# of Females	#of Males
8/30	1B	6	0
	2B	22	0
	3B	1	0
	4B	9	0

Date	Trap	# of Females	#of Males
9/6	1B	2	0
	2B	0	0
	3B	0	0
	4B	8	0

Date	Trap	# of Females	#of Males
9/8	1B	5	0
	2B	0	0
	3B	1	0
	4B	0	0

Date	Trap	# of Females	#of Males
9/13	1B	7	0
	2B	2	0
	3B	2	0
	4B	0	0

Date	Trap	# of Females	#of Males
9/15	1B	1	0
	2B	6	0
	3B	3	0
	4B	0	0

Date	Trap	# of Females	#of Males
9/19	1B	1	0
	2B	0	0
	3B	0	0
	4B	6	0

Date	Trap	# of Females	#of Males
9/21	1B	0	0
	2B	14	0
	3B	0	0
	4B	0	0

Date	Trap	# of Females	#of Males
9/26	1B	0	0
	2B	0	0
	3B	0	0
	4B	0	0

Date	Trap	# of Females	#of Males
9/28	1B	0	0
	2B	0	0
	3B	0	0
	4B	0	0

Species collected include:

Aedes vexans

Ochlerotatus trivitattus

Ochlerotatus cinereus

Anopheles punctipennis

Ochlerotatus sollicitans

Ochlerotatus canadensis

Culex pipiens

Coquilletidea perterbans

Ochlerotatus triseriatus

Psorophora ferox

Anopheles quadrimaculatus

C. Gravid Trap Results

Our "gravid trap" is set once weekly on Thursday, collected Friday and tested for WNV and SLE viral activity using the "VecTest" at the Clarke Lab in Roselle, IL. All samples are then forwarded to the Vector Viral Testing Lab at Michigan State University for further confirmation testing.

The VecTest (antigen assay) provides immediate results for the detection of West Nile Virus. Due to its lower sensitivity it may produce initial false WNV negative results, but usually does not produce false positive WNV results. Therefore, all VecTest samples are submitted for secondary PCR (polymerase chain reaction) testing which is more sensitive and accurate testing standard to eliminate any false negatives. PCR results may take several weeks. VecTest and PCR results are provided below.

2006 Pools Tested

Pool ID	City	Collection Date	Species	#	VecTest	PCR
400-0013	Brookfield, WI	6/9/06	<i>Cx spp</i>	11	Negative	Negative
400-0078	Brookfield, WI	6/16/06	<i>Cx spp</i>	12	Negative	Negative
400-0155	Brookfield, WI	6/23/06	<i>Cx spp</i>	2	Negative	Negative
400-0215	Brookfield, WI	6/30/06	<i>Cx spp</i>	31	Negative	Negative
400-0299	Brookfield, WI	7/7/06	<i>Cx spp</i>	31	Negative	Negative
400-0300	Brookfield, WI	7/7/06	<i>Cx spp</i>	30	Negative	Negative
400-0408	Brookfield, WI	7/14/06	<i>Cx spp</i>	4	Negative	Negative
400-0465	Brookfield, WI	7/20/06	<i>Cx spp</i>	40	Negative	Negative
400-0552	Brookfield, WI	7/28/06	<i>Cx spp</i>	12	Negative	Negative
400-0658	Brookfield, WI	8/4/06	<i>Cx spp</i>	4	Negative	Negative
400-0747	Brookfield, WI	8/11/06	<i>Cx spp</i>	13	Negative	Negative
400-0804	Brookfield, WI	8/18/06	<i>Cx spp</i>	7	Negative	Negative
NA	Brookfield, WI	8/25/06	<i>No catch</i>	0	NA	NA
400-0926	Brookfield, WI	9/1/06	<i>Oc tris</i>	3	Negative	Negative
400-0979	Brookfield, WI	9/8/06	<i>Oc tris</i>	3	Negative	Negative
400-0980	Brookfield, WI	9/8/06	<i>Cx spp</i>	1	Negative	Negative
400-1047	Brookfield, WI	9/15/06	<i>Cx spp</i>	17	Negative	Negative
NA	Brookfield, WI	9/21/06	<i>No catch</i>	0	NA	NA
NA	Brookfield, WI	9/29/06	<i>No catch</i>	0	NA	NA