

LITCHFIELD, NH- Mosquito Surveillance Summary 2012

SWAMP, Inc.

19 Oak Terrace, Kittery, Maine 03904
603-431-0008

E-mail: swampfixer@myfairpoint.net

Prepared by: Kimberly Foss, Director of Biology

The NH State testing criteria for 2012:

The mosquito season was separated into two phases for mosquito submissions; phase I (early season) and phase II (mid to end season). Note that these criteria have been updated for 2012 (species added are underlined).

Phase I – July 1 through July 31, 2012 (dates pertain to date of collection):

Cs. morsitans, *Cs. melanura*, *Cx. pipiens*, *Cx. restuans*, *Cx. pipiens/restuans*,
Oc. canadensis, and *Ae. vexans*.

Only these species will be tested. Any batch (group of mosquitoes) size may be submitted, but cannot exceed 50 mosquitoes.

Phase II – August 1 or first NH EEE or WNV detection (whichever comes first) through September 30, 2012:

In addition to the above species, *Ae. cinereus*, *An. punctipennis*, *An. walkeri*, *Cq. perturbans*, *Cx. salinarius*, *Oc. japonicus*, *Oc. triseriatus*, *Oc. sollicitans*, and *Ps. ferox*

will be tested if batch size > 10 mosquitoes (but cannot exceed 50 mosquitoes).

2012 Litchfield Adult Mosquito Summary:

Adult mosquito surveillance was conducted from 06/5/2012 to 10/9/2012 (**NH State Health Lab extended trapping and testing until October 10, 2012**).

Although the NH State lab did not accept specimens until July 1st, we started trapping in June to track/assess annual mosquito populations for *Cq. perturbans* (cattail swamp mosquito) treatments as well as early trapping for *Cs. melanura* (primary EEE mosquito)...

5,823 total individuals collected
20 different species identified

2012 Species	# Collected	% of Total	2011 Species	# Collected	% of Total	2010 Species	# Collected	% of Total
<i>perturbans</i>	4186	71.89%	<i>stimulans</i>	655	24.08%	<i>Cq. perturbans</i>	1899	63.13%
<i>canadensis</i>	851	14.61%	<i>perturbans</i>	631	23.20%	<i>Oc. stimulans</i>	610	20.28%
<i>vexans</i>	204	3.50%	<i>vexans</i>	610	22.43%	<i>Ur. sapphirina</i>	153	5.09%
<i>stimulans</i>	141	2.42%	<i>canadensis</i>	386	14.19%	<i>Oc. canadensis</i>	95	3.16%
<i>punctipennis</i>	138	2.37%	<i>cinerus</i>	113	4.15%	<i>An. walkeri</i>	53	1.76%
<i>cinerus</i>	77	1.32%	<i>ferox</i>	90	3.31%	<i>An. quadrimaculatus</i>	46	1.53%
<i>walkeri</i>	77	1.32%	<i>trivittatus</i>	81	2.98%	<i>An. punctipennis</i>	40	1.33%
<i>salinarius</i>	34	0.58%	<i>punctipennis</i>	27	0.99%	<i>Ae. vexans</i>	31	1.03%
<i>sapphirina</i>	34	0.58%	<i>melanura</i>	16	0.59%	<i>Ae. cineris</i>	18	0.60%
<i>melanura</i>	23	0.39%	<i>sapphirina</i>	15	0.55%	<i>Ae. abserratus</i>	17	0.57%
<i>triseriatus</i>	18	0.31%	<i>walkeri</i>	15	0.55%	<i>Cs. melanura</i>	14	0.47%
<i>quadrimaculatus</i>	16	0.27%	<i>puncctor</i>	14	0.51%	<i>Oc. puncctor</i>	8	0.27%
<i>trivittatus</i>	7	0.12%	<i>quadrimaculatus</i>	14	0.51%	<i>Cx. pipiens</i>	5	0.17%
<i>ferox</i>	4	0.07%	<i>salinarius</i>	13	0.48%	<i>Cx. restuans</i>	4	0.13%
<i>japonicus</i>	4	0.07%	<i>provocans</i>	10	0.37%	<i>Oc. trivitattus</i>	4	0.13%
<i>abserratus</i>	3	0.05%	<i>abserratus</i>	8	0.29%	<i>Cx. salinarius</i>	3	0.10%
<i>pipiens</i>	2	0.03%	<i>japonicus</i>	6	0.22%	<i>Cx. territans</i>	3	0.10%
<i>puncctor</i>	2	0.03%	<i>restuans</i>	6	0.22%	<i>Oc. japonicus</i>	2	0.07%
<i>morsitans</i>	1	0.02%	<i>triseriatus</i>	4	0.15%	<i>Oc. triseriatus</i>	2	0.07%
<i>provocans</i>	1	0.02%	<i>aurifer</i>	3	0.11%	<i>Oc. provocans</i>	1	0.03%
	5823		<i>morsitans</i>	1	0.04%		3008	
			<i>pipiens</i>	1	0.04%			
			<i>territans</i>	1	0.04%			
				2720				

3 batches consisting of 18 adult *Cs. melanura* specimens collected in June 2012 were sent, as a separate company project, to Connecticut Agricultural Experimental Station for gut content analysis and EEE testing, results are pending. All batches sent from June 2011 tested negative for EEE.

16	6/7/2012	7 Nathan, Litchfield	L = Light	Cs	melanura	1	CONN
16	6/7/2012	19 Foxwood, Litchfield	L = Light	Cs	melanura	1	CONN
29	6/14/2012	7 Nathan, Litchfield	L = Light	Cs	melanura	16	CONN

2 CDC carbon dioxide/light traps were placed weekly at 2 locations which our surveillance team, in conjunction with the Centers for Disease Control recommendations, determined produced sufficient numbers of *Cs. melanura* to send for testing.

7 Nathan, Litchfield
19 Foxwood, Litchfield

50 total mosquito batches* (1,022 adults) were sent to Concord Lab. All batches tested negative for EEE/WNV.

L76121	7/6/2012	19 Foxwood, Litchfield	L = Light	Oc	canadensis	8	NEG
L76122	7/6/2012	19 Foxwood, Litchfield	L = Light	Ae	vexans	3	NEG
L76123	7/6/2012	7 Nathan, Litchfield	L = Light	Oc	canadensis	50	NEG
L76124	7/6/2012	7 Nathan, Litchfield	L = Light	Oc	canadensis	36	NEG
L76125	7/6/2012	7 Nathan, Litchfield	L = Light	Ae	vexans	16	NEG
L712126	7/12/2012	19 Foxwood, Litchfield	L = Light	Oc	canadensis	8	NEG
L712127	7/12/2012	19 Foxwood, Litchfield	L = Light	Ae	vexans	4	NEG
L712128	7/12/2012	7 Nathan, Litchfield	L = Light	Oc	canadensis	48	NEG
L712129	7/12/2012	7 Nathan, Litchfield	L = Light	Ae	vexans	24	NEG
L7191210	7/19/2012	7 Nathan, Litchfield	L = Light	Oc	canadensis	17	NEG
L7191211	7/19/2012	7 Nathan, Litchfield	L = Light	Ae	vexans	5	NEG
L7261212	7/26/2012	7 Nathan, Litchfield	L = Light	Oc	canadensis	8	NEG
L7261213	7/26/2012	7 Nathan, Litchfield	L = Light	Ae	vexans	5	NEG
L7261214	7/26/2012	7 Nathan, Litchfield	L = Light	Cx	pipiens	1	NEG
L821115	8/2/2012	19 Foxwood, Litchfield	L = Light	Cq	perturbans	50	NEG
L821116	8/2/2012	19 Foxwood, Litchfield	L = Light	Cq	perturbans	50	NEG
L821117	8/2/2012	7 Nathan, Litchfield	L = Light	Ae	vexans	16	NEG
L821118	8/2/2012	7 Nathan, Litchfield	L = Light	Oc	canadensis	17	NEG
L821119	8/2/2012	7 Nathan, Litchfield	L = Light	Cq	perturbans	50	NEG
L821120	8/2/2012	7 Nathan, Litchfield	L = Light	Cq	perturbans	50	NEG
L821121	8/2/2012	7 Nathan, Litchfield	L = Light	Cq	perturbans	50	NEG
L821122	8/2/2012	7 Nathan, Litchfield	L = Light	Cq	perturbans	50	NEG
L821123	8/2/2012	7 Nathan, Litchfield	L = Light	Cq	perturbans	50	NEG
L821124	8/2/2012	7 Nathan, Litchfield	L = Light	Cq	perturbans	50	NEG
L821125	8/2/2012	7 Nathan, Litchfield	L = Light	Cq	perturbans	50	NEG
L821126	8/2/2012	7 Nathan, Litchfield	L = Light	Cq	perturbans	50	NEG
L891227	8/9/2012	19 Foxwood, Litchfield	L = Light	Cq	perturbans	26	NEG
L891228	8/9/2012	19 Foxwood, Litchfield	L = Light	Oc	canadensis	1	NEG
L891229	8/9/2012	7 Nathan, Litchfield	L = Light	Cq	perturbans	50	NEG
L891230	8/9/2012	7 Nathan, Litchfield	L = Light	Oc	canadensis	7	NEG
L891231	8/9/2012	7 Nathan, Litchfield	L = Light	Cx	pipiens	1	NEG
L8161232	8/16/2012	19 Foxwood, Litchfield	L = Light	Cq	perturbans	21	NEG
L8161233	8/16/2012	7 Nathan, Litchfield	L = Light	Cq	perturbans	22	NEG
L8161234	8/16/2012	7 Nathan, Litchfield	L = Light	Ae	vexans	12	NEG
L8161235	8/16/2012	7 Nathan, Litchfield	L = Light	Oc	canadensis	2	NEG
L8231236	8/23/2012	19 Foxwood, Litchfield	L = Light	Cq	perturbans	4	NEG
L8231237	8/23/2012	19 Foxwood, Litchfield	L = Light	Ae	vexans	1	NEG
L8231238	8/23/2012	7 Nathan, Litchfield	L = Light	Ae	vexans	9	NEG
L8231239	8/23/2012	7 Nathan, Litchfield	L = Light	Cs	melanura	2	NEG
L8301240	8/30/2012	19 Foxwood, Litchfield	L = Light	Ae	vexans	2	NEG
L8301241	8/30/2012	7 Nathan, Litchfield	L = Light	Ae	vexans	24	NEG
L8301242	8/30/2012	7 Nathan, Litchfield	L = Light	Cq	perturbans	1	NEG
L971243	9/7/2012	19 Foxwood, Litchfield	L = Light	Ae	vexans	6	NEG
L971244	9/7/2012	19 Foxwood, Litchfield	L = Light	Cq	perturbans	1	NEG
L971245	9/7/2012	7 Nathan, Litchfield	L = Light	Ae	vexans	44	NEG
L9131246	9/13/2012	19 Foxwood, Litchfield	L = Light	Ae	vexans	1	NEG
L9211247	9/21/2012	7 Nathan, Litchfield	L = Light	Ae	vexans	8	NEG
L9271248	9/27/2012	19 Foxwood, Litchfield	L = Light	Cs	melanura	1	NEG
L9271249	9/27/2012	19 Foxwood, Litchfield	L = Light	Cs	morsitans	1	NEG

L9271250

9/27/2012

7 Nathan, Litchfield

L = Light Ae

vexans

9

NEG

***A batch consists of 50 or less individual adult female mosquitoes of the same genus and species.**

2012 NH ARBOVIRUS TESTING RESULTS

Eastern Equine Encephalitis & West Nile Virus

Testing results are updated on Fridays as new positives are identified so this report may not reflect the most recent results.

EEE Testing Results

July 1, 2012 – October 19, 2012

Prior Year Totals

	2012	2011	2010	2009	2008	2007
Mosquito Batches Positive*	9	0	0	73	8	6
Animals Positive	4	0	1	7	1	2
Humans Positive	0	0	0	1	0	3

*A mosquito batch is a collection of mosquitoes sorted by species, date of collection, and trap location.

WNV Testing Results

July 1, 2012 – October 19, 2012

Prior Year Totals

	2012	2011	2010	2009	2008	2007
Mosquito Batches Positive*	41	9	1	0	1	0
Animals Positive	0	0	0	0	0	0
Humans Positive	1	0	1	0	0	0

*A mosquito batch is a collection of mosquitoes sorted by species, date of collection, and trap location.

New Hampshire Arbovirus Testing – Mosquito Batches

Town or City	Date Collected	Species	Virus Result
Manchester	7/19/2012	Culex pipiens/restuans	WNV
Manchester	7/23/2012	Culex pipiens/restuans	WNV
Manchester	7/23/2012	Culex pipiens/restuans	WNV
Manchester	7/24/2012	Culex pipiens/restuans	WNV
Manchester	7/24/2012	Culex pipiens/restuans	WNV
Manchester	7/25/2012	Culex pipiens/restuans	WNV
Manchester	7/25/2012	Culex pipiens/restuans	WNV
Manchester	7/25/2012	Culex pipiens/restuans	WNV

New Ham shire Arbovirus Tasting — Mo uito Batches

	1.: Callsciod	Swigs	ft= MEM
Salem	712612012	Culex pipiens	WNV
Manchester	713012012	Culex pipiens1restuans	WNV
Manchester	7[30/2012	Culex pipiens1restuans	WNV
Nashua	7/3112012	Culex pipiens	WNV
Nashua	713112012	Culex pipiens	WNV
Manchester	713112012	Culex pipiens1restuans	WNV
Manchester	713112012	Culex pipiens1restuans	WNV
Manchester	8/0112012	Culex pipiens1restuans	WNV
Manchester	8/0112012	Aedes vexans	WNV
Manchester	810112012	Ochlerotatus japonicus	WNV
Manchester	8/0112012	Culex pipiensirestuans	WNV
Manchester	8/0112012	Culex pipiensirestuans	WNV
Manchester	a`0112012	Culex pipiensirestuans	WNV
Manchester	810112012	Ochlerotatus triseriatus	WNV
Manchester	8/C12.'2012	Coquilletidia perturbans	1/41INV
Manchester	8/C12.'2012	Culex restuans	WNV
Manchester	a'02.'2012	Coquilletidia perturbans	WNV
Manchester	810212012	Culex pipiensirestuans	WNV
Manchester	810812012	Culex pipiensirestuans	WNV
Manchester	810712012	Culex pipiensirestuans	WNV
Manchester	8/0812012	Culex restuans	WNV
Manchester	810812012	Culex pipiensirestuans	WNV
Manchester	810812012	Culex pipiensirestuans	WNV
Seabrook	8r0712012	Culex pipiens	WNV
Brentwood	810912012	Coquilletidia perturbans	WNV
North Hampton	810712012	Culex salinarius	WNV
Manchester	811312012	Culex pipiensirestuans	WNV
Nashua	8r1612012	Culex pipiens	WNV
Manchester	W21/2012	Culex pipiensfrestuans	WNV
Manchester	812312012	Culex restuans	WNV
San down	812312012	Cul iseta rnelanura	EEE
North Hampton	8r2812012	Culex pipiens	WNV
Exeter	812812012	Culex salinarius	WNV
Manchester	910612012	Cul iseta morsitans	EEE
Brentwcx:Ed	910812012	Cul iseta rnelanura	EEE
Newton	911112012	Cul iseta rnelanura	EEE
Newton	911812012	Cul iseta rnelanura	EEE
Danville	9/2712012	Cul iseta rnelanura	EEE
Danville	9/2712012	Cul iseta rnelanura	EEE
Newton	1012 ¹ 2012	Cul iseta rnelanura	EEE
Newfields	1012 ¹ 2012	Cul iseta rnelanura	EEE
Stratham	1011012012	Cul iseta rnelanura	WNV

<i>abserratus</i> (Felt & Young)			Yes Common spring pest	Mammals, birds	Snowmelt pools	1	Egg	Day and night biter
<i>atropalpus</i> (Coquillett)	WNV	100 to 1000 feet	Yes Around breeding areas	Mammals	Rock pools, some artificial containers	1	Egg	Day and night biter
<i>aurifer</i> (Coquillett)		½ mile	Yes Around breeding areas	Mammals	Snowmelt pools, swamps, bogs, open marshes	1	Egg	Day and night biter
<i>canadensis</i> (Theobald)	WNV EEE	½ mile	Yes Major late spring pest around breeding areas	Mammals, amphibians, reptiles, sometimes birds	Wooded snowmelt pools, flood waters	1-2	Egg	Day and night biter
<i>cantator</i> (Coquillett)	WNV EEE		Yes	Mammals, birds	Salt marshes, fresh or brackish water	1+	Egg	Day and night biter
<i>communis</i> (DeGeer)			Yes	Mammals, birds	Wooded snowmelt pools	1	Egg	Day and evening biter
<i>decticus</i> (Howard, Dyar and Knab)			Yes	Mammals, birds	Sphagnum, acid bogs	1	Egg	Day and night biter
<i>diantaeus</i> (Howard, Dyar and Knab)			Yes Wooded areas	Mammals, birds	Wooded snowmelt pools	1	Egg	Morning and evening biter
<i>dorsalis</i> (Meigen)	WNV SLE	10 to 20 miles	Yes	Large mammals, sometimes large birds	Temporary freshwater and brackish pools marshes and ditches	1+	Egg	“Pale marsh mosquito” New record for 2003 (M. Holman)
<i>excrucians</i> (Walker)		½ mile	Yes Common spring- summer pest	Mammals, sometimes birds	Wooded snowmelt pools, marshes	1-2	Egg	Day and evening biter
<i>fitchii</i> (Felt & Young)	WNV	About 1 mile	Yes Common spring-	Mammals, birds	Snowmelt pools, bogs,	1	Egg	Day and night biter

			summer pest in wooded areas		grassy roadside ditches			
<i>hendersoni</i> (Cockerell)		About 1 mile	Yes	Mammals	Tree holes, occasionally tires	1-2	Egg	
<i>implicatus</i> (Vockereth)			Yes Spring pest	Mammals	Wooded snowmelt pools	1	Egg	Day and night biter
<i>intrudens</i> (Dyar)			Yes Common spring pest	Mammals	Wooded snowmelt pools	1	Egg	Day and night biter
<i>japonicus</i> (Theobald)	WNV SLE		Yes	Mammals, birds	Tires, artificial containers, tree holes, rock pools	2+	Egg	Day biter New Record Portland, Maine: June 26, 2001 (K.Foss)
<i>pionips</i> (Dyar)			Rarely		Snowmelt pools	1	Egg	
<i>provocans</i> (Walker)	WNV		Yes Early spring	Mammals	Semipermanent marshes, wooded snowmelt pools	1	Egg	Evening biter
<i>punctor</i> (Kirby)			Yes Spring	Mammals	Wooded snowmelt pools	1	Egg	Day and night biter
<i>riparius</i> (Dyar and Knab)								New record for 2003 (M. Holman)
<i>sollicitans</i> (Walker)	WNV EEE	100 miles or more	Yes Major coastal summer pest	Mammals, birds, reptiles, amphibians	Salt marshes	4+	Egg	“Eastern salt marsh mosquito”, Day and night biter
<i>sticticus</i> (Meigen)	WNV	4 miles	Yes Major pest around breeding areas	Mammals, birds, reptiles	Flood waters, wooded snowmelt pools	1-2	Egg	Day and evening biter

<i>stimulans</i> (Walker)	WNV	2 miles	Yes Major spring pest	Mammals, birds	Snowmelt pools	1	Egg	Long lived
<i>taeniorhynchus</i> (Wiedemann)	WNV EEE		Yes Major pest around breeding areas	Birds, mammals	Salt marshes	2+	Egg	“Black salt marsh mosquito”, Day and evening biter New record for 2002 (M. Holman)
<i>triseriatus</i> (Say)	WNV LAC (X) EEE	½ to 1 mile	Yes Common summer pest around breeding areas	Mammals, birds, reptiles, amphibians	Tires, artificial containers, tree holes	1	Egg	“Tree hole mosquito” Day and evening biter
<i>trivittatus</i> (Coquillett)	WNV EEE	½ mile	Yes Common summer pest around breeding areas	Mammals, birds	Wooded snowmelt pools, floodwaters	1	Egg	Day and evening biter
ANOPHELES								
<i>barberi</i> (Coquillett)	WNV		Yes	Mammals, sometimes birds	Tree holes, artificial containers	1-2	Larva	New record for 2004 (M. Holman)
<i>earlei</i> (Vargas)		1 to 2 miles	Yes Common spring pest	Mammals	Confined bodies of water	1-2	Adult	Day and night biter
<i>punctipennis</i> (Say)	WNV Malaria	1 to 2 miles	Yes Major summer pest	Mammals, birds	Confined and flowing bodies of water, artificial containers	2-3	Adult	“Spotted- winged Mosquito”, Day and night biter
<i>quadrimaculatus</i> (Say)	WNV Malaria (X)	1 mile	Yes Common summer pest	Mammals, sometimes birds and reptiles	Confined bodies of water	2-3	Adult	Common “Malaria Mosquito”, Day and night biter

<i>walkeri</i> (Theobald)	WNV Malaria	1 to 2 miles	Yes	Mammals	Confined bodies of water	2+	Egg	Day and night biter
COQUILLETIDIA								
<i>perturbans</i> (Walker)	WNV EEE	1 to 10 miles	Yes Major summer pest	Birds, mammals, amphibians, sometimes reptiles	Cattail marshes	1-2	Larva	Larvae attach to the base of aquatic plants Day and night biter
CULEX								
<i>pipiens</i> (Linnaeus)	WNV (X) SLE (X) EEE	1 mile or more	Rarely	Birds, rarely mammals	Artificial containers, grassy roadside ditches, catch basins	1-2	Adult	“Northern house mosquito”
<i>restuans</i> (Theobald)	WNV (X) SLE (X) EEE	1 mile	Yes	Birds, sometimes mammals	Tires, tree holes, artificial containers, puddles, grassy roadside ditches, catch basins	1-2	Adult	Day and night biter
<i>salinarius</i> (Coquillett)	WNV (X) SLE (X) EEE		Yes	Birds, mammals	Artificial containers, grassy roadside ditches, brackish water, catch basins	1-2	Adult	Night biter, enters homes
<i>territans</i> (Walker)	WNV EEE	1 mile	Rarely	Cold blooded vertebrates (e.g. frogs), rarely birds	Pond edges, pools, marshes, grassy roadside ditches, artificial containers	1-3	Adult	
CULISETA								
<i>impatiens</i> (Walker)	WNV		Yes Uncommon early	Mammals	Semipermanent ponds, bogs, wooded ground	1	Adult	Long lived, rare, day and evening biter

			spring species		pools			
<i>inornata</i> (Williston)	WNV EEE		Yes Uncommon early spring species	Mammals	Wooded snowmelt pools, marshes, bogs, swamps	2+	Adult	“Winter mosquito”
<i>melanura</i> (Coquillett)	WNV EEE (X)	100 to 1000 yards	Rarely	Birds	Within stumps in acidic swamps and bogs, snowmelt pools	2+	Larva	
<i>minnesotae</i> (Barr)			Rarely	Birds, small mammals, turtles	Snowmelt pools, marshes	1-2	Adult	New Record for 2001 (M. Holman)
<i>morsitans</i> (Coquillett)	WNV EEE		Rarely	Birds	Semipermanent swamps, wooded snowmelt pools, marshes, bogs	1	Egg	
PSOROPHORA								
<i>ciliata</i> (Fabricius)	WNV EEE	5 to 10 miles	Yes, day and night biter Uncommon	Mammals	Temporary open sunlit rain filled fields and flood-water areas	1+	Egg	“Gallinipper” New Record for 2006 S. Berwick (K. Foss)
<i>ferox</i> (Humboldt)	WNV EEE	Up to 1 mile	Yes Within wooded areas, Uncommon species	Mammals	Wooded temporary ground pools, flood-water areas	1	Egg	“White- footed woods mosquito”, day and evening biter New Record for 2001 (M. Holman)
URANOTAENIA								
<i>sapphirina</i> (Osten Sacken)	WNV	Up to 8 miles	Rarely Summer species	Birds	Permanent and semipermanent ponds, pools, swamps, marshes	1-2	Adult	New Record Portland, Maine: July 24, 2001 (K. Foss)

WYEOMYIA								
<i>smithii</i> (Coquillett)			Never	Feeds as larvae on other insects in pitcher plant fluid	Sphagnum bogs	1	Larva	“Pitcher plant mosquito” spends most of the year in larval stage
ORTHOPODOMYIA								
<i>signifera</i> (Coquillett)	WNV EEE	Less than 100 ft	Rarely, uncommon species slow to develop	Birds	Deep tree rot holes and wooden containers	2+	Egg in north, larvae in south	