



NEW JERSEY VECTOR SURVEILLANCE

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ABSTRACT: Culiseta melanura populations were only slightly above average during the month of September at the study sites that are being monitored for EEE virus in New Jersey. After intense early summer amplification of EEE, virus isolations appeared with less frequency in September and Minimum Field Infection Rates (MFIR) were far below those detected in the August populations. Eight equine cases were confirmed during September, bringing the total of confirmed cases to 15. No evidence of human involvement was detected during the epizootic period.

THE CURRENT STATUS OF EEE AND ITS MOSQUITO VECTORS

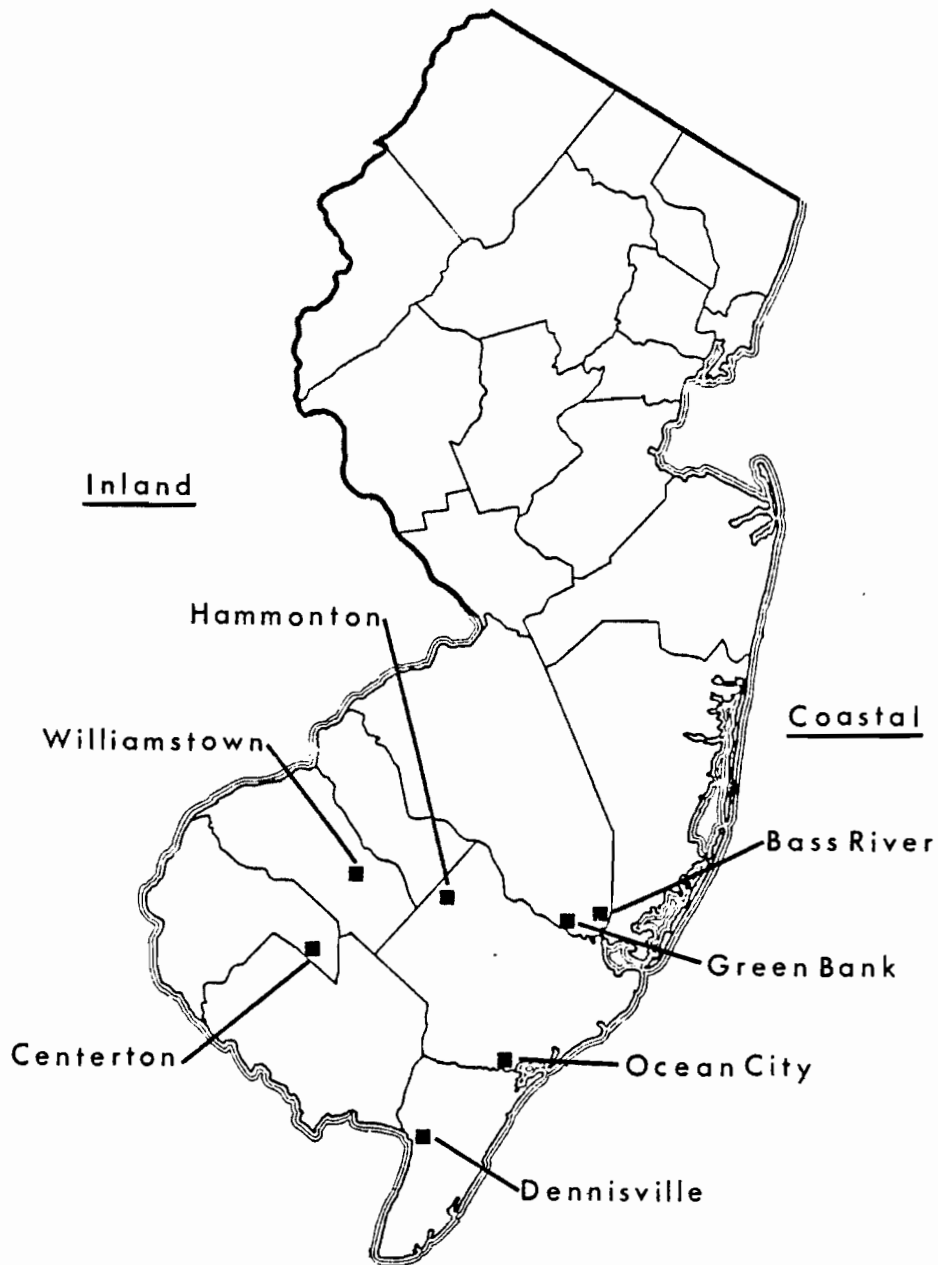
After record high spring and summer collections at the sites that are being monitored for EEE virus in New Jersey, September populations of Culiseta melanura returned to near normal levels. Virus activity, which was quite intense during August, subsided along the eastern coast during the month of September. EEE, however, did remain active at some inland locations.

Figure 1 compares 1987 population levels at Bass River with the 8-yr mean. The Bass River study site monitors the eastern seaboard just north of Atlantic City. Data show that the June, July and August generations were 3-5 times higher than the 8-yr average at that site. EEE virus appeared at Bass River during the first week of August and equine cases followed in the general vicinity shortly thereafter. The populations, however, subsided at the end of August and the September generation was only slightly above the norm for that time of year. No virus isolations were obtained from Cs. melanura after the late August population decline.

A similar trend was noted at Green Bank, a study site just south of Bass River (Fig. 2). Cs. melanura populations were higher than average in the spring and early summer, but returned to normal levels as the season advanced. At Green Bank, however, the decline began in August, before any evidence of EEE virus at any of the eastern sites. No virus was detected in this population during August and a single Highlands J (HJ) isolate represented the only virus activity detected in September.

RESTING BOX SITES

1987



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Cs. melanura populations at inland sites in the state remained high during the month of September. Figure 3 compares populations at Centerton with the 2-yr mean for that site. Like the eastern sites, Cs. melanura populations at Centerton were well above average during the early part of the season. After a mid-season decline, collections during September showed a steady increase in numbers. Virus isolation attempts showed that EEE virus remained in the population throughout most of September. A single equine case was confirmed from Salem County early in September and 5 cases were confirmed from inland areas to the north during the middle of the month. Light trap data collected from affected horse farms by the Burlington County Mosquito Control Commission showed high levels of Coquillettidia perturbans during the epizootic period. No virus isolations, however, were obtained from any of the specimens.

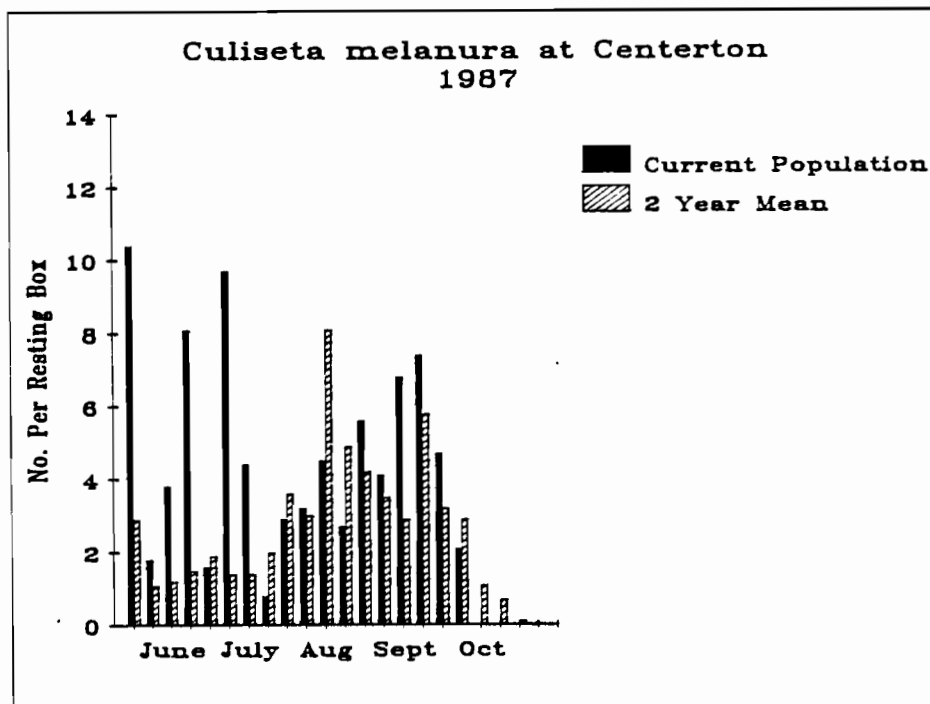


Fig. 3. Resting box populations of Cs. melanura at Centerton, Salem Co. compared with the 2 year mean for that site.

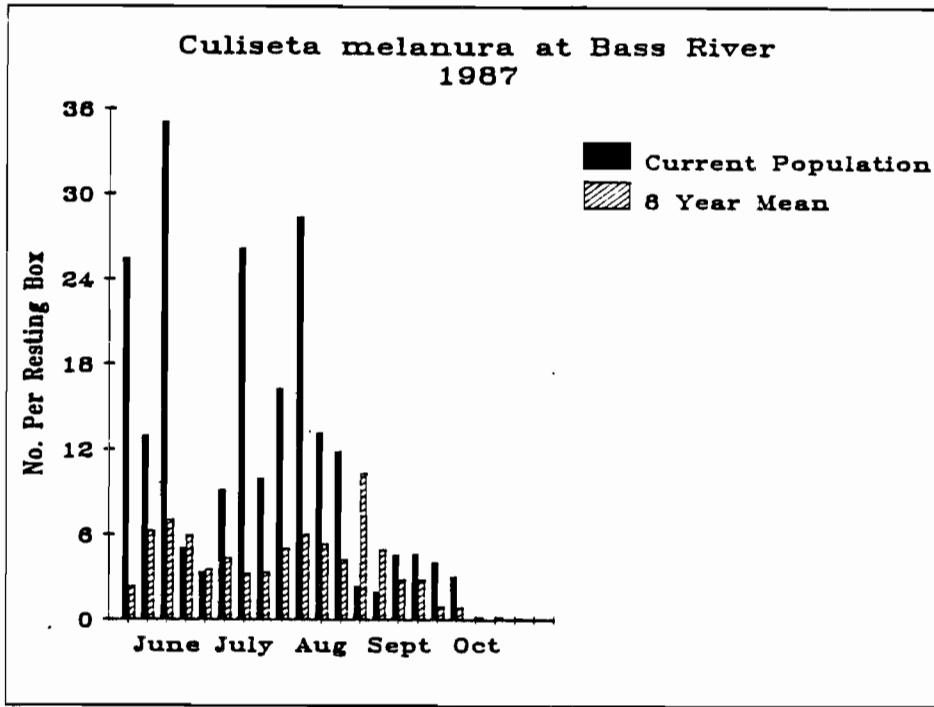


Fig. 1. Resting box populations of *Cs. melanura* at Bass River, Burlington Co. compared with the 8 year mean for that site.

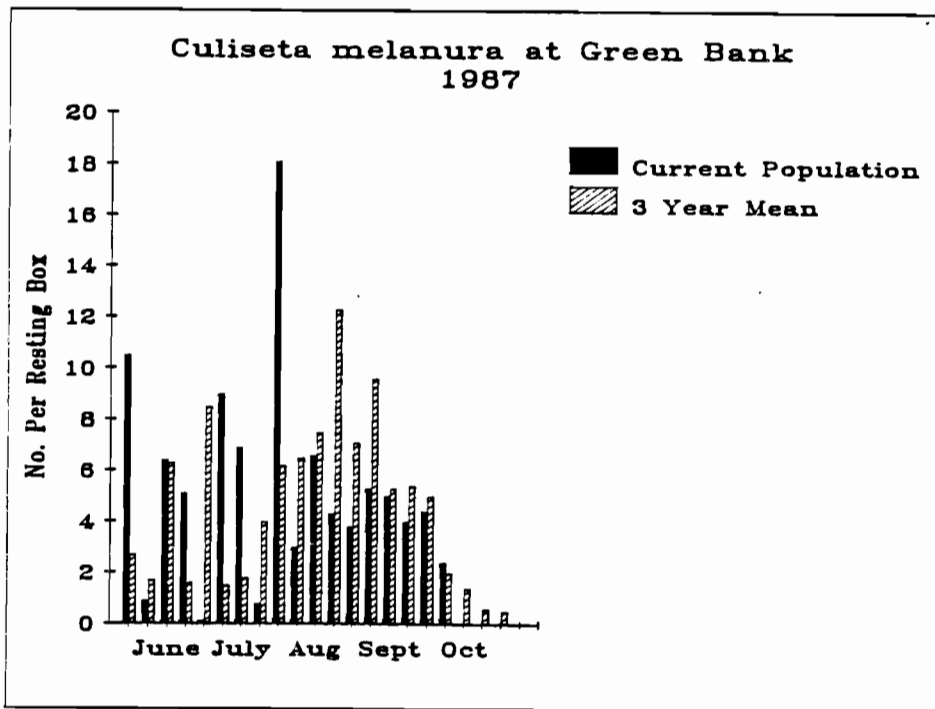


Fig. 2. Resting box populations of *Cs. melanura* at Green Bank, Atlantic Co. compared with the 3 year mean for that site.

Through the month of September, 92,338 mosquito specimens have been screened for EEE virus. Table 1 shows that 9 HJ isolations and 22 EEE isolations have been detected. All but one of the virus isolations were obtained from Cs. melanura. A single EEE isolation was detected in Culex salinarius early in August.

Table 1. Total mosquito specimens tested for EEE virus through the month of September, 1987.

MOSQUITO SPECIES	TOTAL TESTED	NO. POOLS	POSITIVE POOLS	
			HJ	EEE
Cs. melanura	21077	877	9	21
Cq. perturbans	4169	214	0	0
Ae. sollicitans	6233	199	0	0
Ae. canadensis	7629	207	0	0
Ae. cantator	1858	76	0	0
Ae. taeniorhynchus	31	10	0	0
Ae. triseriatus	19	12	0	0
Ae. vexans	124	23	0	0
Cx. erraticus	0	0	0	0
Cx. pipiens	22	16	0	0
Cx. restuans	899	187	0	0
Cx. salinarius	33146	435	0	1
Cx. territans	310	112	0	0
An. bradleyi	12623	219	0	0
An. punctipennis	262	89	0	0
An. quadrimaculatus	3912	231	0	0
Ae. thibaulti	3	3	0	0
Ae. cinereus	1	1	0	0
Ae. grossbecki	0	0	0	0
Ps. columbiae	8	3	0	0
Ps. ferox	3	3	0	0
Cs. inornata	1	1	0	0
Ur. sapphirina	8	4	0	0
Totals	92338	2922	9	22

Table 2 compares Minimum Field Infection Rates (MFIR) Cs. melanura for August and September. Data show that amplification of EEE was widespread in the state during the month of August. By September, however, amplification was limited to Dennisville and Centerton. The 6.21 isolations per thousand specimens tested at Centerton during September is surprising. In most years, EEE is an early season phenomenon at inland locations and is frequently accompanied by early season equine cases. In 1987, EEE amplification extended well into September and equine cases were reported from inland counties during the month.

Table 2. Minimum Field Infection Rates in Cs. melanura during August and September, 1987.

	AUGUST 1987				
	TOTAL TESTED	NO. POOLS	POSITIVE POOLS		EEE MFIR
			HJ	EEE	
COASTAL SITES					
GREEN BANK	434	20	0	0	0.00
BASS RIVER	1347	34	0	3	2.23
OCEAN CITY	78	13	0	2	25.64
DENNISVILLE	1381	68	2	3	2.17
INLAND SITES					
HAMMONTON	703	31	0	2	2.84
WILLIAMSTOWN	174	19	0	0	0.00
CENTERTON	488	25	0	4	8.20
	SEPTEMBER 1987				
COASTAL SITES					
GREEN BANK	426	21	1	0	0.00
BASS RIVER	416	21	0	0	0.00
OCEAN CITY	258	20	0	0	0.00
DENNISVILLE	1424	68	0	2	1.40
INLAND SITES					
HAMMONTON	228	17	0	0	0.00
WILLIAMSTOWN	278	18	0	0	0.00
CENTERTON	483	24	0	3	6.21

THE CURRENT STATUS OF EEE IN EQUINES

During the month of September, 8 equine cases were confirmed by isolation of virus from brain tissue. Table 3 lists the locations of the cases and includes data on presumptive and suspect equines for the entire season. To date, 15 cases have been confirmed, 4 are considered presumptive and 1 is listed as suspect. Data show that the epizootic was centered in Burlington County (9 cases) with a 2nd major focus in northern Ocean County (5) cases. To date, there is no evidence of any human involvement in New Jersey.

Table 3. Equine cases of EEE in New Jersey during 1987.

Date of Onset	Town County	Breed Sex/Age	Status
Aug 8	Monroe Twp. Gloucester	Unknown	CONFIRMED
Aug 15	Pemberton Burlington	Unknown	CONFIRMED
Aug 19	Chatsworth Burlington	Grade Horse Male 5-yr	CONFIRMED
Aug 19	Williamstown Gloucester	Thoroughbred Female 2-yr	CONFIRMED
Aug 22	New Egypt Ocean	Arabian Male 1-yr	CONFIRMED
Aug 22	Tabernacle Burlington	Standardbred Female 13-yr	PRESUMPTIVE
Aug 24	New Egypt Ocean	Arabian Female 1-yr	PRESUMPTIVE
Aug 26	Lakehurst Ocean	Unknown	CONFIRMED
Sept 3	Jackson Twp Ocean	Standardbred Gelding 3-yr	CONFIRMED
Sept 4	Penns Grove Salem	Unknown	CONFIRMED
Sept 14	Vineland Cumberland	Arabian Male ?-yr	SUSPECT
Sept 15	Englishtown Middlesex	Standardbred Female 1-yr	CONFIRMED
Sept 16	Medford Burlington	Pony Female 2-yr	CONFIRMED
Sept 17	Vincentown Burlington	Thoroughbred Male 2-yr	CONFIRMED
Sept 21	Cookstown Burlington	Standardbred Male 1-yr	PRESUMPTIVE
Sept ?	Freehold Monmouth	Pony Gelding 10-yr	CONFIRMED
Sept ?	Medford Burlington	Unknown	CONFIRMED
Sept ?	Medford Burlington	Unknown	CONFIRMED
Sept ?	Jackson Twp Ocean	Unknown	PRESUMPTIVE