

New Jersey Vector Surveillance

NEW JERSEY AGRICULTURAL EXPERIMENT STATION
MOSQUITO RESEARCH AND CONTROL

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INTRODUCTION

No additional equine cases of EEE virus have been reported from New Jersey since the confirmed case from Atlantic County during the second week of August. EEE virus, however, has been isolated from Culiseta melanura at some of the study sites that are being monitored. The virus first appeared in collections made from the Ocean City site on August 19 and has, thus far, been detected at most of the coastal sites that have been included in this study. The only EEE virus isolation from an inland site was recovered from a pool of Cs. melanura collected from the farm where the confirmed equine case was being investigated.

A combination of tides and rains produced extremely large broods of Aedes sollicitans in coastal areas over the Labor Day weekend. Although extensive aerial control was directed at these populations, bite counts remained high in some areas into the second week of September.

THE STATUS OF CS. MELANURA AND EEE VIRUS

Cs. melanura populations were low during July at most of the study sites in New Jersey and did not begin to recover until early August. Figure 1 compares population curves at Green Bank and Dennisville and shows that during early July, the numbers dropped well below 5 mosquitoes per box. Highlands J virus appeared in some of the collections in the early part of the month but no EEE was detected in any of the samples.

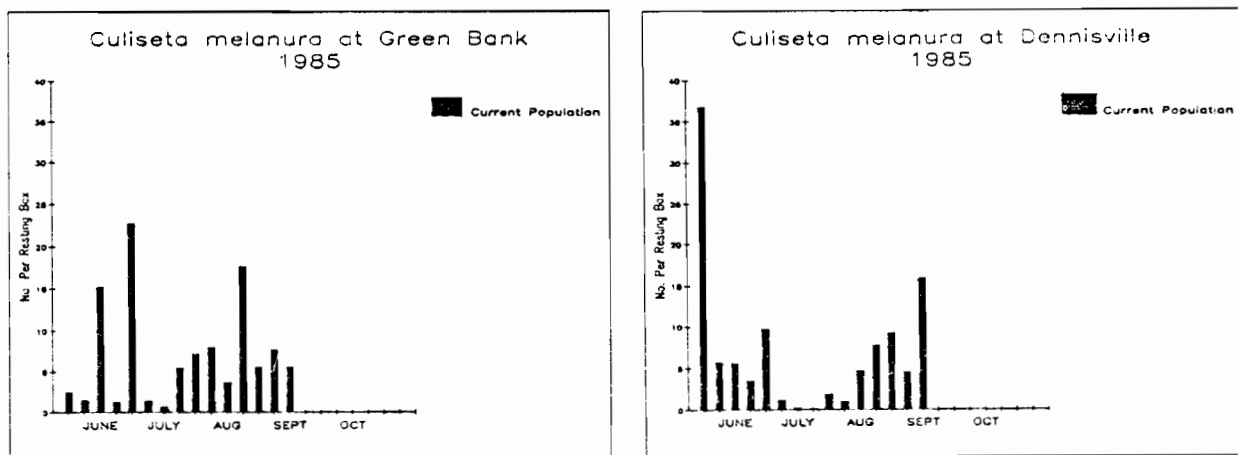


Fig. 1. Resting Box Collections at Two Coastal Study Sites in New Jersey.

KEY

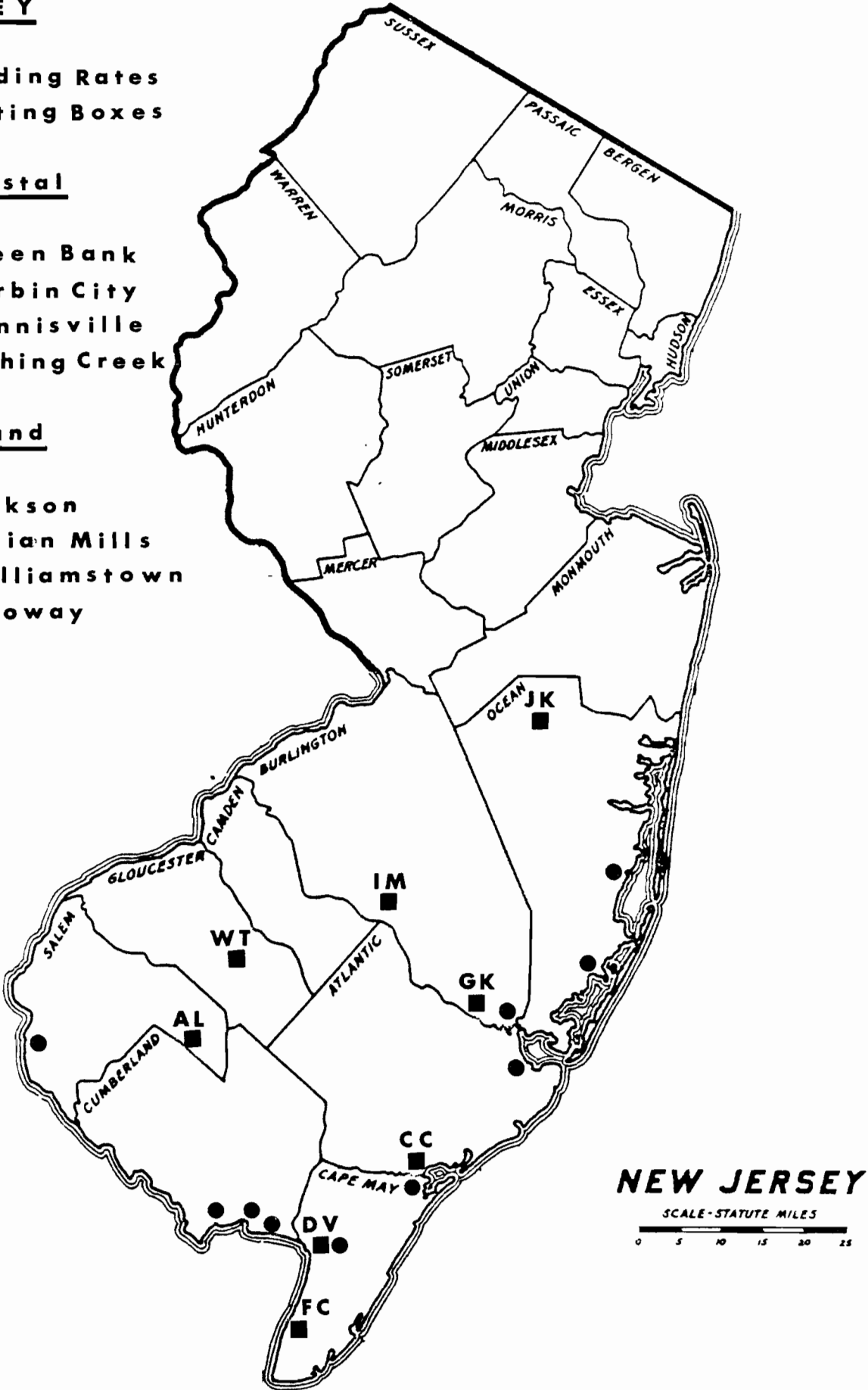
- Landing Rates
- Resting Boxes

Coastal

- GK-Green Bank
- CC-Corbin City
- DV-Dennisville
- FC-Fishing Creek

Inland

- JK-Jackson
- IM-Indian Mills
- WT-Williamstown
- AL-Alloway



During the third week of August, the resting box counts began to approach normal levels for that time of year and EEE virus was recovered from some of the sites. The virus first appeared at the Ocean City site on August 19 and then became evident at Dennisville and Green Bank. To date, the only EEE isolation from an inland area came from the Buena farm in Atlantic County where the equine death had been confirmed earlier in the season.

Table 1 lists the virus isolations that have been obtained from Cs. melanura this season. The data show that EEE has been a coastal phenomenon this year with no indication of the widespread inland activity that was noted in 1984. Results from the Ocean City study site are surprising with high recovery rates of EEE virus in the samples that have been tested to date. The Minimum Field Infection Rate (MFIR) from the Ocean City area is currently 9.54, one of the highest seen in recent years.

Table 1. Virus Isolations from Cs. melanura through September 3, 1985.

Location	Total Tested	No. Pools	Positive Pools		MFIR
			HJ	EEE	
Coastal Sites					
Green Bank	2552	72	6	3	1.18
Ocean City	524	44	0	5	9.54
Dennisville	4212	98	6	5	1.19
Fishing Creek	1000	47	1	0	0.00
Inland Sites					
Jackson	44	20	0	0	0.00
Williamstown	257	36	0	0	0.00
Alloway	1105	52	1	0	0.00

The Ocean City study site is located in the Great Egg Harbor drainage leading to Ocean City and was established last year to investigate a human case that might have been contracted in that general vicinity. The area encompasses a sizeable cedar swamp on the perimeter of typical salt marsh habitat; collections are made in the hardwood forest near the town of Corbin City. Data from last year's investigation indicated high levels of EEE in the Cs. melanura populations and preliminary results from this season suggest that the area may represent a chronic focus. Figure 2 shows that population levels of Cs. melanura in this area have been moderate with low numbers throughout the month of July. The population increase in August, however, was accompanied by EEE isolations and virus has been recovered from the collections each week since that time.

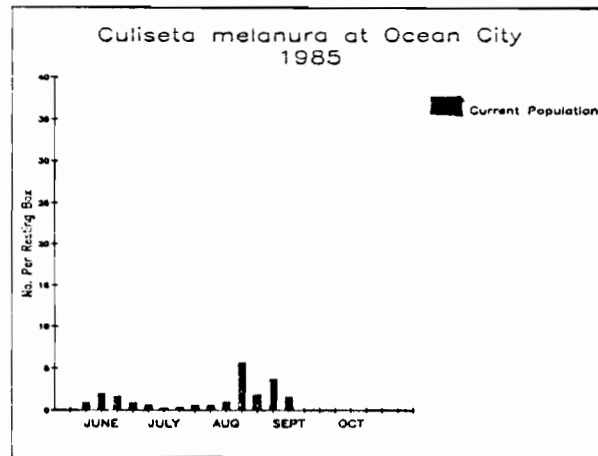


Fig. 2. *Cs. melanura* Populations at the Ocean City Study Site During 1985.

THE CURRENT STATUS OF *Aedes sollicitans* POPULATIONS

A combination of tides and heavy thunderstorms triggered above average broods of *Ae. sollicitans* in coastal areas of New Jersey over the Labor Day weekend. The mosquitoes emerged during the period that EEE virus was being amplified by *Cs. melanura*, thus, special efforts were made to control this brood. Despite the efforts, landing rates exceeded 100 per minute at many of the stations during the early days of September and physiological age dissections showed that the populations reached 100% parity by September 10.

There is little evidence to suggest that the large *Ae. sollicitans* populations in recent weeks made contact with EEE virus. No equine cases were reported from coastal areas and, in most epizootic years, one or more horse cases are usually reported along the coastal strip. Collections of *Ae. sollicitans*, however, are being made for virus isolation attempts. Equine cases are not uncommon during the month of October in New Jersey and last year, a horse case was confirmed during the first week of November.

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