

New Jersey Vector Surveillance

NEW JERSEY AGRICULTURAL EXPERIMENT STATION
MOSQUITO RESEARCH AND CONTROL

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INTRODUCTION

The **New Jersey Vector Surveillance Program** to monitor the encephalitis viruses and their mosquito vectors was initiated in mid-May of this year. Because of the widespread EEE activity that New Jersey experienced in 1984, the program has been expanded to include inland as well as coastal areas of the State. Data from 1984 showed that Culiseta melanura populations reached high numbers at numerous inland foci where Red Maple swamps remained flooded late in the season. Data also showed that these same populations initiated epizootics of sufficient magnitude to result in equine infections at numerous inland foci via mosquito vectors other than Aedes sollicitans. During the course of the season, 17 confirmed, 5 presumptive and 4 suspect horse cases were investigated with special surveillance efforts. All but 2 were associated with Cs. melanura populations that originated from Red Maple habitat and numerous virus isolations were made from the specimens taken from the various horse farms. Virus was also detected in Cs. melanura collected from Atlantic White Cedar habitat along the coast. As in the past, human involvement was associated with the coastal populations and equine involvement was primarily an inland phenomenon.

During 1985, Cs. melanura will be monitored from 4 coastal areas and 4 inland sites. The specimens will be collected from resting boxes once each week and all material will be tested for EEE virus at the State Department of Health Laboratories in Trenton. The sites that have been selected include:

Coastal Sites

Green Bank, Burlington Co.
Corbin City, Atlantic Co.*
Fishing Creek, Cape May Co.
Dennisville, Cape May Co.

Inland Sites

Jackson, Ocean Co.
Indian Mills, Burlington Co.
Williamstown, Gloucester Co.
Alloways, Salem Co.

*The Corbin City site will monitor Cs. melanura in the vicinity of Ocean City, the probable area of exposure for a human case in 1984.

KEY

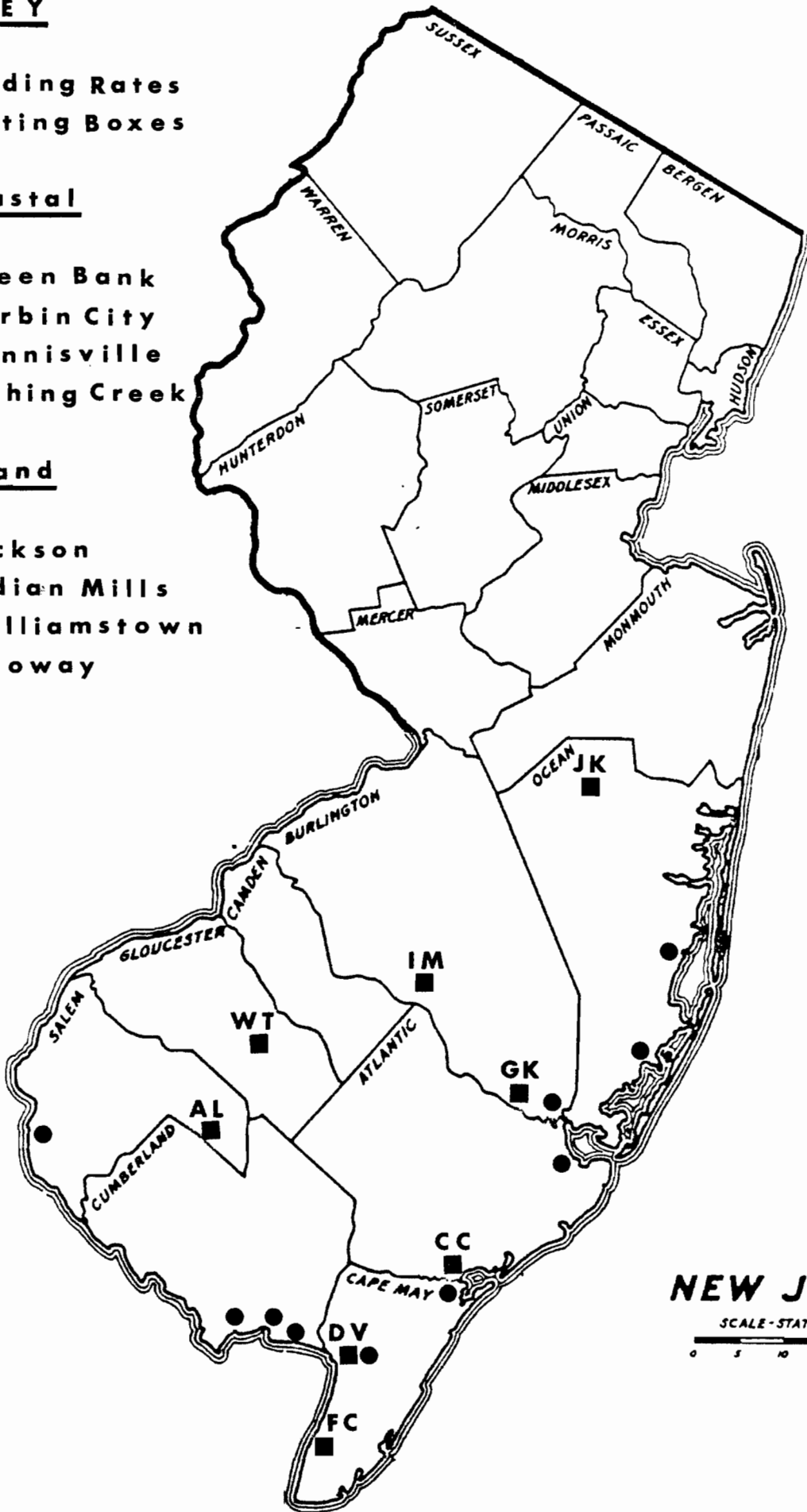
- Landing Rates
- Resting Boxes

Coastal

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

Inland

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



NEW JERSEY

SCALE - STATUTE MILES



The collections from Corbin City, Fishing Creek, Dennisville, Indian Mills and Williamstown are currently being made by personnel of the respective County Mosquito Control Commissions. The material is then submitted to Rutgers for pooling and subsequent transport to the State Health Laboratories for testing.

Ae. sollicitans populations are also being monitored at additional locations this year. Five sites on the East (Atlantic) coast and five on the West (Delaware Bay) coast are visited once weekly. The areas currently being monitored include:

East Coast Sites

Forked River, Ocean Co.
West Creek, Ocean Co.
New Gretna, Burlington Co.
Leeds Point, Atlantic Co.
Beesleys Point, Cape May Co.*

West Coast Sites

Dennisville, Cape May Co.
Heislerville, Cumberland Co.
Port Norris, Cumberland Co.
Dividing Creek, Cumberland Co.*
Masons Point, Salem Co.

*These sites represent areas of probable exposure for human cases in 1984.

Landing rates are taken at each site and specimens are collected for parity dissections to determine the physiological age of the biting population. The information is immediately made available to the respective county mosquito control agencies as well as the Office for Mosquito Control Coordination in Trenton.

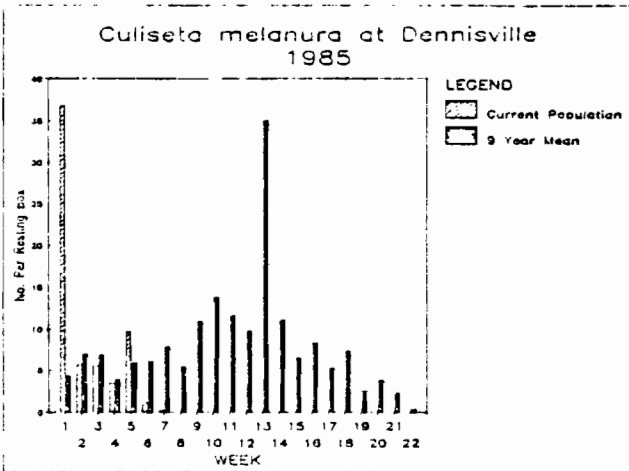
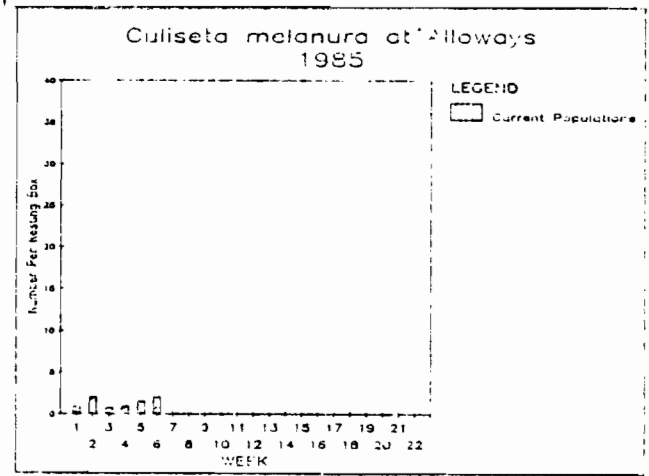
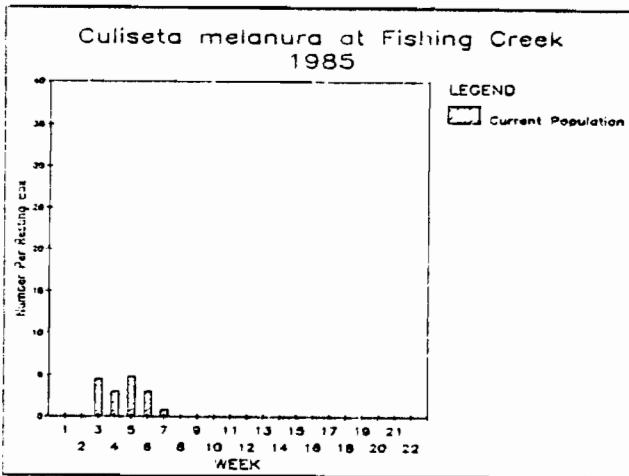
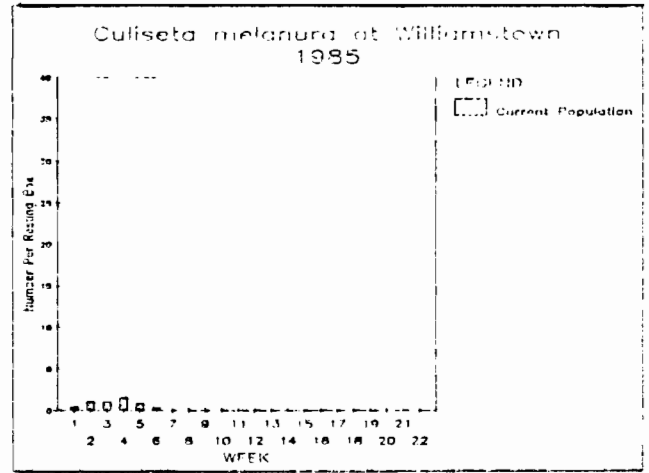
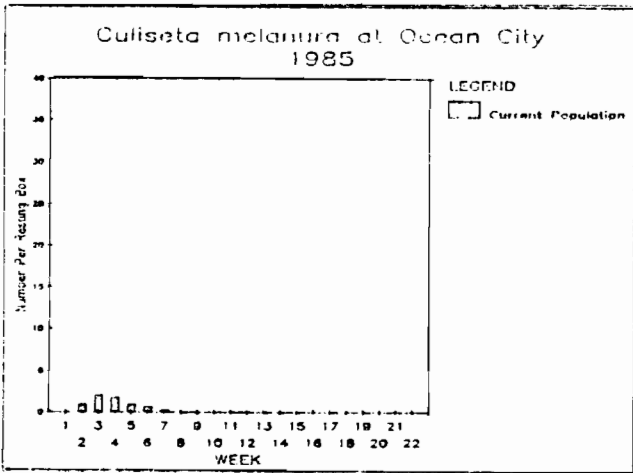
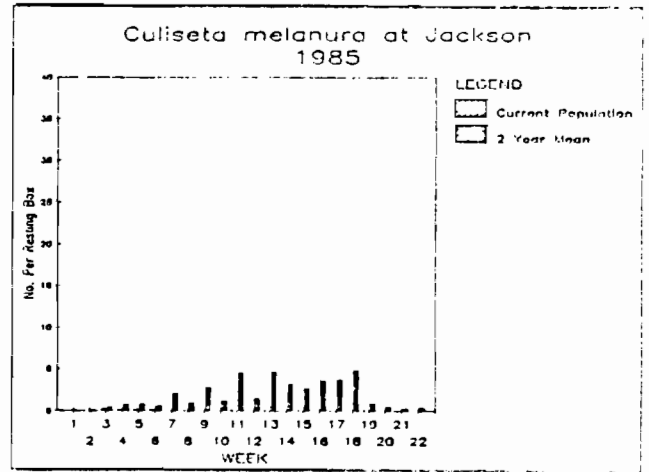
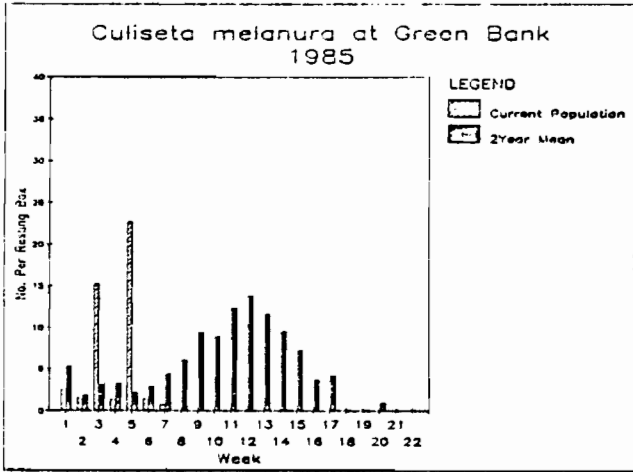
The Current Status of EEE and its Mosquito Vectors

New Jersey experienced an exceptionally dry Spring this year with water tables well below normal levels in most areas. The drought conditions severely limited all of the Spring Aedes and some of the early season freshwater swamp species. Cs. melanura did not appear to be affected along the coast where most of the cedar swamps remained flooded throughout the drought period. Inland populations of Cs. melanura were lower than normal in most areas, due to the lack of Spring water in Red Maple swamp habitats. Population curves for the areas being sampled bear out the trend this season. With the exception of the Ocean City site, the coastal populations, emanating from Atlantic White Cedar, remained high during most of the Spring period. By contrast, the inland sites, which are primarily Red Maple, had low populations this Spring, even though these same sites produced Cs. melanura in abundance late into the Fall last year. Coastal populations, however, have been erratic with drastic fluctuations on consecutive collection dates. At the present time, collections are extremely low at all sites, but an increase is anticipated in the near future. All of the specimens collected to date have been submitted for virus isolation attempts. Results are available only through June 19 (the 3rd week of the season) and no virus has been detected in any of the samples.

Ae. sollicitans populations reached peak parity during the first few days of July when the brood was all but dissipated. A sizeable emergence occurred during the 2nd week of the month and that brood is currently being closely monitored. Aerial control was necessary in many coastal areas where landing rates exceeded 100 per minute. The next lunar flooding will occur July 17 and that brood should emerge during the week of the 22nd.

COASTAL

INLAND



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