

The background of the entire page is a photograph of a helicopter in flight, spraying a wide area with pesticides. The scene is set against a dramatic, orange-hued sunset sky. The helicopter is positioned in the upper center of the frame, with its rotors blurred from motion. Two long, thin streams of spray extend downwards and outwards from the helicopter's nozzles. In the lower half of the image, the dark silhouettes of trees are visible against the bright, glowing horizon.

*Suffolk County Vector Control & Wetlands
Management Long Term Plan
& Environmental Impact Statement*

**TASK 12: EARLY ACTION PROJECTS
CAGED FISH EXPERIMENT**

PESTICIDES APPLICATIONS

Submitted to:

**Suffolk County Department of Public Works
Suffolk County Department of Health Services
Suffolk County, New York**

Submitted by:

CASHIN ASSOCIATES, P.C.
1200 Veterans Memorial Highway, Hauppauge, NY

July 2005

**SUFFOLK COUNTY VECTOR CONTROL AND WETLANDS MANAGEMENT
LONG - TERM PLAN AND ENVIRONMENTAL IMPACT STATEMENT**

PROJECT SPONSOR

Steve Levy
Suffolk County Executive



Department of Public Works

Charles J. Bartha, P.E.
Commissioner
Richard LaValle, P.E.
Chief Deputy
Leslie A. Mitchel
Deputy Commissioner

Department of Health Services

Brian L. Harper, M.D., M.P.H.
Commissioner
Vito Minei, P.E.
Director, Division of Environmental Quality

PROJECT MANAGEMENT

Project Manager: Walter Dawydiak, P.E., J.D.
Chief Engineer, Division of Environmental Quality, Suffolk County Department of Health Services

**Suffolk County Department of
Public Works, Division of Vector
Control**

Dominick V. Ninivaggi
Superintendent
Tom Iwanejko
Principal Environmental Analyst
Mary E. Dempsey
Biologist

**Suffolk County Department of
Health Services, Office of Ecology**

Martin Trent
Acting Chief
Kim Shaw
Bureau Supervisor
Robert M. Waters
Bureau Supervisor
Laura Bavaro
Senior Environmental Analyst
Phil DeBlasi
Environmental Analyst
Jeanine Schlosser
Principal Clerk

SUFFOLK COUNTY LONG TERM PLAN CONSULTANT TEAM	
Cashin Associates, P.C.	Hauppauge, NY
Subconsultants	
Cameron Engineering, L.L.P.	Syosset, NY
Integral Consulting	Annapolis, MD
Bowne Management Systems, Inc.	Mineola, NY
Kamazima Lwiza, PhD	Stony Brook University, Stony Brook, NY
Ducks Unlimited	Stony Brook, NY
Steven Goodbred, PhD & Laboratory	Stony Brook University, Stony Brook, NY
RTP Environmental	Westbury, NY
Sinnreich, Safar & Kosakoff	Central Islip, NY
Bruce Brownawell, PhD & Laboratory	Stony Brook University, Stony Brook, NY
Anne McElroy, PhD & Laboratory	Stony Brook University, Stony Brook, NY
Andrew Spielman, PhD	Harvard School of Public Health, Boston, MA
Richard Pollack, PhD	Harvard School of Public Health, Boston, MA
Masahiko Hachiya, PhD	Harvard School of Public Health, Boston, MA
Wayne Crans, PhD	Rutgers University, New Brunswick, NJ
Susan Teitelbaum, PhD	Mount Sinai School of Medicine, NY
Zawicki Vector Management Consultants	Freehold, NJ
Michael Bottini, Turtle Researcher	East Hampton, NY
Robert Turner, PhD & Laboratory	Southampton College, NY
Christopher Gobler, PhD & Laboratory	Southampton College, NY
Jerome Goddard, PhD	Mississippi Department of Health, Jackson, MS
Sergio Sanudo, PhD & Laboratory	Stony Brook University, Stony Brook, NY
Suffolk County Department of Health Services, Division of Environmental Quality	Hauppauge, NY

This report was prepared by Suffolk County Vector Control (SCVC), and was reviewed and edited by Cashin Associates, P.C. (CA).

TABLE OF CONTENTS

1. Introduction.....	1
2. Larvicides.....	2
2.1 Application Parameters.....	2
2.2 Treatment Types and Dates.....	2
3. Adulticides	4
3.1 Application Parameters.....	4
3.2 Treatment Types and Dates.....	4
Figure 1: Aerial adulticide applied at Johns Neck Creek on August 18, 2004.....	5
Figure 2: Aerial adulticide applied at Johns Neck Creek on August 25, 2004.....	6

LIST OF ABBREVIATIONS AND ACRONYMS

- Bti *Bacillus thuringiensis israelensis*
- SCVC Suffolk County Vector Control
- ULV Ultra Low Volume

1. Introduction

The pesticide applications that were the subject of this study were operational applications conducted by Suffolk County Department of Public Works, Division of Vector Control (SCVC) as part of its ongoing program. The application techniques and dosages used have been standard procedure for Suffolk County since 1995 for aerial larvicide and since 2002 for aerial adulticide, and are similar to techniques used by other control programs in the northeastern United States.

2. Larvicides

2.1 Application parameters

Aircraft: Bell Soloy with tee-jet nozzles on a forward-mounted spray boom and AgNav GPS guidance system.

Flight and swath: Airspeed 50 mph at 10-20 feet above ground level delivering a 50-foot swath with 50 foot lane separation.

Spray characteristics: Water was used as a diluent to deliver ½ gallon of spray volume per acre with a droplet Volume Mean Diameter of approximately 900 microns.

Dose: Altosid Liquid Larvicide concentrate (20% methoprene) was delivered at 1 ounce/acre; Vectobac 12AS (12% *Bacillus thuringiensis israelensis*, [Bti]) was delivered at 1 pint/acre. In some treatments, the two products were delivered together in a tank mix with the same dosages; these applications are referred to as Duplex mixtures.

2.2 Treatment types and dates

Treatment Date	Timber Point	Johns Neck Creek
June 2, 2004	Bti	Bti
June 8, 2004	methoprene	methoprene
June 15, 2004		methoprene
June 22, 2004	Bti/methoprene	
July 7, 2004		Bti/methoprene
July 14, 2004	methoprene	
July 20, 2004	methoprene	
July 21, 2004		methoprene
August 3, 2004	Bti/methoprene	Bti/methoprene
August 10, 2004	Bti/methoprene	Bti/methoprene
August 17, 2004	Bti/methoprene	Bti/methoprene
September 1, 2004	methoprene	
September 14, 2004		Bti

Both sites were surveyed for the presence of mosquito larvae (primarily *Ochlerotatus sollicitans*) on a weekly basis. The decision to treat was based on the intensity of mosquito production as determined by larval dips and other factors such as weather conditions and expected tidal flooding. The choice of larvicide was based on the larval stages present and weather conditions according to standard Suffolk County practices designed to optimize the effectiveness of each material and limit the development of resistance. Early (Stage 1, 2) larvae in cool conditions are treated primarily with Bti, while late stage larvae in warmer conditions are usually treated with methoprene. When mixed stages are present, a Duplex mixture is used.

3. Adulticides:

3.1 Application parameters

Aircraft: Bell Soloy with Beecomist rotary nozzles on a forward-mounted spray boom and AgNav GPS guidance system.

Flight and swath: Airspeed 70 mph at 150 feet above ground level delivering a 300-foot swath with 300 foot lane separation oriented crosswind with the treatment pattern beginning on the downwind edge of the treatment block and proceeding upwind.

Spray characteristics: Scourge 18/54 (18% resmethrin/54 % piperonyl butoxide) was applied using Ultra Low Volume (ULV) techniques at a rate of 0.6 ounces/acre, undiluted. The aerosol droplets were delivered with a Mass Median Diameter of 27 microns as measured with a KLD Labs DC-III hotwire droplet analyzer.

3.2 Treatment types and dates

Aerial adulticide was applied at Johns Neck Creek on August 18, 2004 (Figure 1) and August 25, 2004 (Figure 2). Both treatments were timed to begin approximately at sunset (8 PM, local time). The first application was in response to high numbers of *Oc. sollicitans*, while the second application was conducted in response to West Nile Virus, combined with high numbers of vector species including *Oc. sollicitans*, *Culex pipiens* and *Cx. restuans*.

A more detailed description of the adulticide application is contained in the report prepared by RTP Environmental (part of the Task 8 Task report).

Figure 1: Aerial adulticide applied at Johns Neck Creek on August 18, 2004

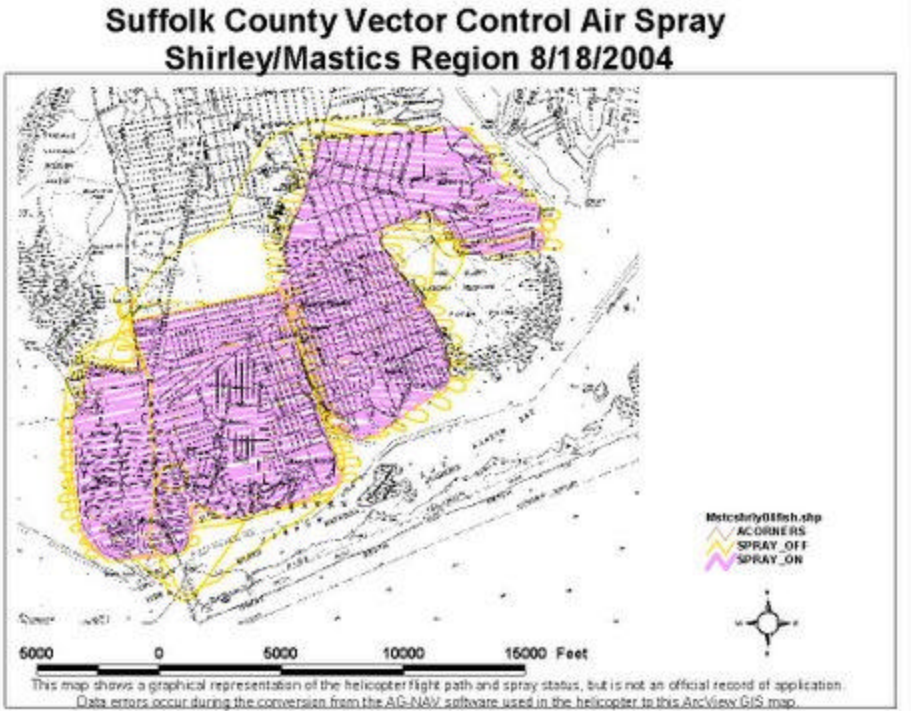


Figure 2: Aerial adulticide applied at Johns Neck Creek on August 25, 2004

