

Mosquito Management and Stormwater Treatment BMP Maintenance

Daniel Strickman, Ph.D.

Vector Ecologist

Santa Clara County Vector Control District

Dept. of Environmental Health



June 9, 2005

Santa Clara County Vector
Control District 408-792-5010

BLUF

- BMPs can create a significant public health hazard through production of mosquitoes
- Prevent mosquitoes by:
 - Optimum design
 - Effective maintenance
 - Regular inspection
 - Coordination with mosquito abatement agency

The Problem

- Mosquitoes develop in water
- Mosquitoes are annoying
- Mosquitoes transmit disease pathogens
 - Malaria – *Anopheles* in permanent water
 - Viruses -- *Culex* in permanent water, containers
 - *C. pipiens*: Worst vector of WNV, very common
 - *C. tarsalis*: Also a vector, likes vegetated sites
 - *C. erythrorhax*: Very numerous in tules, cattails



The Ideal Mosquito-Proof BMP

- Water drains completely in less than five days – **NO MOSQUITOES POSSIBLE**
- Residual water is not accessible to mosquitoes – **NO MOSQUITOES POSSIBLE**
- Residual water is easily accessible for inspection and treatment – **EXPENSIVE BUT FEASIBLE**

Mosquito-Preventing Maintenance

■ Landscape BMPs

- Maintain grades to avoid pooling
- Keep drains clear above and below surface

■ Centrifugal devices

- Maintain seals that prevent mosquito entry
- Keep screens in good repair

■ Underground vaults

- Maintain seals that lead to the surface

Inspection and Coordination

- Include mosquitoes on inspection checklist
- Train inspectors to recognize
 - A potential mosquito problem
 - A mosquito larva
- Equip inspectors to look for larvae
 - Flashlight
 - Dipper
- Coordinate response with SCC Vector Control District



If we ignore mosquitoes...

- We solve storm water pollution only to create biotic pollution
- We increase the total number of human-generated mosquitoes
- We place mosquitoes exactly where they should not be – next to people
- We create risk to public health

Here's what you need to know

- Add mosquito prevention to maintenance plan, inform SCC VCD of new sites
- Add mosquitoes (both potential and actual) to inspection checklist
- Train inspectors to look for mosquito larval sites and mosquito larvae (we can help)
- Coordinate treatment of problematic BMPs with SCC Vector Control District

Information Sources

- Santa Clara County Vector Control District, 976 Lenzen Ave., San Jose, CA 95126; 408-792-5010, www.sccvector.org
- Dan Strickman, 408-792-5542, daniel.strickman@deh.co.scl.ca.us
- Noor Tietze, 408-792-5541, noor.tietze@deh.co.scl.ca.us
- www.westnile.ca.gov

Questions?

June 9, 2005

Santa Clara County Vector
Control District 408-792-5010

Prevention: How Can You Help Stop the West Nile Virus ?

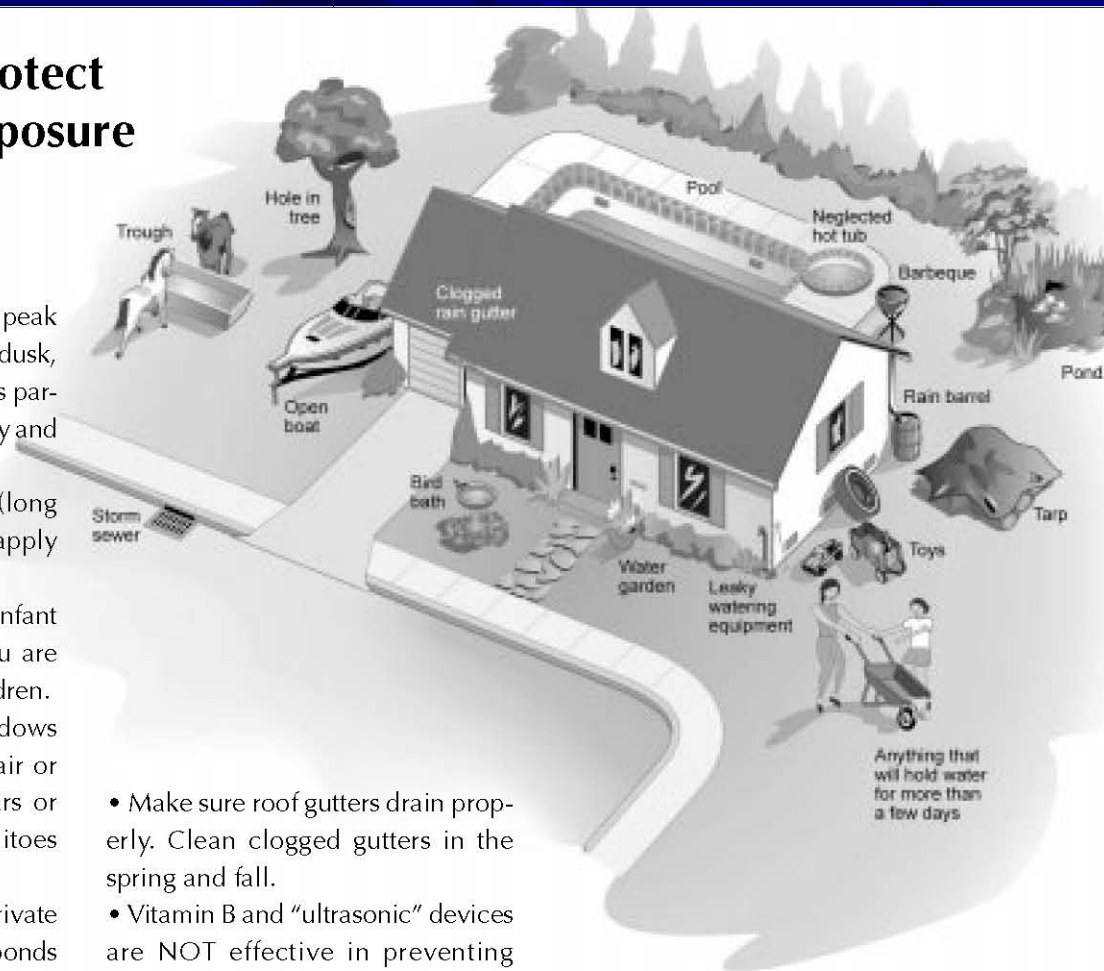
POSSIBLE MOSQUITO SOURCES:	WHAT TO DO:
• Decorative pond	• Stock with mosquito fish or use <i>Bacillus thuringiensis israelensis</i> (Bti) larvicides (i.e. Mosquito Dunks). Inquire at your local hardware store or nursery. Thin out aquatic vegetation.
• Swimming pool/spa	• Operate filter and skimmer every day to remove egg rafts and larva. Provide drainage for filter and pump sumps. Remember chlorine will <u>NOT</u> kill mosquito larva. Stock unused or "out-of-order" pools with mosquito fish.
• Pool/spa covers	• Keep tight. Remove water from top of cover weekly.
• Wading pool	• Change water weekly. Store indoors when not in use.
• Bird bath	• Change water weekly.
• Tree hole	• Check frequently for water. Consult tree specialist to see if hole may be safely filled with sand or mortar. Place Bti larvicides in hole.
• Rain gutters	• Clean frequently to remove leaf litter and keep water flowing.
• Septic Tank	• Seal and cover openings so adult mosquitoes cannot enter. Contact the Department of Environmental Health for advice.
• Under house or basement	• Check for water, especially after rain. Drain if necessary.
• Livestock watering trough	• Stock large troughs with mosquito fish. Clean small ones weekly.
• Catch basins/storm drains	• Check for standing water. Contact Vector Control.
• Boats	• Keep tightly covered. Drain cover weekly if necessary.
• In-ground utility boxes	• Check for standing water. Drain if necessary.
• Tires	• Remove or drill holes so water will drain.
• Rain barrels	• Screen top with fine wire mesh. Change water weekly. Treat with Bti.
• Water gardens	• Stock with mosquito fish or use Bti larvicides.
• Leaky pipes and faucets	• Repair
• Containers (i.e. jars, unused flower pots, buckets, wheelbarrows, etc.)	• Dispose of, turn upside down or store indoors.

How Can You Protect Yourself from Exposure to Mosquitoes?

Steps to Take:

- Consider staying indoors at peak mosquito biting times — dawn, dusk, and in the early evening. This is particularly important for the elderly and small children.
- Wear protective clothing (long pants and long sleeves) and apply insect repellent when outside.
- Place mosquito netting over infant carriers and strollers when you are outdoors with infants and children.
- Make sure that doors and windows have tight-fitting screens. Repair or replace screens that have tears or holes in them so that mosquitoes cannot get indoors.
- Drain all standing water on private property and stock permanent ponds with fish that eat mosquito larvae.

- Make sure roof gutters drain properly. Clean clogged gutters in the spring and fall.
- Vitamin B and “ultrasonic” devices are NOT effective in preventing mosquito bites.



Phone Numbers You Should Know:

- To report dead birds: 408.792.5010 or 1.800.675.1155
- To schedule a presentation or request a brochure: 1.800.314.2427
- Visit www.sccvector.org or <http://westnile.ca.gov>