



## HAMER FLOATING EMERGENCE TRAP FOR CATCH BASINS AND WELLS MODEL 619

### *Instructions*

This trap was developed and evaluated by Dr. Gabriel L. Hamer with collaboration from scientists at the Department of Pathobiological Sciences, University of Wisconsin, the Department of Fisheries and Wildlife, Michigan State University, the Department of Entomology, Michigan State University, the Department of Microbiology and Molecular Genetics, Michigan State University.

This trap captures emerging adult mosquitoes from catch basins and wells. Stormwater treatment systems utilizing catch basins are ubiquitous in the USA and are known sources of mosquito production in the urban environment. The principal mosquito species occupying these habitats are *Culex spp.*, the primary enzootic vectors of St. Louis Encephalitis and West Nile virus. In an effort to reduce arboviral transmission to humans, catch basins are often treated for mosquito abatement with larvicidal oils, and long lasting formulations of *Bacillus sphaericus* Neide, *Bacillus thuringiensis* (Berliner) serovar. *israelensis* de Barjac, and S-methoprene. This trap is designed to monitor the efficacy of such treatments.

This trap was described and evaluated in 2010-2011 (see Hamer *et al.* 2011 below). The abstract is as follows: Stormwater catch basins in urban areas provide important larval habitat for *Culex* mosquitoes. In this study we quantified adult *Culex* emergence using a newly designed emergence trap deployed in catch basins in suburban Chicago, IL. Traps were deployed from late June to mid-October, 2009–10, in 19 catch basins for a total of 461 trap-days. Based on laboratory trials, the percentage of adults emerging under the trap and reaching the collection cup ranged from  $37.7 \pm 6.5\%$  for closed-cup and  $50.5 \pm 3.8\%$  for open-cup configurations. In 2009, catch basins containing immature mosquitoes produced an estimated  $58.9 \pm 30.8$  female and  $86.2 \pm 36.4$  male *Culex spp.* per day. Most (84.4%) were *Culex pipiens* and the remainder were *Culex restuans*. The trap was also effective in documenting reductions in adult emergence following intense precipitation events that caused “flushing” of larvae and pupae. In general, the new emergence trap was effective for studying *Culex* production in catch basins and should be broadly useful in studies of container-breeding mosquitoes.



## ***Construction and materials***

## ***Operational Details***

A lanyard is attached to the head of this trap that may be used to lift it out of deeper wells and catchment basins. The evaluation of this unit involved 24-hr capture times.

## ***Useful References***

Hamer GL, Kelly PH, Focks DA, Goldberg TL, Walker ED. 2011. Evaluation of a novel emergence trap to study *Culex* mosquitoes in urban catch basins. 27(2): 142-147.