

### **About The Buzz**

The Buzz is a weekly 1 – 2 page summary of mosquito activities in the City of Portsmouth. Activities summarized each week can include: Mosquito Activity Scale, Service Requests, Control Activities, Federal Activities, and Special Notes.

### **The Mosquito Activity Scale**

The scale ranges from 0 to 5. The scale is based on the Virginia Department of Health (VDH) “Virginia Arbovirus Plan, 2005”.

- 0 – No Mosquito Activity in the City
- 1 – Some mosquito breeding in standing water, little adult mosquito activity, low likelihood of mosquito viruses West Nile Virus (WNV) or Eastern Equine Encephalitis (EEE).
- 2 – Active mosquito breeding in standing water, active adult mosquitoes, initial presence of mosquito viruses (WNV or EEE) in birds or mosquitoes.
- 3 – Moderate (WNV or EEE) activity is mosquitoes and birds with initial evidence of WNV or EEE in a horse or human.
- 4 – Heavy WNV activity suggesting high risk of human infection (i.e., high mosquito infection rates, confirmed human or horse case, abundant adult bridge vectors).
- 5 – Multiple human cases of WNV or EEE and conditions favoring further transmission to humans.

### **Service Requests**

Every citizen that calls to report a mosquito problem is recorded in our mosquito service request log. We try to determine what types of mosquitoes are causing the complaints. We then direct our efforts to finding and eliminating the source of the mosquito problem. Tracking mosquito complaint calls allows us to analyze call frequency and distribution from year to year and direct control measure as needed.

### **Surveillance Activities**

Sixty percent of our daily operations are directly related to surveillance activities. Good surveillance is essential for effective mosquito control operations. There are over 26 different species of mosquitoes regularly found in the City of Portsmouth. We have to know what kind, how many, and where the mosquitoes are before we can do anything. There are two main types of mosquito surveillance, juvenile (larvae and pupae in standing water) and adult (flying mosquitoes).

### **Juvenile Mosquitoes**

To check standing water for presence or absence of juvenile mosquitoes we use a white cup on a stick to “dip” or sample water. Anytime we find mosquito larvae or pupae in water we record the location and treat the area as needed. Once it is recorded in our system we can regularly return and monitor the site throughout the season.



## Adult Mosquitoes

To sample for adult mosquitoes we use two main types of traps, Center for Disease Control and Prevention (CDC) light traps baited with carbon dioxide. Traps are set when night time temperatures are above 55<sup>o</sup>F.

**CDC Light traps** provide a standard method for measuring the relative abundance of adult mosquito populations. CDC light traps use a small light bulb, fan, and a small cooler with dry ice (for carbon dioxide). The mosquitoes are attracted to the carbon dioxide and or light, when they get close enough they get sucked up into the container.



**Gravid traps** are designed to catch gravid (adult female mosquitoes ready to lay eggs). Gravid traps use a special mix of stinky water in a tub to attract female mosquitoes. Once the mosquitoes get close enough they get sucked up by the fan and blown into a holding container.



When we retrieve the traps the mosquitoes are brought back to the lab sorted and identified. Weekly trap counts are posted on a map of the city. Samples or pools of mosquitoes are sent to the Department of Consolidated Laboratories (DCLS) for virus testing. If mosquitoes test positive for EEE or WNV we work closely with the Portsmouth Health Department to communicate the information to the public and take the actions necessary to protect public health.

## Control Activities

**Source reduction** is essential for long-term effective mosquito control. When we eliminate a source of mosquito breeding, we eliminate all of the adult mosquitoes that would have come from that habitat now and in the future.

**Larval control** is the application of natural predators, or pesticides to control juvenile mosquitoes in the water before they have a chance to become flying adult mosquitoes. In some cases it is not possible to eliminate the source; we cannot drain all ditches, catch basins, and wetlands. We use biological pesticides to control mosquito larvae. Most of what we use is a naturally occurring bacteria that the mosquitoes feed on. Once inside the mosquito it ruptures the gut causing the mosquito larvae to die.

**Adult control** is the application of pesticides to kill adult mosquitoes. Despite all of our efforts, we cannot eliminate or treat all mosquito breeding habitat. As a result we must use truck mounted sprayers and aerial sprayers to kill adult mosquitoes. Adult control efforts are the most expensive and least effective part of mosquito control. Every time we send a truck out to spray a route it costs about \$1000. To control costs, minimize the amount of pesticide used, and achieve the desired control; we use state of the art spray technology and train our employees.



### **Federal Activities**

We have Army, Navy, and Coast Guard assets in the City of Portsmouth. We work closely with our federal neighbors to minimize mosquito populations. As part of the cooperation we communicate what control efforts are used on federal properties.

### **Special Notes**

The special notes section is used to communicate items that do not fall into one of the above categories. Often times this section included essential things homeowner must do to control mosquitoes.