



Clean Storm Water

STORM WATER FACTS



REDUCING MOSQUITOES IN STORM WATER PONDS



Do



Don't

Storm water ponds attract a variety of wildlife, most of which are beneficial and aesthetically desirable. However, these ponds can also produce insects that threaten the public's health and comfort by spreading disease or creating a nuisance. Unless properly maintained, a pond or basin can be a significant source of mosquito breeding, and the growth of emergent vegetation in a pond can severely impact mosquito control efforts.

Pond Maintenance for Mosquito Control

To reduce mosquito breeding in ponds, dry and backfill the pond once the Fresno Metropolitan Flood Control District provides service to the area. While the pond is in operation perform the following maintenance activities routinely to inhibit mosquito production:

1



Maintain a water depth in excess of four feet to prevent growth of invasive emergent vegetation such as cattails.

2

Maintain water quality sufficient to support surface-feeding fish such as *Gambusia affinis*, the mosquitofish. *Gambusia* are an excellent biological control agent used extensively by mosquito control agencies.



3

Control excess vegetation along pond banks and particularly at the shoreline in order to reduce shelter for mosquito breeding.

4

Use caution when selecting herbicides so that fish and other predators are not poisoned. Contact your Pest Control Advisor for recommendations.

5

Provide access to the pond for mosquito control personnel.



Maintain a road around the entire pond perimeter for vehicle and foot traffic so that the pond can be easily managed and inspected for the presence of mosquitoes.

MOSQUITO BIOLOGY AND ECOLOGY

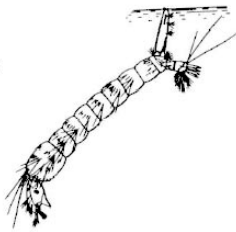
Mosquitoes require standing water in order to complete their life cycles. Ponds that contain water for long periods attract several types of mosquitoes, which can bite humans and cause disease. The cycle begins



when the adult female lays eggs on the water surface. The larvae hatch from the eggs

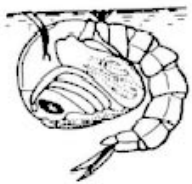
and immediately feed on organic matter such as algae and microscopic animals. The larvae grow and molt three times before reaching their maximum size.

Mature larvae change into pupae and do not feed in this stage. The life cycle is complete when a fully formed adult mosquito emerges from its pupal case and flies away.

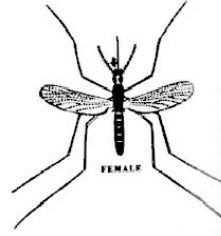


Mosquitoes that breed in ponds generally complete their life cycles in seven to ten days during warm weather, but the process can take

longer during the cooler weeks of late fall and early spring. Adult mosquitoes obtain nutrition from flower



nectar, but the females require a blood meal to produce eggs. Different mosquito species tend to prefer different bird and mammal hosts, but most will feed on whatever hosts are available. Therefore, humans living close to mosquito breeding areas are readily attacked by host-seeking females. Adult mosquitoes can live for two to three weeks during warm weather and longer when it is cooler.



Mosquito larvae are generally found in shallow water and along the shoreline where grass, weeds, and emergent vegetation provide an excellent feeding area for larvae. Mosquitoes in protected areas are less likely to be preyed upon by fish, amphibians, and beneficial insects. Dense emergent vegetation also hinders mosquito control treatments, so it is important to prevent the growth of these invasive plants, especially tules and cattails. Proper design and construction of the pond along with diligent management of the water and vegetation are essential.

Mosquitoes and Disease Transmission

Mosquitoes that breed in storm water ponds not only cause discomfort from their bites and

are a nuisance to residents living in adjacent areas, but they are a serious health threat as well. As a result of their blood feeding behavior, some mosquitoes can transmit certain viruses that cause disease, including Western equine encephalitis, St. Louis encephalitis and West Nile virus.

These viral diseases can cycle within bird populations and may be incidentally transmitted by mosquitoes to humans and other mammals. West Nile virus is of special concern because of its epidemic spread westward across the United States since its introduction in New York City in 1999. The effects of these diseases can be quite serious, even resulting in human death. There are no vaccines to prevent human infections from these viruses; mosquito control is the only method available to reduce the threat to people.



Where to Learn More

Contact the State of California Department of Health Services, Division of Communicable Disease Control at (916) 324-3738 or visit www.westnile.ca.gov

For further information contact:

Consolidated Mosquito Abatement District

2425 Floral Avenue
P.O. Box 278
Selma CA 93662
Phone: (559) 896-1085
Fax: (559) 896-6425
E-mail: conmad@pacbell.net

Fresno Mosquito and Vector Control District

2338 E. McKinley Ave.
Fresno CA 93703
Phone: (559) 268-6565
Fax: (559) 268-8918
E-mail: fmvcd@pacbell.net

Fresno Metropolitan Flood Control District

5469 E. Olive Ave.
Fresno CA 93727
Phone: (559) 456-3292
Fax: (559) 456-3194
www.fresnofloodcontrol.org

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