

Do Stormwater Retention Ponds Contribute to Mosquito Problems?

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Types of Ponds

Wet Ponds (Retention ponds)

Wet ponds are storm water control structures that provide both retention and treatment of contaminated storm water runoff. A wet pond consists of a permanent pool of water into which stormwater runoff is directed. Runoff from each rain event is detained and treated in the pond until it is displaced by runoff from the next storm. By capturing and retaining runoff during storm events, wet detention ponds control both storm water quantity and quality.

Dry Ponds (Detention ponds)

A dry pond is designed to capture and slowly release runoff water for a period of 72 hours or less after a precipitation event. Dry ponds do not treat the storm water and are typically constructed in areas where flood control is the greatest concern.

Mosquito Control

Discussion of mosquito control in guidance manuals written to date has been sparse, although that should not imply that mosquito control is not being addressed. Properly designed, operated, and maintained ponds are not conducive to standing water and as such should not be fertile breeding grounds for mosquitoes. To help control mosquitoes in their wet ponds, some localities introduce mosquito predators such as mosquito fish.

Mosquito breeding potential depends on the depth and location of the standing water. To prevent proliferation of mosquitoes in wet ponds, guidance manuals often contain recommendations for minimum pool depths and the establishment of habitats that promote colonization of the facility by mosquito predators both aquatic and terrestrial (e.g., dragonflies and mosquito fish). Improperly maintained dry ponds, however, may contribute to mosquito problems. In cases where the dry ponds are improperly designed or maintained and do not drain within 72 hours after a precipitation event, increased mosquito populations have been observed.

The Florida Cooperative Extension Service reported in *Mosquitoes Associated with Stormwater Detention/ Retention Areas*, one of a series of fact sheets by the University of Florida's Entomology and Nematology Department (<http://edis.ifas.ufl.edu/mg338>), that properly functioning, extended detention wet ponds are not a significant mosquito problem, but that dry pond systems holding standing water as a result of improper design, construction, or maintenance (or neglect) are a problem. As a result, Florida requires these dry ponds to be designed to drain within 72 hours to prevent the creation of mosquito habitat.