

GUIDELINES FOR PONDING BASIN / POND CONSTRUCTION AND MANAGEMENT TO CONTROL MOSQUITO BREEDING

Immature mosquitoes develop in shallow water habitats. Fresno has enough year-round urban runoff from sprinklers, car washing, and pool drainage to keep water in drainage basins even in the summer--when mosquitoes breed the fastest. The design and management of ponding basins and ponds is of critical importance for mosquito control. Following are some new guidelines for these facilities:

- *1. Ponding basins and ponds with fluctuating water levels should have a "low flow" area, a deeper area or sump where drainage will accumulate, instead of a uniform flat bottom. This allows for water to accumulate to a greater depth, and helps "mosquito fish" survive. The low flow area should be located at the pond inlet and should be at least four feet deeper than the rest of the basin floor. The rest of the basin should be graded so that drainage is directed into this low flow area.
- *2. Side slopes of ponds and ponding basins should be as steep as is compatible with safety and grading considerations. They should have a slope ratio of 1:2 (vertical:horizontal).
3. Decorative ponds and artificial wetlands should be constructed so that water depths are maintained in excess of four feet, to preclude invasive emergent vegetation such as cattails.
- *4. Ponds and ponding basins should be constructed to provide for free, unobstructed access around their entire perimeter by vehicle and/or by foot, to allow for maintenance and mosquito abatement activities.
- *5. All ponding basins should be enclosed in chain-link fencing at least six feet tall (to City of Fresno Public Works Standards), with double gates to provide an unobstructed total opening at least ten feet wide (no center post between the gates). Gates should be secured with a standard padlock to allow for access by maintenance workers and mosquito and vector control personnel: a No. 5 MasterLock™ with key numbers 1C95, 3203 or 0855.
6. Ponds and ponding basins should be constructed to allow easy de-watering when needed.
7. Ponding basin and pond edges should be maintained free of excess vegetation and trash that would harbor insects and support mosquito breeding when it falls or blows into the water.
8. Ponding basins and ponds should be managed to control algae and emergent vegetation (plants that emerge from shallow water), to remove harborage for mosquito breeding and to allow "mosquito fish" and other mosquito predators better access to their prey.
9. Ponding basins and ponds should maintain water quality that supports the survival of "mosquito fish" (*Gambusia affinis*, available from local mosquito and vector control agencies). Use caution when selecting herbicides and pesticides for use in or near ponding basins and ponds, because many pesticides are toxic to fish.

* The asterisked guidelines modify the current City of Fresno Public Works Standard No. P-62 for Temporary Ponding Basins.