

Wet Pond Factsheet

1.0 GENERAL DESCRIPTION



Figure 1. Wet pond (MN Pollution Control Agency)

Potential Treatment Mechanisms								
I ¹	ET	FA	B	RH	S	F	P	T
✓	✓				✓		✓	
Legend: I = Infiltration					S = Sedimentation			
ET = Evapotranspiration					F = Floatation			
FA = Filtration and/or Adsorption					P = Plant Uptake			
B = Biochemical Transformation					T = Trash Capture			
RH = Rainfall and Runoff Harvest								

¹ For unlined systems only; these systems are sometimes constructed with a liner

Wet ponds are similar to constructed wetlands in that they are vegetated basins with a pool of water year-round or, depending on location/climate, at least during the wet season, but they differ in that wet ponds are much deeper than wetlands. The constant pool of water allows stormwater to slowly infiltrate and receive treatment from the plant roots. A schematic of a basic wet pond is shown in Figure 2.

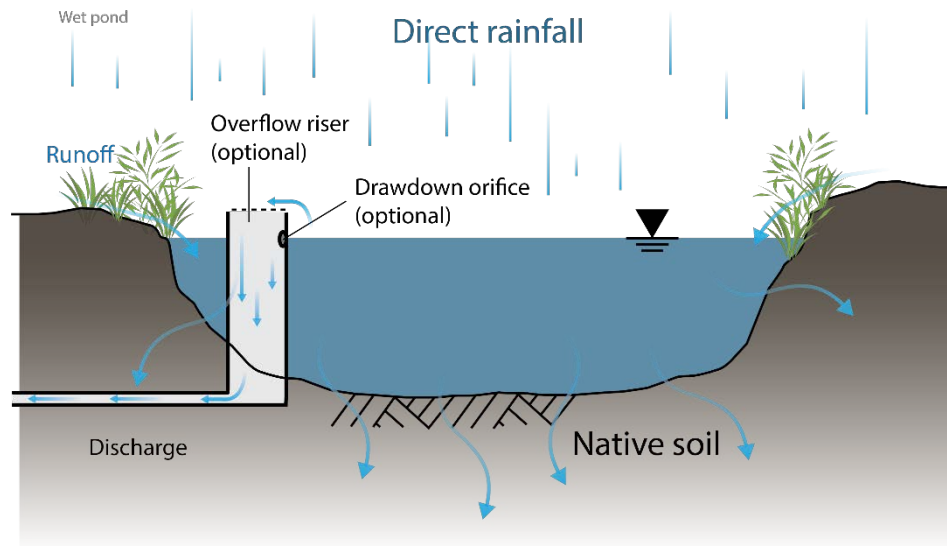


Figure 2. Schematic of a basic wet pond

1.1 Variations and Alternative Names

- Stormwater ponds
- Retention ponds
- Wet extended detention ponds
- Detention ponds

2.0 ADVANTAGES & LIMITATIONS

2.1 Advantages

- ✓ Can provide habitat for wetland wildlife and add aesthetic appeal
- ✓ Can provide significant reduction in contaminants/pollutants

2.2 Limitations

- ✗ Vector breeding often becomes an issue
- ✗ Public access safety concerns may require security fencing around the area

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- ✘ Relatively high land area requirement

3.0 SITING

Wet ponds are not suitable for areas with steep/unstable slopes. Also, they may not be appropriate for discharges into cold water streams due to warm water from the pond possibly increasing stream temperatures.

If the site has significantly porous soil, an impermeable liner along the bottom may be required to maintain the permanent pool.

4.0 DESIGN CONSIDERATIONS

When designing a wet pond, the following parameters should be considered:

- Design volume
- Drawdown time
- Permanent pool volume/depth
- Liner (optional)
- Inlet/outlet erosion control
- Forebay
- Surge depth
- Side slopes
- Seepage collar (to prevent piping/internal erosion on bermed systems)
- Vegetation
- Vector control animals (e.g., mosquito fish)

5.0 CONSTRUCTION CONSIDERATIONS

- Install seepage collars on outlet piping to prevent water from seeping out and causing damage

6.0 MAINTENANCE

- Maintain permanent pool of water
 - may require water to be pumped in during dry weather
- Inspections:
 - of vegetation while pond is establishing, replanting vegetation as needed
 - of outlet
 - for trash and debris accumulation
 - for mosquitos and other vectors
- Vegetation and fish management may be required

7.0 REFERENCES

California Stormwater Quality Association (CASQA 2003). *Stormwater Best Management Practice Handbook: New Development and Redevelopment*. January 2003.

California Stormwater Quality Association (CASQA 2017). *Draft Stormwater Best Management Practice Handbook: New Development and Redevelopment*. April 2017.

Sacramento Stormwater Quality Partnership (SSQP 2018). *Stormwater Quality Design Manual*. July 2018.