



5th TEXAS REGIONAL STORMWATER CONFERENCE

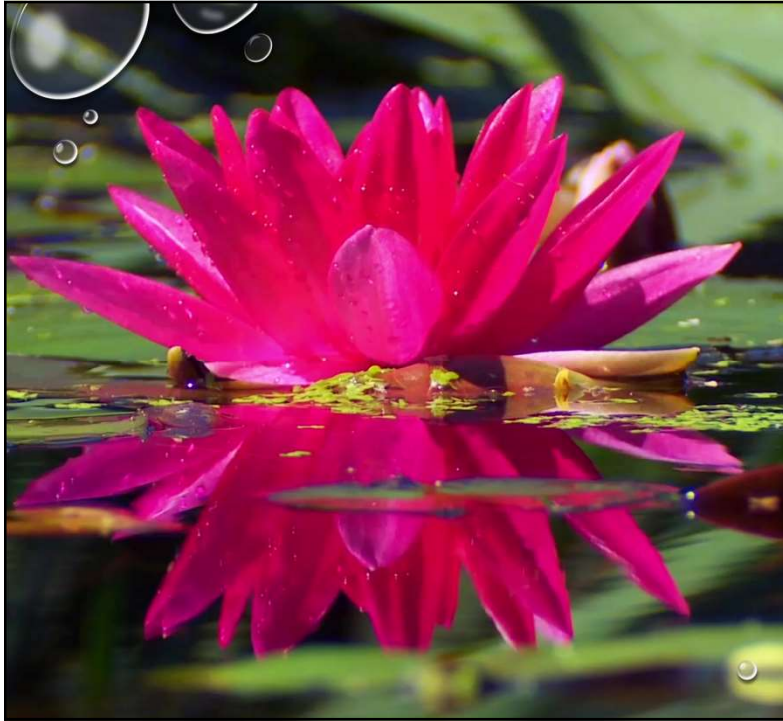
Post-Construction BMP Maintenance
How to Effectively Monitor & Maintain Wet Ponds

Bob Quinlan - Travis County TNR-EQ

ABOUT US

- TRAVIS COUNTY IS A PHASE 2 LEVEL 2 MS4 PROGRAM
- SWMP 1ST PERMITTED BY TCEQ ON AUGUST 13TH, 2007
- POST CONSTRUCTION PROGRAM IMPLEMENTED IN 2013
 - 2 FULL-TIME STAFFERS ASSIGNED
 - FOLLOWS PHASE 2 LEVEL 4 REQUIREMENTS
 - MAINTAINS 163 STRUCTURES AT 39 COUNTY SITES
 - INSPECTS 470 STRUCTURES AT 97 PRIVATE SITES





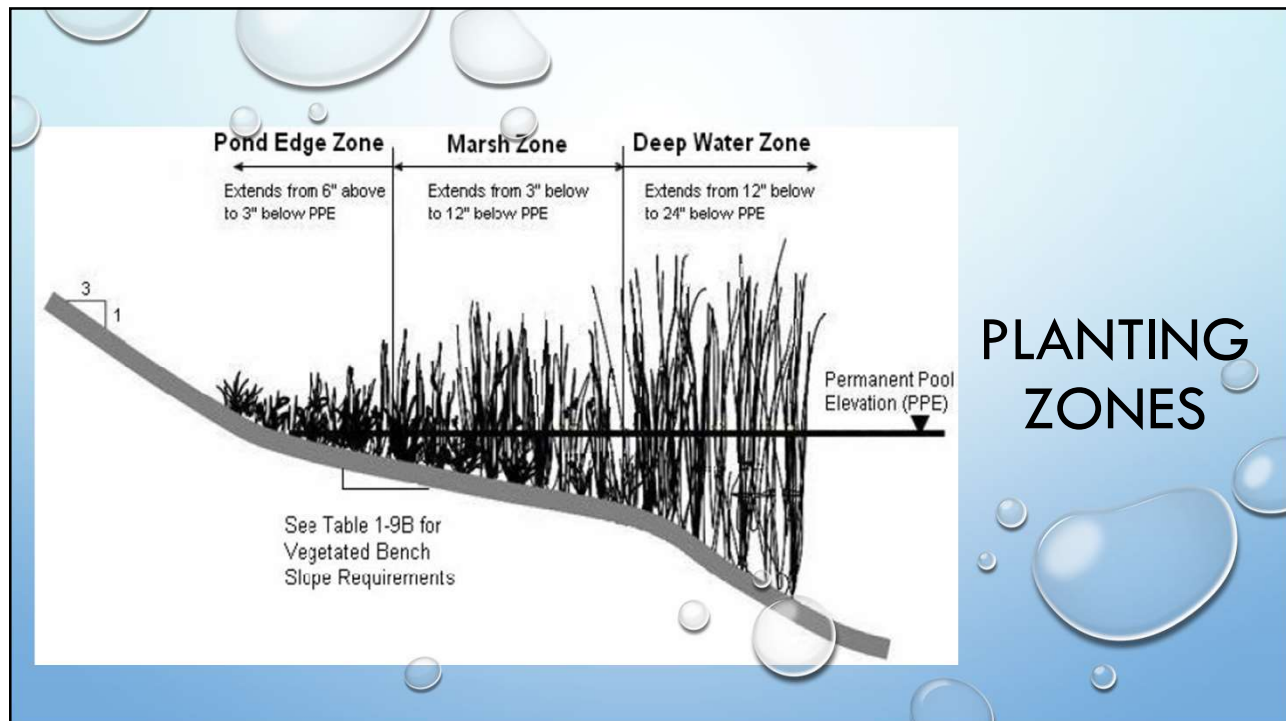
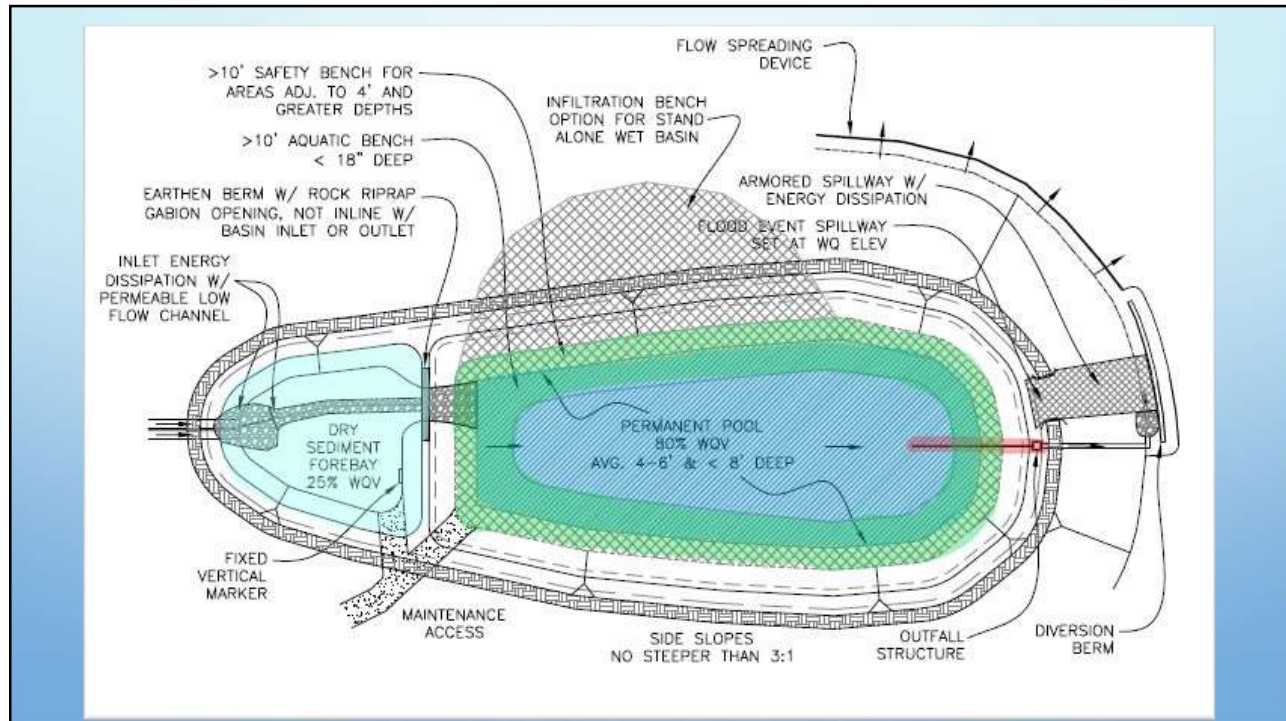
OBJECTIVES

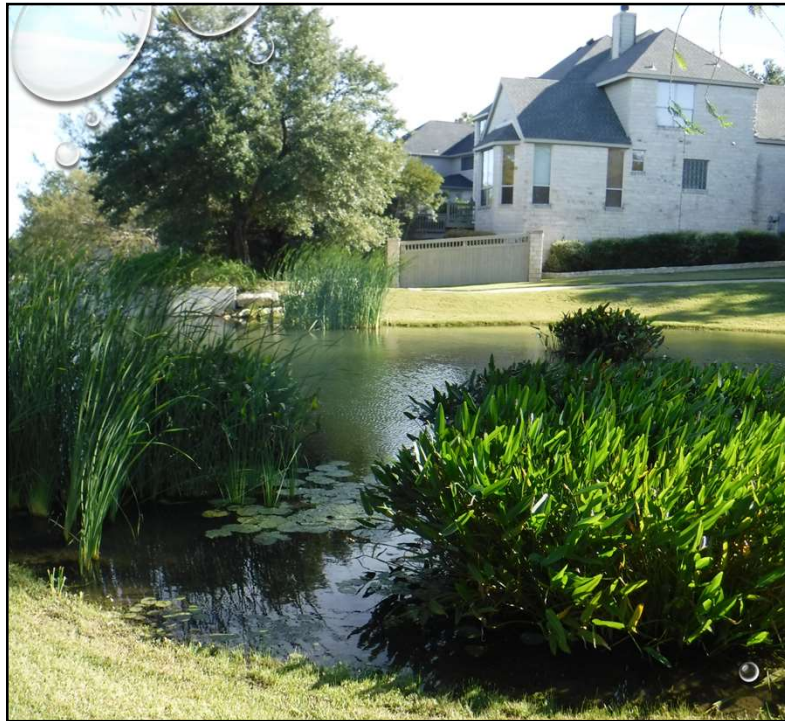
- UNDERSTAND THE BASIC ELEMENTS OF A WET POND
- MAKE AN INFORMED DECISION WHEN SELECTING A WET POND AS A WATER QUALITY CONTROL
- THE BENEFITS OF WET PONDS AND CHALLENGES OF MAINTAINING THEM
- UNDERSTAND THE BASICS OF WET POND MAINTENANCE



WET PONDS & WETLANDS

- BENEFITS:
 - FLOOD/ EROSION CONTROL
 - POLLUTANT REMOVAL
 - AESTHETICS/ PROPERTY VALUE
 - INFREQUENT MAINTENANCE
- COMMON CHALLENGES:
 - EXCESS SEDIMENT
 - INVASIVE VEGETATION
 - PEST MANAGEMENT





REQUIRED VEGETATION

- WETLAND PLANTINGS ARE REQUIRED BUT OFTEN OVERLOOKED
- FUNCTIONS:
 - PHYSICALLY SLOWS WATER FOR SETTLING
 - EROSION CONTROL
 - NUTRIENT UPTAKE
 - OXYGENATES WATER
- USE NATIVE PLANTS IN ZONES
- NO INVASIVE PLANTS ALLOWED

Table 1-9G
Deep Water Zone Plants

Common Name	Latin Name	Height	Required	Comments
Common Poolmat	Zannichellia palustris			Submergent oxygenator
Coontail	Ceratophyllum demersum	6'		Submergent for nutrients
Eelgrass	Vallisneria Americana	4'		Submergent oxygenator
Fanwort	Cabomba caroliniana	6'		Submergent oxygenator
Giant bulrush	Schoenoplectus* (tabernaemontani, validus)	8'		Emergent 8' ht. Evergreen; 2 acre min. pond size
Pondweed	Potamogeton pectinatus (nodosus, diversifolia, illinoensis)	4'	x	Floating-leaved aquatic, benefits wildlife
Water lily	Nymphaea (odorata, elegans, mexicana)	8'		Floating-leaved aquatic; 2 acre min. pond size
Water-naiad	Najas guadalupensis	4'	x	Common submergent
Water primrose	Ludwigia repens	4'		Float-leaved aquatic
Water star grass	Heteranthera dubia (Liebmanni)	5'		Submergent oxygenator



INTEGRATED PEST MANAGEMENT

- ALGAE
 - CAUSED BY HIGH NUTRIENT LOADS
 - TREATMENT NOT REQUIRED OR NECESSARY
- WILDLIFE
 - BEAVERS, NUTRIA, WATERFOWL
- MOSQUITO CONTROL (REQUIRED)
 - ONLY GAMBUSIA AFFINIS
 - NO GAME FISH STOCKING
 - MOSQUITO "DUNKS" ACCEPTABLE



WET POND MAINTENANCE



GENERAL REQUIREMENTS

- REMOVE TRASH/DEBRIS
- CHECK STRUCTURAL INTEGRITY
- CLEAR INLET/OUTLET
- PEST MANAGEMENT
- MOW TURFGRASS (>4", <18")



- DATA
- GO
- EVI
- EVI
- EVE
- EVE

- DRAIN THE POND
 - PUMP/DEWATERING BAG
 - MAINTENANCE DRAIN
- CONCRETE MAINTENANCE PATH DOWN TO BASIN FLOOR IS BENEFICIAL
- DREDGE THE BASINS
- PROPERLY DISPOSE OF SPOILS



- **CORAL ON VERTEBRATE**
 - **ONLY THREE OF**
 - QUICKLY INVADES SHALLOW
 - GROW IN VERY QUICKLY – AREAS TO CREATE AN
 - PROOF OF LIFE FOR OURS
 - UNHEALTHY MONOCULTURE
 - CREATES AN UNHEALTHY
 - **WITH THE CORAL REEF**
 - **WALK AND RUN OFFING**
 - **CONCRETE IN SEDIMENT**
 - **IMPURS IN LETS/OUTLETS**
 - **FULL REMOVAL IS NOT REQUIRED**
 - **"NATURE'S SUPERMARKET"**



CATTAIL: NATURE'S SUPERMARKET?

- ALL PARTS OF PLANT ARE EDIBLE
 - EAT LIKE CORN ON THE COB
 - USED AS FLOUR SUBSTITUTE
 - USED IN SOUPS, STEWS, BREAD
 - SHOOTS TASTE LIKE ASPARAGUS
- USE STALKS AS BUILDING MATERIALS
 - INDIGENOUS PEOPLE MAY WANT TO HARVEST YOUR CATTAILS



REFERENCE MATERIALS

- CITY OF AUSTIN: *ENVIRONMENTAL CRITERIA MANUAL*
 - [HTTPS://LIBRARY.MUNICODE.COM/TX/AUSTIN/CODES/ENVIRONMENTAL_CRITERIA_MANUAL](https://library.municode.com/TX/AUSTIN/CODES/ENVIRONMENTAL_CRITERIA_MANUAL)
- LCRA: *WATER QUALITY MANAGEMENT TECHNICAL MANUAL*
 - [HTTPS://WWW.LCRA.ORG/WATER/QUALITY/WATERSHED-MANAGEMENT-ORDINANCE/DOCUMENTS/WATERSHED_TECHNICALMANUAL.PDF](https://www.lcra.org/water/quality/watershed-management-ordinance/documents/watershed_technicalmanual.pdf)
- TCEQ: *EDWARDS AQUIFER RULES: TECHNICAL GUIDANCE ON BMPS*
 - [HTTPS://WWW.TCEQ.TEXAS.GOV/ASSETS/PUBLIC/COMM_EXEC/PUBS/RG/RG348/RG-348.PDF](https://www.tceq.texas.gov/assets/public/comm_exec/pubs/rg/rg348/rg-348.pdf)
- EPA: *WET POND MANAGEMENT GUIDEBOOK*
 - [HTTPS://WWW.EPA.GOV/SYSTEM/FILES/DOCUMENTS/2021-11/BMP-WET-PONDS.PDF](https://www.epa.gov/system/files/documents/2021-11/bmp-wet-ponds.pdf)



QUESTIONS?



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