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[RETENTION PONDS-WE CAN'T LIVE WITHOUT THEM](#)

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Retention ponds ("RPs") are an integral part of a community's total drainage system as well as a vital part of a community's aquatic management program.

Retention ponds which are more appropriately termed "Storm Water Maintenance Areas" are relatively recent requirements for many communities and are physically separate from mandatory community waste water management or sanitary sewage systems. Years ago storm water resulting from rainfall was permitted to drain as determined by gravity from non-porous areas including paved roads, parking lots and driveways, as well as from the concrete slabs or foundations of structures. The surface topography usually determined that storm water drained to any nearby property where the storm water could slowly percolate / seep into the ground. Storm water runoff could also collect in low lying areas or ponds which may become stagnant, foul smelling, become breeding grounds for insects, become potentially drowning hazards or even contaminating ground water which may be the source for shallow drinking water wells.

In the past many municipalities had few restrictions governing the disposal of storm water, hence storm water runoff was essentially "left to nature." Recently more and more natural porous surfaces are being paved over and made impervious to storm water percolation following all types of construction-especially the building of roads. Increasing problems with storm water runoff have accordingly caused municipalities to enact stricter regulations governing the disposal of storm water. Not only does storm water remaining on roadways constitute a safety hazard to vehicle traffic, runoff draining into storm drains is often heavily contaminated with roadway oils, dirt and trash, grass clippings and leaves, as well as with fertilizer and pesticides from lawns.

Environmental concerns also dictate that the contaminated runoff mixture should not be drained into natural waterways which may become contaminated.

RPs, therefore, have been designed and constructed to provide a reservoir for contaminated storm water to be temporarily stored and from which some of the water evaporates. RPs are also structures from which most of the storm water slowly percolates into the ground. In addition, much of the runoff contaminants slowly settle in the form of sediments which may require periodic dredging and removal. It must be emphasized, however, the storm water in RPs is heavily contaminated and is not a recreational water body intended for swimming or fishing; fish from RPs should be considered as contaminated and not for consumption.

In addition, RPs must also incorporate an outflow structure (an overflow drain) in the event heavy rainfall or floods exceed the RP's capacity. Outflow structures usually conduct excessive storm water into natural waterways. Outflow structures of RPs which have been stocked with weed eating triploid grass carp must also have specially constructed fish barriers installed to prevent the escape of the stocked fish. Florida statutes mandate that the required fish barriers are not to be removed or altered.

Since RPs are standing bodies of contaminated storm water, they also provide an environment where undesirable aquatic weeds often thrive and which require an ongoing aquatic management program for weed control. Although RPs may become infested with many types of emergent and submerged weeds as well as with weeds growing along shorelines, Charles Aquatics' biologists have the skills and training to identify aquatic weeds requiring treatment and the methods to treat those undesirable plant forms. When it comes to the eradication of aquatic weeds the provision of periodic (monthly) aquatic management service is a specialty of Charles Aquatics, Inc.

Aquatic management and especially the application of herbicides are best left in the hands of trained biologists. Individuals unfamiliar with aquatic weeds may not choose the appropriate herbicide for targeted weeds and more importantly they may not apply the correct amounts of herbicides. Individuals, while well meaning, must also be cautioned never to attempt to augment properly applied herbicides previously delivered by aquatic management professionals since those actions could result in fish kills as well as in excessive concentrations of herbicides in RPs.

While the application of specific chemical herbicides is the principal means to initially treat most waterways and RPs heavily infested with aquatic weeds, a coordinated aquatic management program including the subsequent stocking of RPs with weed eating triploid grass carp for long term maintenance is the basis for a cost effective aquatic management program.

Stocking of waterways with triploid grass carp is currently becoming one of the more environmentally ideal means of biological aquatic weed control. Triploid grass carp which have been rendered sterile by a number of methods are therefore unable to reproduce yet their appetite for many types of aquatic weeds makes these fish extremely effective for successful aquatic weed control.

One of the continuing problems of aquatic weed control with triploid grass carp is that carp are subject to predation by otter, largemouth bass as well as by humans. Otter are very efficient predators of all fish and measures should be taken to discourage their presence. Largemouth bass are considered another principle predator of grass carp especially during the first years following grass carp stocking. The stocking of large mouth bass in grass carp permitted ponds can greatly diminish the effectiveness of grass carp. Finally human "predation"/ fishing is yet another major cause of the depletion of grass carp populations, however fishing for grass carp (which is illegal under Florida law) is the most preventable of the overall predator problem.

It should be emphasized that Charles Aquatics, Inc. stocks triploid grass carp in waterways and RPs (as well as installing the required fish barriers) at no additional cost to clients with annual aquatic management agreements.

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