

THE WATERLOGUES

Wetlands Professional Services

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Maintenance of Raw Land to Manage Regulatory Encumbrances

Raw land is subject to a slew of environmental regulations that include: wetlands and habitat protection, tributaries, storm water runoff, interstate commerce, development rights, listed species, cultural resources, etc. The wide spectrum of environmental law is always growing in new directions and progressively encumbers raw land.

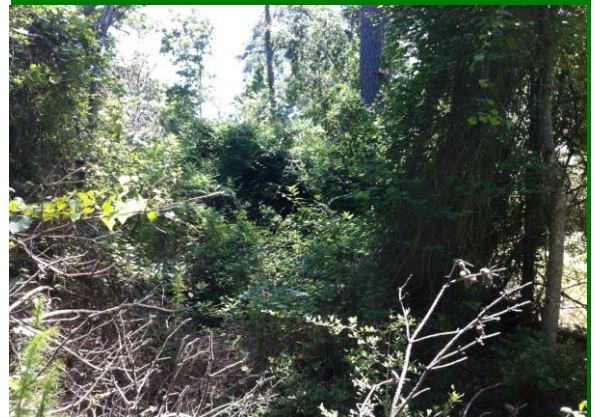
Much of the raw land in and around the greater Houston area and throughout east Texas tends to be flat and poorly drained due to lack of maintenance. Most of the naturally occurring grasses, herbs, shrubs and trees are now classified as "[wetlands vegetation](#)" and this encumbers raw land.

In east Texas, there is sufficient rainfall under normal conditions to support the propagation of dominant wetlands vegetation on flat poorly drained land and to convert uplands into wetlands.

In the absence of routine maintenance mowing, raw land is quickly overgrown with dense shrubs, underbrush and young trees. Existing ditches and drainage channels become clogged with thick vegetation and accumulated sediment, which impedes drainage and causes ponding and saturated soil conditions for extended periods. Wetland plant species thrive and become dominant in each strata of vegetation (grass, herb, shrub, trees). This is a naturally occurring process which creates a type of "emergent" wetlands that is the direct result of neglected maintenance.

Wetlands in general (including wetlands caused by neglected maintenance) have certain recognized ecological functions such as sensitive habitat for aquatic species of plants and animals, wetlands may filter and remove certain pollutants from stormwater runoff and re-charge groundwater. Wetlands often pose a significant regulatory encumbrance for landowners.

Below: Typical unmaintained ditch on raw land, overgrown with dense vegetation and clogged with tree debris and accumulated sediment, which impedes drainage. During Rainfall events this ditch will overflow and cause adjoining land to pond for extended periods and propagate wetlands vegetation.



Below: Ditch that has been properly maintained by mowing, cleaning and grading to restore its original dimensions. This reduces potential regulatory encumbrances. Maintenance of existing ditches is an authorized activity provided that the maintenance work complies with the guidelines and procedures in the Corps' [Regulatory Guidance Letter 07-02](#) for drainage ditch maintenance.



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The most important management objective for landowners is to always maintain good drainage on their property in order to reduce potential wetland encumbrances. Land that is slated for future development should be maintained as allowed under the law to re-establish good drainage and facilitate routine maintenance mowing going forward.

Initial Maintenance Work on Raw Land:

Maintenance of raw land includes two primary activities – mowing dense vegetation and underbrush, and, cleaning existing ditches and drainage channels. Both of these maintenance activities are necessary in order to re-establish good drainage on raw land.

Under current regulations a landowner is allowed to cut and mow vegetation, maintain existing ditches, and construct new ditches in uplands. Maintenance of existing ditches and drainage channels is exempt from permitting requirements under [Section 404\(f\)\(1\)\(C\)](#) of the Clean Water Act. Mowing activities are exempt under [33 CFR 323.2\(d\)\(2\)\(ii\)](#). Construction of ditches in uplands is not regulated under the Clean Water Act.

Dense vegetation, shrubs, underbrush and saplings should be mowed, cut and mulched above the root zone. Mowing increases "sheet flow" of rainwater runoff and allows sunlight and wind to reach the ground and dry the soil. Heavy-duty equipment such as a "hydroax" or "wood gator" may be required to cut, mow and mulch mature vegetation on raw land that has not been maintained over a long period of time.

Cleaning and maintenance of existing ditches and drainage channels is exempt from regulation under the Clean Water Act provided that such work is performed in accordance with applicable regulatory guidelines. The Corps of Engineers has issued a [Regulatory Guidance Letter](#) with guidelines and procedures that are necessary to qualify for the ditch maintenance exemption. Authorized maintenance activities include; removal of vegetation, debris, snags, accumulated sediment, and re-establishing the original flow-line and side slope dimensions of existing ditches and drainage channels.

Below: Hydro-Ax or Wood Gator - Mows thick vegetation in ditches and drainage channels, opens up land and allows sunlight and wind to penetrate to the ground and dry the soil, restores good drainage and prepares land for the use of lower cost medium duty mowing equipment for long-term routine maintenance .



Hydro-Axing is an authorized activity because it cuts vegetation above the root zone and avoids soil disturbance. This work should be specified, documented and performed in a manner to avoid unintentional regulatory violations.



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Ditch maintenance work should be carefully planned, specified, documented and performed in accordance with the Corps' guidelines in order to avoid unintentional regulatory violations.

Existing ditches and drainage channels should be cleaned of vegetation, silt and debris, and graded to restore original dimensions and drainage function. New ditches may be constructed in uplands as necessary to restore drainage. Culverts should be cleaned and installed as necessary to protect ditches and to enable equipment access for routine maintenance mowing going forward.

This initial maintenance work should be performed by qualified persons and contractors who are knowledgeable and experienced with the regulatory guidelines, procedures, equipment and techniques applicable to this specialized drainage maintenance work.

Trash Removal:

Another common maintenance task on raw land is trash removal. Old fences, tires, drums, containers, scrap metal, construction scrap, household garbage and other trash is often dumped, scattered and piled on raw land. Trash may be efficiently collected and removed while performing the ditch maintenance work. Trash removal improves the appearance of the property, reduces potential soil contamination.

No Trespassing:

Land should be properly posted with "no trespassing, no dumping, no hunting" signs. Property boundaries should be legally marked and posted; gates and fences should be maintained and installed to reduce illegal dumping, poaching, trespassing, unauthorized off-road vehicles, and other liabilities that effect raw land. Government regulatory agencies are usually required to notify the landowner and obtain permission before entering property that is legally posted.

Undeveloped land should be managed and maintained to ensure good drainage, reduce potential regulatory encumbrances and protect value. Landowners are authorized to perform normal maintenance tasks such as mowing, cleaning ditches, repairing culverts and other work to maintain good drainage, access and use of their property.



Below: This ditch serves as valuable drainage infrastructure because it is capable of being maintained by routine mowing with medium-duty mowing equipment to insure good long-term function. Mowing is essential for protecting the value and development rights of raw land.



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End Product of Initial Maintenance:

When the initial maintenance work is complete, the end product is clean open land that is well drained with low ground cover vegetation interspersed by large trees. In this condition the land and ditches can thereafter be economically maintained by routine mowing with medium-duty mowing equipment to insure good long-term drainage conditions.

Routine Long Term Maintenance:

After the initial maintenance is complete, mowing should be performed 3 to 4 times per year depending on the weather. Routine mowing of land and ditches reduces the potential for regulatory encumbrances by sustaining clean green, open, well-drained commercial land with low ground-cover vegetation and good access. This facilitates conceptual planning, marketing, photography, detention siting, surveys, measurements and calculations.

Planning and Performing Initial Maintenance Work:

The logical procedure for planning and implementing the initial maintenance work begins with an analysis of aerial photography, topographical information and onsite inspections to evaluate and collect site-specific data. Drainage characteristics, ditches, channels, culverts, and vegetation are evaluated to identify specific maintenance requirements and determine the scope-of-work. Then the various maintenance tasks are technically specified and a preliminary cost estimate and schedule is prepared for the landowners' approval prior to commencing work.

Given the large amount of regulations governing land use and environmental protection, this type of maintenance work should be performed with diligence and care to avoid unintentional regulatory violations. Regulatory compliance can

be satisfied by carefully documenting existing drainage channels and properly specifying the work in accordance with applicable regulatory guidelines. The maintenance work should be appropriately documented in a "Maintenance Specification" which serves to verify compliance with applicable laws, and provides a working document to guide the contractor in proper execution of the field work.

This maintenance work should be performed by qualified persons and contractors who are knowledgeable and experienced with the regulatory guidelines, procedures, equipment and techniques that are applicable to this specialized drainage maintenance work.

Depending on the size of the property and other factors, the initial maintenance work can take from three months to one year or longer to implement. The schedule depends on good planning, equipment availability, contractor performance and the weather. The fieldwork is performed most efficiently during hot summer months when the ground is dry and firm enough to support heavy equipment operation. This work should be planned and scheduled to avoid prolonged wet weather conditions which delay and hamper the field work. It is recommended to start the planning process early.

Conclusion:

Prevailing regulatory trends impose ever more risks and encumbrances on raw land. The most important management objective for landowners is to maintain good drainage on their property at all times in order to reduce potential encumbrances. Please contact Wetlands Professional Services for more information about wetlands, streams, ditches, maintenance, listed species, and other environmental regulatory issues that affect raw land.

Jim Coody, PE

Jim Coody is a Professional Engineer with over 25 years of experience in wetlands and related environmental regulatory issues that affect land-use authorization in the greater Houston area and east Texas. His clients include owners of large and small tracts of land, real estate developers, brokers, municipal utility districts, school districts, and other companies and institutions. Areas of specialization include analysis and documentation of wetlands, streams, ditches and ponds; permitting, maintenance of undeveloped land, evaluation of listed species, coordination with government agencies and project management.



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