



Reclaiming Flooded Land with Tillage

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The degree of damage caused to land by recent flooding will dictate the process required to bring that land back into production. Before tilling agricultural land, check with the Soil Conservation Service to determine whether the land is classified as highly erodible (HEL). Residue cover may be required in the conservation compliance plan for this land. Failure to maintain proper residue levels for erosion control could result in a loss of USDA program benefits, including CRP and disaster aid payments.

On upland soils, severe erosion may have occurred such as rilling and terrace breaks. Notify your local SCS before performing tillage or repairs. Cost share for repairs might be available in some cases.

If erosion has occurred on bottomland soils, reclamation may require extensive dirt work. However, if the damage consists of minimal sand deposits, reclamation could be possible with tillage equipment found on most farms. If the layer of sand is thin, less than four inches, or is in strips that can be spread thin over the field, a chisel with twisted shanks or moldboard plow could be used to reclaim the land.

However if the layer is deeper or more widely spread across the field much more effort may be needed such as removal or deep plowing. Incorporating deposits into top soil might make the soil more susceptible to wind and water erosion. A cover crop or wind strips will help protect soils from wind erosion during the winter. This information is provided to help determine the degree of field operations needed to reclaim flooded lands.

Sand Problems

Due to the duration, velocity, and extent of flooding during 1993, millions of tons of sand

were deposited in floodplains. Sand deposits range from a few inches to over 8 feet in depth and can have a great impact on soil productivity. Sand has very poor water-holding capacity and is often low in nutrients and organic matter.

Producers impacted by sand deposition need to assess conditions of each field individually. The depth of the sand deposit, total area affected, and type of underlying soil are critical factors. Soil surveys (available from local SCS or Extension offices) are useful in assessing pre-flood soil conditions.

Shallow Deposits

For deposits less than 4 inches, a chisel with twisted points or moldboard plow can be used for incorporation. A moldboard should incorporate deposits in one pass, while the chisel may require two or three passes for adequate incorporation. Tillage passes for either implement should be 10-12 inches deep. If deposits are deeper than 4 inches, but are only on part of the field, the sand should be spread as evenly as possible over an area large enough that the depth does not exceed 4 inches. Now it can be incorporated with the underlying soil with the implements mentioned above.

Deep Deposits

If the entire field is covered with a sand layer deeper than 4 inches, the normal farm tillage tools will not do the job. Removal or deeper tillage will be required to incorporate the deposits. The following table lists plowing depths for varying depths of deposits. If sand deposits are uneven, spreading them before tillage may reduce the necessary tillage depth. The power required for deep tillage is related to tillage depth and speed and can be extremely high. Plowing 5 feet deep at 3 mph can

Texture of Underlying Soil	Depth of sand deposit in inches					
	4	8	12	16	20	24
Heavy	12	16	20	25	30	36
Moderately Heavy	12	16	22	28	35	40
Medium	12	17	24	32	40	48
Moderately Light	12	19	28	38	47	60
Light	12	24	36	48	60	—

require as much as 400 flywheel horsepower for steel tracked tractors while plowing 2 feet deep requires approximately 150 flywheel horsepower. Using agricultural tractors for deep plowing is not recommended because wheeled tractors will have difficulty generating traction on the deposited material and will require more available power. Construction vehicles are designed to operate under high loads at low speeds, while agricultural tractors are designed to operate at speeds over 4.5 mph. Operating agricultural tractors at low speeds

and high drafts typical of deep plowing will most likely result in a drive train failure.

Summary

Flood damaged land can be reclaimed and put back into production, however it could be expensive. Evaluate each field independently and consider all of your options before making any decisions. Check with SCS or ASCS offices for information concerning set-aside and 0/92 programs and possible costshare.

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