Avoid fertilizer and manure application on frozen and snow-covered soil

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Application of fertilizer or manure on frozen and/or snow-covered soil is not recommended because rapid snow melt or rainfall can move nutrients and other constituents from the nutrient sources to surface waters. Either nitrogen (N) or phosphorus (P) lost from fertilizer and manure can cause eutrophication, algal blooms, low oxygen levels in water and death of aquatic organisms.

In freshwater, added P is usually the nutrient that causes algal blooms (ex. Western Lake Erie Basin). Additions of N are largely responsible for algal blooms in brackish and saline water (ex. Gulf of Mexico Hypoxia or Dead Zone). Phosphorus and N remaining on the soil surface are far greater contributors to runoff P and N than high soil levels of either nutrient.

To reduce the potential for nutrient runoff into surface water, fertilizers and manure should be injected or incorporated into the soil or be applied under conditions when runoff events are unlikely or at least unexpected. Fall and early winter applications are typically better for fertilizer and manure application than when the soil is frozen and/or snow-covered.