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# COVER CROP & HIGH RESIDUE TILLAGE SURVEY

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Leaving an abundance of plant residue on crop fields and planting winter cover crops is one of the most effective ways of preserving farm productivity and downstream waters. In this factsheet we'll show you how to assess the extent of cover crop and crop residue use on farm fields in your watershed. We urge you to thank farm owners who make use of these valuable measures and alert others of the many benefits, including financial incentives, which are described at the [Maryland Department of Agriculture \(MDA\) Cover Crop Program](#) webpage.

## High Residue Tillage

Of three tillage methods - conservation, low residue and high residue - the last provides the greatest aquatic resource protection. The Chesapeake Bay Program's [Quick Reference Guide for Best Management Practices](#) defines high residue tillage as a minimum of 60% of crop field soil surface covered with leaves, stems and plant parts following spring planting. Quick Reference Guide Table A-3-1 shows high residue tillage reduces nitrogen, phosphorus, and sediment losses by 14%, 11%-74% and 79%, respectively.

## Winter Cover Crops

Planting crop fields with rye or wheat following harvest reduces nitrogen losses by 9% - 45%, phosphorus losses by 0%-7%, and sediment by 0%-20%, respectively. In Maryland, maximum benefits are obtained if cover crops are planted two weeks before the [first frost](#) (Statewide average October 1<sup>st</sup>). Later plantings still provide benefits, though with decreasing nitrogen retention.

## Survey Procedures

Residue and cover crop surveys are conducted solely from the roads ramifying a watershed. You should never enter onto a farm without permission. Fortunately, most cropfields are visible from public roads. And most of Maryland's 138 [subwatersheds](#) can be surveyed in four- to six-hours. Following are the steps involved in this extremely easy survey.

1. Print out aerial photos showing cropfields in your watershed from Maryland's Environmental Resources and Land Information Network website: <http://dnrweb.dnr.state.md.us/MERLIN/>. MERLIN allows you to print aerial photos with watershed boundaries.
2. **Cover Crop Survey:** By the first week of December rye, wheat, or other cover crops should have appeared as green shoots throughout a crop field. Drive watershed roads and note whether each harvested cropfield is sprouting new green shoots. Make a note on the aerial photo of the percent vegetative cover (*see other side*), take a photo (when a field is unoccupied) and a GPS reading to document the cropfield location and cover crop condition (*or lack thereof*).
3. In February repeat the survey when fields are mostly free of a snow cover. The purpose of this second survey is to verify that the cover crop is still present and has not died back.
4. **High Residue Tillage Survey:** A field benefits from high residue tillage if a minimum of 60% of the soil surface is covered with leaves, stems and other plant parts following spring planting. By June most crops should have been planted. Drive watershed roads then and assess the average percent of soil covered with crop residue. Note this figure on the aerial photo.
5. Send a thank you letter to the owners of farms benefitting with cover crops or high residue tillage (*see sample letter on other side*). The Parcel Boundaries layer in [MERLIN](#) allows you to look up ownership information.
6. Consider informing other farm owners about the benefits of cover crops and high residue tillage. The [MDA webpage](#) has an attractive [flier](#) you can print and mail. Be certain to get the information to the farm owner by early June while the enrollment period is open.
7. Finally, please email your findings to us at [Help@ceds.org](mailto:Help@ceds.org) so we can add your data to the CEDS Clean Water database.



**Near 100% Vegetative Cover**



**About 75% Vegetative Cover**



**About 20% Vegetative Cover**



**About 30% Vegetative Cover & 70% Residue**

Dear Mr. Smith:

There's an old saying: If you like to eat, thank a farmer. Well, a thank you is also deserved when a farm owner goes the extra mile to protect water quality. Therefore, thank you for planting your field(s) in winter cover crops.

As a member of the North River Watershed Association, I know that your extra effort has made the river a better place for everyone to enjoy. Please let us know if there's ever anything we can do to help make your farm more productive in terms of crops and clean water.

Gratefully,

**Sample Thank You Letter**

