

CONSERVATION PRACTICES ON WHEAT LANDS of the PACIFIC NORTHWEST--

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F O R E W O R D

Farmers and agricultural investigators for years have sought ways of keeping crop yields at high levels without destroying the soil upon which production depends. Both groups have found it to be a problem involving complex physical and operational difficulties, but have realized there can be no long continued or profitable agriculture if farming methods result in decreased soil fertility or actual physical loss of the land itself.

These facts are brought out effectively in this bulletin, the information for which was assembled by Mr. D. E. Stephens. He has taken the data of research findings from all sources, state and federal, and assembled them in an easily usable way. The information as it thus is presented should be immensely helpful to those who are concerned in the management of the world-renowned cereal producing lands of the Pacific Northwest.

Significant is the growing interest in the effects of soil erosion on continuance of a sound agriculture, as shown by the attention given to this important phase of the problem by many of the new experimental projects which have been organized by state and federal institutions. Consequently, we feel indeed indebted to our associates in the State Experiment Stations for their excellent experimental work and their fine response in meeting what now is recognized as being one of the foremost problems in American agriculture—that of maintaining the actual physical resource of the land itself.

In point is the attention that has been given to burning of straw, which for so long was an all too common practice in conjunction with grain farming. This practice violates a basic soil conservation principle—utilizing plant residues. In certain localities, burning sometimes has shown at least a temporary stimulation in crop yields. At the same time, soil analyses prove that approximately 35 percent of the soil's organic matter and about 50 percent of the soil nitrogen have been dissipated under constant wheat-fallow farming, including those areas in which burning has been practiced widely over a long period. The once high moisture holding capacity of the soil also has been destroyed, and the land has become harder to work and prepare for crops. First efforts in restoring organic matter and nitrogen by growing legumes as green manure crops in the rotation in many cases led to depressed grain yields afterward, it is true; but now, through these investigations, we are finding that there can be reconciliation between the use of plant stubble, rough tillage, and leguminous crops to help maintain and restore the crop producing capacity of these lands.

The men who are working on the farms where this and other intricate problems constantly are in the forefront are deeply indebted to the investigators who have brought forth such solutions.

J. H. Christ

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