

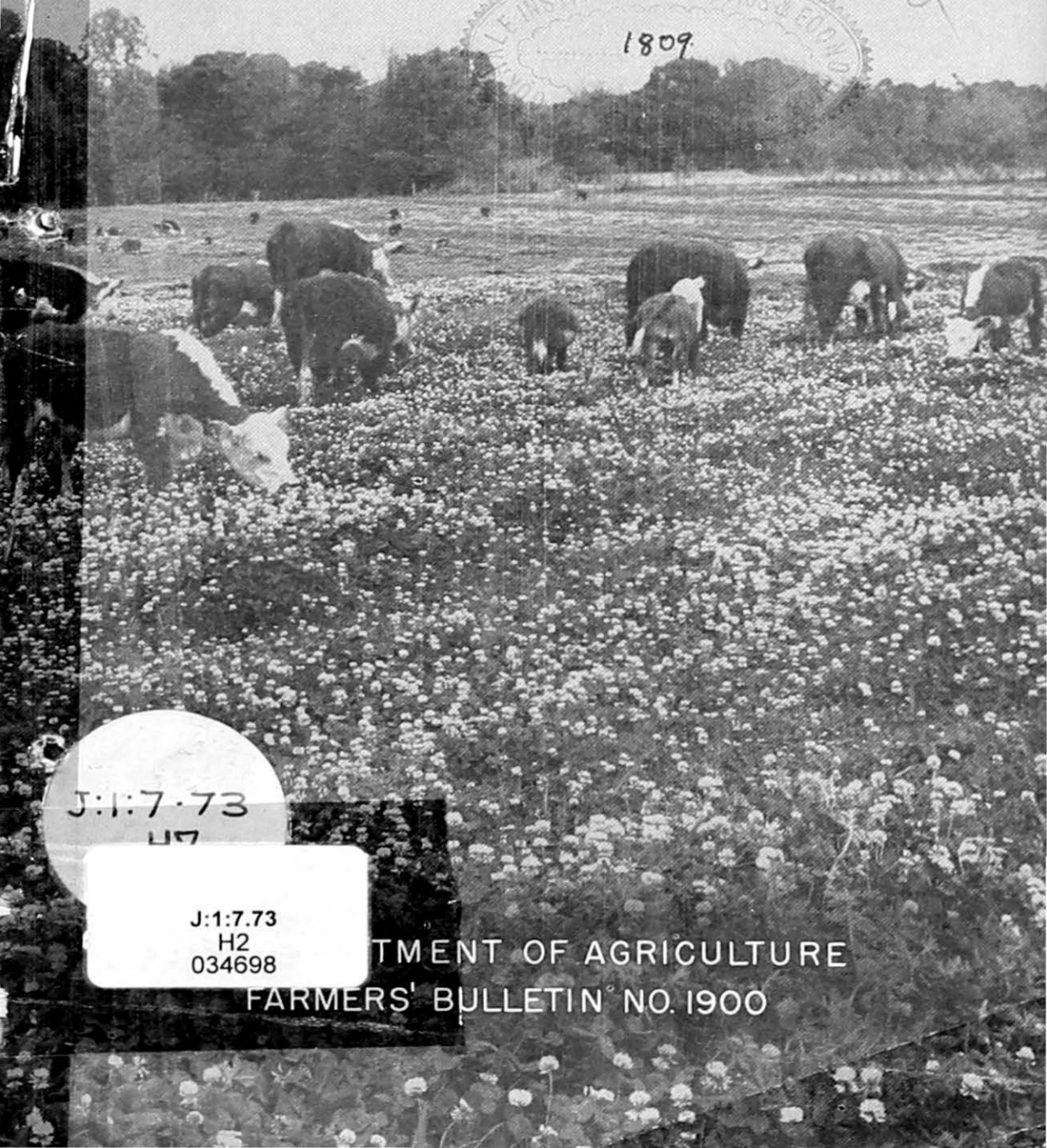


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Pastures to Hold and Enrich the Soil



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DEPARTMENT OF AGRICULTURE
FARMERS' BULLETIN NO. 1900

This bulletin on pastures has special value now that farmers are directing their operations to the all-important business of winning the war. The production goals for milk, beef, wool, and mutton that depend upon our pastures may now prove as important in winning the war as our goals for planes, tanks, ships, and guns.

Agriculture's goals can be reached *through conservation farming that increases crop yields by protecting and building up our soils*. In a long war the maintenance of fertility is especially important, for it is essential that we sustain high production, year after year, for the duration—and longer.

The sod of good pastures protects the soil while it is being used for grazing, makes the soil more productive when it is broken to grow crops in rotation, and reduces the losses of soil by erosion while the land is being tilled.

For the practical guidance of farmers this bulletin outlines how pasture or meadow may best be used on seven classes of land that have differences in soils, slopes, susceptibility to erosion, and the need for protective measures. It points out the value of using pasture in livestock production and emphasizes the importance of pastures in providing essential foods.

Typical examples of conservation planning for farms, involving the use of pastures, are taken from the Corn Belt and the Cotton Belt.

The information contained in this bulletin will serve not only individual farmers but those communities of farms that are banded together in the soil conservation districts to which the Department of Agriculture is furnishing technical help and financial assistance.

Detailed recommendations on seedbed preparation, seed mixtures, and fertilizer application can be obtained from county and community committeemen, county agricultural agents, conservation technicians, or from the State agricultural colleges and experiment stations.

PASTURES TO HOLD AND ENRICH THE SOIL

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INTRODUCTION

PASTURES afford one of the most effective and economical means of holding and enriching the soil, provided they are managed properly. Two outstanding requirements of proper management in the eastern part of the United States and other humid sections where rainfall is usually adequate for abundant plant growth are (1) a sufficient supply of mineral plant foods such as lime, phosphate, and potash for desirable pasture plants to make enough growth to cover and protect the soil and to provide forage for livestock and (2) regulation of the number and kinds of livestock and the periods of grazing so that the pasture plants can make a vigorous growth each year.

MINIMUM SOIL LOSSES

When vigorous plant growth and regulated grazing are maintained, very little soil is lost from most pasture land. Measured losses are frequently less than 100 pounds per acre annually and average only 700 pounds of soil per acre annually on 13 important types of soil, under typical conditions in the eastern half of the United States, when a dense cover of grass is maintained. This average rate of loss is probably no greater than the rate at which new topsoil is formed. In clean-tilled crops, the same soils lose an average of about 34 tons of soil annually, or 97 times as much as when they are well covered with grass. Under the most favorable conditions, it takes nature from 300 to 1,000 years or more to build an inch of topsoil (fig. 1).

The process of making topsoil is complex; plants play an important part in it. Their living roots penetrate the earthy layers and aid in making the soil mass granular. When the plants die the root holes