Cutting Grass

How much grass can you remove from a field before you start to reduce its fertility?

This seems like a simple question, but the answer depends on what one means by fertility, and what sort of vegetation you want to see in your grass fields.

Cutting Once Per Year

About twelve years ago, we acquired a one-hectare field close to our house; we already had a suspicion that it was not very fertile – it had been used to grow wheat and maize alternately for several years, had not been manured in that time, had been repeatedly ploughed, and treated with chemicals and nitrogen fertilisers. We divided it up into small fields, some of which we used for crops, and the rest we cut once a year with a scythe. We did not have much choice but to rake off the cut material and use it as a mulch on the crop fields, as we did not have any other organic material available, and it seemed natural to prioritise the crops above everything else. However, there was a worry that by removing the feeble growth the fields were able to produce, we would be exacerbating an already bad situation. We did not plough or seed these fields, we just left them to see what would grow of its own accord. In the first few years, the growth was very poor; there were large areas just covered in moss, and others with ivy. Some grasses managed to grow, but they seldom reached knee height in the course of a year; dandelions were the most prolific crop. We continued with our annual scything programme, partially because tree seedlings were managing to grow in some of the fields, and we did not want it to develop into woodland, as that would have deprived us of our mulch altogether. Gradually, things changed; it started to take longer to scythe the fields, and more material was collected. We passed from having a chronic shortage of material for mulch, to having a surplus. We started drying the cut material and making it into hay ricks, for later use, and are now experimenting with composting the material, so that it can be worked directly into the surface of our crop fields.

The growth in some parts of our grass fields is becoming excessive, some of the grasses are over shoulder height, and the vegetation at ground level is so dense that it is difficult to cut through it with a scythe.

What we have learnt is that a single, annual cut does not deplete the fertility of a field, on the contrary, it allows the field to build up its fertility.

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What is Soil Fertility?

The idea of soil fertility predates science, and does not have a precise scientific definition. It could be understood to relate to an area of land's ability to give a useful crop, without the need for any external inputs. In grassland, it seems to be a function of the amount of organic matter and living things in the soil, the soil's ability to retain moisture, and the amount of air in the soil, but is also closely related to the roots of the plants themselves. Generally, the taller the plant, the deeper the roots; the roots break up the soil, aid the circulation of air and water, introduce organic matter into the subsoil, and encourage living things to delve deeper into the ground. Cutting the field just once a year favours plants that grow tall and have deep roots; in our case, this suits our needs, because we want a bulk of material that we can compost. Lightly grazing grassland, or cutting it for hay more often, favours the growth of plants with shorter roots, but can still be a sustainable system of land management, with the field giving a regular crop, and, therefore, maintaining its fertility. Problems arise when an area is cut too often (such as when it is overgrazed, or regularly cut with a lawn mower), so that only very-short-rooted grasses can become established; it then becomes susceptible to drought, compacted, devoid of life, and 'infertile'.

In the past, there was a better understanding of this subject; some areas were reserved as permanent grassland, and the number of animals allowed to graze on them was tightly controlled. This maximised the crop and conserved fertility. The process of enclosing land has led to overgrazing; ploughing up grassland and reseeding with grasses that need nitrogen fertilisers has further confused the issue, giving the impression that meadows are not self-sustaining. With a little common sense, however, it should be possible to determine how much of a crop you can take from your grassy areas whilst still preserving their fertility.

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