OPEN ACCESS Freely available online

Journal of Forest Research

Perspective

Enhancing Ecosystem Services: Short Rotation Forestry and Coppice for Sustainable Biomass Production

Gartzen Lopez*

Department of Forestry and Conversation, University of Granada, Granada, Spain

DESCRIPTION

The need to acquire and use renewable resources and carbon sinks sustainably is growing due to the growing world population. Planting quickly growing trees for Short Rotation Forestry (SRF) or Short Rotation Coppice (SRC), such as *Alnus incana*, *Betula pendula*, *Salix* sp., and *Populus tremuloides*, Populus tremula, is one method to meet this demand and realize the green deal. These plantations are growing in size. Renewable wood energy is these crops' primary advantage. If the plantation is utilized to its maximum potential, there may be further advantages for ecosystem services. The plantation provided a wide range of additional ecosystem services, as demonstrated by the results. Providing ecological services in the grassland belts between tree rows included plants for tea and medicine, as well as forage species for feeding cattle. Pollination by nectar plants, which yield honey as an added benefit, was one of the ecosystem services that were regulated. With 20 different types of nectar plants blooming, April through October was the most active blooming and pollen-producing month. There was potential for soil improvement with trees and plants associated with microbial nitrogen fixing. The quick-growing trees have the ability to absorb carbon and slow down global warming. A wider range of ecosystem services are provided by SRC and SRF as opposed to cultivated grassland with one or a few species.

The European Union will see a rise in demand for wood supplies, especially for bioenergy. Up to 2030, the European Union wants to see a 32% rise in the share of renewable energy in the overall supply. One way to replace fossil fuels as an energy source is to use Short Rotation Forestry (SRF), Short Rotation Coppice (SRC), or an agroforestry approach. The need for wood products from SRF and SRC is growing. Although the primary goal of these plantations is to supply wood for electricity, they also provide a variety of other ecosystem services, therefore they should be viewed as socioecological systems. An assessment of the ecosystem services can help with decisions about management and policy in the forest industry. Lowering Greenhouse Gas (GHG) emissions is one of Europe's top priorities. This can be accomplished by the construction of SRCs or the afforestation of arable lands by SRF as alternatives to possible GHG emission mitigation initiatives. Litter addition to soil will result in increased nitrogen concentrations and organic matter accumulation in addition to the carbon sequestered by the tree crop. This is especially true for tree species that have associations with nitrogen-fixing bacteria. It will also increase aeration, water holding capacity, and the diversity of microbiological ecosystems. Consequently, greater functional diversity and extra ecosystem services like nitrogen cycling will arise from the more diverse soil.

CONCLUSION

SRF plantations have the potential to host a wide variety of herbaceous plants, especially when the canopy is partially open. Utilizing the entire plantation by alternating grassland strips with tree rows will boost the variety of herbaceous plants and provide ecosystem services. The vegetation that grows in this kind of SRF planting is typical of grasslands, which can enhance the landscape's ecological and aesthetic value. Non-intensive management of the grassland strips in SRT may provide greater biological and functional diversity than pasture and meadows in an intensive agricultural setting, where plant diversity is low due to planting of *Lolium perenne*, *Lolium multiflorum*, *Phleum pratense*, *Dactylis glomerata*, *Festuca arundinacea*, and *Festuca pratensis*. The goal is to compare the ecosystem services provided by plantations with rows of trees separated by grassland strips, with those provided by intensive agriculture (one to three planted species) and closed cover fast-growing tree plantations (minimum herbaceous vegetation).

Correspondence to: Gartzen Lopez, Department of Forestry and Conversation, University of Granada, Granada, Spain, E-mail: gartzen.lopez24@ehu.es

Received: 29-Jan-2024, Manuscript No. JFOR-24-30184; **Editor assigned:** 01-Feb-2024, PreQC No. JFOR-24-30184 (PQ); **Reviewed:** 15-Feb-2024, QC No. JFOR-24-30184; **Revised:** 22-Feb-2024, Manuscript No. JFOR-24-30184 (R); **Published:** 29-Feb-2024, DOI: 10.35248/2168-9776.24.13.492.

Citation: Lopez G (2024) Enhancing Ecosystem Services: Short Rotation Forestry and Coppice for Sustainable Biomass Production. J For Res. 13: 492.