**Assessing the Impact of Forest Fires on Ecosystem Services: A Scoping Literature Review and Proposing a New Framework**

**This study explores the extensive impacts of wildfires on global forest ecosystems, highlighting their significant effects across economic, environmental, and social dimensions. Through a comprehensive scoping literature review, various economic valuation methodologies are evaluated, encompassing both market and non-market assessment techniques. Notable methods include the Faustmann and Reed model for assessing market impacts, alongside stated and revealed preference approaches for evaluating non-market environmental values. Additionally, insights from ecological models provide further understanding of the indicative environmental impacts of wildfires.**

**A significant finding from our review, based on the work of Wang and Lewis (2024), quantifies the economic impacts of wildfires on timberland value in the Pacific states of the USA. Their analysis documents a substantial 10% decrease in timberland economic value attributed to extensive wildfires and prolonged drought stress over the past two decades. Furthermore, comparative financial analysis by Blick and Woon (2021) indicates greater economic losses in forested areas compared to scrub and pasture lands in New Zealand.**

**In the context of non-market economic valuation literature, which remains very limited in the fire impact assessment space, the study by Farreras and Mavsar (2012) underscores a pronounced public preference for proactive wildfire prevention strategies over dead tree management. Furthermore, research by Loomis et al. (2001) illustrates the diverse impact of wildfires on recreational activities, with crown fires significantly altering the perceived value of hiking and mountain biking experiences.**

**From an ecological perspective, the global review by Roces-Diaz et al. (2022) indicates the complex effects of wildfires on ecosystem services, affecting water provision, quality, climate regulation, and erosion control in various ways.**

**Building upon these insights, we propose a novel conceptual framework that leverages remote sensing data for a nuanced evaluation of the multifaceted values of Forest Ecosystem Services (FES). This approach aims to refine the assessment of the costs and benefits associated with wildfire management programmes, considering both market and non-market values of FES, alongside distance and neighbourhood effects. By enhancing our understanding of the financial, environmental, and social repercussions of wildfires on FES, this research advocates for more effective forest management and a more targeted fire prevention approaches and outcomes. Our findings and proposed framework aim to inform future research, thereby contributing to the mitigation of wildfire-induced damages on local, national, and global scales.**

**References**

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