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Gwen Spencer* (gspencer@smith.edu). *Missing Constraints: Local Incentives May Sabotage Landscape-Scale Coordinated Management.*

A rule of thumb in optimization is that the more decisions which can be coordinated, the better. Is this principle suitable for considering problems in landscape-scale natural resource management? When jurisdiction is fragmented, and local land managers face substantial personal costs under globally optimal policies, implementation of “scientifically optimal policies” may be impossible. As an example, we discuss the case of improving preventive fuel reduction policies (to suppress wildfire spread). Can we move towards a richer set of constraints that reflect the true social-ecological nature of managing important natural resource systems? We open this inquiry by extending work in behavioral and environmental economics on conditional provision for the public good to heterogeneous networks. When knowledge that the global system will benefit is not enough to influence local adoption, what can we learn about optimal ways to coordinate an extended landscape of self-interested decision makers? Departures from the theoretical work on the spread of innovation and contagion are substantial, as total adoption is no longer submodular. (Received September 09, 2014)