

## **Response from Lant, Ruhl, and Kraft**

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servicing but irrational ideas that harm society—a case of negative externality. Caplan (2007) has found that voters have systematic biases that do not cancel out as simple random errors would. This leads to systematically bad policies. The same kind of analysis of self-interest and positive and negative externalities applies to politicians (who promise and enact policies that are popular instead of optimal), bureaucrats, and lobbyists.

Thus, Lant and colleagues want to address the externalities of commercial markets by creating a system that is also plagued by externalities. Political institutions will solve some problems, worsen others, and create new ones. Whether they work better or worse overall than traditional voluntary markets is an open, empirical question.

I agree with Lant and colleagues that some free-market mechanisms help to internalize externalities. As they discuss in more detail, a mechanism that may work at the local level is property bundling. Externalities and inefficiency arise when the spatial scale of environmental effects is larger than the size of properties. One way to internalize externalities is to increase the size of properties or to have lands potentially linked by externalities owned by a single individual, firm, or community. Property law should indeed evolve to facilitate forms of ownership that better deal with new environmental challenges.

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### Response from Lant, Ruhl, and Kraft

Professor Fuentes raises a number of interesting points in response to our Forum article titled “The Tragedy of Ecosystem

Services” (Lant et al. 2008), in which we present three approaches for dealing with the underprovision of ecosystem services: (1) the evolution of property rights, (2) reforming economic incentives, and (3) the development of ecosystem service districts. Addressing the second and especially the third remedy, Professor Fuentes argues, on the basis of Caplan (2007), that democratic political processes suffer from the “rational irrationality” of voters, derived from their lack of incentive to be informed on political issues and the systematic bias in the information they do use.

Caplan’s thesis, however, is only one of many perspectives of voter behavior. Granted, voters and politicians today generally have a limited understanding of ecosystem services. That said, when scientists creatively engage voters and politicians—as they could do more effectively in demonstrating, for example, that lost wetlands could have significantly mitigated the storm-surge damages of \$85 billion or more from Hurricanes Katrina and Rita (Colgan and Adkins 2006) and the \$12 billion to \$16 billion in property damages from the 1993 Mississippi floods (Galloway 1995)—constituencies can develop to protect and enhance such ecosystem services. What voters perceive as rational, in other words, is not beyond the influence of new information effectively presented about the connection between the environment and their pocketbooks.

Where circumstances allow, we agree that the difficult work of constructing markets does provide advantages, including a measure of economic rationality for both providers and beneficiaries of ecosystem services that voters and politicians sometimes lack (see Forest Trends et al. 2008, Willamette Partnership 2008, Wunder et al. 2008), but there are many instances in which the public sector is the most appropriate ecosystem service provider. We also agree with Professor Fuentes’s suggestion that increasing the size of private or public property holdings can lead to political inequalities, but the evolution of property rights cannot be left out of the picture. Developing common property institutions, ecosystem service easements, and other institutional designs for new property configurations embracing ecosystem services are worth exploring.

Ultimately, however, and despite its flaws, actively engaging the political process in the importance of ecosystem services to human welfare is necessary, if the externalities envisioned by Professor Fuentes are not to result in the accelerating degradation of natural capital and the consequent loss of ecosystem services. Constructed markets and new theories of property rights are not sustainable if they do not enjoy legitimacy in the political realm.

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