Editor introduction

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“Advancements” is the theme tying together the research presented in this issue of *Population and Environment*. Within these pages, we find important progress in population–environment methodologies (An and Liu 2010; Miller et al. 2010), data (Gallego 2010) as well as new and intriguing substantive questions (Ebanyat et al. 2010).

In the critically important setting of Ecuador’s Galápagos Islands, Brian Miller and colleagues provide an excellent example of the use of agent-based models (ABMs) within population–environment scholarship. In “*Using stylized agent-based models for population–environment research: A case study from the Galápagos Islands*,” the authors model population and land cover dynamics as a product of hypothetical agricultural subsidy scenarios aimed at controlling invasive guava. The results are intriguing and particularly relevant for those engaged in the integration of conservation and development in fragile settings. In addition, the methodological tool itself holds broad potential for the facilitation of stakeholder dialog and exploration of policy scenarios.

Agent-based models hold broad utility and we find another distinct application presented in this *Population and Environment* issue. Li An and Jianguo Liu use ABMs within their work “*Long-Term Effects of Family Planning and Other Determinants of Fertility on Population and Environment: Agent-Based Modeling Evidence from Wolong Nature Reserve, China*.” An and Liu model the habitat implications of fertility decision-making—an important, although understudied, connection. Their results shed light on the temporal dimensions of pressures on critical Panda habitat—which factors hold the most potential for short-term conservation gains?

Offering important advancements in demographic data, Francisco Javier Gallego offers “*A population density grid of the European Union*.” Lack of relevant data

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often hampers population–environment research since it is often difficult to geographically link demographic information with data reflecting relevant environmental context. Gallego makes innovative use of dasymetric grid population data to downscale population data thereby making it useful for more localized population–environment investigations. The data used are distributed free of charge by the European Environment Agency (for non-commercial use) and Gallego carefully describes the process used. We hope many scholars will find utility in this advancement.

Finally, Peter Ebanyat and colleagues offer “*Drivers of land use change and household determinants of sustainability in smallholder farming systems of eastern Uganda.*” Their scholarship more closely explores environmental implications than is often the case in population–environment scholarship. Specifically, they closely examine land use changes, even exploring nutrient implications of distinct farming approaches. This careful integration of demographic perspectives with ecological science should inform agriculture and development policy aimed at enhancing yields in the face of different demographic pressures.

Thanks to all of the authors in this issue for their commitment to *advancements* in the field of population–environment research. I also thank the reviewers who also enhanced these contributions through their critical commentary.

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