coastal shrub ecosystems in San Diego County at different scales and find that GAP methods are well suited to mapping larger remnants of original vegetation that have particular significance to regional conservation planning. In this case Stine et al. (1996) also point out the inappropriate nature of applying GAP maps to localized sites. Bolger et al. (1997) have enhanced our knowledge on the issue of predicting bird abundances with site-specific inventories; however, we fail to understand how they conclude that the GAP method may be seriously deficient at the regional scale.

Gap analysis seeks to develop a cooperative approach toward a shared framework for biogeographic information to promote proactive conservation practices for species while they are still common; it is hoped preventing their decline into conservation crises. Presently there is a need to expand the information sources used for conservation management, planning, and research beyond site-level characteristics in order to provide a consistent means for placing localized information into regional and rangewide contexts. The demand for this type of information is large and some users expect more from GAP information than is currently possible. There is ample room to improve upon the science behind the GAP methods, the methods themselves and, of course, peer-reviewed information on species-by-species responses to habitat factors. In this regard, the authors have developed some valuable information about responses of certain species to some habitat factors.

We agree that species-habitat relationships determined at one scale may not apply at others, although this is both species-specific and location-specific. We also agree that edge and fragmentation effects and their implications for reserve design deserve more study. We must be clear, however, about the proper applications of information developed at different scales. Much future progress in conservation biology will depend on the ability of scientists, planners, and land managers to develop and use biogeographic information that is content or site-specific in concert with information that provides a rangewide or ecological context. Such progress can only come with studies that correctly use data developed at multiple scales.

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Dangers in Dividing Conservation Biology and Agroecology

In their recent editorial, Vandermeer and Perfecto (*Conservation Biology* **11**:591-592) make the cogent point that if we as conservation biologists ignore agroecosystems "we leave the vast majority of the Earth's surface to the husbandry of those who care little about biodiversity preservation." We agree with their points, but feel they have "soft-peddled" their arguments to the extent of misrepresenting the gravity of not focusing more efforts in agricultural areas. We see this split between conservation biology and agroecology as more detrimental than Vandermeer and Perfecto suggest, one that warrants urgent attention from conservation biologists.

The notion that areas outside of nature reserves, parks, and wilderness areas are important for the global protection of biodiversity is not new. In one of the classic texts marking the early development of modern conservation biology, Western (1989) states that "if we can't save nature outside protected areas, not much will survive inside." The discipline, however, has failed to adequately address this point thus far. Our recent influence on national and international funding priorities serves as a useful example of this failure. The more general field of ecology and its major funding source (the National Science Foundation) have experienced a shift over the last decade, in which funding for conservation-related programs has increased steadily (e.g., the Conservation and Restoration Biology Program). In sharp contrast, we have made little effort to influence research priorities in agricultural areas. Given Western's well-articulated thesis that efforts are needed in both pristine and intensively managed areas, we have only approached success in one half of the equation. Research funding may be just the tip of the iceberg; there may be a wellspring of opportunity to institute large-scale changes in land-use, especially given the large role of government regulation and funding in controlling agricultural subsidies and practices.

The split between agroecology and conservation biology can also be seen explicitly in a central theme of

research in conservation biology, habitat fragmentation. For good reason, many efforts have focused on the role of fragmentation—at the level of populations, communities, and ecosystems. In theoretical studies size and spatial distribution of fragments are considered key variables for modeling the persistence of both populations and species diversity. From these models dispersal between fragments has been shown to be a critical component for metapopulation persistence (Gilpin & Hanski 1991). Dispersal is almost always viewed as a function of distance between, and/or isolation of, fragments. Empirical studies evaluate problems of both diversity and population persistence in the same way (Harrison 1994). Importantly however, we most often ignore ecological characteristics of what is *between* fragments as a variable in influencing dispersal rates. For example, juvenile survival and dispersal is often viewed as a difficult stage for Neotropical migratory songbirds, but very little research has been directed at the landscapes through which these birds must migrate (e.g., Robinson et al. 1995; Anders et al. 1997). We should ask questions such as what will be the difference between a typical Michigan corn field, for example, and an organic agriculture system on the movement of juvenile birds between woodlots, or on the movement of insects, mammals, and the many ant-dispersed seeds, etc. . . . ? In short, how will different types of agricultural systems influence overall regional diversity? The consideration of "corridors" may be inadequate here; by focusing on the corridor between two rooms we may be ignoring better opportunities to knock down the walls that isolate populations.

The failure of conservation biology to focus significant attention on agricultural systems is more detrimental than Vandermeer and Perfecto suggest; it may indicate a problem that future generations will view as a primary cause of conservation biology's failure to help preserve biodiversity. This is also a failure of agroecology. Although agroecologists are already beginning to study biodiversity as an important by-product of agricultural practices, the focus of most agricultural research on diversity has been for enhancement of predator-prey interactions to increase yields. Conservation biologists and agroecologists both lack experience in the study and management of agricultural systems for biodiversity. Yet, this is exactly the area where we should be honing our management capabilities before tampering with more "pristine" systems. For example, recent collaboration between agricultural and conservation biologists in developing the Conservation Reserve Program has led to practices that can decrease soil erosion and increase soil productivity while improving grassland songbird populations (Rodenhouse et al. 1995). Though few in number, the success of such collaborations between these groups in the past should serve as a lesson for future efforts (e.g., Buchman & Nabhan 1996).

With the hope of protecting biodiversity we must consider that one of our primary goals should be to reduce the level of degradation in managed areas, manage them appropriately, all the while entrusting to "nature" as much of the landscape as possible. To do this we need to address agricultural systems in terms of our research questions, funding priorities, and our influence on policy implementation, thus expanding the realm of conservation. Overcoming these challenges is not just a way to improve conservation biology—it is a necessity if we hope to reach our objectives. Without descending the ethical slippery slope concerning "naturalness," we can both encourage improved biodiversity protection on large portions of the managed landscape and at the same time oppose further degradation of remaining pristine areas.

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Public Lands under U.S. Air Force and Department of Defense Management

Jacobson and Marynowski (*Conservation Biology* **11**:770-778) overestimate the total proportion of U.S. Air Force lands included in Elgin Air Force Base by more than a full order of magnitude. Elgin AFB with a total acreage of 200,000 ha constitutes some 5.5% of all Air Force lands, not "78% of Air Force lands" (page 772) as cited by the authors. This error may be attributable in part to confusion regarding administrative distinctions between lands under Air Force management classified variously as "installations" or "ranges." The magnitude and sig-