Possession and the Law of Nature
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Letters

LEGAL LANGUAGE

In the article "The unwilling expert" (*BioScience* 42: 160–163), Anna Maria Gillis quoted me as follows:

> "The court's attitude was that Exxon and plaintiffs had the right to information that could affect their cases, especially because some of the survey participants may be parties to the litigation. *The* survey participants were deemed to have waived their right to confidentiality in their survey responses." (emphasis added)

I specifically stated that "*Those* survey participants were deemed to have waived their right to confidentiality in their survey responses." Only survey participants who are parties to litigation were deemed to have waived the right to confidentiality in terms of their survey responses, i.e., just like a plaintiff in a medical malpractice action is deemed to have waived her right to confidentiality of her medical records. Other nonlitigant survey participants were not deemed to have waived their right to confidentiality. Hence, the extremely tight protective order approved by the court.

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POSSESSION AND THE LAW OF NATURE

I have a few thoughts regarding the article by Arturo Gomez-Pompa and Andrea Kaus, "Taming the wilderness myth" (*BioScience* 42: 271–279). The genus *Homo* has been a member of the universe for somewhat less than 1% of 1% of nature's existence, and we have been making an impression beyond that of other animals for perhaps half that time. We are thus newcomers. Although complaining about the elitism of the western tradition of protecting some of nature, the authors come from a (relatively) ancient line of argument suggesting, ultimately, that we should take even more of it.

In their introduction, the authors make an immediate and fatal error in assuming that the rationale for protecting nature is that western civilization knows just what and how much to preserve. Nothing could be further from the truth. It is precisely because we know so little about nature that some thoughtful humans suggest we protect large areas of the planet, so nature can do what it does on its own, without our interference, direction, or influence. Humans are seen not as evil, but rather as something like bulls in a china shop.

The authors clearly take the infestation, or cockroach, view of humanity: once humans get into an area, they own that area, have control over it, and can never to be asked to leave that area. They become locals. The authors seem to be claiming that as long as even a single rural person claims control, for example, over a 60,000-acre valley, even if he has been there for all of 0.00001% of the planet's history, anyone else is an elitist outsider who can have little or no knowledge or legitimacy.

The authors fairly well romanticize the rural folk, "the people most closely linked to the land." But we, the rural folk, have been the ones altering the planet (taking game, plowing up the topsoil, displacing plant and animal species, and appropriating production) for about 2 million years (Simmons 1989). It was only when we became so proficient at it, about 9000 to 8000 BP, that we could afford the luxury of complicated interpersonal life in cities. The authors also seem to fail to notice that it was early and continual population growth of "those closest to the land" that led to those destructive, elitist cities in the first place. That hardly seems like considerate behavior. Perhaps the larger myth that needs taming is the one that intimates that humans are made of two species, and that one, in this case the rural folk, are some sort of benign, wise, and friendly caretakers of the land.

Unfortunately, the article contains other flaws in logic and judgment. For example, as an example of the difference in ethos between rural and urban people, the authors note that many human groups hold land communally and conserve it, rather than view it as an exploitable resource. But that only works when the human groups maintain low group populations, with lots of available land between groups. As soon as they grow, as most human groups invariably do, part of the group breaks off to a new piece of land and begins anew the same low-level resource use. All is fine until the groups begin to abut one another. Few groups lower their growth rates, and the inevitable follows: they take more from the land. Beyond a certain minimal level of technology, which again, many, many groups seem able to attain, we end up with sumps in the form of villages, towns, and cities. History is full of examples, including the Mayan lands. If we wait long enough, we end up with Cairo, Tenochtitlan, Los Angeles, and Tokyo. For the planet as a whole, there do not appear to have been any appreciable periods during which human appropriation of natural and biological resources have not increased (Roberts 1989, Simmons 1989) due to the interaction of population growth and technological innovation. Examples of exceptions include the crashes of civilizations, such as the Mayan, and periodic plague epidemics.

Many such small groups appear to conserve because, in effect, it was easy to do so: if one does not need some-

thing, preserving it is hardly altruistic (for that matter, is protecting something you can use particularly selfless?). I do not think there is a single demonstrated case of a so-called primitive, environmentally benign group in the past century that, having been given medicines, does not use them, and does not subsequently mushroom in the number of its members and thus threaten to degrade its environment. Today, many such groups have the very highest growth rates. Large numbers of humans simply cannot be benign to a limited number of Brazilian trees or to local salmon in the creek. Someone is being deluded to think so. I do not really see much difference, on an environmental benignity gradient, between one group that exploits the environment, but keeps its numbers down, and another that institutes myths and rules to publicly or directly conserve its immediate environment, yet continually produces more offspring/users. Why do we—all of us—not take the benign parts of both? In our changed world, no one has the luxury of clinging to traditional ways any longer.

Were it not for that tendency of humans to change (i.e., increase), both in numbers and in the amount of technological power available per capita, it would be hard to imagine that any "western" conservationist would have an opinion, pro or con, about small groups of humans living dispersed in any habitat of their choosing. But because change they do, they tend to blend together and become a large, overbearing mass: the human race, individuals with far more in common than not. In an ideal world, it might indeed be pretty to sanction individual human access to and control over every meter of the entire globe, but what may be fine for a person living within a group of scattered communities of 150 people is not possible in a world of 5.5 to 15 billion or more people.

Insofar as humans (of all cultures) are renowned for rationalizing their right to take what they please, the only thing that surprises me is that it took so long for this kind of argument to reach the pages of *BioScience*. Unfortunately, and in light of the still-exploding human population (and the fact that so few of us seem to be controlling our personal behavior in this area), I suspect that this is just a prelude for humanity to take even more for its own use: as much as it needs, now that it needs it. Surely the most dangerous attitude we can take is that of the temporally provincial: Here I am, let's protect my way of life; after all, this is the way we have always done it, this is the way we will always do it. All in all, the article reminds me of a photograph I saw many years ago: a remote Texas beach, the tideline strewn with plastic flotsam and jetsam, the lonely, prescient scientist stating, "What's most worrisome is that children growing up will think this is normal." He meant that historical recency is taken as the way things are supposed to be. Perhaps we are those children.

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Arturo Gómez-Pompa and Andrea Kaus reply:

We do not deny that humans have occupied this earth for only a fraction of its history or that human actions have been the overwhelming contributing factor to environmental degradation. However, the proportion of human history to that of the planet's is not a relevant argument in this case. The reality is that we are here on this planet, we occupy every one of its biogeographical provinces, and we literally hold its fate in our own hands. Our argument, stated in the very first paragraph of the article, is precisely that we, as a global society, do *not* yet know how to conserve our natural resources, and that in the past, international conservation policies have implemented policies that are based on an incomplete knowledge of reality. Perhaps when Gastang refers to our "immediate and fatal error," he misunderstood this introduction to the article.

Archaeological, botanical, geographical, and ethnographic research has increasingly shown that the places we wish to designate as wilderness areas, in the sense that they are to remain untouched, are often in fact inhabited by humans or have been inhabited in the past. Therefore, the pristine state we so value in wilderness is actually the result of a human relationship with the natural environment, even if this relationship is not a conscious one and even if this relationship has been a very short one. These are the human actions that need to be acknowledged and included within conservation policies and practices.

In addition, the use attributed to local inhabitants of a wilderness area may in fact be the protection of the area. In the literature on common property management, many examples can be found of human societies which have successfully designated and managed a protected area within the sociopolitical systems for productive use of the surrounding land. The article is by no means an argument for human use of all areas of the globe, only a reminder that conservation is part of a management system that includes areas of both limited and intensive human use. In this sense, protected areas (and their managers) need to be an integral part of the social as well as the natural environment, rather than artificially isolated tracts of land that must then constantly defend themselves from the surrounding human pressures and incentives that may ultimately usurp the human-perceived rights of wilderness to exist.

Population density is indeed an important factor in environmental degradation, but contrary to common beliefs, it is not the population density in the designated wilderness area that automatically seals the fate of the area. Rather, it is the population density of the urban areas and populations of the political entities that have usufruct rights to the land that contribute to the incentives for protective or extractive land use. Tropical forests are disappearing because our urban centers need their raw resources and their governing nations need the capital these resources provide. Slash-and-burn agriculture (including the range of mismanaged to well-managed sites) accounts for only 30% of tropical deforestation in Latin America (IRRI 1992). And, as was pointed

out in the article, slash-and-burn agriculture by colonists (under government incentives to clear the land) is different from the shifting agriculture practiced over millenia by the indigenous inhabitants of the tropical forests. Second, high population density is not a necessary or sufficient cause for environmental degradation. The ancient Maya of Mexico and Central America maintained high population densities over many centuries without massive extinctions of the flora and fauna in the areas we now call pristine tropical forest. Yet, present-day tropical forests throughout Latin America, with comparatively low population densities, suffer from the world's highest rates of tropical deforestation and probably large numbers of extinctions.

The article is also not an argument to throw out Western tenets and embrace those of non-Western societies with the assumption that these are automatically environmentally sound. In fact, the article states that the point is not to create a new romantic myth of the nobleness of the residents of rural areas. Nor is the article an argument to separate the rural and urban sectors of human societies and place a value on their relative understandings of the natural world and its appropriate use. Many schools of thought within Western and non-Western societies, urban and rural populations, advocate a harmonious relationship between humans and the natural environment. In turn, archaeological, historical, and ethnographic evidence demonstrates that non-Western societies are also capable of great environmental destruction. The range of beneficial to destructive actions exists within the scope of all human relationships to the land. And, ultimately, it is humans who decide the fate of the land and must accept the consequences: "For man, who fancies himself its conqueror, is at once the maker and victim of the wilderness. Even the dense and hostile jungles of the tropics are often the work of his hands" (Sears 1980).

What the article is intended to show is that the dominant beliefs about wilderness, the beliefs that influence national and international conservation policies, are missing the experienced knowledge held by the inhabitants of the lands we designate as protected areas. We are essentially ignoring generations of field trials, good or bad, in environments about which we know very little. Equally important, such policies do not include the needs and aspirations of the local inhabitants in the decisions that ultimately affect their lives. By excluding local inhabitants from federally or internationally designated protected areas, conservationists impose their beliefs about humanity's obligations to wilderness protection over those of the local residents. This costs the concerned conservationist nothing, but costs local inhabitants their source of livelihood, and the resultant alienation from the land sets up some of the very conflicts that protected area managers wish to avoid, such as poaching, plant extraction, and colonization.

It is perhaps true that "no one has the luxury of clinging to traditional ways any longer," if indeed traditions are dead constructs. However, a tradition here is held to be the evolving combination of changing practices and beliefs that together form a creed to guide behavior within a society from one generation to the next. Other authors before us have wisely pointed out the basis of conservation in human perceptions. In speaking of the need to include human needs and aspirations in forestry policies, Hugh M. Raup, an eminent forest ecologist and former director of Harvard Forest, has pointed out that this requires a new frame of reference, "in which the focal point is not the physical resource but the human mind, from which all forest values come. Because the human mind is inventive, fickle, and essentially unpredictable, any frame of reference built around it must have a large element of flexibility" (Raup 1967).

We, as a global community, have the ability to create a new tradition of conservation management formed from the "benign" alternatives present in many human societies. What is needed is the integration, not the exclusion, of scientific and local-level knowledge and methodologies for a better understanding of the reality of the human role in the natural environment.

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