

EDITORIAL

THINK LINK: CRITICALLY EVALUATING LINKAGES BETWEEN CONSERVATION PROJECTS AND DEVELOPMENT

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Previous editorials in the *Journal of Zoo and Wildlife Medicine* have focused on the evolving role of veterinarians as environmental professionals and the societal needs shaping this evolutionary process.^{2,3,7} Hutchins, Foose, and Seal² suggested three basic levels of concern for zoo and wildlife management: the individual animal, the social group, and the population. The purpose of this editorial is to define a fourth and significantly broader level of concern for conservation professionals dedicated to fostering truly integrated ecosystem health: the linkage between biodiversity conservation efforts and sustainable development.

Zoological park and wildlife veterinarians are in a unique position to lead by example in maximizing "bang" for every conservation "buck" spent by their home institutions. Economic realities alone dictate that we reevaluate the way we spend money ladled from what is clearly not a bottomless pot, considering the plethora of capital-intensive approaches to natural resource conservation. We must take responsibility for critically evaluating our project ideas in the context of "big picture" needs, and must be willing to acknowledge the difference between true conservation priorities and projects developed out of an institution's inherent biases: historical research emphasis, curatorial preferences, political pressures, staff strengths/interests, scope of captive collection, etc. Should an organization ignore the characteristics that make it unique? Of course not. We must draw on our particular strengths, but at the same time we must have the integrity to screen proposed projects in terms of clearly defined conservation objectives with measurable results. In-house project review committees, peer-review of grant proposals, and funding trends among major donors all play a role in the conservation triage process. The reality, however, is that international bodies, governmental and nongovernmental organizations, and academia still respond to

conservation problems in a fairly ad hoc way, without developing a consensus on long-term objectives and the contextually relevant policies needed to achieve them.⁵

These statements should not be construed as criticism of our work to date as much as an admission of guilt, a recognition that long-term planning has not been one of our species' strengths over the millennia. Can we attempt to optimize the limited resources (time, money, expertise, land) we do have available?

It is not quite so easy to harmonize natural area protection, cultural preservation, and true rural development for resident peoples. The gap between rhetoric and reality is not so easily closed. Tragic dilemmas and hard, wrenching choices will not go away.

Once we have come to that realization, then perhaps we can truly proceed to both build and rigorously evaluate new alternatives, firmly rooted in the integrated use of the natural and social sciences, and using participatory planning and conflict management processes. This will need to be merged with a sense of balanced moral responsibility for the human and ecological consequences of our actions, and the political will to support real implementation of concepts such as local control and co-management that will be politically threatening to a variety of powerful interests, not the least of which is the autonomy of the international conservation movement itself.⁹

A response to the challenges described above arose in the relatively new concept of the Integrated Conservation and Development Project (ICDP),⁸ with its three main objectives: (1) protected area management, (2) establishment of buffer zones where human activity is phased down to allow a blending with conservation objectives, and (3) local social and economic development.⁵ Although these three objectives are necessary for successful (sustainable over the long term) conservation, they are not sufficient. A recent review of 23 ICDPs from around the globe designated all of them as failures because of a lack of a clear linkage (or any linkage) between socioeconomic benefits derived from the project by local people and the induction of behavioral changes that would reduce pressures on the protected area's resources:

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The projects failed for several reasons, among which are: (1) although all projects provided local benefits, they lost sight of the need to translate this into conservation in the process; (2) they assumed naively that simple enhancement of living standards would reduce pressures on the nature reserves without law enforcement—results have disproved this assumption; (3) different organizations—government, conservation organizations, development organizations—working independently as they usually do could not effectively implement ICDPs; and (4) some factors leading to the erosion of biodiversity do not originate at the local level, but far from park boundaries. Such factors are the inability of central governments to manage public lands and powerful financial incentives that encourage over-exploitation of wildlife, grazing, timber, and crops.⁵

What do the above issues have to do with the community of zoological park and wildlife veterinarians? Since coming to Washington, D.C., I have been repeatedly asked why more veterinarians are not involved in wildlife conservation. Within our own community, this question sounds almost absurd: our careers have been devoted to *ex situ* and *in situ* species conservation. To conservation professionals outside our community, ecologists, biologists, sociologists, economists, and even politicians, our efforts can seem disjointed, somewhat out of step with the big picture that the ICDP concept tries to capture. Right or wrong, this perception merits our consideration. Critical clinical problems mandate a rigorous diagnostic plan, a multifaceted therapeutic plan, clear communication, and short- as well as long-term monitoring. Critical conservation problems deserve no less.

Most of us would not approach a patient by focusing solely on symptoms while ignoring etiology. Similarly, we must ensure that our institutions continue to fine tune their objectives when prioritizing conservation-oriented expenditures; focusing on the reproductive parameters of an endangered species while ignoring the etiology of its decline in the wild may not be the best use of available resources. Perhaps a transfer of funds from the zoo to education programs in the species' country of origin instead of a high-profile in-zoo project would "buy" more conservation. Under the best of circumstances, of course, zoo-based work and work *in situ* are strongly linked, and the importance of this coupling is obvious to most of us.

A recent trend in international conservation that I hope will continue is the emphasis on *in situ* human capacity building, with local scientists and technicians serving as true counterparts to visiting western conservationists, for example. The importance of earnest international collaboration, particularly between wildlife veterinary professionals

from "developed" and "developing" countries, has recently been discussed.^{1,4} Time and money spent on such training, with the goal of facilitating sound wildlife management, can be more valuable than yet another out-of-context research project, despite what may be our professional conditioning to the contrary.

Within the conservation community, there appears to be reasonable consensus on broad research priorities: monitoring ecological baselines and long-term trends; predicting cumulative impacts on ecosystems from human activities, with the objective of preventing or ameliorating such impacts; understanding the effects of climate change on biodiversity; developing methods for restoring degraded ecosystems (including reintroductions when indicated and feasible); and developing land-use policies and grass-roots protected area plans that increase managers' capabilities to reach conservation objectives.^{5,6} Each one of these research priorities is inextricably linked to human activity in one way or another and thus must take development factors into account. (Similarly, management actions derived from research findings must incorporate development needs.) Each one of these research priorities also raises questions perhaps best answered by investigative teams that incorporate veterinarians.

Veterinary training prepares us quite well to address the interface between the acquisition of technical knowledge and the implementation of meaningful projects. More wildlife conservation projects fail than succeed, particularly when they lack good research information, fail to address basic linkage issues, and/or do not make provisions for long-term program maintenance.⁵ I would like to see the veterinary profession doing all it can to tip the scales in the other direction. In the words of E. O. Wilson,¹⁰

In the end, I suspect it will all come down to a decision of ethics—how we value the natural worlds in which we evolved and now, increasingly, how we regard our status as individuals. We are fundamentally mammals and free spirits who reached this high level of rationality by the perpetual creation of new options. Natural philosophy and science have brought into clear relief what might be the essential paradox of human existence. The drive toward perpetual expansion—or personal freedom—is basic to the human spirit. But to sustain it we need the most delicate, knowing stewardship of the living world that can be devised. Expansion and stewardship may appear at first to be conflicting goals, but the opposite is true. The depth of the conservation ethic will be measured by the extent to which each of the two approaches to nature is used to reshape and reinforce the other.

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