



Todd Fuller (sixth from right) counting hermit crabs at Corcovado National Park, Costa Rica, with graduate students from the Wildlife Management Program at Universidad Nacional de Costa Rica in Heredia.

## Why do international research and management?

*Todd K. Fuller, Mark R. Fuller, and Richard M. DeGraaf*

### In an informal survey, wildlife scientists attest to the value and benefits of international work

In 1991, inquiries by Brown et al. (1994) to members of The Wildlife Society, the scientific and educational association of wildlife professionals, resulted in replies indicating that international wildlife conservation was ranked medium-low, overall, as a natural-resource priority issue. Although most members of The Wildlife Society identified continuing-education opportunities for wildlife professionals as a high priority, few apparently identified international work as an appropriate or desired option to obtain such edu-

cation (Brown et al. 1994). In commenting on this report, deVos (1995) lamented the poor rating received by international wildlife conservation and the lack of action by North American biologists in efforts to conserve the wildlife and natural ecosystems in the developing world.

There is a clear need for scientific expertise in foreign countries (Crowe and Shryer 1995, Xu and Giles 1995), and there are opportunities for international collaboration (Leslie et al. 1995). As government em-

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ployees and academicians, we (the authors) have been and continue to be involved in wildlife research and management in other countries. When colleagues or other friends learn this, they typically ask: (1) Why do you do work in other countries? or (2) How do you get to do work in other countries? The following summary reflects our thoughts and those of some colleagues from the United States and elsewhere. It is not a formal survey but, rather, a collaboration of colleagues with common interests and experience in international work.

## Methods

We wrote to 26 acquaintances and colleagues in the United States and around the world whom we knew participated in wildlife research and management outside their home countries. We sent each person a 4-page questionnaire to complete and return. The results of this survey provided the basis for this report. By definition, participation in international wildlife research and management included a wide array of activities involving direct travel to or participation in research or management in a foreign country.

## Demographics

Including our own responses, 20 questionnaires were completed. Respondents were males, mostly from the United States ( $n = 12$ ), but also from 6 Palearctic countries, including Sweden (3), Italy (1), Denmark (1), United Kingdom (1), Russia (1), and China (1). Collectively we have had experience in  $\geq 61$  countries and on all 7 continents. We are government employees ( $n = 9$ ), academics ( $n = 8$ ), and members of nongovernmental organizations ( $n = 3$ ) with varying lengths of experience in international work (1-4 yrs:  $n = 3$ ; 5-9 yrs:  $n = 3$ ; 10-19 yrs:  $n = 7$ ;  $>20$  yrs:  $n = 7$ ).

All of us have attended international conferences, and 90% have conducted field work abroad. Many have been involved in teaching (65%), wildlife management activities (60%), and program evaluation (45%). Fifteen percent of us have engaged in museum and library work; and 30% have participated in other activities such as mail surveys, cooperative agreement administration, and editing. In addition, we do a variety of international work, with the average time individuals spend on various activities as follows: field research (51%), conferences (20%), management (10%), teaching (10%), program evaluation (12%), museums or libraries (1%), and other activities (3%).

## Questions and answers

We posed the following series of questions; summary answers provide insight into why and how we engage in international wildlife research and management.

*Question:* Why is it important that you work in a foreign country; what do you do that requires travel outside your home country? *Answer:* For the most part, we seek to gain new information. Specifically, some of us look for different ecological perspectives, but others want to contribute to global conservation, share information, and build cooperation and friendships while gaining personal experience and satisfaction.

*Question:* What are the difficulties and constraints in international work, at home and abroad? *Answer:* Often, there are major differences in doing business at home and abroad, differences including language, culture, and methodology. In some cases, there are significant differences in ways in which research relates to management in a country. A lack of infrastructure, especially in the provision of air transport and availability of maps, constrains some work. Funding and lack of commitment or support by employers also are difficulties. Obtaining required permits can be difficult, and other regulations (at home and in other countries) can be constraining. Sustaining continuity in a program after the first year and finding time to be away from the primary job at home are difficult.

*Question:* What are the restrictions on uses of funds for international work, and are sponsors concerned about money being spent in the country where the work is done? *Answer:* Several of us noted that the only constraint is that funds have to be spent for the stated goals or in the country proposed. Some funds are strictly designated for conference attendance. Some sponsor-provided funds are explicitly for use in the host country or to provide training to nationals.

*Question:* To what extent do visits serve educational purposes in the host country and your country? *Answer:* Most of us give seminars or guest lectures in host countries, and many do field demonstrations for students and technicians. Several correspondents go to a country to conduct a specific training program. Everyone gains personal knowledge from their international work, and most use that knowledge in courses or seminars in their home country.

*Question:* How do you share the information you collect with the host country? *Answer:* The most common form of information sharing (beyond informal discussions) is providing a report of the trip or

project. Several respondents co-author papers with hosts, and others prepare information for the public. A few make formal presentations in the host country. Publication in the host country's language or in regional outlets, whether in technical or popular format, is rarely identified as a means of sharing work results.

*Question:* To what extent are short-term visits (days-weeks) valuable? If you have longer or recurring visits, what are the advantages? *Answers:* Respondents cite conference attendance, renewing personal contacts and lectures, and training as being worthwhile accomplishments on a short-term visit. Some say research could be accomplished during a brief visit if the necessary planning were in place and collaborators were prepared. Others state that longer or repeated visits are needed to do field research. Longer or repeated visits also assure continuity and project implementation.

*Question:* What was your most disappointing experience in international work? *Answer:* None of us were complainers, but disappointing experiences included: brevity of visit, lack of program continuity or completion, bureaucratic waste of time or funds, lack of funds or employer support, misunderstandings, and illness.

*Question:* What was your most rewarding international experience? *Answer:* Responses included obtaining new perspectives and ideas, discovering new information or results and expanding knowledge, making a meaningful contribution to conservation, conducting field work in a new place, completing work in a new culture, and developing friendships and personal contacts.

## Discussion

As wildlife scientists from many countries, we have a variety of perspectives on international wildlife research and management. Our varying interests, experiences, and employment include the independent study and reporting on basic and applied research on species in all classes of terrestrial vertebrates; visits and investigations carried out on all continents; and employment with universities and with state, provincial, and federal natural resource agencies. Overall, we find that our acquired knowledge is broadly applicable to international projects, whether it relates to techniques, natural history, ecological and evolutionary relationships, or environmental perturbations. We believe that by working internationally we can gain new information and make important contributions to our areas of interest.

We find that international wildlife research and

management is rewarding. Everyone indicated that they had accomplished some objective in research, management, or education. For some of us, our work is very important simply because our area of expertise requires international travel to conduct field work or to communicate with other specialists in our field. But generally we participate in international activities for the same basic reasons wildlife biologists pursue their work at home.

We are interested in concepts (e.g., keystone species, limiting factors, biodiversity), certain taxa, or management or conservation strategies. Basically, those interests, transcending political boundaries, define international work. The comparative approach to science leads naturally across national boundaries. Comparisons among management plans and conservation strategies that develop from different historical contexts and different cultural attitudes can be very useful. The benefits of learning from colleagues and experts, regardless of national affiliation, are obvious.

International work makes sense and should be supported in the research and management of species whose distributions or habitat requirements extend beyond political boundaries. Supporting work in both Florida (U.S.) and Alaska (U.S.) because it is domestic, while dismissing or discouraging work conducted in Arizona (U.S.) and Sonora (Mexico) or in Quebec (Canada) and Maine (U.S.) because such work is international does not make sense. To be sure, different efforts may be required to obtain necessary permits and funding to do such work. We also recognize that there might be other factors, such as language or infrastructure, that must be weighed in determining the viability of an international project. But these considerations also often apply to work at home.

We have found useful, fulfilling experiences in international wildlife research and management projects. We encourage sponsors and employers to initially consider proposals for international work on the same grounds that they use for national work; sponsors or employers should then consider the advantages and disadvantages associated solely with the international aspects of the proposal. There are many issues requiring attention within one's home country, but clearly there are many natural resource issues that transcend national boundaries; we should avoid letting unnatural lines on a map hinder the research and management required to conserve global natural resources.

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