Policy Relevant Conservation Science

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Conservation scientists increasingly aspire to conduct research that directly informs and influences conservation policy and management actions. Emphasis among funders on science to inform conservation activities is also increasing. Furthermore, agencies and nongovernmental organizations are increasing the value placed on science published through peer review. These trends indicate a welcome transition, where a conservation scientist need not make a dichotomous choice between developing science for policy and management impact, and science of high academic impact.

Extensive discussion of the “research-implementation gap” (Knight et al. 2008; Sunderland et al. 2009; Esler et al. 2010; Biggs et al. 2011) suggests, however, that a gulf commonly exists between published conservation science and the implementation of conservation activities. Although writing as conservation scientists, we are motivated by our observations as editors that many authors equate documenting phenomenon related to conservation, with policy relevance. We believe that a more explicit link to conservation policy or management increases the likelihood that research will be policy relevant.

At Conservation Letters our aim as editors is to publish policy and management relevant conservation science. Our touchstone criteria is whether authors have clearly identified actors who could take policy or management action as a consequence of the scholarship presented in the article (see author guidelines http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1755-263X/homepage/ForAuthors.html). Often, policy relevance is discovered in the process of conducting a study or sometime after it is completed. Such fortuitous relevance to conservation policies and actions is expected, welcomed and likely the norm. However, it is our experience that policy and management relevant science can more reliably be developed if there is a clear understanding of relevance prior to undertaking and publishing the research.

Here, we present our conceptualization of key ingredients for strategically producing policy and management relevant conservation science, presenting them as questions that scientists can ask themselves as they are developing research plans and publications This Viewpoint aims to assist researchers to develop and publish conservation research that informs actions for improved conservation outcomes.

Defining policy and management relevant conservation science

Conservation is, broadly speaking, any act with the intention of conserving nature. Conservation science is research
that informs conservation. This research can be drawn from right across the sciences (natural, social, physical, and interdisciplinary). Conservation policy is any set of institutionalized behaviors or practices that influence conservation activities. Under this definition, management actions are an example of an institutionalized practice, and therefore conservation policy. We define policy relevant conservation science as science with a clearly articulated and substantive link to conservation outcomes through a policy process.

The distinction between conservation science and policy relevant conservation science can be illustrated by an example. A study focused on the habitat requirements of a threatened species and threats to this habitat, is likely motivated by the conservation of that species and is conservation science. On the other hand, a study that uses knowledge of habitat requirements to examine the potential impact of proposed agricultural policies on this habitat and the threatened species, is policy relevant conservation science. In this latter case, the study is policy relevant conservation science because it is explicitly linked to conservation outcomes through an explicitly identified policy process.

Conservation as a policy process

The defining feature of a policy is the institutionalization of behaviors or practices (Clark 2002). This institutionalization can occur across multiple spatial, temporal, and institutional scales, for example, local (e.g., selecting and managing community-based no-take fishing zones) to global (e.g., the Convention on Biological Diversity). Policies are developed and implemented through a policy process. A widely accepted definition of a policy process from the policy sciences is a social process of authoritative decision making by which members of a community clarify and secure their common interests (Clark 2002). We view conservation action as fundamentally a policy process, and believe that understanding it as such, assists in promoting the development of policy relevant conservation science. Without policy processes to guide conservation actions, societal goals for conserving nature are unlikely to be achieved.

Understanding the relationship between science and policy, and having a robust mental model of how conservation science can influence conservation policy is fundamental to delivering policy relevant conservation science. For example, policy relevant conservation science might seek to: (1) raise awareness about problems with an existing policy or management practice, (2) identify management options that can drive policy prescriptions, (3) make predictions about likely policy and management outcomes, (4) address monitoring and evaluation to determine whether a policy has been successful, or (5) identify new policy opportunities.

Developing policy relevant conservation science

We do not believe that all conservation science ought to be focused on policy relevance. There is need for a wide range of research to inform conservation, including “curiosity” or “blue skies” research, in much the same way as different types of knowledge (e.g., traditional ecological knowledge) can be used to complement science. We do, however, believe that many conservation scientists are striving to make their science policy relevant; hence, we focus our attention here on some guiding principles for succeeding at that effort. We propose a set of core elements for strategically developing conservation research and publications which are policy relevant (Table 1). Of course, adhering to some or all of these elements is no guarantee of policy relevance. Similarly, failing to address each element will not preclude research from policy relevance. Rather, these are elements we believe will increase the likelihood of science being policy relevant.

More generally, attributes of science that improve policy relevance include salience, credibility, and legitimacy (Farrell & Jäger 2005; Mitchell 2006). Salience assures that format, timing, and resolution are appropriate. Credibility assures that a study is the result of a transparent and robust scientific process conducted by experts. Legitimacy assures that the research process takes account of the concerns, interests, and needs of stakeholders germane to the policy process, and is consistent with recognized existing rules or procedures.

Conservation Letters

We have focused on what we think scientists can do to bridge the research–implementation gap with their science. Conservation Letters was initiated to provide a home for cutting-edge, policy relevant conservation research from across the sciences. It is our view, that the publication of policy relevant conservation science needs to be fostered by the academic publishing community. We specifically look for policy relevance in manuscripts submitted for publication, seeking evidence from authors that they have taken explicit steps to link their science to conservation policy or management actions through a policy process. As the field of conservation science continues to diversify and evolve, we feel that the opportunity to mindfully integrate principles of policy relevant conservation science into research practice will allow
Elements of explicitly policy relevant conservation science. The breadth of conservation problems results in these steps having varying relevance and importance in different contexts. Furthermore, specific conservation problems may result in manifestations of the element not well captured by the specific description presented here. Nonetheless, the likelihood of achieving policy relevant conservation science will be increased by strategically and explicitly considering each of these elements in research design and publication.

| Element               | Description                                                                 | Focal Question(s)                                                                                                                                 |
|-----------------------|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Values                | Values manifest what society fundamentally cares about and are the basis by which we evaluate the desirability of alternative policies. PRCS should be explicit about what values are being considered or assumed. | • Does the research assume nature as a prioritized value or integrate a diverse set of values that includes nature? |
| Policy context        | The specific policy process(es) that govern relevant behavior or practice is clearly identified. | • What is the policy process for which the science is relevant? • Who, and how, are the key stakeholders affected by the policy process? • Who holds decision authority? And, what is the decision process? • What instruments, incentives, and institutions are relevant for implementing conservation policy and management actions and how does science link with them? |
| Research questions    | Develop scientific questions to illuminate or reduce uncertainty in possible policy outcomes, or address key weaknesses that hamper current policy. | • Are different types of knowledge, in addition to science, important to acknowledge and integrate to ensure the research has legitimacy? • Understanding of what phenomena can science elucidate to improve conservation policy and management processes and actions? • What scientific uncertainties constrain future policy options? |
| Audience and message  | Be explicit about how science is relevant to stakeholders and the policy context more generally. | • Who should take what action as a consequence of this science? |

conservation policy processes to better harness the considerable talents and creativity of the conservation science community.

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