

OPINION ARTICLE

The value of cooperative extension for involving society in restoration and conservation

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Stakeholder input for restoration and conservation efforts is critical for project success and societal buy-in. A lack of experience or training, however, might limit the ability of managers to develop the partnerships needed for effective integration of stakeholders in project design and deployment. Cooperative extension (CE), a boundary-spanning organization associated with U.S. land-grant institutions, can help address this limitation because it has a long history of success with identifying, reaching out to, and connecting stakeholders in management projects. Organizations both within and external to the United States can enhance stakeholder contributions in restoration and conservation by leveraging expertise in CE. This can occur both by learning from and partnering with CE.

Key words: clientele, conservation, cooperative extension, restoration, stakeholder

Implications for Practice

- Cooperative extension has more than 100 years of experience in community engagement and experimentation that can be leveraged in evolving models for stakeholder involvement.
- Organizations can both learn from and partner with cooperative extension to enhance stakeholder integration into restoration and conservation projects.

Introduction

It is well established that management goals are more successfully achieved when stakeholders are incorporated into the decision-making process (Gregory et al. 1993; Beierle & Konisky 2001; Bernhardt et al. 2007). Researchers and practitioners, however, do not necessarily have experience involving stakeholders into management design and deployment, limiting achievement of applied management goals. Recently, topical discussions of this idea have developed into more formal descriptions of how to actually integrate stakeholders into restoration and conservation design (e.g. Chase et al. 2002; Reed 2008; Luyet et al. 2012). As a result, discussions about considerations of stakeholder participation in management project design and deployment are becoming more commonplace. For example, *Restoration Ecology* recently published a special issue entitled “Involving Society in Restoration and Conservation” (volume 26, issue S1). The articles in this special issue do an exceptional job of providing a comprehensive overview of stakeholder engagement, suggestions for how to identify and incorporate stakeholder input into management decision-making, and descriptions of a diverse set of case studies of stakeholder contributions in restoration and conservation.

Notably absent from this dialogue, however, has been the relationship-based, boundary-spanning cooperative extension

(CE) system in the United States, which has successfully cultivated stakeholder networks for management design and deployment for the past 100 years (Gould et al. 2014; Gornish & Roche 2017). CE has the experience, training, and existing partnerships to effectively foster stakeholder involvement and as such provides the unique skills and perspective of both research and outreach that helps to successfully deploy stakeholder-relevant restoration and conservation management. Here, we argue that learning from and partnering with CE can enhance stakeholder integration into restoration and conservation projects both within and external to the United States while possibly minimizing the increased uncertainty, time, and costs that can accompany community-based decision-making (e.g. Golet et al. 2006).

The Smith-Lever Act, a U.S. federal law passed in 1914, established the CE system, originally to improve rural life. CE is associated with or housed within one or more land-grant universities—institutions of higher education originally established to focus on the teaching of applied sciences, including agriculture and engineering (Martin 2001). CE is supported by land-grant universities, the U.S. Department of Agriculture, and state and local governments through, e.g. the provisions of funding and land for research. The primary goal of CE is to conduct stakeholder-driven research and provide outreach to individuals, families, and communities in the fields of nutrition, agriculture, natural resources, youth development, and economics. To

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accomplish this, CE identifies important programmatic priorities by asking stakeholders for their information needs directly and indirectly. Directly, CE can survey stakeholders at events, through the mail, or online. CE also hosts listening sessions and field days to facilitate discussions of stakeholder needs. Indirectly, CE agents and specialists can access published sources of information such as aggregated survey data or briefs produced by special interest groups. Once these priorities are identified, CE collects data relevant for addressing stakeholder needs by either conducting experiments or partnering with land-grant university researchers who are actively involved in relevant work. Finally, CE delivers recommendations to stakeholders, based on experimental data, through outreach activities such as workshops, field days, and best management practices guideline publications. Since its establishment, CE has helped safeguard national food and fiber supplies, enhance rural economies, and develop and disseminate knowledge about sustainable agriculture (Ward 2014).

To achieve its mission of conducting stakeholder-driven research and disseminating this research to the public, CE success relies on identification of relevant stakeholder groups and effective, sustained interaction with these groups. As a result, CE has a long history of identifying stakeholders, and actively cultivating trusted networks, ultimately resulting in an organization composed of individuals who are constantly refining methods of stakeholder participation in management programs. CE stakeholders are diverse and include agencies, non-profit groups, private agricultural producers, academic institutions, and special interest groups. These partnerships occur at the local, state, regional, and federal government levels and are constantly developed through tools that foster collaborations across disparate stakeholders (e.g. engineers and farmers for sustainable agriculture; Sanagorski et al. 2013). CE also actively cultivates international partners in order to expand knowledge exposure and learning opportunities from a wider breadth of restoration and conservation expertise. Leveraging these networks could advance ongoing efforts to more effectively involve stakeholders in restoration and conservation activities. CE could support practitioners through partnerships where existing networks are used to identify and more easily connect with relevant stakeholders in order to enhance input in the initiation stage of a management plan. Any organization with access to the internet can also benefit from previous CE work by using freely available survey data, publications, and workshop agendas and presentations to better understand stakeholder needs and priorities prior to project design.

Cultivating partnerships with a diverse portfolio of stakeholders can be time-consuming and challenging, particularly as conservation and restoration move from unilateral decision-making to co-management. Moreover, many managers and academics are not trained in stakeholder engagement (although efforts are being made to develop tools for this effort; e.g. Chase et al. 2004; Druschke & Hychka 2015). Leveraging existing CE relationships and networks could enhance community engagement, stakeholder buy-in and incorporation of local knowledge on a timescale that is relevant to managers while also providing managers and academics with experience with stakeholder

interactions. This is because CE has experience in integrating stakeholders into management programs and is well versed in how to address common pitfalls of incorporating stakeholders into restoration and conservation efforts. CE has also cultivated a very large cache of stakeholder information and knowledge that is freely available online. This can include summary statistics for surveys, white papers, discussion outcomes, and workshop agendas and presentations. These online resources can be used by individuals both within and external to the United States in order to identify methods of collecting stakeholder data as well as use the data themselves to better understand stakeholder perspectives.

Restoration and conservation decision-making can be fraught with divisive points of view. Stakeholders with fundamentally different priorities can hamper conservation efforts by limiting trust among groups, which can restrict information exchange among relevant parties. CE regularly finds itself as an intermediary among dissenting groups (Cantrell et al. 2013; Martin 2016), such as regulators and private land managers or agricultural producers and preservationists. To ensure that diverse stakeholders are heard and are provided with research and outreach that best accommodates their needs, CE regularly meets with disparate groups (jointly and separately) to discuss management priorities. CE also works across communities with different practices and languages—facilitating translation between diverse stakeholder groups. These meaningful interactions, over time, establish trust between stakeholders and CE, as well as develop networks across groups for information transfer and knowledge exchange. As a result, the experience of CE to work as a catalyzing institution for addressing management needs across diverse management mosaics (Epanchin-Niell et al. 2010) can be particularly useful for effectively engaging stakeholders in particularly contentious management issues.

Restoration and conservation efforts are vulnerable to failure if stakeholders are not provided with support to maintain management outcomes at the end of a project. In addition to being valuable for identifying and integrating stakeholders into management decision-making, CE experience provides value for post project activities. For example, CE is well versed in quantifying and documenting stakeholder experience through surveys, interviews, and informal discussions (e.g. Dodd & Abdalla 2004; Shackelford et al. 2017). These activities are critical for developing or initiating strategic plans for assessing if stakeholder contributions were successfully integrated in decision-making and ensuring that local expert knowledge is considered for future management projects. Further, these data can be used by CE and other management agencies to understand how to best package and deliver science-based recommendations to stakeholders (Gillett-Kaufman et al. 2014). CE does not simply deliver information to stakeholders, but also works to help stakeholders implement science-based recommendations into actionable management. For example, CE often provides opportunities for stakeholders to test recommended approaches in “low risk” situations, such as on a test site or by providing support for small trials (e.g. Smith & Enfield 2002).

CE is not a panacea for the fields of restoration and conservation. For example, like any institution, CE struggles to remain relevant in a quickly changing society (Smith & Kotlik 1990) while producing meaningful research products in an ever-dwindling funding environment (Bull et al. 2004). CE also faces the challenge of adequately addressing the needs of a rapidly growing stakeholder base. Changing societal perceptions and interests in natural resources results in the development of a more complex stakeholder landscape composed of a higher diversity of special interest groups that might or might not interact with one another and CE is charged with keeping track of and responding to these changes. To do this, CE is constantly considering how to modify current practices and develop new strategies to best serve both the urban and rural public (e.g. Brown et al. 2003; Downer et al. 2017). This effort includes enhancing partnerships with conservation and restoration decision makers to design and deploy effective management programs. CE also considers stakeholder identification and engagement a continuous process, so finding and connecting with new groups across interest types is a regular component of CE work. Finally, in order to be successful (e.g. Young et al. 2013), CE must also actively cultivate trust between the organization and stakeholder groups, which can be particularly difficult for institutions associated with the federal government (Gray et al. 2012). To do this, CE often works at the county level where long-term networks help maintain and enhance working partnerships among disparate groups of individuals. Despite these efforts, however, sometimes, CE can still be considered as an “outside” or biased organization and must continually refine efforts to cultivate stakeholder trust.

Academics and land managers acknowledge the value of stakeholder input for restoration and conservation efforts. A lack of experience or training, however, might limit the ability of key actors to make this link. CE can help address this limitation to provide the genuine, time-tested relationships that are critical for organizing community-based decision-making (Rhoads et al. 1999) because it has a long history of success with identifying, reaching out to, and connecting stakeholders in management projects. Managers can initiate this partnership by finding CE personnel who work across the state (specialists) or within a county (agents), based on specialty and relevance to restoration areas of work (e.g. forestry, range management, organic agriculture, restoration, water resources, soils). CE is ready and excited to work with new partners to better involve society in management programs. Considering CE as one of many potential partners can help serve the environment and the people who depend on it.

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