Social process in grizzly bear management: lessons for collaborative governance and natural resource policy

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Abstract In this study, we analyze a case of governance in natural resource management. Building on the limited body of literature on termination and using methods of problem orientation and social process mapping, we examine a stakeholder engagement process designed to address conflicts in grizzly bear management in Banff National Park, Alberta. Terminated in 2009 after several years of collaboration, this stakeholder engagement process explicitly used the policy sciences framework to cultivate dialogue, improve participants' decision-making skills, and make consensus-based recommendations for grizzly bear management. Our analysis demonstrates the utility of undertaking social process mapping and problem orientation in order to understand a natural resource policy problem. We include recommendations to foster a social process that allows for clarification and advancement of the common interest in stakeholder groups, insights into how social process can contribute to policy termination, and reflections on the practical, collaborative use of the policy sciences to solve problems of governance. This analysis complements other articles on this case that examine stakeholder perspectives, initial outcomes, and decision process, collectively providing a thorough policy analysis.

Keywords Governance · Termination · Social process · Interdisciplinary problem solving · Policy sciences · Grizzly bear · Prototype

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Introduction

Grizzly bear (*Ursus arctos*) management in North America is a complex, polarized, and value-based policy problem (Cromley 2000; Primm 1996; Wilson and Clark 2007). Grizzly management in Banff National Park (BNP) in Alberta, Canada, is no exception. The small grizzly population is threatened by high rates of human-caused mortality (Bertch and Gibeau 2009, 2010), and participants have long clashed over how best to manage the park's bear population and human activities. For some time, the degree to which participants with clashing value demands struggled over grizzly bear issues in Banff could be characterized as a governance problem with value-based, hard-to-define conflicts that defied resolution (Rittel and Webber 1973). With a social process dominated by acrimony and rancor, grizzly bear management in Banff "move[d] the political discourse away from robust deliberations that result in compromise and resolution into monologic policy marketing efforts that result[ed] in lose–lose policy processes and inevitably contested policy decisions" (McBeth et al. 2010: 392). Centered on the value-laden symbol of grizzly bears in a high-profile park, many management conflicts in Banff arose from and contributed to a dysfunctional social process that prevented decision making from clarifying people's common interests.

After years of acrimony and deprivation of values among many participants in the grizzly bear debate, in 2005 Parks Canada initiated a prototype—a small-scale, trial intervention with the goal of learning about a system and improving outcomes (Willard and Norchi 1993; Lasswell and McDougal 1992). This forum, called the Grizzly Bear Dialogue Group (GBDG) or Interdisciplinary Problem Solving (IPS) Group,[1] convened a small number of diverse stakeholders to meet regularly to discuss grizzly bear issues and generate management recommendations. Its purpose was to reduce conflict by creating a new social process based on the common interest, and a new decision process based on consensus, collaboration, and the policy sciences framework. The policy sciences framework consists of (1) defining problems and understanding them in relation to social and decision processes (Clark 2001; Rutherford et al. 2009) and (2) explicitly integrating concepts from different disciplines in order to think critically about problems (Clark 2011). The group used "interdisciplinary problem solving," which is derived from and explicitly uses the problem-solving framework of the policy sciences, a contextual, multi-method, interdisciplinary approach to recommend policies whose overriding goal is to advance human dignity (Clark 2011).

Herein, we map out and appraise the GBDG's social process.[2] Because the GBDG was a prototype terminated without a comprehensive appraisal, this study examines lessons learned from a stakeholder process uniquely grounded in and directly applying the policy sciences and representing years of stakeholder collaboration. We build on previous research that examined initial outcomes of the GBDG (Rutherford et al. 2009) and participants' perspectives prior to (Chamberlain 2006; Chamberlain et al. 2012) and after (Kölhi 2010) its lifetime. Based on interviews with participants, leaders, organizers, and observers, we suggest causes of the GBDG's discontinuation and offer insights into how social process can affect termination in collaborative governance. We describe the GBDG context, analyze the social process using problem orientation, and recommend practices to help foster a social process that may allow for the clarification and advancement of the

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[1] Over its lifetime, this group was called the GBDG and the IPS or process. Here, we use the former name.

[2] For a detailed appraisal of the decision process, see Oppenheimer and Richie (in manuscript).

common interest. Our appraisal examines the practical application of the policy sciences problem-solving approach to a real-life natural resources conflict, and as such, it contributes to our collective knowledge on how to successfully teach and use the policy sciences to solve problems. We hope that elucidating successes and failures from this case may help other collaborative decision-making groups to resolve conflicts in natural resource and wildlife conservation.

Social process mapping

Understanding the biology of grizzlies and the factors threatening them, though important, is not enough to address management challenges in Banff. Human values, perspectives, and interactions are also critical factors (Clark and Slocombe 2011). In pursuit of values, participants use societal institutions to influence the distribution of resources, affecting other people as well as grizzly bears (Lasswell 1971a). Mapping the social process or context behind policy problems sheds light on these behaviors and interactions, and improves understanding of the policy problem and efforts to solve it (Clark 2011; Brunner 2004). The policy sciences conceptualize social and policy processes in a framework composed of mapping categories—social and decision processes, problem orientation, and standpoint clarification—to help understand and solve a given policy problem (Lasswell 1971a).

Social process mapping and stakeholder analysis can help participants to better orient themselves and to create more informed decisions when solving a collective problem (Bryson et al. 2002). Analyzing the social process provides insight into the dynamics and motivations of human behavior; Arnspiger (1961: 27) describes it as a "tool for the analysis and appraisal of institutional and personal practices as these bear upon the achievement of social goals." The social process includes participants in the policy problem; their differing perspectives (including demands, expectations, and identities); situations (where and how they interact and communicate); base values (participants' resources or capabilities, which include power, enlightenment, wealth, well-being, skill, affection, respect, and rectitude); strategies (the methods they use to manage their base values); outcomes (the short-term consequences that indulge or deprive participants of values); and effects (the long-term consequences of participants' actions) (Lasswell 1971a; Muth and Boland 1983).

The recovery of threatened species depends on our understanding of human social process, and recovery will only succeed if human social process supports restoration (Clark and Wallace 2002a). Social process mapping has been applied to conservation and other policy problems in Podocarpus National Park in Ecuador, the Hawaiian monk seal, Yellowstone grizzly bears, black-footed ferrets, community-based natural resource management in southeastern Mexico, and black-tailed prairie dogs, among many other examples (Wilshusen 2009; Clark et al. 2009; Clark and Wallace 2002a; Reading et al. 2002; Fenimore and Cullen 2002; Clark 1997; McDougal et al. 1988).

Methods and standpoint

We lived in BNP from June to August 2010 in order to immerse ourselves in the context of grizzly bear management. During this time, we interviewed approximately 30 GBDG participants and eight other individuals with an interest in grizzly bears, park management,

or the GBDG. After reviewing the transcripts, we organized data in a social matrix. Over time, we constructed the story of the GBDG based on what we heard in interviews throughout the summer. We became confident of our understanding when later interviews did not reveal vastly new information as compared to earlier interviews. We reviewed several years of local and regional newspaper articles and letters to the editor about bear management in BNP (Campbell unpublished data), GBDG meeting minutes, and scholarly literature on BNP and grizzly bear management, stakeholder engagement, collaborative-based decision making, prototypes, innovation, termination, and other theory. We also examined data and literature written about this case, including an analysis of stakeholder perspectives prior to (Chamberlain 2006; Chamberlain et al. 2012) and after (Kölhi 2010) the GBDG, and a *Policy Sciences* article describing and assessing the group's early phases (Rutherford et al. 2009).

We analyzed the GBDG's social process using problem orientation, which allows for appraising and forming more rational policy (Lasswell 1971a; Simon 1985; Wallace and Clark 1999). Problem orientation involves in-depth examination of the problem through five intellectual tasks: clarifying goals (preferred outcomes), describing trends (historic and recent events), analyzing conditions (factors that influence trends), creating projections (likely future outcomes), and inventing, evaluating, and selecting alternatives (possible courses of action) (Lasswell 1971a). A component of the policy sciences, problem orientation encourages participants or analysts to form a realistic and effective problem definition, instead of immediately jumping to solutions (Dery 1984). Different problem definitions can have powerful consequences in policymaking (Weiss 1989). Our analysis focused on whether and how the GBDG advanced the common interest of participants and the larger community, and what lessons about solving natural resource conflicts could apply to other cases.

To understand how we fit into the context, we examined how our personal perspectives and values might bias our analysis (Clark and Wallace 2002b). We are researchers from the eastern and southern United States who care about the environment, wildlife, and people. With academic and professional experience in biodiversity conservation, biology, anthropology, land use planning, and natural resource policy and management, we have professional goals of advancing the common interest in natural resource conflicts. We recognized that our previous knowledge of the policy sciences could influence our analysis by predisposing us to overlook weaknesses in the process because of our investment in its methodology. We also acknowledged that our interests in natural resource conservation could cause us to lend a more sympathetic ear to participants with interests closely aligned to ours. We strove to address these potential biases by evaluating our assumptions and reactions to interviews, welcoming information that conflicted with our personal beliefs, and recognizing that analyzing problems requires understanding all perspectives. We undertook this project to gain skills in solving natural resource problems and to offer recommendations that may be useful for BNP and elsewhere. While in Banff, our goal was to build trust and facilitate dialogue with participants so that we might learn enough to understand the problem, social and decision processes, and how to find the common interest in complex policy problems.

Background: before the GBDG

Covering 6,641 km² of montane, subalpine, and alpine ecosystems, BNP is part of the larger Central Rockies Ecosystem (Gibeau 2000; Parks Canada 2007, 2008). The region is one of the most heavily developed areas in which grizzlies still exist (Garshelis et al. 2005;

Gibeau 2000; Gibeau and Stevens 2005), and provides for tourism, residential developments, transportation, and logging (Gibeau 2000; Parks Canada 2007). Highways, a transcontinental railroad, and several towns divide the park, which also contains hotels, golf courses, ski resorts, tourism and industry establishments, and many recreational trails. In this developed and fragmented landscape, approximately 60 grizzlies persist in BNP (Garshelis et al. 2005). Exacerbated by slow reproductive rates and habitat fragmentation that hinders movement (Proctor 2005; Gibeau 2000), human-caused mortality threatens the sustainability of the bear population (Gibeau 2005; Herrero et al. 2001; Parks Canada 2008). The largest proportion of overall grizzly mortality in BNP (Bertch and Gibeau 2009, 2010) is human-caused mortality and most often occurs near highways, railroads, and other human activity (Herrero 2005; Benn and Herrero 2002).

With more than three million annual visitors from around the world and a population of almost 8,000 permanent residents (Parks Canada 2008, 2010), BNP comprises a complex social process. Participants concerned with grizzly bear management include Parks Canada, tourism and ski industries, conservation organizations, commercial developers, recreation groups, transportation services, wildlife scientists, local government, federal and provincial agencies, and other interested citizens. For many, the park's grizzlies hold significant political and cultural importance, partly because of their location in a premier national park and world heritage site (Parks Canada 2010). Participants derive pride and value from BNP; such values attached to surroundings can form part of humans' personalities, sense of belonging, and purpose (Bott et al. 2003; Tuan 1974; Prohansky et al. 1983). In addition, grizzly bears represent wilderness, and this symbolic construct and the myths in which it is rooted can induce strong feelings about policy outcomes (McFarlane et al. 2007; Mattson et al. 2006; Clark et al. 2005; Kellert et al. 1996). People also care about grizzlies because of their ecological importance as key predators and as indicators of the status of the ecosystems on which they depend (Parks Canada 2010; Gibeau 2000).

For years, participants with different interests, varied stances, and opposing opinions have debated long and hard about the problem of managing grizzlies and human use in the park (Chamberlain 2006; Chamberlain et al. 2012; Campbell unpublished data) (Table 1). With various groups promoting grizzlies as symbols for their interests, from tourism to ecological integrity, grizzly bear management has been mired in controversy (Rutherford et al. 2009; Chamberlain 2006; Chamberlain et al. 2012; Campbell unpublished data). Participants have disagreed on the status of grizzlies and whether their protection warrants limiting human activities; underlying this disagreement has been the pursuit of policies that promote participants' values (Campbell unpublished data). This debate was often voiced in the media, notably in newspaper articles and letters to the editor from 1999 to 2005 (Campbell unpublished data), as described below.

Exemplary titles include "Alberta should back our bear scientists," "Death of Bear 66 raises questions," "Environmental group takes aim at Parks Canada and CP Rail over dead bear," "Highway statistics, bear research questioned," "Scientists challenged," "Grizzly study leading to fear mongering," and "Critics laud peer review proposal" (Campbell unpublished data). One 2005 local newspaper described Banff's "long-simmering debate between development and wildlife issues [that] continually threatens to boil over" (Campbell unpublished data). Business, science, environmental, and political interests, along with local residents and recreational users, have all striven for the legitimization and advancement of their interests in park management (Jamal and Eyre 2003). These opposing views caused bitter politicized debate, particularly when efforts to reduce human-grizzly conflicts restricted human activities (Rutherford et al. 2009; Chamberlain 2006; Chamberlain et al. 2012).

Table 1 Phases in grizzly bear management over time

	Pre-GBDG (2000–2005)	GBDG (2005–2009)	Post-GBDG (2009–2010)
Grizzly bears	Unsustainable mortality	Unsustainable mortality New mortality targets and access restrictions agreed upon	Unsustainable mortality
Social process	Debate over conflicting perspectives, largely in the media	Arena for civil dialogue Relationship and trust building Participants' expectations not always met	Disillusioned, often bitter participants with expectations based on prior experiences
Value trends	Deprivation of respect Asymmetrical power dynamics	Initial increases in respect More symmetrical power dynamics	Power consolidation by Parks Canada Deprivation of respect
Decision Process	Consultation (low public access to decision-making and authority); growing use of stakeholder groups Bureaucratic and scientific management; criticism of science and park management; special interest contests	Collaboration (high public access to decision-making and authority) (see Oppenheimer and Richie in manuscript) Social and natural science jointly gathered and sanctioned by group Adaptive governance; pursuit of common ground	Consultation (low access to decision-making and authority) Alternate process, BVPAG, created then disbanded
Problem	*Acrimonious social process and competing special interests due to lack of public access to decision-making*	*Problem-solving skills and social capital declined as new participants joined with expectations incongruent with those of others and little integration into the group, which tackled increasingly difficult problems*	*Struggling with conflict, frustration, and special interest competition, the BVPAG fell apart*
Common interest	*Not clarified or secured*	*Clarified and secured, but not sustained*	*Not clarified or sustained*

The Grizzly Bear Dialogue Group (GBDG), a stakeholder engagement process, was designed to address conflicts in grizzly bear management and make consensus-based management recommendations

Source: adapted from Oppenheimer and Richie in manuscript and based on Chamberlain (2006), Chamberlain et al. (2012), Chamberlain and Rutherford (2005), Rutherford et al. (2009), and personal interviews

As voiced in the media, one prevalent demand was for more protection for grizzly bears, even if it meant stricter limitations on human activities. These participants often identified as environmentalists, naturalists, or concerned citizens, and generally placed a high value on rectitude. A 2005 local newspaper article quoted one environmentalist as having written that humans should "step up to the plate and do what is required of them to absolutely minimize grizzly bear deaths in Canada's premiere national park" (Campbell unpublished data). A 2004 citizen's letter stated, "To lose the grizzly is to forfeit the very soul of Alberta's wilderness" (Campbell unpublished data). A 2002 news article quoted a scientist as saying, "Logic and science alone will not maintain grizzly-bear populations … Moral concern for the living creatures we share the planet with is needed" (Campbell unpublished data).

Another prevalent opinion in the media opposed these views, demanding fewer restrictions on human activities, stating that tourism and development were not causing conflicts between humans and grizzlies. Tourism outfits wanted acknowledgement of their

value, input into park management, and respect for creating a robust industry and connecting visitors with the park. They also strove to protect their businesses, which they perceived would suffer from burdensome restrictions. In a 2005 local paper, a development industry representative commented, "Development isn't the cause [of human-wildlife interactions] because similar incidents have happened … far from development" (Campbell unpublished data). Another article reported that in response to a proposal to erect a fence to protect wildlife, a housing cooperative representative stated, "Many people come to Lake Louise looking to see wildlife. To fence it off so no animals can get in could have a negative impact on tourism" (Campbell unpublished data). According to another 2005 article, an industry association representative stated, "We all need to take responsibility for our role in the parks, and it's not just the development organizations" (Campbell unpublished data).

Some articles and letters questioned scientific findings, arguing against stronger protections for grizzlies (Campbell unpublished data). For example, a 2001 news article described attacks made by the "right-winged Fraser Institute which claims flawed science and extreme environmentalists are the driving force behind park decisions," and a citizen who argued that "scientists are manufacturing a widely publicized ecological crisis [about grizzlies] that simply does not exist," (Campbell unpublished data). In one 2001 letter to the editor, a citizen critiqued a scientific report on grizzly bears, calling it "yet another incomplete bear study using paranoid scare tactics trying to impose their way on Parks Canada" and stating, "I am getting fed up with studies whose conclusions are predetermined before they even start" (Campbell unpublished data).

Caught in the middle of these conflicts, Parks Canada personnel sought validation of their authority and respect for the difficult task of balancing competing demands (Campbell unpublished data). As the federal agency with jurisdiction over grizzly management in BNP (Parks Canada 2010), Parks Canada wrestled to find common ground among conflicting interests and public disagreement (Rutherford et al. 2009). In a 2005 local newspaper article, in response to the suggestion to close a road at night to protect grizzly bears, a Parks Canada official commented, "That is so unpalatable to the public and businesses along that highway … It's a pretty bold step … we're doing everything we can and we're not going to solve it today … We've got to keep working on it continually with [the railroad company] and all the other stakeholders" (Campbell unpublished data).

The outcome of these combative interactions was both the deprivation and the indulgence of values (Chamberlain 2006; Campbell unpublished data). Media debates and personal attacks reduced respect, affection, and trust among participants (Chamberlain 2006; Campbell unpublished data). In sum, grizzly bear management prior to the GBDG neither integrated nor balanced valid and appropriate community concerns to advance the common interest.

Judging by interviewees' accounts of this contentious period leading up to the GBDG, these dynamics led to a change in Parks Canada's decision process, which until then relied principally on scientific management. Scientific management uses scientific logic as the foundation for a central authority to create efficient policies, usually within a bureaucratic structure constrained by specific mandates, jurisdiction, and experts (Brunner et al. 2005; Helling and Thomas 2001). In many situations of centralized and scientific management, including in Banff, conflict with excluded groups has initiated a move toward more adaptive and inclusive governance and community engagement (Brunner et al. 2005; Nelson et al. 2007; Helling and Thomas 2001; Weeks 2000). Because of public frustration, Parks Canada has gradually shifted toward increased stakeholder consultation and engagement to acknowledge community concerns. An early example of this shift was the

initiation of the Banff Bow Valley Round Table in 1995 (Jamal and Eyre 2003). Parks Canada formed several other stakeholder engagement groups in the Banff region, including the Elk Advisory Committee, Lands Adjacent to Banff Group, Icefields Parkway advisory group, and Lake Louise Area Strategy Group (Mike Gibeau, personal communication).

Goals of the GBDG

To increase stakeholder engagement and reduce conflict over grizzly management, Parks Canada initiated the GBDG, beginning with three skill-building workshops in May and October 2005 and March 2006 (Fig. 1). These workshops were designed to "promote more effective and efficient collaborative thinking about grizzly bears," and improve democratic decision making to build a successful and publicly supported conservation program (invitation to participants 2005; Rutherford et al. 2009). Attended by 18–22 stakeholders, the workshops presented the policy sciences as a method to improve problem-solving skills and focused on (1) standpoint clarification: examining perspectives and biases; (2) problem orientation: building more comprehensive and constructive problem definitions; (3) social process mapping: examining the social dynamics of grizzly management; and (4) decision process mapping: assessing existing decision making and suggesting ways for improvement.

Following the workshops, a smaller subgroup (not all of which may have attended the initial workshops) continued to convene approximately every 3 months over the next 5 years to provide a forum for dialogue and make collaborative, consensus-based recommendations to "work towards achieving a greater consensus in grizzly bear management" (email to participants 2006). Although they were sponsored by Parks Canada, a centralized bureaucratic agency, meetings were decentralized, flexible and guided by an independent facilitator. Provided that the group's recommendations were deemed reasonable and consistent with the park management plan and other standards, the superintendents would take the recommendations to the Chief Executive Officer of Parks Canada to be adopted (Oppenheimer and Richie in manuscript). Participants created ground rules and a list of problems to address (Rutherford et al. 2009), and the process was designed to be practice-based (as opposed to science-based) and scientifically informed (as opposed to scientifically driven) (Oppenheimer and Richie in manuscript).

The GBDG had both procedural goals (creating an arena for civil discourse and upgrading skills) and substantive goals (solving problems in grizzly bear management). These goals were nested within larger Parks Canada goals. The Canada National Parks Act enables Parks Canada to designate and maintain national parks, and dedicates them "to the people of Canada for their benefit, education and enjoyment …so as to leave them unimpaired for the enjoyment of future generations" (Canada National Parks Act 2000,
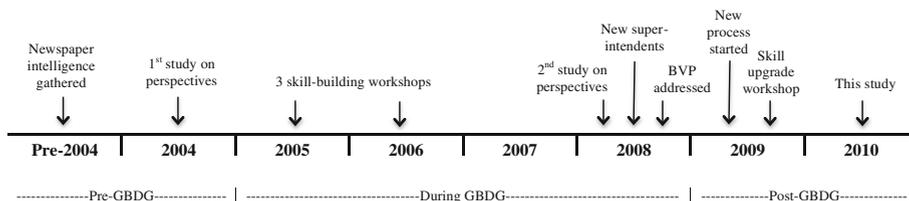
Fig. 1 Timeline of major events before, during and after the GBDG

Section 4(1)). The Canadian government strives to "ensure that Canadians form a lasting connection to this heritage," while also protecting these resources and building "a culture of heritage conservation" (Parks Canada 2010, Foreword). Grizzly bear management and stakeholder engagement in Banff occur in the context of Parks Canada's mandate (Parks Canada 2010: 4):

> On behalf of the people of Canada, we protect and present nationally significant examples of Canada's natural and cultural heritage and foster public understanding, appreciation and enjoyment in ways that ensure their ecological and commemorative integrity for present and future generations.

As part of this mandate, Parks Canada balances three objectives: natural and cultural heritage resource conservation, visitor experience, and public appreciation and understanding (Parks Canada 2010). The act specifies that ecological integrity "shall be the first priority" in park management (Section 8.2) and requires management plans, which in Banff include a goal of maintaining a non-declining population of grizzlies (Parks Canada 2010).

Trends in the GBDG social process

Participants in the GBDG were invited as representatives from a variety of organizations and sectors, including Parks Canada; tourism-based businesses such as horse outfitters and hotels; conservation groups; commercial developers; recreation groups; transportation agencies; extractive agencies such as oil and gas; wildlife scientists; local government; provincial park agencies; First Nations; and local citizen groups and naturalists (Mike Gibeau, personal communication). Approximately twenty individuals representing most, but not all, of these interests regularly attended GBDG meetings (GBDG minutes).

As evidenced by interviews, participants held a range of perspectives on grizzly bear and park management, both within and beyond the GBDG (Table 2). Most expressed

Table 2 Value demands of GBDG participants

Value	Demand
Respect	*Time*: "We spent half the time revisiting what we had already done"
	Progress: "You need a start, a middle, and an end, and there was one hell of a lot of middle"
	Perspectives: "Skills work when they are supported by an open mind, and it's difficult when the mind is closed"
	Legitimacy: "People felt disrespected that the superintendents couldn't bother to show up"
Power	"Everyone's supposed to be equal, but Parks Canada is more equal than everyone else"
	"The world has no trust that Parks Canada will do what it says it will"
	"Superintendents are like gods"
Enlightenment	"Parks Canada was trying to make decisions [about the BVP] without the science to back it up"
Skill	"You need to keep having these workshops to bring everyone on the same page"
Wealth	"For the service industry, there's so much to lose, and concern of little to gain"
Well-being	"In the last 15 years in Banff, it has been: closing, closing, closing [to human activities]"
Rectitude	"[I feel] frustrated because more and more bears are dying every year"
	"Humans need to back off if we care about saving [the environment]"
Affection	"The old way of engaging with people was not palatable … [the GBDG] created an atmosphere that was more trusting"

expectations about how the group should function and what it would accomplish, influenced by their experiences with the GBDG and with park management and stakeholder engagement. These expectations clashed at times, particularly when newcomers were poorly integrated to the group's discussion, norms, and decision-making methods. Participants also had expectations about the role of Parks Canada leadership in the GBDG, such as the degree of power sharing, or the consistency of attendance by superintendents. Participants most frequently voiced demands for respect and power. Many participants expressed a desire for respect for their perspectives and concerns, as manifest by adherence to ground rules, equality, openness, and support from superintendents. Most participants also wished for respect for their time and energy, in the form of training of new participants, clear problem and goal definitions, progress in decisions, and an endpoint to the process. Many participants sought authority or power through affecting management policies that enabled them to pursue other values (such as rectitude from increased ecological protection or wealth from enhanced tourism).

Participants also expressed a desire for other values (Table 2), including enlightenment and skill through presentations by outside experts and training to maintain problem-solving skills. In interviews, many participants pointed out that park management decisions should be supported by robust and unbiased science. Several participants valued wealth and well-being, particularly if management decisions seemed to negatively affect business, industry, or recreation.

Participants made several conflicting claims and counterclaims (Table 3). First, about half wanted an equal share in decision making, such that Parks Canada superintendents would attend every meeting and simply be additional participants, and would not override or rewrite group decisions. Others felt that superintendents should be absent from meetings except when asked to provide direction or clarity, and to prevent participants from "lobbying" superintendents.

Second, participants had divergent conclusions about the goals of park management (Table 3) during discussions of how to manage grizzly bears and human activities. Several demanded that management follow the precautionary principle and prioritize ecological protection, and wanted sustainable grizzly populations even at the expense of human activities. A few others disagreed, recognizing that people have rights and privileges in the park, and prioritizing the visitor experience. They advocated for (1) little or no reduction of

Table 3 Claims and counterclaims expressed by GBDG participants

| Subject	Claim	Counterclaim
Role of power and authority	"People are demanding to talk to the decision-maker, and have [him or her] in the room"	"The superintendent should step back and not drive the process" "If the superintendent is in the room … the focus becomes on lobbying for outcomes"
Goals of park management	"This is supposed to be one of the most protected places in Canada" "[Retain] the integrity of national parks as parks, not commercial playgrounds"	"We shouldn't be reducing recreational opportunities unless we replace them" "The pendulum had gone far to the side of the preservationist movement, instead of visitor experience"
Meaning of the GBDG	"[The GBDG] was visionary, ahead of its time, novel, and incredibly difficult" "[The GBDG] created a forum for open and honest dialogue that couldn't have happened before"	"When the going got tough, everybody ran away … dancing around tough issues, but never solved any of them" "I can't even recollect what the goal was"

tourism, recreation, or user access, (2) less use of the precautionary principle, and (3) visitor education instead of closures. Participants disagreed on whether the burden of providing evidentiary support for management actions should be borne by those advocating restrictions on human activities or those advocating against them.

Third, participants made claims and counterclaims about the meaning of the GBDG and its legacy going forward (Table 3). Many felt that the GBDG was a worthwhile, innovative, and even transformative experience (Kölhi 2010). A few said that it was similar to other stakeholder engagement processes and did not solve any difficult problems. Many believed that GBDG participants and other community members had formed negative associations with the GBDG by misattributing its muddled ending to a failure of problem-solving methods. Most participants did not expect a significant amount of diffusion of problem-solving skills on an institutional level, although several believed that diffusion did occur on an individual level.

There were several outcomes of the GBDG. Most interviewees stated that during its initial years, the GBDG significantly reduced conflict over grizzly bear management. Relationships and trust among competing interests improved and debates in the media largely disappeared. For example, one participant reported forming a friendship with someone despite previous antipathy. Many participants reported gaining knowledge about the social process by sharing values, identities, and perspectives. The group exercised a degree of power over decision making when several of its collaborative recommendations were adopted by Parks Canada, including setting realistic grizzly mortality targets and establishing an interim management plan for two areas known for past human-bear conflict. This important shift in grizzly bear management reflected a new consensus among stakeholders, and included direct collaboration with Parks Canada to make policies. In its initial years, the GBDG helped remove some stakeholders' previously held perception that the problem in grizzly bear management in the park was politicized decision making and lack of a visionary plan, an important shift from prior years (Kölhi 2010).

Interviewees reported that beginning in 2008, 3 years into the GBDG, a series of changes and events coincided with or fostered a turning point in the GBDG (Fig. 1). One was a change in superintendents. Parks Canada superintendents have the delegated authority to carry out and make major decisions affecting park management, subject to approval by the Parks Canada Chief Executive Officer and the Minister of Environment (National Parks General Regulations 2010). New Parks Canada leaders brought different expectations, approaches to sharing authority, and familiarity with the GBDG. A second event was the GBDG's beginning discussions of management of the Bow Valley Parkway (BVP), a park road that is important for its habitat and wildlife views. The BVP was particularly controversial because along the parkway were located several family businesses, whom the GBDG invited only after deliberations on the parkway had begun. A third significant event was the premature release of information to the media by one GBDG participant regarding a possible decision on the BVP. A fourth event transpired when one participant claimed that he or she did not support a group recommendation for the BVP, when many GBDG members remembered the opposite and felt the participant was reneging on an agreement. Concurrent with these events was gradual turnover of participants (Fig. 2), with new participants having less familiarity with problem-solving skills, or diverging expectations.[3]

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[3] Throughout this analysis, by "new" participants, we mean individuals who had not attended the initial policy science-based training workshops and/or had only attended a few of the subsequent meetings. "Existing" participants are those who had been a part of the GBDG for longer; they had attended the initial
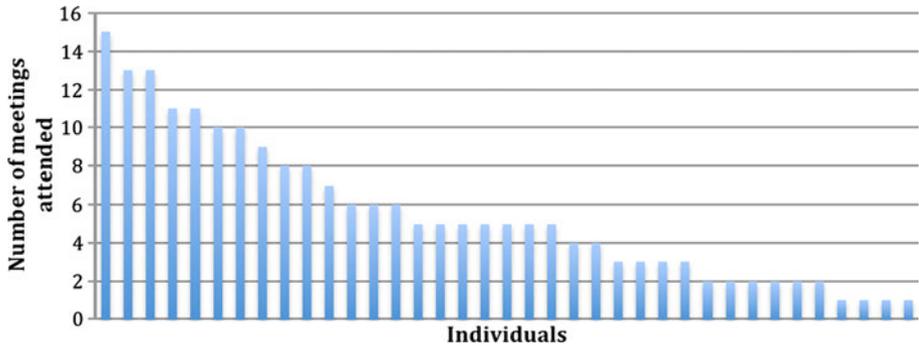
Fig. 2 There was a wide range in the number of meetings each participant attended from 2005 to 2009, partly because of high participant turnover. We generated this figure from meeting minutes sent to us by the GBDG's organizer. Because we did not have minutes for every meeting and not all minutes included attendance, numbers are likely higher than this figure demonstrates

Interviewees all agreed that during the latter part of the GBDG (2008-onward), conflict resurfaced. Participants disagreed on problem definitions, and they increasingly promoted their preferred alternatives in the contentious BVP issue; at this point one participant noted, the GBDG "exploded." In 2009, the group brought in an outside expert for a workshop to upgrade problem-solving skills. However, this occurred after Parks Canada had initiated a new and separate stakeholder engagement process to address the GBDG's last deliberated issue, the BVP. With the formation of this new stakeholder process and as an outcome of the abovementioned dynamics of the GBDG social process, the GBDG was indirectly terminated, without an appraisal. Participants never reconvened.

There were also numerous long-term effects as a result of the GBDG. According to many participants interviewed, the GBDG fostered respect and created lasting improvements in relationships between individuals who had formerly been at odds. Many felt that the process enhanced their understanding of their own and others' perspectives, and taught them to avoid stereotypes and jumping to conclusions. Several reported gaining knowledge of the policy sciences' problem-solving methods that they later used in their everyday lives. Those particularly satisfied with the group's recommendations gained a sense of rectitude.

Several individuals, however, did not believe the GBDG brought any significant long-lasting changes to existing value imbalances, nor to institutional practices such as Parks Canada stakeholder engagement. One individual (who participated since the initial training and attended a majority of meetings) described the GBDG as feeling "very conventional." Similarly, another individual who joined later was "not sure it [was] any different than any other consultation process." A few participants disengaged from Parks Canada stakeholder engagement altogether because of frustration with continuing conflict, disrespect, and seemingly never-ending discussions. Several participants believed that conflicts would never be resolved until the constitutive (real) problem was addressed. According to them, this problem was about governance by and trust in Parks Canada, and the degree to which

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Footnote 3 continued

training workshops and/or numerous meetings. Given that the GBDG lasted several years and "new" participants eventually became "old," these terms are dynamic and reflect the constant influx of new participants over the years.

the agency wielded power and exercised control—who gets to decide, whose interests are served, and whether preservation or development is favored.

Another long-term effect was the restriction of this prototype. Prior to the GBDG, a common perception among numerous participants was that Parks Canada engaged stakeholders but afterward made decisions behind closed doors. The GBDG differed from traditional stakeholder engagement because it created a forum for transparent, collaborative decision making. We believe that its termination, without adequately appraising it or retaining its effective elements, prevented the diffusion of this innovation to the rest of park management.

In summary, the GBDG did initially advance the common interest through its consensus-based decisions, but its longevity was cut short by termination after collapsing over the BVP conflict. In this study, we assessed advancement of the common interest, or those "interests widely shared by members of a community," by means of procedural, substantive, and pragmatic criteria (Brunner et al. 2002: 8, 12; Steelman and DuMond 2009). Procedurally, the GBDG was initially inclusive and representative, allowed the open expression of views, and provided feedback to the group and justification for whether or not recommendations were implemented. Substantively, the GBDG's concerns and claims both matched wider community goals and were supported by existing evidence. Concerning pragmatic criteria, although we did not examine how the group's adopted decisions were carried out in practice, interviewees indicated that during its initial stages, the GBDG was pragmatically sound. That is, participants' experiences with the implementation of recommendations were consistent with their expectations. However, this advancement of the common interest faltered later in the process as conflicts resurfaced.

Conditions underlying the social process

Based on interviews and investigation of numerous bodies of theory, we identify several conditions that underlie the social process trends and ultimate termination. These can be grouped into (1) constitutive shifts in Parks Canada management, (2) contributions of organizers and facilitators, and (3) participants' differing perspectives, ways of orienting toward others, and behaviors.

The first, changes in constitutive Parks Canada management—who should make decisions and how—significantly affected dynamics. Prior to the GBDG, the acrimonious debate over the park's management of grizzlies created a willingness to try something new and share decision making with stakeholders. In addition, at the national level, Parks Canada had undergone a shift toward greater reliance on stakeholder engagement and consultation. However, as time went on, Parks Canada struggled to balance ecological protection, education, and visitor experience, and several participants perceived that conditions became less conducive to the GBDG. For example, Parks Canada had to adapt to changing demographics, declining park use, and the perception of many local residents that the park was shutting out visitors (Statistics Canada 2006; Dearden 2008; Chartier 2004; Jager and Sanche 2010). As a result, the agency refocused its attention on visitor experience, promoting the objective of reconnecting Canadians with their natural and cultural heritage (Jager and Sanche 2010). When new superintendents entered the GBDG with mandates that some participants felt were new, these changes did not sit well with those who expected continued emphasis on ecological integrity. Many also noted that this constitutive shift also allowed less room for experimenting with power sharing and open decision making like the GBDG.

Secondly, contributions by the Parks Canada organizer and the independent facilitator resulted in changes in social capital, respect, and enlightenment. In collaborative processes striving to solve problems such as in Banff, the facilitator mediates discussions among participants who are competing to incorporate their values into policy outcomes. Much like a policy broker, the facilitator's challenging role is to direct the process and steer participants toward finding common ground in these conflicts (Sabatier and Jenkins-Smith 1999). The Parks Canada organizer coordinated the initial participant invitations and provided guidance throughout, particularly on the application of the policy sciences framework. Together, the facilitator and organizer took responsibility for meeting logistics, inviting and integrating new participants, bringing in experts to share information, and scheduling skill workshops and refreshers on the practical utility of the policy sciences. The facilitator or organizer briefed most, if not all, incoming participants on the group's function and use of the policy sciences framework to solve problems; however, new participants could not realistically undergo the same extensive skill- and relationship-building as long-term participants. Most, if not all, participants felt that the facilitator fostered open and productive dialogue, discouraged promotion of special interests, and intervened when commentary was disrespectful. Many participants gained knowledge of the policy sciences' problem-solving methodology and had positive learning experiences during the 2009 skills upgrade workshop, but the infrequency of such workshops led to declining problem-solving skills.

The third condition, participants' differing perspectives and familiarity with the policy sciences' problem-solving methods, dramatically influenced social dynamics. Initially, the problem-solving workshops and value sharing built enough social capital and skill to overcome differences and find common ground. Over time, turnover hindered progress as people moved, disengaged because of burnout, or withdrew due to inability or unwillingness to commit. A continuous introduction of new perspectives and skill levels followed, leading to inconsistent understanding of the policy sciences framework and differing views among participants on how best to move forward.

We believe these perspectives were formed by individuals' core beliefs—basic normative stances that provide a foundation for policy preferences (Sabatier and Jenkins-Smith 1999)—as well as by distinct "knowledge cultures," that is, groupings of people with different "languages," constructions of reality, and/or behaviors (Brown 2004: 43). The GBDG struggled with consensus-based decisions because integrating perspectives requires communication and understanding among individuals in a society dominated by specialization. Among different cultures, synthesis in decision making and negotiating is often ad hoc and ephemeral as participants return to the "security of their separate compartments" (Brown 2004: 43). The GBDG consisted of naturalists, scientists, ski resort managers, environmental advocates, agency officials, and others, each with their own distinct knowledge cultures and core policy beliefs. The policy sciences framework is challenging to understand and use, as it forces people to try to integrate cultures and beliefs instead of specializing. Some participants described the process as "too academic," others "rewarding" and "worthwhile," and still others "a grind," reflecting the diversity of responses and receptiveness to policy sciences methodology.

We also surmise that participants interacted and behaved differently according to their individual ways of orienting toward others. Kelman (2006) identifies three processes of social influence: compliance, identification, and internalization. Rule-oriented individuals are oriented toward *compliance*, and adhere to norms to assure positive responses from others. Role-oriented individuals are oriented toward *identification*, and strive to meet the expectations of their roles and to sustain gratifying relationships. Finally, value-oriented

individuals are oriented toward *internalization*, and accept the influence of others in order to match their actions and beliefs with their own value system. These differing orientations result in not only different interactions and responses to situations, but also varying standards for appropriate behavior.

In the GBDG, differences in whether participants oriented toward rules, roles, or values likely contributed to the social process trends. For example, one rule-oriented participant stressed following ground rules in order to foster positive relationships, and was frustrated when these rules were broken. The participant who prematurely released information regarding BVP discussions to the media, provoking disapproval from other participants, was probably not strongly oriented toward rules. As a result of varying degrees of role orientation, participants more or less attended to their roles as representatives of both the GBDG and their constituencies. When participants did not attend to these dual roles, and did not adequately represent their constituents or the GBDG, it created strife within and outside of group meetings. Value-oriented individuals interacted with others in ways that promoted their own values, expressing agreement with and defending others with similar values and demands (e.g., concerning protection of ecological integrity or tourism).

Problem definition

We posit that the policy problem in the GBDG's social process was a combination of factors: With increasingly difficult issues to tackle, problem-solving skills and social capital declined with the entrance of new participants who had minimal integration and incongruent expectations. This fragmentation prevented the group from clarifying and sustaining the common interest, culminating in the problem of how to manage the BVP. We believe the GBDG did not adequately respond to key value dynamics: faltering problem-solving skills and deprivations of respect and power, expanded upon below. In turn, these unattended value dynamics led to the GBDG's eventual outcome: termination.

Problem-solving skills and knowledge of the policy sciences learned at the outset decreased with fading memories and turnover. Many participants attended less than half of the meetings (Fig. 2), hindering the group's ability to address challenging and controversial problems. Newcomers missed the initial intensive skill-building workshops, and subsequent briefings were often inadequate. Long-term participants also needed refreshers of the policy sciences framework. To some, the GBDG resembled other stakeholder engagement processes, indicating declining use of the policy sciences over time. Goal clarity also faltered. At times some participants lost sight of why they were there and felt that they were groping for problems to solve (Oppenheimer and Richie in manuscript). After initial success in resolving issues that were "low-hanging fruit," increasingly complex and controversial problems confronted the group in tandem with declining skills.

The group built and sustained respect, affection, and trust initially, but these gains dropped dramatically with turnover, new superintendents, and the BVP controversy. New participants missed significant sharing of values and perspectives and had varied understandings of expectations and formerly shared social data. Long-term participants did not always actively share perspectives or build relationships with newcomers.

The change in superintendents may have been the tipping point. As issues became increasingly complex and skills and social capital faltered, the group needed superintendents who were invested and well versed in the policy sciences problem-solving method to foster relationships and trust. Instead, the new superintendents had not experienced the "blood, sweat, and tears" expended over previous years. With different personalities,

leadership styles, and constitutive priorities in park management, the new superintendents did not effectively manage participants' expectations about Parks Canada's role. Although they had legal authority to accept or reject recommendations, the original superintendents acted as coequal voices. Many participants expected this equality to continue, but instead new superintendents asserted more authority and expected to make the final decisions. Participatory power sharing transitioned to more traditional, authoritative leadership. Many participants felt disrespected when sharing of authority declined, especially without adequate communication, and this reignited distrust of Parks Canada. In addition, many participants interpreted the new superintendents' inconsistent attendance as diminished support that delegitimized the process.

The abovementioned dynamics exacerbated the hostility that arose over the BVP, which was significantly more difficult to resolve than prior issues, as it involved more controversy and complex scientific issues. This problem "derailed" the GBDG, in the words of one participant. Because of an unclear system of constituent representation, the GBDG invited appropriate interests to BVP discussions too late to ensure that these interests felt respected. The group assumed that the business interests currently present represented and communicated with all of the BVP businesses, a misassumption as little communication took place. This mistake reflected participants' struggle with balancing dual roles of representing the GBDG to their constituencies and vice versa. Participants were also confused about whether they were representing specific organizations or entire sectors, and hence they communicated with their constituencies to varying degrees. This reflected a failure in the constitutive structure of the GBDG's system of representation, which the group did not clarify in a frequent or formal enough manner.

When the BVP businesses did attend several meetings, they did not receive adequate training on the policy sciences or relationship building. Furthermore, they were invited not as equal contributors to decision making, but as potentially affected parties to be consulted. The BVP businesses felt disrespected that they were not part of BVP discussions from the start. At this point, participants competed to advance their values (e.g., wealth and respect derived from protecting tourism business interests) in policy outcomes. The poor integration of BVP businesses and Parks Canada leadership, participant turnover, and weakened skills and relationships caused deprivations of power, trust, and respect. Because of this failing social process, hostile debate broke out over the divisive BVP issue, and despite prior success, the group was unable to clarify or advance the common interest.

An outcome of the GBDG's failing social process was the formation in 2009 of a new stakeholder engagement process, the Bow Valley Parkway Advisory Group (BVPAG).[4] As described by interviewees, the BVPAG was formed to make recommendations on managing the BVP, the last issue the GBDG tackled. Some BVPAG participants had participated in the GBDG, but others were new. This process did not use the policy sciences. Instead, it attempted to envision the parkway's "future best" to find points of agreement and make consensus-based recommendations. As one participant noted, this new process represented a return to the park's original stakeholder engagement approach. Specifically, the new superintendents did not share decision-making authority with participants, nor did they attend every meeting.

The BVPAG agreed on a vision of the "future best" for the parkway but disagreed on how to achieve it (Campbell et al. 2011 unpublished report). As of 2011 the process had "blown up," in the words of one interviewee. According to a minority report submitted by

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[4] Although it went by several different names, in this analysis we refer to it as the Bow Valley Parkway Advisory Group, since that is what interviewees most commonly called it.

five members of the group, the process had "run its course" and suffered from unsubstantiated allegations "based on hearsay and assumptions" (Campbell et al. 2011 unpublished report). These five members withdrew from the process because they found no value in continuing, felt "outnumbered" and "overridden," and did not expect to reach consensus (Campbell et al. 2011 unpublished report). Thus, substantial value deprivations occurred during the BVPAG, particularly of respect and affection, and participants believed that authority was asymmetrically distributed. Participants argued over the validity and robustness of scientific information, and value deprivations and general distrust carried over from the acrimonious ending of the GBDG.

Projections

Given the withdrawal of several participants, we do not expect the BVPAG to make a recommendation about the parkway that clarifies the common interest. We predict that there will be winners and losers rather than compromise, with associated deprivations of respect, affection, and power. We also predict partial diffusion of the skills, respect, and relationships built during the first part of the GBDG, at least among some participants. Several said that they had used the policy sciences in their current professions and that some formerly hostile relations had greatly improved from the GBDG. We do not expect these skills and social capital to diffuse on an institutional level, however, particularly since Parks Canada did not undertake a formal appraisal in order to learn from the GBDG. Overall, we expect that skills and knowledge of the policy sciences will decrease.

We also predict several trends in Parks Canada management. Based on our conversations with several participants and a review of the 2010 park management plan, we predict that park management will increase its focus on visitor use and experience, favoring commercial and business interests at the expense of ecological protection. The agency will use stakeholder groups likely to be issue-specific and more similar to traditional consultation than the GBDG prototype. Parks Canada will also continue to share authority less than it did at the start of the GBDG. The superintendents will play a supportive but outside role as the final decision maker in stakeholder engagement groups. Finally, we predict that grizzly bear populations in the park will continue to suffer high mortality levels from human activities, particularly collisions with trains (Bertch and Gibeau 2009, 2010).

Alternatives

We envision three alternative approaches to grizzly bear management and stakeholder engagement in Banff: (1) scientific management, (2) the current trajectory, and (3) adaptive governance.

The first, scientific management, is still pervasive in natural resources management, despite trends toward community-based and other models of governance. Scientific management is used in issues ranging from human-provided waters for desert wildlife in the southwestern United States to the international climate change regime (Mattson and Chambers 2009; Brunner 2010; Walters et al. 2000). Given that scientific management is still the dominant doctrine used for many agency-managed resources, and that it is challenging to reform, it is conceivable that Parks Canada could return to increasingly relying on scientific management, particularly if collaborative strategies such as the GBDG fail. Under this first alternative, Parks Canada would engage stakeholders in less meaningful

ways, favoring top-down implementation of management strategies using centralized and technically rational decision making, heavily based on science and relatively disconnected from the social context and local value demands. The agency would sequester more power, and stakeholders would increasingly view it as a closed organization and feel disrespected and deprived of access to decision making.

The second alternative, the current trajectory, relies on a combination of scientific management and ad hoc stakeholder engagement groups that are not necessarily problem-oriented, as described in our predictions above. Across North America and elsewhere, this hybrid approach to natural resources management is becoming more common as groups become frustrated with the failures of scientific management, but agencies do not necessarily share fully in decision making when involving stakeholders (Susskind et al. 2010; Brunner 2010; Kallis et al. 2009; May and Plummer 2011; Helling and Thomas 2001). In this alternative, stakeholders would likely struggle to move past the history of conflict as they clarify their joint interests, value deprivations would continue, and businesses would likely be the dominant special interest.

The third alternative, adaptive governance, would involve decentralized decision making, broad and inclusive participation in policy making, and a focus on procedural rationality as opposed to technical rationality (Brunner 2010). These community-based approaches to policy making hold promise to bring in a greater diversity of alternatives and views, build social capital to move toward consensus, and create broad support for a given decision (Helling and Thomas 2001). After examining other alternatives, we posit that this alternative would prioritize the common interest over special interests, and that out of the three alternatives, it is the most likely to solve policy problems in park management. Given that the Banff GBDG strove for but did not sustain advancing the common interest through this alternative, we offer recommendations that may help achieve a social process that does allow for the sustaining of the common interest in collaborative stakeholder processes.

Recommendations

For a time, the GBDG moved grizzly bear management in Banff closer to adaptive governance. It was an innovative attempt to meet the challenge of finding common ground among diverse participants and demands over the management of the symbolically powerful grizzly bear. It had a number of successes, including building relationships, fostering respect, and making several recommendations that were adopted. However, the process ended in acrimony and debate similar to what it was meant to solve. For the reasons delineated above, the GBDG did not sufficiently sustain problem-solving skills, respect, or power sharing. How can stakeholder engagement processes maintain these values, and what can be learned from this case to help other efforts foster an effective social process and find common ground in collaborative wildlife management?

Maintain skills through learning

First is the need to continuously teach and refresh problem-solving skills for new and old participants (Bolland and Muth 1984). This includes sharing information on how to solve problems effectively, understand perspectives and expectations, build social capital, and find ways to address individual demands as well as common interests. New participants should receive more than a brief introduction, and current members should participate in newcomers' orientation. Frequent skills training on a common set of analytical procedures

helps create and maintain an effective problem-solving culture (Burgess and Slonaker 1978). Problem-solving skills allow participants to "decompose a problem into its component parts" and "provide structure to a task that too often breaks down due to the complexity of most social problems" (Bolland and Muth 1984: 82). Without such training, participants are highly susceptible to the tendency to "lose track of their problem-defining and problem-solving mission and concentrate instead on making the day-to-day decisions necessary for the [group] to function" (Bolland and Muth 1984: 85).

Although time- and resource-intensive, frequent skill upgrading workshops are immensely helpful to provide a "booster shot" so the group doesn't "backslide," in the words of one participant. Indeed, interviewees frequently requested enlightenment and training. Many participants had positive comments about the 2009 skill-upgrade workshop and were impressed with the expertise of the invited expert. One participant described this workshop as an "eye-opening moment" and another was "blown away." Bringing in inspirational speakers and outside experts can refresh skills and enthusiasm, and invigorate the group (Burgess and Slonaker 1978). As part of continuous learning, it is important to provide opportunities to practice skills with trials on less urgent issues.

The policy sciences are complex, abstract, and foreign to most. As Bolland and Muth (1984: 85) state, "although the political process model and the problem-solving tasks are useful tools for exploring the ramifications of public policy decisions, their utility derives at least partially from their complexity." Building these skills takes time, a limited commodity for many professionals. The challenge is to balance these constraints and to appreciate the commitment of time and energy to the demanding mental and emotional commitments of the policy sciences. To reduce participant burnout, helpful techniques include revisiting past accomplishments, clarifying the endpoints of groups or issues, designating project champions to galvanize others, and continually examining how to improve efficiency. In addition, during skills training and throughout the process, the group should acknowledge participants' different learning styles and role orientations according to the core policy beliefs and "knowledge cultures" that influence their perspectives (Sabatier and Jenkins-Smith 1999; Brown 2004). Learning the policy sciences may be one way to bring these diverse perspectives to the same page.

Participant turnover poses a major barrier to maintaining skills. While little can be done about some turnover, at the outset organizers can gather a "committed nucleus" of those most able to commit to the process, while still being inclusive (Willard and Norchi 1993: 603; Lasswell 1971b; Burgess and Slonaker 1978). This "permanent core membership" is required "to ensure continuity of the enterprise and the building of a problem-solving culture" (Burgess and Slonaker 1978). Clarifying endpoints helps participants gauge their ability to commit, although unpredictable changes will happen. The GBDG did not plan its own finale, and thus, with no end in sight, many participants struggled to devote the time required. Because of turnover, stakeholder engagement processes may be more successful if they build in mechanisms to maintain continuity, or if they take root in communities with low transience and persons who are invested for the long term.

Clarify rules, and roles, and representation

It is critical to maintain clarity about participants' roles and the ground rules governing acceptable behavior; this is "necessary for any group of people to coordinate, albeit imperfectly, the expectations and actions of its members" (Clark and Brunner 2002: 3). Although breaking of ground rules was rare in the GBDG, it dramatically reduced respect when it did happen. Ground rules should include the acknowledgment of others' concerns;

this can promote mutual respect. Particularly for those who are less rule-oriented (Kelman 2006), frequent reminders of ground rules can help prevent both accidental and deliberate deviations. Clearly defining roles and duties is critical to maintaining an adequate system of representation, especially given human variation in role orientation (Kelman 2006). Also important is defining whether participants are representing themselves, a single organization, or an entire sector—and what information can be shared. This can help the shift "from stakeholder participation to substantive stakeholder representation" (Merrey and De Lange 2003: 797). Verifying participants' communication with constituents helps to prevent mistakenly assuming that missing voices are represented; this also creates a process that is as inclusive of appropriate interests as possible. It is important that issues of representation are defined through the group's constitutive process.

To ensure this inclusiveness, group membership and the constitutive structure of the group's system of representation should be formally and critically re-examined when concluding deliberations on one problem and moving to another. The GBDG was late in re-examining its membership with the BVP issue because of inadequate clarity in constituent representation. A decision process will not clarify the common interest and the policy outcome will be unsuccessful if participants in the social process are excluded and disagree with the decision (Brunner 2010). Lack of representation "weakens the perceived legitimacy of the process, causing both citizens and policy makers to take it less seriously, and creating a vicious circle that further reduces participation" (Helling and Thomas 2001: 759). Newcomers must be integrated into the group not only to update them on the decision-making process and problem-solving skills, but also to build respect, trust, and rapport. This social capital is a critical prerequisite to finding common ground over controversial policy problems. Having the group periodically share their values and connections with the park may help integrate newcomers and find common ground (Manzo and Perkins 2006).

Manage expectations

Another critical component of successful stakeholder and conflict resolution groups is managing participants' expectations by clearly and frequently defining the group's goals, function, and power (Helling and Thomas 2001). Self-reflection and re-examination of the group's purpose can maintain goal clarity and avoid goal substitution (whereby goals other than official goals take precedence) (Clark and Brunner 2002). Displaced goals can also arise when a group turns means into ends and forgets the original end (Brunner et al. 2005); this may have occurred in the GBDG when some participants lost sight of the goals and continued the process for its own sake. The purpose of goal re-examination is to avoid unclear purposes and objectives, such as when "everything got blurred," as one participant described it. Confusion exacerbates burnout and creates a less-effective policy process. Frequently asking, "Why are we here?" helps to make decision making more efficient, effective, and likely to find common ground among conflicting interests. If a process is failing, a "crisis intervention" appraisal can be undertaken to reorganize and upgrade decision-making processes (Clark and Brunner 2002).

Expectations about the group's functioning must also be actively managed. Participants enter stakeholder engagement processes with expectations based on their previous experiences with park management, public engagement, and interactions with others. It is challenging to open minds to self-examination and new ideas, particularly with high participant turnover. At the start of many endangered species recovery programs, participants often do not recognize that these processes are difficult and necessitate long-term

commitments of time, energy, and resources (Clark and Gillesberg 2001). There is also a "tendency to focus on the biological and technical aspects … at the expense of a full consideration of the social impacts and an integrated look at both dimensions" (Clark and Gillesberg 2001: 141).

Finally, power dynamics must be managed. New agency leaders should recognize that an existing group will have strongly embedded expectations carried over from previous leadership; they should respect those expectations and be clear and transparent if change is needed. If a group needs superintendents' attendance to feel legitimate and respected, leaders should recognize that not acceding to this request will reduce respect and confidence and weaken the group's effectiveness. Likewise, a group will lose trust in the agency if decision-making power is shared and then withdrawn; the agency "takes a big risk if it permits or encourages participants to think their influence will be greater than actually planned" (Helling and Thomas 2001: 764). If a group's expectations cannot be sustained, then agency leaders should ideally shift the group's expectations to fit the new arrangement.

While the organizer, facilitator, and agency leaders in the GBDG certainly did at times remind participants of rules, roles, and goals, it is critical to be conscious of participants' perceptions. All individuals have different and simplified versions of reality, each mistaken in its own way (Brunner et al. 2002). Individuals construct narratives (sometimes divisive) of how they understand themselves and others (McBeth et al. 2010), which affect these different versions of reality. We often heard a vastly different account of a given event in the GBDG from participants, all of whom were present for the event. Participants told us honest stories of what they perceived had happened, and the cumulative messages contained several different accounts. These "culturally constructed understandings" matter; they strongly influence how participants interact with others and the environment (Helling and Thomas 2001: 760; Brown 2004). Organizers, facilitators, and leaders must manage their own and others' fallible memories and different interpretations of the same events. Reminding participants, recording detailed meeting minutes, and ensuring that participants read critical notes and material are necessary ingredients, but may not be sufficient. Taking into account irrationality, selective interpretations, and error-prone memories are key challenges in all policy processes.

Define leadership role

The superintendents' roles in the GBDG significantly affected the group's feeling of respect and shared authority. Participants generally held one of two perspectives about appropriate superintendent roles. One was that their presence caused participants to direct discussion specifically toward the superintendents in order to advance individual interests, instead of toward the group as a whole to advance pursuit of the common interest. According to this view, superintendents should not regularly attend meetings. While this is a legitimate concern, nearly all participants indicated that this was not an issue with the original superintendents, one or both of who attended every meeting. Thus, overcoming the risk of lobbying superintendents was surmountable. To discourage participants from targeting agency leaders to promote individual interests, an agency can define its role as equal to that of other stakeholders. However, the agency's authority to do so may be limited by its responsibility to serve the common interest on a larger scale, such as nationally or internationally, and this larger interest may differ from the common interest of a local community (Brunner et al. 2002).

The second perspective was that superintendents should be regular attendees in order to give legitimacy and respect to stakeholder groups. Different leadership styles, including the degree of shared decision-making authority, have profound consequences on the social dynamics of the group. When the new superintendents did not consistently attend every meeting during the latter part of the GBDG, their role became unclear. Many participants interpreted this as the new superintendents' defining their role as ultimate decision makers and the GBDG's role as merely advisory. As one participant stated, "At one point the superintendent wanted to abandon the process and make the decisions." This caused group discussion to be more directed toward trying to sway the new superintendents instead of pursuing the common interest. Thus, by not attending meetings (to prevent participants from trying to bend their ears), which one superintendent claimed to have done, the opposite effect may result, such that more lobbying occurs in an attempt to reach sequestered power.

It is not this paper's purpose to prescribe what the role of superintendents should be; appropriate roles depend on the context and problem at hand. However, the social dynamics in the GBDG demonstrate the critical need to define the role of agency leadership and the degree of shared authority. Collaborative stakeholder-based processes may indeed require a difficult shift in mindset among agency officials, as "greater citizen involvement means redefining public officials' roles in the decision making process, an uncomfortable process rejected by many officials" (Helling and Thomas 2001; Walters et al. 2000: 349). Agency leadership roles may be communicated through subtle signals that neither leaders nor participants are consciously aware of, but that nevertheless greatly influence the social process.

Conclusions

Mapping a social process through the lens of problem orientation may provide great understanding of human behaviors and interactions in complex socio-political problems (Clark 2011; Brunner 2004). This understanding, in turn, allows for deeper analysis of a policy problem and enables the generation of lessons learned that are potentially appropriate for other problem-solving efforts. The social process map provided here complements other research on this case, including a study of stakeholders' perspectives on grizzly bear management and conservation (Chamberlain et al. 2012), an examination of the GBDG's initial outcomes and effectiveness in integrating knowledge to find common ground (Rutherford et al. 2009), and an appraisal of the decision process over its lifetime (Oppenheimer and Richie in manuscript). Although each study stands alone, collectively, the compilation provides a relatively thorough analysis of a case in the important issue of governance in natural resource policy and management (Clark and Rutherford in manuscript). In addition, this collection illustrates the utility of the policy sciences framework in studying and offering recommendations for efforts to advance the common interest in policy problems.

The Banff GBDG was a direct and practical application of the policy sciences' problem-solving approach to a real-life and high-profile natural resource problem. This prototype shared policy science problem-solving skills with a diverse group of people, from ski business managers to park wardens to horse outfitters, most of whom had no prior exposure to the policy sciences. As such, the lessons from this case are relevant not only to other collaborative decision-making efforts, but also to endeavors to teach the policy sciences to persons outside of the policy sciences sphere. This analysis sheds light on the challenges of

teaching this mentally demanding framework to varied individuals, and on using it to solve problems in practice. In particular, this case illustrates the importance of maintaining problem-solving skills over time, and of teaching them to incoming participants in collaborative decision-making processes. What the policy sciences provide—a method for forming rational policy that advances the common interest—would benefit many policy problems. The recommendations from this study contribute to our collective knowledge on how to successfully teach and use the policy sciences to solve these problems.

The GBDG also provides important lessons for policy termination, especially given the GBDG termination's unclear and unofficial nature. deLeon (1983) argues that "neither the evaluation or termination stage makes much sense without the other. The isolation of one from the other—either in concept or in practice—would be difficult to justify" (pp. 641–642). Yet the GBDG termination occurred without public evaluation amidst the controversy of the Bow Valley Parkway. Parks Canada never formally terminated the GBDG, but participants were no longer convened for meetings and an alternative stakeholder group was initiated. With an absence of evaluation, there was limited diffusion of the GBDG's successful elements and incorporation of lessons learned into capacity building and organizational knowledge. Indeed, termination without appraisal in grizzly bear collaborative conservation programs has occurred elsewhere (Clark and Slocombe 2011). The evaluation of conservation programs and community-based initiatives in general is greatly needed to improve their effectiveness (Kleiman et al. 2000; Helling and Thomas 2001). This diffusion would advance institutional learning and greatly improve humans' ability to resolve conflicts in wildlife conservation.

In the absence of a public appraisal, it is our hope that this analysis may be useful to efforts in and beyond BNP to cultivate an effective social process in collaborative problem solving. An effective social process is critical to fostering participants' collective ability to find common ground in policy problems such as grizzly bear management in BNP. In this case study, the losses of problem-solving skills, mutual respect and power sharing caused such conflict that participants were unable to achieve a decision process that clarified the common interest. These value deprivations and clashes ultimately resulted in the GBDG's demise, illustrating that not attending to these important value dynamics in a social process may induce termination in a policy process.

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