

# Of Bears, Chess, and Checkers

MOVING AWAY FROM PURE SCIENCE TO SOLVE PROBLEMS

By Michael L. Gibeau



Credit: Emilie Gibeau

*Michael L. Gibeau, Ph.D., recently retired after 33 years with Parks Canada, where he served as a Park Warden, Conservation Biologist, and finally the Carnivore Specialist for the Mountain National Parks.*

**W**ildlife biologists who promote conservation tend to share a certain frame of reference. Most of us got into the wildlife business because of our love of nature and animals. That's what led me to my long career of working with grizzly bears in Canada's Banff National Park. But something changed during my career that has fundamentally rearranged the way I think—not just about biology, or bears, but about almost everything I do in my life. I've come to understand a more comprehensive way to solve problems. By sharing it, I hope to provide an alternative to the way fellow biologists approach problem solving.

Throughout my formal education, I was steeped in the epistemology of wildlife biology. I viewed the world through the lens of science, where scientific management was the primary solution to problems. This bounded rationality is typical for many of us. I spent most of my career radio collaring and studying various carnivores, a classic "collar and foller" kind of guy, who collected data, wrote reports, and published papers.

I don't do that anymore. I've come to understand that science, while necessary, is not sufficient to solve problems in the real world. When faced with a tough problem, most biologists will simply collect more data, a natural reaction for those who believe that science ultimately holds all the answers. But more study doesn't address the fundamental problem. I see it as merely playing checkers when a situation calls for playing chess—a much more complex and strategic game.

## Learning in the Trenches

To explain what I mean, I'll rewind the clock. From roughly 1994 to 2000, my research boiled down to nothing more than collecting interesting information about grizzly bears. Through radio telemetry monitoring we documented low levels of security and high movement rates. In sum, our research suggested that high levels of human use in Banff National Park were having a negative impact on the grizzly bear population.

Such information can help inform debate and management decisions, but it's still just information. Although I was doing solid science and had published many papers in peer-reviewed journals, I was receiving significant criticism from a small but influential segment of the public. For example, stakeholders with development interests were becoming concerned that research like mine would cause Parks Canada to introduce measures to protect Banff's small population of bears by restricting development and tourism opportunities.

Beginning around 2000, a debate erupted in the popular media that spanned several years, questioning not only the science but openly attempting to discredit me as a scientist. The debate centered on determining appropriate levels of human use and the age-old question of preservation vs. development in our national parks. Grizzly bears were the lightning rod that sparked the debate. Some of the headlines from our national newspapers read: "Parks failing to protect grizzlies," "Scientists deny grizzly study an attempt to create false crisis," and "Highway statistics and bear research questioned." Some Parks Canada officials began wondering whether to believe me or the headlines. I asked myself, "What was I doing wrong?" Wasn't it enough to get the science right? Apparently not.

I came to realize that I was conducting science in a totally a-contextual way. Like many typical wildlife biologists, I was unaware of the larger social debate and political pressures at play. I was also unaware of how far special interests would go to use—or skew—scientific research to justify their own ends.

## Smarter Chess Moves

The controversy surrounding grizzly bears and bear management a decade ago in Banff was unsettling enough that I began searching for an alternative way for scientists to interact with people instead of just spotlighting published papers. I wanted to do something different than simply bombard the public with information. The answer is to actually work with people, illustrated



by a continuum that ranges from simply providing information to total collaboration (see chart).

Most governments try to inform or influence people by holding open meetings and issuing media releases and brochures. That typically passes for “consultation” in government circles. However, the object is often simply to “check the box” of public engagement before moving on to implement a pre-determined plan. I wanted to move to a more participatory form of engagement and to actually collaborate with stakeholders in a meaningful way. Fortunately, I had been exposed to a methodology that would help me do just that.

In the early 2000s, with the blessings of Parks Canada in Banff, managers who were fed up with controversy began to pursue a new policy-science framework that allows a more comprehensive approach to problem solving (Clark 2001, Wallace and Clark 2002). Notably, this framework was widely known in law, international relations, and public health, but barely recognized in the arena of resource management.

As described in “The Policy Process: A Practical Guide for Natural Resource Professionals” (Clark 2002), this framework provides a fully contextual approach to problem solving and enables civil dialogue about the real problems. With this book as our guide, we brought together a diverse group of people in Banff including biologists, government officials, advocacy groups for business and conservation interests, and various user groups. Everyone wanted to try a new style of interaction that avoided the stale government consultation process that did nothing more than provide information, collect a range of opinions, and then make decisions behind closed doors.

Central to the policy sciences’ interdisciplinary framework is an understanding of eight core values (Lasswell 1971) that motivate human actions. They are:

**Power:** Decision-making authority and access to goods and services.

**Enlightenment:** The finding and spreading of information and knowledge.

**Wealth:** Control of resources such as money, natural resources, and people.

**Well-being:** Opportunity for personal safety, health, and comfort.

**Skill:** Opportunity to develop inherent talents including professional, vocational, and artistic skills.

**Affection:** Friendship, loyalty, love, and intimacy in interpersonal situations.

**Respect:** Recognition or deference in one’s professional or community life.

**Rectitude:** Responsible and ethical conduct.

People’s actions can be explained by seeking more or being deprived of any of these core values. I therefore started asking the question: “What is that person being deprived of or seeking more of?” As my understanding of the eight base values broadened, it became evident there are two values of particular importance in all human interactions. The first is power—something that governments tend to sequester and maintain—and the other is respect, as withholding or being deprived of respect is an all-too-common occurrence in interpersonal relations.

Our newly formed problem-solving group in Banff began by acknowledging and trying to understand one another’s values and perspectives. Group momentum built as decisions such as seasonal access restrictions or sustainable mortality targets were agreed upon and implemented by the government. For example, prior to the formation of this group, any type of restriction of human access to specific areas for conservation reasons was portrayed by user groups as the government’s

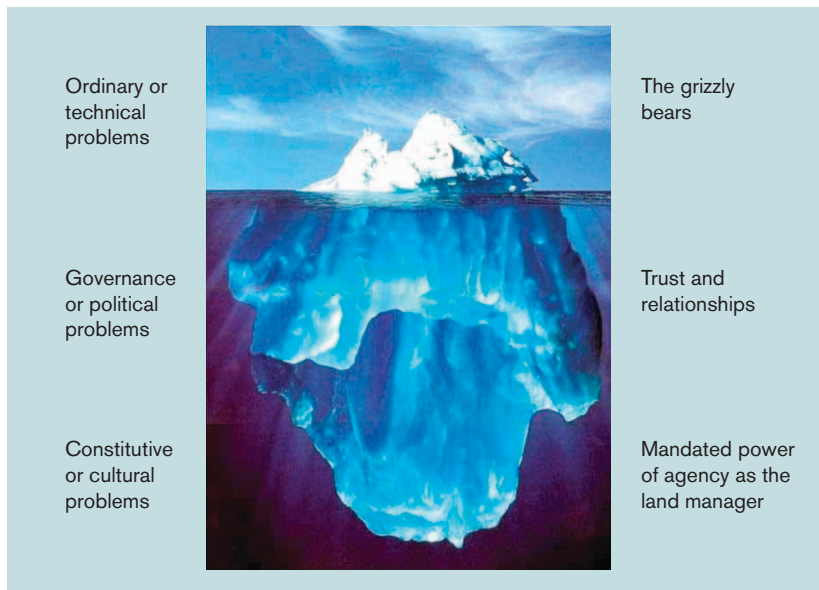
### A Continuum for Working with Others

	↑	↑↓	↓↑	↻
	Inform	Influence	Involve	Collaborate
<b>Purpose</b>	Provide information to raise awareness	Exchange information to foster knowledge & understanding	Explore ways to build support & commitment	Strive for consensus
<b>Relationship</b>	One-way	Two-way	Active	Adaptive
<b>Decision Making</b>	Decisions made by authority	Some advice and feedback go both ways, but decisions made with minimal input	Decisions made after several opportunities to provide substantive input	Decisions based on consensus-based recommendations
<b>Outcome</b>	Public is informed, thus better able to participate	Information informs the agency about the public’s views	Decisions reflect concerns and ideas; feedback is provided about how public input influenced decisions	Ownership of outcomes is shared
<b>Capacities</b>	Capacities increase from left to right for information processing and learning, for drawing out values, for problem solving, and for resolving conflict.			

Credit: Adapted from Edwards 2005



## The “Problem” is Just the Tip of the Iceberg



Credit: Susan G. Clark

Grizzly bear research in Canadian parks was the visible (i.e., “ordinary or technical”) problem during Gibeau’s research. But the real problems lay below the surface. Some involved political pressures and mistrust between land agency managers and other participants. Deeper still were complex issues regarding how Parks Canada chose to wield its constitutive power.

attempt to close the park down to the public. Through this new joint problem-solving and shared decision-making approach, everyone not only agreed to seasonal access restrictions in several areas, but promoted the changes as the best solution for everyone.

Within the first two years, and as the issues became more complex, we came to ask the question: “What is the *real* problem here?” Grizzly bears were the obvious superficial issue, but more deep-seated was the problem of trust and relationships. Years of animosity among groups over philosophical differences in park management and a general mistrust of the Parks Canada leadership had created a caustic atmosphere.

Even more hidden from view and rarely discussed was the process of decision making mandated by our government. The mandated power of the agencies to make all decisions themselves is perceived as a real problem for many people. However, our group was different. Parks Canada (the agency) was sharing power, and our group was making joint decisions. Group cohesion tightened as participants came to understand other perspectives. Many of the long-standing issues arising out of years of mistrust seemed to fade as the science surrounding grizzly bears was dissected and digested. As a result, controversy over grizzly bears in Banff National Park largely faded away.

### A Mixed Legacy

I wish I could just end the story here, heralding the merits of participatory decision making, but that is not how it eventually ended. In 2009 our

group collapsed. While in the midst of a contentious issue surrounding access restrictions along one of the secondary highways, the superintendent of Banff National Park retired. She had been very supportive of our collaborative efforts. However, her successor did not share the same philosophy of joint decision making, so the agency again assumed all decision making authority. Trust within our group eroded, and participants reverted to using the media and political lobbying to make their points. We went from civil dialogue about common interests to the old model of stakeholders promoting their own special interests to the all-powerful government. Grizzly bears once again symbolized arguments about issues of preservation versus development, trust and relationships, and ultimately about who had the power to decide (Rutherford and Clark 2005).

For a brief period of our history in Banff, a broad cross-section of citizens had a taste of interdisciplinary problem solving and group decision making. We had civil and open dialogue on a level playing field and government-approved sharing of power—a successful formula that allowed us to build trust and foster relationships. Through this approach we enjoyed productive discourse about grizzly bears and made some conservation gains. Participants found this a more comprehensive approach to issues and understood that the real problem involves social interactions and how decisions are made (Richie and Oppenheimer 2011, Oppenheimer and Richie 2011). Ultimately, we learned that you can get the science right and still not get a sound decision because special interests override the common interest.

Sadly, today, we are once again bogged down in the acrimony and the same controversy we faced 10 years ago. So I challenge you all to step outside your thinking box. Is science the central element of your problem solving strategy? Are you playing checkers while everybody else is playing chess? The time has come for all biologists to recognize that while science is necessary, it is not sufficient to solve today’s problems. We need to shift our attention away from just the biological elements and put people, not science, at the center of problem solving. We need to learn more comprehensive ways to approach problem solving that are fully contextual. And finally, biologists need to lead the way in applying these new skills in an increasingly complex world. The vast majority of the public are ready, but the question remains, are we? ■