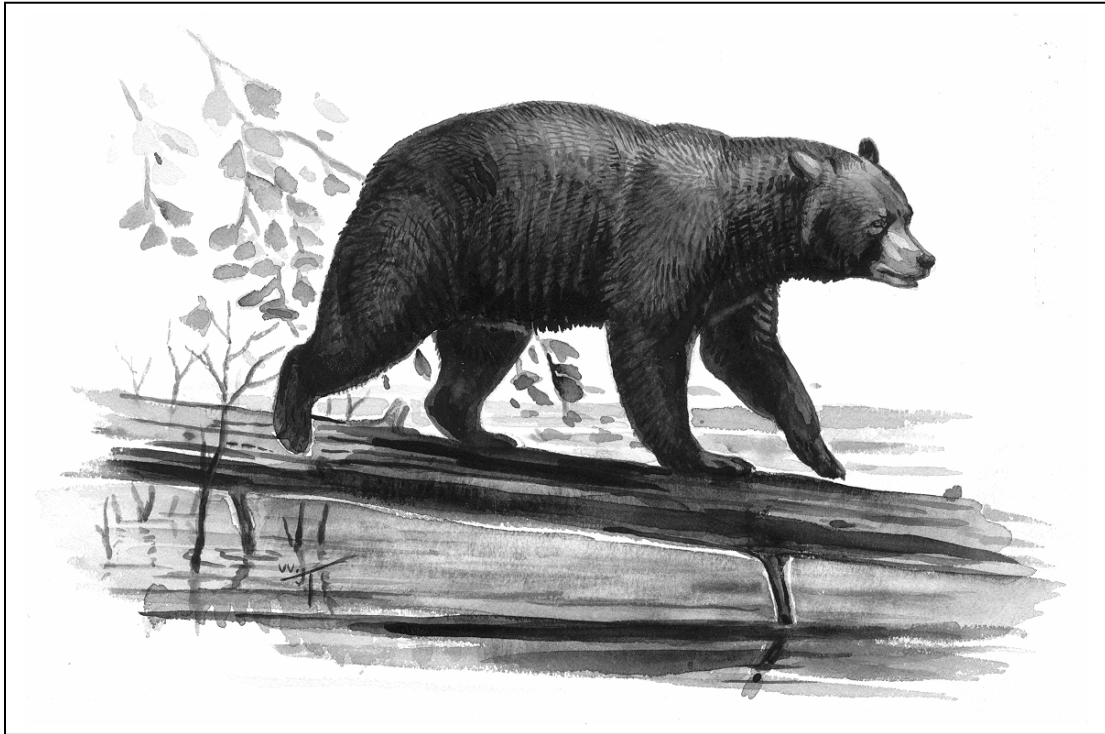


A FRAMEWORK FOR BLACK BEAR MANAGEMENT IN NEW YORK

Second Edition



Department of
Environmental Conservation



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Second Edition: 2007**

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SECTION 1: INTRODUCTION

Why Do We Need a Planning Framework for Black Bear Management?

The Bureau of Wildlife in the New York State Department of Environmental Conservation (DEC) is the government agency responsible for black bear management in New York State. Historically, New York State has had distinct populations of black bears in western, northern, and southeastern New York. In recent years, black bear numbers have increased, bears have become more widely distributed across the state, and interactions between people and bears have increased. These developments prompted DEC staff to develop a framework for making decisions about black bear management, a framework that will produce a more adaptive and responsive management program. The framework improves the Bureau of Wildlife's ability to carry out its mission, which is to provide the people of New York the opportunity to enjoy all the benefits of the wildlife of the state, now and in the future, through scientifically sound management that is efficient, clearly described, consistent with law, and in harmony with public need. The purpose of this document is to outline how the framework is being used to make decisions and take actions within the black bear management program.

How was the Planning Framework Developed?

In the spring of 2000, DEC established a team of technicians, biologists, managers, and human dimensions specialists to gain stakeholder input about the black bear management program. All of the technicians and biologists selected for the Bear Team had extensive experience working with bears, and working with people affected in some way by bears. Meeting regularly during 2001-02, the Bear Team synthesized information about the ecological and social aspects of the management system, as well as information about the practice of managing publicly held natural resources. The Bear Team then developed a framework for

making decisions about the bear management program based on their synthesis of ecological, social, and management science information bases.

Key Characteristics of the Planning Framework

Stakeholder engagement is the cornerstone of the planning framework and will continue as a key feature of the black bear management program. The framework describes a cyclical process that will be repeated as necessary to adapt the bear management program to environmental and social changes. Department staff have already begun using the framework to guide a cycle of decision making. Activities to date include a set of small group meetings and a statewide mail survey. Several additional stakeholder engagement activities will be necessary before this first cycle of the process continues into later stages, including action recommendations, action approval, action implementation, and action evaluation. We discuss more details about stakeholder engagement activities associated with the planning framework in Section 3 of this document.

The most effective planning approaches recognize that all decisions involve some level of uncertainty, and all management takes place in an environment that is continually changing. The planning framework is dynamic and capable of responding to the changes in distribution and abundance of black bears that New Yorkers will witness in coming years. The planning framework outlines a process by which the public can interact with DEC such that continuous program improvement is possible. Our planning framework considers DEC management actions as one subset of factors in a dynamic system that includes interactions between people, black bears, and the land. Above all, this planning framework depends on staff working to develop a black bear management program that is based on the core values of New Yorkers, as those values are expressed through stakeholder engagement processes.

The planning framework will address bear management in areas occupied by bears now and in areas that may be occupied in the future. It incorporates consideration of time frames that vary based on a variety of factors. The conceptual basis for the plan is an approach called adaptive impact management (AIM). In the next section of this document we describe the AIM approach and how it is implemented using the planning framework.

SECTION 2: USING ADAPTIVE IMPACT MANAGEMENT (AIM) CONCEPTS TO GUIDE PLANNING

AIM focuses on stakeholder-identified desirable impacts of management as the basis for setting fundamental objectives of management. Stakeholder engagement is a key feature of an AIM approach. An AIM approach depends on stakeholder-manager collaboration to describe the preferred nature and extent of human-black bear interaction across management zones, and to identify acceptable management interventions and their timing (a plan of action). Furthermore, the premise of an AIM approach is that managers and stakeholders do not know everything they want to know about the “system” to be managed—a system that includes black bears, their habitats, and people. Moving ahead with acknowledged uncertainty about some relationships in the bear management system, AIM seeks to conduct management in such a way as to enhance the learning that occurs among managers and stakeholders. Components of an AIM process, taken step-wise, include:

- Analyzing the situation, including identification of the range of potentially relevant events and interactions to be considered (revealing what is known about biological and human dimensions of the bear management system);
- setting objectives in terms of human values (i.e., stakeholder-identified impacts);
- developing a dynamic model of the key events and interactions that lead to impacts of management interest (i.e., stakeholder concern);

- identifying and selecting acceptable management interventions; designing and implementing those interventions via a plan of action;
- monitoring the changes in impacts that occur to assess progress toward achieving objectives;
- evaluating progress on a set schedule and adjusting system models, management objectives, and management interventions as new knowledge is gained over time from studies and experience. Ongoing communication between managers and stakeholders about the management process and progress toward accomplishing objectives is a key feature of engagement.

Below we describe how steps in AIM are being implemented within the planning framework for black bear management in New York.

Situation Analysis

Situation analysis has been an ongoing activity. DEC wildlife managers have been engaged in research and management of the state's black bears for many years, so a considerable amount is known about these animals and about bear-human interactions. Studies of stakeholders in bear management were conducted in the Catskill region in the 1970s and 1980s, bear biologists and managers have interacted regularly with the public to learn about black bear interests and concerns, and DEC staff have held educational programs to enhance public understanding of black bear ecology and management. As part of our current situation analysis, DEC sponsored a study to increase understanding about stakeholder interactions with and interests in black bears in upstate New York (i.e., in all counties north of New York City).

Objective Setting

A primary purpose for recent studies of citizen stakeholders in bear management has been to identify potentially relevant impacts of bear-people interactions, a key feature of an AIM approach. These impacts can be of several general types and many specific forms (see Section 3 for a description of impact categories). Due to the range of potential impacts, setting objectives in an AIM approach requires more than surveys. A set of stakeholders representing the diversity

of stakes in black bear management at some meaningful management scale (i.e., bear management zones) is needed to help verify and weight the impacts such that the most important can be identified and transformed into management objectives. These objectives may be of two types: (a) fundamental objectives that state what impacts are desired from management; and (b) enabling objectives that state what conditions must be created through management to make achievement of fundamental objectives possible.

Selecting Acceptable Management Interventions

Stakeholders also should be involved as potential management interventions are identified and evaluated. Proposals for management action can create conflict between stakeholders. Experiences in New York and elsewhere have shown that the best way to manage such conflict is to keep stakeholders engaged in all phases of the management planning and implementation process, thereby ensuring that program effort is reflecting stakeholder interests. An AIM approach helps managers and stakeholders deal with conflicts by making explicit connections between proposed management actions and the impacts those actions are intended to address (i.e., means are linked to ends in an explicit way so that they can be subjected to fair and open deliberation by stakeholder advisory teams).

Developing and Implementing a Plan of Action

There is much to be done after establishing a set of socially acceptable management actions. Interventions need to be designed, responsibility for their implementation needs to be assigned, and timing and sequencing of actions must be scheduled, etc. All of this will be guided by a plan of action. Stakeholders often have a role in this aspect of the black bear management planning process, too. Although some management interventions may be taken individually by DEC or in partnership with other agencies, often nongovernmental organizations, local

communities and even private individuals are part of the action. Conversely, any of these entities, individually or collaboratively, may, by agreement, take the “lead” for particular management actions. The interventions themselves may take any of a variety of forms, and may be directed at influencing black bears, people, or the land.

Ongoing Monitoring

To make the adaptive aspect of AIM operative, it is necessary to monitor progress in achieving the impacts desired from management. Managers will need to develop indices for each impact and they will need to monitor those indices to assess whether the direction and rate of progress is as planned. If problems are detected, it may be possible to identify the causes and to make mid-course adjustments. It is important to focus on learning why unexpected results are occurring, so that models of the black bear management system can be revised appropriately when the next round of strategic planning is undertaken.

Evaluation and Adjustment

The adaptive aspect of AIM hinges on evaluating actions taken to achieve objectives, measuring level of accomplishments, and even revisiting the impacts stated in objectives, for purposes of learning from the management “experiment”. Managers and stakeholders do this all the time informally, but AIM puts a spotlight on these activities and sets up an expectation of rigorous review based on biological and sociological data. The results of analysis can be used to re-evaluate the objectives and interventions prescribed in the overall plan of action.

Ongoing Communication

An integral component of the planning framework is a multi-faceted communication strategy aimed at (a) informing the public about the planning process, management actions, and progress toward accomplishment of objectives; and (b) seeking stakeholder input in planning,

implementing, and evaluating black bear management. In addition, it is anticipated that some important management interventions will be informative communication and educational communication targeting various audiences; e.g., youth, hikers and campers, homeowners, etc.

SECTION 3: STAKEHOLDER ENGAGEMENT

Identifying Stakeholders

Anyone who can affect or be affected by black bear or black bear management is a potential stakeholder to consider in the black bear management plan. Careful stakeholder identification is the foundation for the stakeholder engagement process described more fully in the next section. As part of the current planning cycle, DEC staff have begun efforts to identify stakeholders and develop an up-to-date understanding of how people are affected by bears and bear management. Examples of the different types of stakes and stakeholders that DEC staff have identified are found in Table 1. This list will be modified as necessary during the course of future stakeholder contacts. As the current cycle of planning moves forward, the concept of impacts will be used to characterize stakes and stakeholders.

DEC staff started the stakeholder identification process by addressing three questions: Who is interested? Who is affected? And, who can assist in management? People and organizations can fall into more than one of these categories. By asking all three questions, the full range of potential stakeholders to involve in the planning process was identified.

Who is interested? It was relatively easy for wildlife managers to identify stakeholders who are interested in bear management, because over the years these stakeholders have contacted DEC directly to request information, ask questions, or voice complaints.

Who is affected? Identifying all the stakeholders affected by bear or bear management was a more challenging task. Thinking broadly about the potential impacts of species and

Table 1. Examples of bear management stakeholders in New York State, 2002.

Examples of Stakeholders
<ul style="list-style-type: none"> • Wildlife-related recreationists (e.g., wildlife watchers, photographers, hunters, anglers, trappers). • Other outdoor recreationists who may come into contact with bears (e.g., campers, hikers). • People concerned about animals (e.g., protection, welfare, rights). • People concerned about environmental conservation or protection. • People who don't participate in wildlife-related activities but have an interest in wildlife generally.
<ul style="list-style-type: none"> • Private landowners. • People who earn a living from the land (e.g., farmers, forest landowners, bee keepers). • Homeowners/residents living in bear range. • Businesses in the tourism and travel industry (e.g., hotels, restaurants).
<ul style="list-style-type: none"> • Organizations that serve stakeholders' interests. • Advisory bodies to DEC. • Local, state, and federal government agencies/officials. • Police departments. • Mass media. • Educators and their institutions.

management actions was helpful in determining who might be affected. DEC staff began to identify such people by reviewing the interest groups that had developed over time to represent people who share a common interest in bears or bear management. A survey of New York State residents was conducted in 2002 to further ensure full knowledge of stakeholders for black bear management.

Who can assist with management? Asking this question helped DEC's wildlife managers to identify important stakeholders who could help implement management actions. For example, municipal, state, and federal governmental officials could be considered

stakeholders in locations where those officials have authority over land-use policies.

Stakeholders in this category may vary depending on the scale of the decisions in question.

Identifying Impacts Associated with Black Bears

Black bear management is a multi-faceted undertaking. Regulating the size of black bear populations is an important part of the management program in New York, but black bear management involves much more than changing the population of bears in a given geographic area. Bear population manipulation is just a means by which people hope to achieve some desired ends with respect to the black bear resource. New York's bear management program is a suite of policies and actions that serve as means to achieve several different fundamental objectives. The next few sections will lay out a comprehensive "blueprint" that links activities like public education, habitat protection, and bear population management to the fundamental objectives that the people of New York State hope to achieve through the bear management program. We will create this blueprint by basing the bear management program on a comprehensive view of the purpose and practice of wildlife management. The next few sections lay out our rationale for wildlife management, why it is conducted, and why it should focus on stakeholder-identified impacts.

Why is wildlife management conducted? Wildlife management is conducted to achieve a range of outcomes that people desire – outcomes such as the continued existence of wildlife, opportunities to utilize wildlife in sustainable ways, or relief from problems related to wildlife.

What is wildlife management? Wildlife management is essentially about making decisions and taking actions to achieve specific goals. The managers responsible for this planning process are guided by the following definition of wildlife management:

Wildlife management is the guidance of decision-making processes and the implementation of practices to purposefully influence interactions among and between people, wildlife, and habitats to achieve impacts valued by stakeholders (Riley et al. 2002).

The term “impacts” is central to this definition of wildlife management. It refers to a special subset of the many effects resulting from interactions among people, wildlife, and wildlife habitat.

Countless effects result from interactions between people, wildlife, and wildlife habitat. Many go unnoticed by stakeholders. But a subset of effects are recognized by stakeholders and regarded as being important. Effects in this important subset are “impacts.” Stakeholders evaluate impacts as positive or negative, “good” or “bad.” The range of all possible impacts is large, so it is useful to think of impacts in a manageable number of general categories (Table 2).

Wildlife-related effects and impacts . . .

- Wildlife-related effects: Positive and negative outcomes of interactions among wildlife, people, and wildlife habitat.
- Wildlife-related impacts: A subset of wildlife-related effects that a stakeholder recognizes and regards as important.

A single interaction between wildlife and people may generate both positive and negative impacts. Different stakeholders can have very different evaluations of the same interaction. Even the same individual may perceive an interaction as creating both positive and negative impacts. Whether that stakeholder evaluates the overall interaction positively or negatively depends on how he or she personally weighs the importance of each positive and negative impact.

Table 2. Broad categories of impacts associated with black bear.

Ecological Impacts:	Examples:
Effects on wildlife, wildlife habitats, and ecological systems that result from interactions between wildlife, people, and the land.	<ul style="list-style-type: none"> • Effect of regulated hunting on black bear populations. • Competition for food between bears and other species. • Black bear predation on other species of wildlife. • Effects of human land uses on quality of black bear habitat.
Economic Impacts:	Examples:
Monetary effects produced by interactions among people, related to black bears.	<ul style="list-style-type: none"> • Cost of bear-related property damage. • Economic activity associated with bear-related recreation. • Cost of business failure related to damage of crops or apiaries. • Economic activity associated with trade in bear parts.
Health/Safety Impacts:	Examples:
Effects on human health and safety.	<ul style="list-style-type: none"> • Health benefits associated with wildlife-related recreation. • Injury from diseases transmitted from bear to people. • Injury from a bear attack. • Injury associated with a bear-vehicle collision.
Psychological Impacts:	Examples:
Enhancement or diminishment of psychological well being for individuals, stakeholder groups, or society overall.	<ul style="list-style-type: none"> • Benefits associated with seeing a bear in one’s local area. • Personal satisfaction from bear-related recreation. • Becoming more connected to nature by seeing bear or signs that bear are present. • Personal enrichment associated with learning about bears. • Fear/dread of being confronted or injured by a bear. • Anxiety about the safety of children or pets. • Aggravation associated with property damage by bears. • Sense that bear-related problems are an involuntary risk. • Anxiety about a bear-vehicle collision.
Social Impacts:	Examples:
Social effects associated with interactions among people, where black bear are the reason for the interaction.	<ul style="list-style-type: none"> • Relationships among family and friends strengthened by spending time together hunting bears. • Conflicts between people related to interactions with bears (e.g., conflicts over appropriateness of feeding bears, stopping along the road to watch bears, etc.). • Educational and other social benefits created as people learn more about black bears.

Helping the public understand effects, even those not apparent to a casual observer, is an important role of managers and educators. In fact, the less obvious effects (perhaps revealed only through research) will not register with stakeholders as impacts unless they are recognized and understood. Nevertheless, while scientists, managers or educators may explain effects, it is ultimately stakeholders who interpret the effects based on their values and determine relative importance. It is a collective effort for various stakeholders to determine which effects constitute impacts that deserve management attention. Tradeoffs are typically involved because of practical limits of management scope.

In summary, managing to achieve human benefits – taking action to achieve more or less of the impacts people care about – is a fundamental objective of wildlife management. The planning framework for bear management puts this principle into practice by answering three guiding questions.

Guiding questions within the planning framework:

- What are the impacts that concern black bear management stakeholders?
- Is the black bear management program focused on the impacts that matter most to stakeholders?
- Is the management program designed to emphasize management activities that will have the greatest influence on increasing positive impacts and reducing negative impacts?

Engaging Stakeholders

Stakeholder engagement, as carried out by DEC, implies more than talking to organized interest groups and the general public about black bear management (i.e., one-way communication from the agency to the general public). It even means more than simply seeking

informal and formal input (e.g., public meetings and scientific public surveys, respectively). Stakeholder engagement includes such elements, but as part of an on-going management program engagement also refers to both transactional and co-management relationships among stakeholders and between them and DEC bear managers. DEC will create forums for dialogue and deliberation among stakeholders to sort out the relative importance of various impacts, assess stakeholder perceptions of advantages and disadvantages of various candidate management interventions, etc. Creating opportunities for such transactional activities has been a hallmark of DEC deer management, for over a decade. And, DEC also recognizes the potential for stakeholders of various types (other agencies, non-governmental organizations, local governments, grass roots groups, individual landowners, etc.) to play a role in co-management of wildlife, given a broad view of management intervention possibilities. The same, inclusive philosophical perspective will guide DEC's black bear management program, where the management interventions to achieve objectives may take many forms and involve an array of partners.

Black bear management has been ongoing for decades in New York, and the program has had an active public information component for many years. Presentations to groups, bear forums, occasional radio and television presence, news releases, informative brochures and other methods of outreach to the public have been key activities. At this writing, some new engagement activities have been initiated and others have been planned. These will be described briefly.

Recent engagement activities:

Public meetings. DEC bear biologists continue to respond to invitations to speak to groups about black bears and bear management in New York. In addition, DEC staff seek and

create opportunities to inform stakeholders about black bears, through such devices as the black bear forum conducted each year in northern New York.

Web site. DEC, as part of the communication sub-plan that is an integral element of the planning framework, has developed a web site for the black bear management program. This site is useful to educate people about black bears and inform the public about developments in the current planning cycle and the management program it will guide. The site provides informative communication to stakeholders and may be used to solicit feedback from stakeholders about bear management.

Nominal groups. As part of the process of developing a statewide mail survey, DEC provided support for three nominal group meetings (facilitated group interviews) across the state in 2001 to identify the potentially relevant impacts of black bears on people. The nominal groups were conducted by the Human Dimensions Research Unit (Cornell University), a research group with expertise in the social science and human behavioral aspects of wildlife management. A diverse set of stakeholder interests were represented by the participants in the nominal groups, revealing the kinds of impacts that should be considered as a focus of management attention.

Statewide mail survey. Using input from the nominal groups, previous study experience in New York, and the literature describing other studies of public attitudes about black bear management in the US, staff in the Human Dimensions Research Unit at Cornell designed and implemented a mail survey in the early months of 2002. The purpose of this study was to identify any regional differences in public attitudes and experiences with black bears, verify (or modify) the list of potentially relevant impacts that were identified by the nominal groups, and determine which DEC should focus on as the next steps of developing a plan of

action. The preliminary results of that study were available in fall 2002, and the final report was produced in 2003.

Stakeholder Input Groups (SIGs) have been created to address two objectives. First, the groups have helped DEC staff articulate area-specific management objectives (based on identified impacts) and related plans of action. Second, the groups served as a sounding board for feedback about documents designed to communicate with the public about planning or program activities. These temporary, *ad hoc* groups existed only for the time needed to complete the task of clarifying impacts and recommending actions to address impacts. To date, 5 SIGs have been utilized in different regions of the state. See Appendix B for summaries of their results.

These SIGs included people representing different stakes or interests. The mix of stakes varied across the five regions. The number of people in each SIG varied from approximately 8-12 members. Each input group was supported by a range of professionals who facilitated group interaction and provided subject matter expertise as requested by the team.

In some cases, the enabling objectives of these SIGs have already translated into policy and regulatory changes. DEC regional staff has stepped up efforts to educate the public on avoiding negative impacts and interactions, and increased hunting opportunities have been expanded into Wildlife Management Units in the Catskills and Alleghenies.

Anticipated engagement activities:

Stakeholder Input Groups will continue to be utilized on an as needed basis around the state. The number of input groups convened by DEC staff will vary in a given planning cycle, depending on the situation analysis conducted at that time. In any given planning cycle the number, location, and scale of input groups will vary.

Statewide Management Planning will be utilized in early 2007 to address the accomplishments, needs and objectives of black bear management on a broader scale. It will include amendments to the map of known bear range. It will also include the creation of a new map outlining the most current management activities and identification of impact areas on a regional basis.

These maps will then be displayed through outreach and public meetings to get input from interested citizens in late 2007. This input could result in the formation of new SIGs in locales where specific impacts need to be addressed, or new management objectives where broad support is identified. Resulting regulation and/or policy changes, if any, could occur as early as 2008.

Evaluative Inquiry. It is anticipated that follow-up public surveys (mail, telephone or personal interviews), either of general populations or specific stakeholder categories, will be conducted to monitor changes in bear-people interactions and to measure changes in perceived impacts (i.e., progress in achieving management objectives). Such surveys will be one form of public engagement used when scheduled review of the management plan is undertaken.

SECTION 4: SUMMARY AND OVERVIEW OF PLANNING ACTIVITIES

Black bears are expanding their range in New York State and interactions between people and black bears are increasing. In response to these developments, DEC staff have developed a planning framework to guide New York's black bear management program. An approach called adaptive impact management (AIM) is the foundation for the planning framework. AIM focuses on what stakeholders value – what we call impacts – as the basis for setting fundamental objectives of management. An AIM approach treats management actions as learning opportunities, using some management actions as practical experiments that will reduce

A Framework for Black Bear Management in New York

Just the facts ...

What are you doing? Implementing a dynamic and adaptable framework for black bear management in New York State.

Who is doing this work? Bureau of Wildlife staff, with direct and ongoing input from bear management stakeholders.

Why was a new framework needed? Because an increasing level of human-bear interactions created the need for a more adaptive management program.

When will this work be completed? The first cycle of planning using the new planning framework was completed in 2004.

Where will this work be conducted? Stakeholder input will be gathered from all over the state. Stakeholder Input Groups will be convened in specific localities.

How will the work be accomplished? The work will be guided by a conceptual framework called adaptive impact management and accomplished through a three-phase strategic planning process.

uncertainty about important management questions. Stakeholder engagement is a key feature of the planning framework.

Stakeholders collaborate with wildlife managers to describe the preferred nature and extent of human-black bear interaction across management zones, and to identify acceptable management interventions and their timing (a plan of action).

The planning framework has three phases: preparing for decisions, engaging stakeholder teams, and making decisions/taking actions. Figure 1 provides a generic outline of activities and expected time periods for activities during a typical planning cycle. In a typical planning cycle each phase could be completed in about one

year. However, a variety of circumstances may arise that add time to the process. Figure 1 displays an ideal case, where the phases of the cycle are distinct and occurring in separate years.

In reality, the activities of one phase may overlap with the activities of another.

Table 3 outlines the tasks and task completion timeline for the current planning cycle. Bureau of Wildlife staff completed the first phase (preparing for decisions) between 2000 and 2002. An agency planning team was formed in 2000. The DEC team conducted a preliminary

situation analysis in 2000, which identified a set of information gaps about bear management stakeholders. In 2001, The DEC team synthesized information about bear-human interactions and worked with research staff at Cornell University to hold small group meetings with stakeholders to identify impacts. In 2002, DEC staff worked with staff at Cornell University to fill information gaps, by conducting a mail survey of New York State residents living in counties north of New York City. Phase I tasks included one-time activities associated with development and implementation of the planning framework. The preparatory phase will require less time and effort in future planning cycles.

In 2003, DEC staff implemented phase II of the planning framework (engaging stakeholder groups). Three groups were formed including the Upper Catskill, Lower Catskill, and Western New York SIG. These groups clarified management impacts, identified fundamental objectives for black bear management, and linked fundamental objectives to a set of possible management actions. Conducting these activities generated learning by both the managers and stakeholders. DEC staff used input from SIGs to draft management action proposals in 2004 and 2006.

Phase III of the cycle of planning (making decisions/taking actions) began in 2004. The Bear Management Team submitted a set of management action proposals to the Bureau of Wildlife Management Team in early 2004. This included regulation changes allowing hunting of black bear in two Wildlife Management Units (WMUs) in the Catskill bear hunting area and 6 WMUs in the Allegheny bear hunting area. The draft plan then entered a prescribed approval process that included a period of public review. The regulation changes were enacted in late 2004. This same process was utilized again in late 2005 allowing for the opening of three additional WMUs to bear hunting in the Catskill Region in 2006. Any management actions that

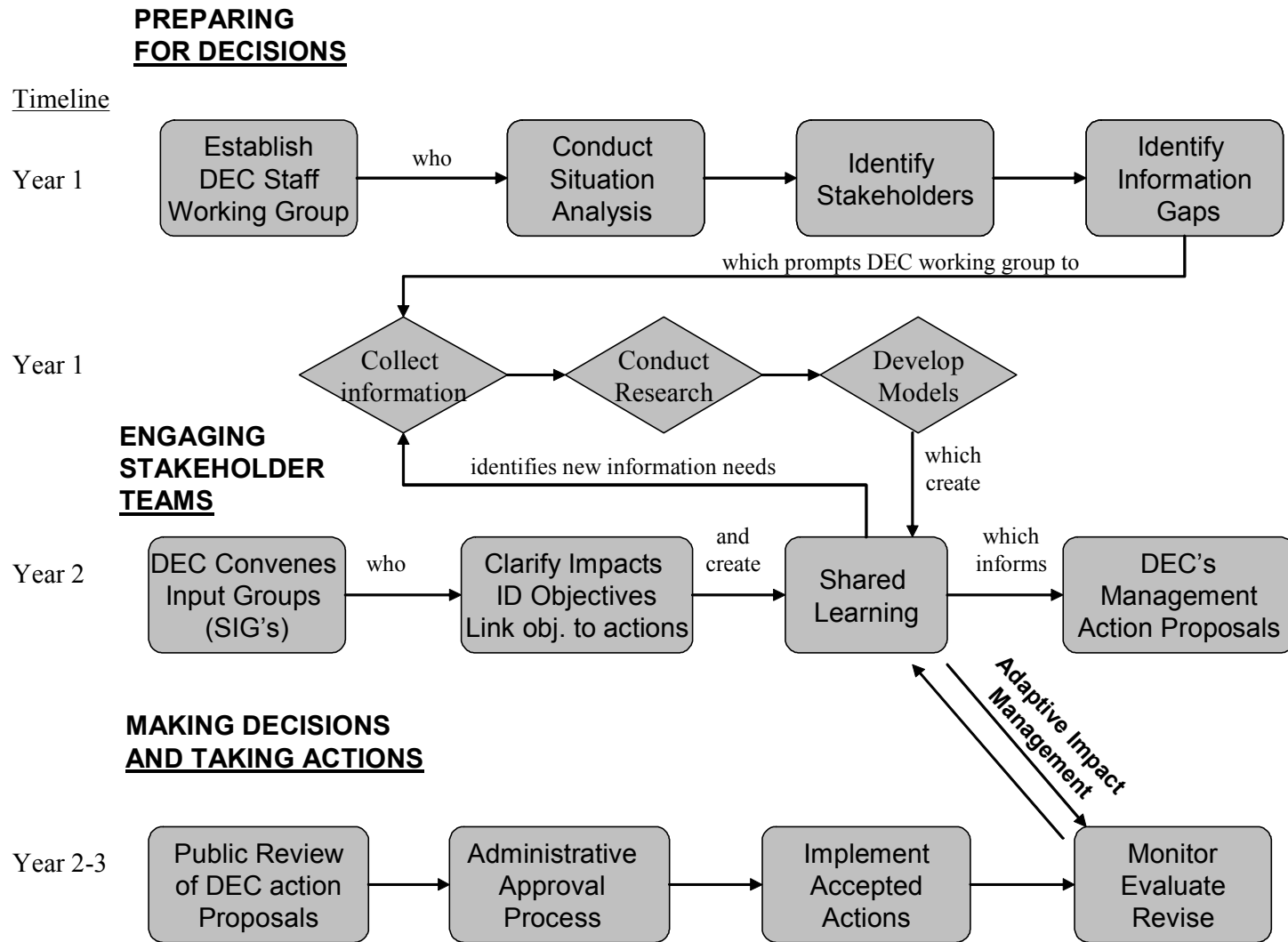


Figure 1. An outline of the cyclical process DEC will use to revise the black bear management program in New York.

Table 3. Tasks and timeline for the first cycle of decision making regarding New York’s black bear management program.

Activities by year	<u>Jan. – Mar.</u>	<u>Apr. – June</u>	<u>July - Sept.</u>	<u>Oct.- Dec.</u>
Preparing for decisions				
2000	DEC Bear Team formed	Preliminary situation Analysis completed		Information gaps identified
2001	Information on black bear and their interactions with people synthesized			
2001				Small group meetings with stakeholders
2002	Black bear management stakeholder survey (in-depth situation analysis)			
2002	Preliminary model of risk perception developed			
Engaging stakeholder groups				
		Finalize SIG process		
2003			Convene input groups	
2003	Prepare resource documents for SIGs (e.g., study reports)		Provide technical expertise to assist SIGs	
2003			Input group meetings	
				Propose Management actions
Making decisions and taking actions				
2004	Public review of action proposals	Administrative approval process		
			Administrative actions implemented	
2004	Approval process for regulatory changes (if changes are recommended)			Regulatory changes implemented

are implemented will be monitored and evaluated. Monitoring and evaluation will improve learning about the bear-people system, which will be used to revise the plan and improve black bear management in subsequent planning cycles.

Do You Have Comments or Questions about the framework?

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APPENDIX A: Bibliography

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APPENDIX B: Stakeholder Input Group Summaries

East of the Hudson Black Bear Stakeholder Input Group May 2006

Summary

The New York State Department of Environmental Conservation (DEC) convened a stakeholder input group (SIG) for black bear impact management in April 2006 for a three county area east of the Hudson River. The counties included Washington, Rensselaer and Columbia. Obtaining stakeholder input is an important part of DEC's framework for black bear management. This SIG intended to "... help DEC staff articulate area-specific management objectives (based on identified impacts) and related plans of action" (Framework, p. 17). This location was selected because of increasing bear-related issues and local concern and interest in the black bear resource.

The SIG included twelve members reflecting diverse stakes in black bear management that convened for one daylong and one evening meeting. Staff from Cornell University's Human Dimensions Research Unit (HDRU) and DEC supported the SIG by facilitating group interaction and providing subject matter expertise. The groups were temporary, ad hoc entities. Facilitators asked the group to clarify bear-related impacts, identify priorities for impact management, and suggest actions to manage key impacts. This input is summarized below.

1. Long Term Viability of Black Bear Populations

The group felt this could be accomplished by informing and educating local land use planners about the importance of maintaining adequate habitat, and by providing technical information and education about how to incorporate black bear habitat considerations into local land use planning and decision making.

2. Increased Education and Outreach

The group had a strong desire to see an increase in the level of knowledge in the general public that will allow them to have realistic perceptions about black bears. This could be accomplished through increased educational effort by DEC with the use of TV, radio and newspaper spots, distribution of pamphlets and educational programs in public venues, such as schools and environmental centers.

3. Minimize Damage to Commercial Property

There was concern by the group of the possibility of increased damage to apiaries, field corn and other commercial/agricultural properties. Damages could be reduced by increasing education of farmers about recognizing and preventing bear damage, and making available the tools necessary to reduce damage. This includes the use of licensed houndsmen.

Management Implications

Education was considered an important management tool by the East of the Hudson SIG. Educating land use planners in local government about the value and importance of maintaining habitats can ensure the continued presence of black bears in this region. Also, educating the

public about “bear awareness” can prevent negative interactions, such as bird feeder damage or garbage can raids from occurring. Informing farmers of the tools available to mitigate agricultural damage can reduce the cost and impact of that damage.

Broome and Tioga County Black Bear Stakeholder Input Group Spring 2005

Summary

The Region 7 Wildlife Office convened a stakeholder input group (SIG) for the region’s southern counties, Broome and Tioga, in the spring of 2005. A SIG was convened for this area because bears, while a fairly recent colonizer of this part of the state, now occur in numbers enough to be a growing interest or concern for some residents of the area. Through this process DEC would gain a better understanding of current issues of concern and preferred means to address them.

The SIG was comprised of seventeen people representing diverse perspectives or stakes in the black bear resource. The group conducted their work during three evening sessions. Staff from Cornell University’s Human Dimensions Research Unit (HDRU) and DEC supported the SIG by facilitating group interaction and providing subject matter expertise. The group was asked to identify and prioritize bear-related impacts and recommend actions to manage these key impacts.

Priority Impacts

The group recognized and accepted that bears were now a resident animal in the area and generally believed that current numbers didn’t demand action to control or reduce bear numbers. The SIG also recognized that bears were causing some concerns and named the following as priority impacts;

1. Anxiety, perception of risk.
2. Damage to commercial property.
3. Potential negative effects on other wildlife.

Program Goals

The program outcomes desired by the SIG could be summarized as follows;

1. A viable bear population, with;
 - A. minimal negative economic impact on commercial or residential property, and
 - B. minimal negative impact on other wildlife.
2. A well informed public, such that;
 - A. fear or anxiety about bears is minimized,
 - B. people act appropriately if they encounter a bear,
 - C. people don’t create attractions to bear on their properties,
 - D. people know how to prevent problems and know how to respond if one occurs, and

E. people understand enough about bears to offer informed input on future management decisions

Management Implications

The SIG stressed the importance of education efforts to bolster the prospects of bears and residents of the area being able to co-exist with minimal problems. DEC will continue efforts to inform the public and local government agencies of bear natural history and behavior and appropriate human behaviors when living in bear country.

Upper Catskill, Lower Catskill, and Allegany Black Bear Stakeholder Input Groups December 2003

The New York State Department of Environmental Conservation (DEC) convened stakeholder input groups (SIG) for black bear impact management in 2003. Obtaining stakeholder input is an important part of DEC's framework for black bear management. SIGs formed in the upper Catskills, lower Catskills, and western New York were intended to "... help DEC staff articulate area-specific management objectives (based on identified impacts) and related plans of action" (Framework, p. 17). These 3 locations were selected in 2003 because of increasingly prominent bear-related issues and staff availability to support the SIG process. Each SIG included about a dozen members reflecting diverse stakes in black bear management that convened for 3-4 meetings. Staff from Cornell Cooperative Extension (CCE), Cornell University's Human Dimensions Research Unit (HDRU), and DEC supported each SIG by facilitating group interaction and providing subject matter expertise. The groups were temporary, ad hoc entities. In a series of 3-4 meetings, process facilitators asked each area-specific input group to clarify bear-related impacts, identify priorities for impact management, and suggest actions to manage key impacts. This input is summarized below.

Ecological Impacts

Participants in all three locations placed importance on maintaining the long-term population viability of black bears. Participants stated that management actions should not jeopardize the population viability of black bear. They believed that DEC's current management program adequately maintains population viability and that the program should continue to do so in the future.

Economic Impacts

Concerns around residential property damage were greater among participants in the lower Catskills and western New York groups. Participants in the upper Catskills group were more concerned about the economic costs of agricultural damage, including both crop (corn) and apiary damage. They also were concerned about the potential economic loss to camps, hotels and other businesses that could result from lost tourism should a bear-related human injury occur in their region. In western New York, the economic costs of apiary damage were a priority concern, while crop damage was viewed as a concern for a range of wildlife species, but not as a priority impact for bear management.

Human Health and Safety Impacts

All three groups placed low priority on the impact "actual number and severity of human injuries" because participants recognized that human injuries from bears are rare. In later discussion of management actions, however, it became clear that the fundamental objective of maintaining human safety was a high priority in all locations.

Psychological Impacts

In both the upper and lower Catskills, some participants expressed a desire to increase opportunities to obtain hunting-related benefits (e.g., hunting satisfactions). Some participants in all groups valued the psychological benefits associated with viewing bear. Members of all three groups expressed a desire to reduce negative psychological effects associated with human-bear problems in residential, commercial, or camping situations.

Management Actions

In all locations, participants viewed education as a high priority management action for addressing several objectives, including maintaining safety and reducing bear-related problems. Participants emphasizing education reasoned that bear-related problems can often be prevented by changes in human behavior that minimize the availability of bear attractants. Participants suggested a variety of educational strategies targeted at various audiences (general public, homeowners, hotel operators and camp managers, tourists, beekeepers, etc.). They suggested selecting actions that would leverage resources, for example, by focusing educational efforts on training first-responder personnel and others in contact with the general public who could aid in delivering public education. Responding more quickly to problem bear situations with aversive conditioning and increasing business owners' ability to employ such techniques themselves also was viewed as a priority strategy for reducing bear-related problems in non-agricultural, commercial situations in the upper Catskills.

In the upper and lower Catskills groups, participants suggested changes in hunting to increase the harvest of bears. These included, among others, expanding the areas open to hunting (upper Catskills) and extending the length of the regular season by opening it earlier, concurrent with opening day of deer season. These actions were viewed as a means to increase hunter satisfaction, reduce the economic costs of crop and apiary damage (upper Catskills), and reduce the negative psychological effects and economic costs of residential property damage (lower Catskills). In the upper Catskills, however, expanding the areas open to hunting could increase concern that hunting affects non-hunters' ability to enjoy other recreational activities, such as hiking. In western New York, some participants suggested opening new areas to hunting and extending the length of the hunting season to reduce apiary damage. Other participants suggested that hunting regulations in western New York remain the same because opportunities to see bear are uncommon in many areas of the region.

The SIG participants in all 3 locations shared a concern that placed substantial importance on having a wildlife agency with the knowledge and expertise to conduct black bear management. Recognizing DEC's current inability to hire additional staff, each group emphasized the need to devote additional resources to black bear management, especially for research and education. For example, participants in the upper Catskills and western New York specifically included "dedicating a DEC staff person to ongoing bear-related education" and "creating a budget line for education," respectively, among their suggested management actions. Participants viewed allocating resources, or finding creative ways to partner with others in the absence of those

resources, as essential to accomplishing the objectives they identified as priorities in their regions. Some participants expressed concern that budget constraints and other logistic considerations would limit the ability of the agency to implement actions suggested through the SIG process in a timely manner.

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