



Alaska Interagency Bear Safety Education Committee

Bear/Human Conflict Workshop
MARCH 23-24, 2000

Workshop Recommendations and Summary

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Anchorage, Alaska

March 23-24, 2000

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Workshop sponsored by:

Federal Aid in Wildlife Restoration

ARCO Alaska

Alaska Department of Fish and Game, Region II

USDA Forest Service

Workshop presented by:

Alaska Department of Fish and Game

Summary published by:



Alaska Department of Fish and Game

Division of Wildlife Conservation

333 Raspberry Rd.

Anchorage, Alaska 99518-1599



**Alaska Interagency Bear Safety Education Committee
Workshop – 23-24 March 2000**

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Introduction

Alaska Department of Fish & Game (ADF&G) sponsored an inter-agency bear safety workshop 23-24 March 2000 in Anchorage. This was the first formal meeting of the Alaska Interagency Bear Safety Education Committee (AIBSEC) in several years, and it highlighted the increased emphasis ADF&G and the other agencies are placing on bear safety in the state. The intensive two day event gathered 32 bear biologists and managers from government agencies and private organizations. We wanted to develop a consistent bear safety message for the public, an efficient means of disseminating that message, as well as concur on recommendations to agencies for improving bear safety education.

AIBSEC began as a "grass roots" organization of Alaska bear biologists in the mid-1980s. Several field biologists noticed that bear safety information was largely based on fear. They worked together to disseminate information based on documented bear biology and behavior.

There was little official support for the group until the Exxon Valdez oil spill in March 1989. Field biologists and supervisors alike soon recognized that the impact of the thousands of clean-up workers on bears was probably going to be greater than the impact of the oil itself. Exxon and its contractors recognized there was potential liability if employees were injured by bears. Consequently, bear safety education became part of the training of clean-up workers. In the end, only a couple of bears were killed and no workers were injured. But the biggest impact was that thousands of people were exposed to factual bear safety education.

The grass-roots organization evolved into an officially sanctioned interagency committee. In 1990, the committee sponsored a revision of the Alaska "Bear Facts" brochure, and enlisted the help of management biologists and supervisors to adopt official ADF&G policies on bear/human conflicts and solid waste disposal. The U.S. Fish and Wildlife Service mandated bear safety training for all of its field personnel. The National Park Service incorporated the committee's ideas into revised bear safety training for its seasonal personnel and for park visitors. As the momentum continued, we were poised, ready to pursue a bear safety video and other products specific to various target audiences, but funding and supervisory support dwindled within a few years, and the committee reverted to work by individual biologists in the trenches.

But the genie was out of the bottle. The public demand for bear safety information exploded throughout the 1990s, and agency personnel spent increasing amounts of time providing bear safety training, and dealing with bear conflicts. The net result, either by coincidence or consequence, was a change in the public attitudes about bears. Many articles relating to bear/human conflicts now feature prevention and evaluation of actions. This is a far cry from the sneaking, snarling, man-killer image those same sources presented in bear stories in earlier years.

Biologists and recreation planners have noticed increasing public demand for information. This increase, coupled with an influx of new bear safety trainers, caused some alarm that mixed messages regarding bears was being disseminated to the public. There were also important advances in interpretation of bear behavior, analysis of bear/human encounters, and in bear deterrence devices and techniques. These advances, and improved methods of

education, need to be incorporated into bear safety education. The March workshop proved to be an effective way of discussing the issues "in house".

The workshop included the following sessions: interpreting black and brown bear behavior and differences between the two; dealing with bears in human habitats ranging from the urban Anchorage bowl to small, rural communities; advantages and disadvantages of various repellents including pepper spray and dogs; incident response and reporting; and, public outreach. There was also a session on liability in which state and federal lawyers discussed the potential legal ramifications of providing advice and assistance with bear/human conflicts. Participants spent an evening critiquing a "typical" bear safety presentation, and an afternoon at the range firing a variety of bear repellent devices.

Workshop Organizing Committee	
Name	Organization
Bruce Bartley	Alaska Department of Fish and Game
Terry DeBruyn	National Park Service
Dee Galla	U.S.D.A. Forest Service
Colleen Matt	Alaska Department of Fish and Game
Mike McDonald	Alaska Department of Fish and Game
Sue Mills	National Park Service
John Neary	U.S.D.A. Forest Service
Dick Shideler	Alaska Department of Fish and Game
Larry Van Daele	Alaska Department of Fish and Game
Greg Wilker	U.S. Fish and Wildlife Service



Recommendations by workshop participants

BROAD MESSAGE

It was agreed that the following statement should be the broad message given to the public:

“Respecting bears and learning proper behavior around them will help you keep bear encounters positive for both you and the bears. Handling food and garbage properly, and avoiding surprise encounters are two of the most important actions that you can take.”

RECOMMENDATIONS FOR IMMEDIATE IMPLEMENTATION ...

Messages to the public given in bear safety education presentations

1. Making eye contact with a bear is unlikely to influence the bear or to affect the outcome of an encounter. Keep the bear in sight at all times so you can detect important visual clues to the bear's behavior.
2. People's reaction to, and behavior around, both species of bears should be the same...up to the point where contact is made.
3. If the a bear physically contacts you, take the following actions:
 - ❖ If you positively know that the attacking bear is a black bear—fight back;
 - ❖ If you positively know that the attacking bear is a brown bear—play dead;
 - ❖ If you don't know the species of the bear--play dead BUT if attack persists--fight back
 - ❖ DON'T play dead until contact is made.
4. In any bear encounter, the following actions are recommended:
 - ❖ Stop and think,
 - ❖ If the bear is not aware of you, leave the area,
 - ❖ If a bear approaches you, hold your ground, UNLESS
 - ❖ You are standing by a food source or blocking the bear's traveling corridor. In this case, move away while still obliquely facing the bear.
 - ❖ If a bear attacks you while you are in your tent, fight back.
5. Educators should emphasize prevention methods such as:
 - ❖ Travel in groups of 3 or larger;
 - ❖ Children stay with your parents or other adults; and
 - ❖ Children use whistles or bells so responsible adults can find you.
6. Pepper spray is a legitimate tool. However, pepper spray is only effective as a defensive tool, not as a repellent.
7. In a bear encounter, your behavior MAY influence the bear's behavior and prevent a negative outcome.
8. Bear safety messages should not include the phrase “bluff charge.” This phrase implies intent on the part of the bear, and seems to give people the false impression that this is not an

interaction; therefore, the individual has no control over the outcome. All charges have the potential....and should be described simply as “charges.”

Educational Tools and Training

9. Develop a public website for bear safety information. Other state and federal agencies in Alaska should provide “hot links” from their sites to this central education site.
10. Bear safety education is most effective when it is targeted at specific audiences that have the most potential to influence bear conservation. Important audiences include children, leaders of rural communities, people who feed birds, hunters, tourism operators, and rural Alaskans.
11. Public information should address bear behavior that leads to maulings. For example, defensive actions related to food or cubs.
12. Traditional bear safety training for agency personnel has been heavily weighted towards firearms. Prevention of bear/human conflicts should be given greater emphasis.
13. The decision on whether firearms should be required in the field should be made by the project leader, rather than as a blanket agency policy. Firearms are an important tool in both lethal and non-lethal situations; however, only willing, capable and qualified personnel should carry firearms.
14. AIBSEC member agencies should support the use of CARA funds to expand bear safety education/outreach programs. Possible programs include the following:
 - ❖ Education programs sensitive to and targeted at specific audiences and communities
 - ❖ Trained “extension agents” whose job includes bear safety outreach appropriate to local communities

Bear/Human Conflict Management

15. Encourage communities with potential bear conflicts to enact solid waste ordinances and enforce existing ordinances.
16. In most cases, agencies should inform the public about preventive and simple methods to discourage bears from approaching human activities, and should not directly supply aversive conditioning tools. Exceptions might include situations in rural areas where agency personnel cannot directly deal with a bear problem and public access to repellents could increase public safety or prevent bear mortality. Agencies can alert the public about those aversive conditioning tools that are commercially available. Where the public has access to repellent products, we should provide information about their proper use.
17. Pepper spray vendors should be provided with information regarding its proper use. Information should include the dangers of transportation of pressurized canisters.
18. Develop a controlled access website to post information regarding bear/human conflicts that result in injury or death. The purpose of this site is to provide timely, accurate, and detailed reports for bear biologists and wildlife managers.

Liability

19. When trapping bears in culvert traps, agencies should warn the public of possible danger from animals.

RECOMMENDATIONS FOR THE LONG RUN...

Educational Tools and Training

1. Encourage grass-roots groups to develop bear safety materials and/or programs for use in Alaska Schools.
2. Agencies should seek cooperative funding for bear safety education/outreach programs.

Bear/Human Conflict Management

3. Review and/or revise ADF&G's "Policy for Managing Bear/Human Conflicts in Alaska" and "Solid Waste Management and Bears" (dated 3/90). Other agencies are encouraged to review similar policies and seek consistency where possible.
4. Review and/or revise sealing forms to gather information about the circumstances of bear kills. For example, add the question "Was this bear perceived as threatening or as a nuisance?"
5. Periodically summarize (every 10 years?) DLP and mauling information. This information will help realistically assess risk of bear attacks and public perceptions of bear attacks.
6. Agencies should make a concerted effort to gather the most important data (including descriptions) about the rate of bear encounters through a survey of the public. The purposes of this information would include 1) a determination of the risk of injury from bears; and 2) an assessment of the type and number of actions that lead to bear encounters.
7. The Alaska Department of Natural Resources and federal agencies should require lessees to prepare bear interaction plans for activities that occur in bear habitat. This plan should be reviewed and approved by ADF&G.
8. Encourage the Alaska State Troopers and the Alaska Court System to classify 5AAC.92.230 (feeding game) as a violation ("mail and bail") instead of as a misdemeanor (mandatory court appearance) in order to facilitate enforcement.
9. The effectiveness of pepper spray as a deterrent (or as an attractant), should be the focus of research. (Possible foci include types of chemical carriers, use against different species, effectiveness against habituated, food-conditioned, or wary bears.)
10. Encourage development and funding of community-based planning and implementation of programs to reduce bear conflicts.

Liability

11. Agency policy should give field personnel general guidelines and a list of reasonable responses or actions. However, they should be given the discretion to choose appropriate actions.
12. Public information (written, oral, or video) should include a disclaimer that even if the public follows your advice, risk of injury is not eliminated.



Session I: Interpreting bear behavior

Chair: Terry DeBruyn
Presenter: Larry Aumiller

Larry Aumiller and Terry DeBruyn discussed bear behavior as it relates to a bear's level of stress and differentiating threatening behavior. Larry Aumiller focused first on brown bear behavior:

- In respect to the slide presentation "Are we in trouble?" the focus was not on extremes of bear behavior, but rather on common or subtle behavior. Behavior should be put in context to its environment. Behavior acceptable in one environment may not be acceptable in others.
- 90-95% of bear/human contacts result in bears running away.
- 5-10% bear human contacts may be problematic. They usually consist of food- and garbage-related settings, surprise encounters at close range, or with females with cubs. Habituated bears may be considered problematic because they do not run away. However, habituation in and of itself does not lead to negative interactions.
- The key issue is surprise contact, especially with females with cubs. Eight out of ten serious charges are from females with young.
- Other potentially troublesome interactions include older bears, bears in poor physical condition, bears on a food cache, hunters with game animals, and consorting or mating bears.
- *Surprise* human contact could provoke aggression from male bears intent on following female bears, females actively nursing, or from bears engrossed in eating or pursuing of prey.
- Visual signals serve as clues to interpreting bear behavior. Yawning may indicate a low level of stress. Salivating might be a higher level of stress. Charging indicates the highest stress level. (Black bears salivate less than do brown bears.)
- Standing up and looking is done less by large bears. It is a sign of curiosity and it is not a sign of aggression in and of itself.
- Calm and peaceful demeanors are easy to detect and may be an indication of a habituated bear. Cubs adopt their mother's habituated behavior, even around food and other bears.
- When encountering bears, we should strive for neutral interaction, *never* feeding, attracting, or approaching them.
- It is best to look for visual signs of bear stress levels and to react quickly. Signs to look for include overall demeanor, position of ears, presence or lack of cubs. Curious bears exhibit the following behaviors: sniffing, raising of head, failure to run, moderately paced approach. Curiosity among cubs and young bears is common. Curiosity, in general, is not dangerous unless humans are a potential source of food.
- Occasionally, a bear stealthily approaches, with his head down, and charges a very short distance (e.g., 4 or 5 feet). Such bears are usually adolescents testing a human, perhaps because it is establishing its dominance in the encounter. Standing still, waving your hands and shouting will probably stop the bear from approaching.
- A bear may make the same short charge as in the above situation with ears lowered and saliva frothing or flowing from its mouth. This bear is frightened and its action may be a precursor to a serious charge.

- “Woofing” or “huffing” is a sign of stress, however it does not mean that charge is imminent.
- Frightened cubs can agitate their mother. An agitated female can also agitate her cubs.
- A highly agitated bear will probably flatten its ears against its head. An agitated bear will probably stare intently, and may woof or clack its teeth. If a cub is present, it will probably be making noise, hiding behind its mother, or mimicking its mother’s behavior.

Overview of brown bear behavior:

- Look at body position, ear position, head position, salivating and aggressive postures. The following is a list of stress signals, starting with the least and going to the most agitated. These signals don’t necessarily occur in a stepwise fashion:
 - ❖ Yawning
 - ❖ Huffing
 - ❖ Staring intently
 - ❖ Salivating
 - ❖ Small charge of a few steps
 - ❖ Ears flattened
 - ❖ Charge at object of agitation
- A highly agitated bear could have a lowered head, intensely directed visual contact, ears nearly flattened, and a cub might be present. A charge is the highest degree of agitation.
- Do not run from bears. Bears may just display agitation and turn to run away.
- One should consider subtleties and observe bear body language. The proper interpretation of these factors could save bear lives, human lives and thus change human attitudes.

Terry DeBruyn addressed interpreting black bear behavior.

- There are instances when it is okay to retreat rapidly from a bear: e.g., a cub is on a beach and the mother is upwind and unaware of your presence. A person in this situation could run to distance themselves from a potentially negative encounter.
- Black bears are not unpredictable; they are predictable. What complicates our predictions is that bears are individuals with individual personalities. It is important to remember that events take place in context. Our response to black bears needs to be considered in the context of the situation. Bears are more alert than humans. Bears, like humans, are an intelligent and long-lived species. It is difficult to determine the outcome of a bear’s behavior toward a person from watching bears interact because bears are motivated differently by the presence of a human and another bear. Understanding a bear’s motivation is a key element in determining the proper response during an encounter.
- The *overwhelming* response of bears to humans is to flee. Humans react to bears in fear and try to unnecessarily eliminate them.
- Brown bears evolved in open terrain and tend to face danger; whereas black bears are creatures of the forest. They mostly flee and do not aggressively defend their young when confronted by danger. Brown bears will aggressively defend their offspring.
- Female black bears tend to send their cubs up a tree and flee the area until danger has passed.

Signals of bear behavior to consider:

- Standing on hind legs is a sign of curiosity in bears. Humans can, in this instance, give the bears cues to help them identify us, wave arms, talk softly.

- Habituated bears, approaching with a steady gaze, may intimidate humans, though this is not an act of aggression, but rather the bear might be merely curious.
- Making eye contact with a bear does not provoke it. The bear's body posture is the real indicator of attitude beyond eye contact. Avoidance of contact or aggression might, in such instances, be as simple as merely standing aside and letting the bear pass.
- Ear position alone does not provide enough information to interpret a bear's intentions. One should consider the entire bear Gestalt; that is, one should look at the whole picture of bear body language. The following signals show that a bear is agitated: pursing of the lips, blowing, huffing, jaw-popping, paw swatting, lunging, and step-charging.
- Bears do not raise their hackles. When the wind blows, hair may be blown up or, the bear may be shedding, or the bear may have wet fur that gives it the 'raised hackle' look.
- Bears yawn. This may be a sign of stress. They may be afraid or intimidated.
- Black bears do not appear to salivate as often as brown bears. They are prone to do this when food is involved more so than if fear or stress is involved. The apparent difference may be due to their evolution, however I'd be interested in learning if this is the case at sites in Alaska where black bears aggregate.
- Impolite behavior to a bear includes the following: invading a bear's personal space, interfering with the bear's movement, interfering with the bear's behavior. A bear's personal space should not be invaded.
- Blustery behavior, such as blowing is a good sign in a black bear. It means they are unsure and will not likely charge. Most aggressive displays by black bears are highly ritualized displays that they perform when they are nervous or stressed. Such displays may provide the opportunity to step aside and allow the bear to displace its aggression on another object. A good strategy when dealing with aggressive black bears is to place an object such as a tree or small shrub between you and the bear.

Discussion ensued regarding bear safety classes for the public.

- Keep an eye on the animal so you can see it. Eye contact will not make a situation worse. A continued steady gaze is acceptable behavior. Maintain this visual contact without demonstrating aggressive behavior.
- Eye contact shows up in the literature a good deal. The dog analogy is often used. It is not certain if this comparison is relevant. One should keep an eye on the bear, but not act threatening. The bear's head posture is more important than some other aspects, such as the bear's eyes.
- Consider the whole body posture of bear and human more so than just eye contact.
- Take an aggressive posture rather than passive one (holding your ground is considered to be a mildly aggressive posture). Do not let the bear think you can be bullied.
- Habituated bears, food-conditioned or otherwise, will probably demonstrate consistent behavior towards humans.
- Where bears aggregate in the presence of humans and are naturally well fed, they are more tolerant of humans. Bears who aggregate at rivers and bears who move about in a human community typically behave differently than bears who have little exposure to humans. Humans should strive to have consistent behavior which makes a bear comfortable and thus reduces attacks.

- All bears are individuals and not all bears, even those of the same species, respond to similar stimuli in the same manner. There are distinct behavioral differences between black and brown bears. For example, when surprised by humans, the typical response of black bears is to flee, while brown bears are more likely to be defensive/aggressive. Some black bears, most often sub-adults, will approach humans out of curiosity--this is normal. What is not normal is for a black bear to follow a human and remain within the immediate area for prolonged periods. Such behavior should be taken as a warning sign. The bear may be exhibiting predacious behavior.
- There may be regional differences in aggressiveness within bear species. For example, coastal brown bears that aggregate at salmon streams are either sated on a plentiful food resource or have learned to be more tolerant to the close proximity of other bears, or both. They appear to have smaller personal spaces and be less aggressive than say, grizzly bears in Denali National Park, which have a much larger personal space and tend to respond to the presence of humans at a much greater distance.

Recommendations for public talks:

- The commonly held view discriminated between attacks by black bears vs. attacks by brown bears. It was thought that while black bear attacks were less common, they were more apt to be predacious, and the victim should respond aggressively in order to break off the attack. Brown bear attacks are more often defensive, and victims were encouraged to “play dead” after contact was made. The group agreed that victims may not have time, focus, or expertise to denote the difference in species during an attack. They recommended that bear safety messages warn people to base their reaction on *bear behavior*, not on species. The wording found in the “Bear Facts” brochure was reviewed and recommended:

“In rare instances, particularly with black bears, an attacking bear may perceive a person as food. If the bear continues biting you long after you assume a defensive posture, it likely is a predatory attack. Fight back vigorously.”

- Making eye contact with a bear is unlikely to influence the bear or to affect the outcome of an encounter. Keep the bear in sight at all times in order to detect important visual clues to the bear’s behavior.
- People’s reaction to, and behavior around, both species of bears should be the same...up to the point where contact is made.
- If a bear physically contacts you, take the following actions:
 - ❖ If you positively know that the attacking bear is a black bear—fight back;
 - ❖ If you positively know that the attacking bear is a brown bear—play dead;
 - ❖ If you don not know the species of the bear AND if the attack persists--fight back
 - ❖ DO NOT play dead until contact is made.
- In any bear encounter, the following actions are recommended:

- ❖ Stop and think,
- ❖ If the bear is not aware of you, leave the area,
- ❖ If a bear approaches you, hold your ground, UNLESS
- ❖ You are standing by a food source or blocking the bear's traveling corridor. In this case, move away while still obliquely facing the bear.
- Educators should emphasize prevention methods such as:
 - ❖ Travel in groups of 3 or larger;
 - ❖ Children stay with parents or other adults; and
 - ❖ Children use whistles or bells so responsible adults can find you.
- Pepper spray is a legitimate tool. However, pepper spray is only effective as a defensive tool, not as a repellent.
- In a bear encounter, your behavior MAY influence the bear's behavior and prevent a negative outcome.
- Bear safety messages should not include the phrase "bluff charge." This phrase implies intent on the part of the bear, and seems to give people the false impression that this is not an interaction; therefore, the individual has no control over the outcome. All charges have the potential....and should be described simply as "charges."

Handouts (copies available from session chair)	
Title	Author
Brown Bear Behavior	Larry Aumiller
Interpreting Black Bear Behavior	Terry D. DeBruyn, Ph.D.



Session II: Dealing with bears in human habitat

Chair: Larry Van Daele
Presenters: Tim Manley
Larry Van Daele
Rick Sinnott

Larry Van Daele, Rick Sinnott and Tim Manley addressed the fact that most human/bear encounters occur in "human habitat," yet most of our efforts in public information are how to deal with bears in remote locations.

Tim Manley, a grizzly bear specialist with Montana Fish, Wildlife and Parks deals with grizzly bear conflicts with humans in northwestern Montana, addressed the topic first.

- Are the bears in the backyard? As in Banff, Canada, Montana Fish, Wildlife & Parks puts out brochures on the topic.
- Why are grizzlies showing up? The commonly held belief is that bears are trying to prey on children, dogs, or cats. In reality, the bears show up looking for dog food or cat food.
- Prevention is the key. The public wants to know how to do this. Most people do not agree on how to do this.
- The Montana Fish, Wildlife and Parks Department has concluded the following on grizzly bear management:
 - ❖ Most people think bears live up in isolated areas. They are surprised that bears live down lower in human inhabited areas and in valleys.
 - ❖ More people are building second homes and live in these second homes infrequently.
 - ❖ People dump garbage in backyards and it serves as a bear attraction. They do not realize that just tying garbage receptacles to trees does not work. No laws exist for mandating bear proof containers.
 - ❖ Most habitats have non-bear-proof containers. These containers frequently become overfilled.
 - ❖ An endeavor should be made to convince people, and especially restaurants, to purchase bear proof containers. Even so, bears will come to lick off grease and other food residue from the containers' exteriors. Many dumpsters do not even have lids. Those dumpsters which are bear-proof, may or may not be compatible with existing dump truck technology.
 - ❖ Some containers lose their bear proof status over time through improper use.
 - ❖ Individual compost piles and recycling can lead to mini-garbage dumps and thus serve as bear attractions.
 - ❖ People should be encouraged to feed pets indoors and not leave pet food outdoors, for either feeding or storage purposes.
 - ❖ Bird feeders and squirrel feeders become a big problem. From April 1 to November 1, no such feeders should be put outside.
 - ❖ Hummingbird feeders are also a problem. As an alternative, people should be encouraged to plant flowers which are appealing to hummingbirds.
 - ❖ Suet feeders as well as suet blocks are also problems.

- ❖ Individuals as well as commercial growers who plant fruit trees should be encouraged to purchase electric fences. They should also be encouraged to pick fruit regularly as well as get the local food banks involved.
- ❖ Livestock and horses do not usually attract grizzlies. Disposal of deceased livestock, however, does constitute a problem, particularly if the disposal is done behind someone's house.
- ❖ Chickens serve as an attraction and thus constitute a problem. Typically, bears are attracted to and consume chicken feed first. They then go for the chickens. Individuals should therefore be encouraged to have electric fences. It is difficult to justify killing a bear because of one chicken.
- ❖ Horse feed such as barley, corn, molasses and similar combinations serve as strong grizzly attractions.
- ❖ With the derailment of trains, grain is oftentimes spilled. Bears who consume this grain often are killed on the tracks. The grain should therefore be dug up and hauled away to prevent grizzlies from getting hit by trains.
- ❖ Individuals who feed deer and elk corn and grain attract bears. Electric fences would then have to be erected to protect the house.
- ❖ Garbage placed outside of homes serves as an attraction to bears.

Larry Van Daele of the Alaska Dept. of Fish & Game in Kodiak addressed the issue of bears in rural settings.

- People in rural Alaska have diverse levels of culture, education and wealth, and vary from Eskimo grandmothers to sourdough miners.
- Some common aspects exist among bush dwellers. These are, typically:
 - ❖ a basic distrust of government
 - ❖ pride in being Alaskans
 - ❖ frequent contact with bears
- Despite the frequency of contact with bears, we should not assume that rural residents know how to deal with bears properly. Closer ties to the land exacerbate problems with bear attractants (e.g. fish racks, meat caches, dog yards, unsecured garbage).
- Culture and tradition influence people's perspectives on bears, bear behavior and treatment of bears. For instance, traditional Yup'iks do not condone thinking about bears, which is in sharp contrast to our "Be Bear Aware" message.
- In southwestern Alaska we have learned several lessons about effectively dealing with people having bear conflicts:
 1. **Learn about the situation from local residents.** Seek information prior to giving advice. Do not go with the attitude that "I'm the one with the college education," but rather, listen intently to their experiences and concerns.
 2. **Gain their trust.** Become part of their community. Avoid being judgmental. Respect cultural peculiarities
 3. **Emphasize that bears are a community concern and can only be dealt with cooperation.** Capitalize on Alaskan and/or Native pride in knowing how to live with bears. Remind residents that it is not Fish and Game's bear, but it belongs to all of us. The responsibility of bear management, therefore, is a shared responsibility.

4. **Offer suggestions and highlight existing regulations.** Be willing to take calls at all hours for advice, help with skinning DLP's, work with local law enforcement agencies on training and field operations.
 5. **Work closely with local media.** They love bear stories and they can quickly become advocates if you treat them professionally.
 6. **Work with community elders, officials, politicians, and schools.** Help them to embrace bear safety ideas so that they become their own.
 7. **Praise good work and gently point out areas where there could be improvement.** Telling people how good the community is doing often becomes a self-fulfilling prophecy.
 8. **Recognize that there are some "bad" bears that have to be destroyed, and some people are going to have to be cited for violations.** But use these options judiciously.
 9. **Be honest.** Never hide anything or try to put a "spin" on anything.
 10. **Never give up.** Bear safety training and conflict management provide good job security – they are never done. It may become easier over time, but there are always some people and/or bears that do not get the message, and there is also some degree of turnover.
- Ways of dealing with problem bears in rural areas include:
 1. **Keep garbage and food away from bears.** Seek innovative ways that are not too inconvenient to people.
 2. **Electric fences.** These are tried-and-true methods of dissuading bears from specific areas. Portable fences are available for about \$500, and agencies should consider having a couple available for people to try.
 3. **Landfill management.** This is a critical component of any community bear conflict prevention effort, but may be too expensive for small communities.
 4. **Habitat alteration.** Lights, brush clearing, and temporally spacing bears and people can all reduce encounters.
 5. **Adverse conditioning of bears.** This is normally best left to professionals, but if is done with discretion it can be suggested to the public, and in some cases they can be provided with plastic bullets and bean bag rounds.
 6. **Lethal force.** In most cases this will be accomplished by individuals in rural areas. Explain the DLP requirements and emphasize shooting to kill.
 7. **Translocation.** This option should rarely, if ever, be used in rural areas. It is expensive, inefficient, and dangerous. Most importantly, it gives people an easy way out of acting responsibly.

Rick Sinnott of the Alaska Department of Fish and Game in Anchorage discussed the problems of bears in urban settings.

- While Anchorage is Alaska's only urban area, wild animals may be found in and around the city. Bears and other wild life are abundant in Anchorage as much of the habitat in and around the city is still natural.
- Chugach State Park is prime bear habitat.

- While such areas as Girdwood, Bird and Rainbow are surrounded by natural habitat, others areas such as Eagle River and the Anchorage Bowl, because of the natural habitat, pull bears into the city.
- More than 250 black bears and 60 brown bears live in the municipality. One-third of the black bears live in and near neighborhoods, whereas up to six brown bears a day have been sighted in the city in the summer. No other city in the world has brown bears and black bears.
- Most conflicts between bears and people are due to problem people and not problem bears. Coexistence entails a learning process. It is more difficult to teach people good habits than it is to teach bears bad habits.
- In Alaska it is legal to shoot a bear in defense of life or property. In recent years, the numbers of bears shot by private citizens, state troopers, Fish and Game, military officials and city police have increased due to the increase of problem bear calls. Typically, the shooting of bears for DLP instances have been done by private citizens, and not by Fish and Game. The last four years have been the worst for DLP shootings. Just because the number of phone calls made for bear sightings has increased, it does not mean that the number of problem bears has increased. A few bold bears can generate a lot of calls.
- Since 1960, the Anchorage population has tripled. Because there are more people, the city has expanded. Many people own large, wooded, unfenced lots, which allow bears to move freely.
- Most bears are shot around Eagle River and Chugiak as well as in Girdwood. In Girdwood, it is legal to shoot brown and black bears with a hunting license during certain times of the year.
- Hunters tend to shoot bold and unwary bears. Brown bears cannot be hunted except in remote parts of town.
- The greatest draw for bears in urban and suburban areas is garbage. Other attractions include: natural foods, such as devil's club berries, as well as unnatural foods such as dog food and bird seed. Black bears in particular readily consume bird seed from feeders.
- Other draws to bears include pets or livestock and both brown and black bears hunt for moose calves in May and June in urban and suburban areas.
- Spawning salmon in Potter Marsh, Campbell Creek, Ship Creek and Eagle River, among other areas, are also bear attractions.
- The realization among Anchorage residents is that bears pose little risk to humans.
- In the last thirty years, four individuals have been injured by bears, with two fatalities due to brown bears and two injuries due to black bears. On the other hand, 600 dog attacks are reported each year. The vast majority of injuries and fatalities in Anchorage are due to car accidents. The latter results in 24 fatalities annually with 9,000 total annual accidents.
- Coexistence is difficult due to lack of knowledge by city residents on bear attractions.
- Most bear-human interaction occurs in natural areas, especially parks and bear-viewing areas where human activities are strictly regulated. Coexistence in urban areas will have to occur on human terms.
- Most Anchorage residents oppose the shooting of a bear if a bear is provoked to maul. If that same bear mauls more than once, the public views the Fish and Game Department to be at

fault. Sinnott believes that a bear should not be shot as punishment for mauling or even if it kills a person. However, a bear or bears which are likely to attack people should be killed.

- While the risk of bear related injuries is very low, it is increasing. This risk can be significantly reduced by minimizing attractants.
- Certain solutions might minimize conflicts in urban areas.
 1. Remove bird seed feeders in the summer and convince neighbors to do likewise.
 2. Education and peer pressure. Garbage issues as well as the bird seed issue need to be communicated frequently.
 3. Implementation of innovative ideas. Make it a community project to purchase bear-resistant garbage containers.
 4. Establish garbage ordinances. This will be resisted by many, but it is worth the effort.
 5. Increase hunting where it is appropriate, perhaps on Fort Richardson. This is likely to eliminate bold bears.
 6. Capture and relocate bears that are not food-conditioned, that is, bears which are not aggressive in obtaining human foods. Food-conditioned bears pose a danger as they seek out human foods, once relocated, at camp grounds and other communities.
 7. Shoot individual bears that become food-conditioned.
 8. Accept an occasional mauling.
 9. Coexistence with bears is entirely possible. It is this coexistence with bears and other wildlife which make living in Anchorage special.

Discussion ensued on bear management in urban settings:

- Alaskans do not like to be told what to do. They do not want to be told to buy bear-proof containers, for example.
- Neither the city government nor Mayor Rick Mystrom want to assume responsibility for bear related problems. They prefer to shift this responsibility to the Fish and Game Department. They do not want, for example, to have to purchase bear proof containers.
- In Montana, bear awareness and education has made a difference.
- In Alaska, the issue is one of limited resources. Each area is different, therefore, each area requires different solutions. In Kodiak and in Bristol Bay, one could, for example, work on relationships with village leaders and Native elders. Emphasis should be placed on pride on being Alaskans.
- Emphasis should be made that the problem is not solely that of Fish and Game, but also a community responsibility. The perspective frequently prevails that "We don't need the government telling us what to do."
- How does one deal with tourist guides and outfitters? Emphasize a food storage order, explaining what the options are:
 - ❖ if one is away from the camp, all food has to be stored, including food for pets or other accompanying animals. This policy is weak because then individuals have a mistaken sense of security that when they are present in the camp, food therefore no longer needs to be stored.
 - ❖ portable electric fences can be used.

- What does one do with areas, such as villages, that have no resources for bear management? Have the borough deal with this by seeking matching grants for bear proof dumpsters. (This is not an easy issue.)
- What is the percentage of bears which constitute a problem in the Anchorage Bowl? About one fourth to one half. This is just an estimate.
- Bear management should be an interagency funded project with the military bases, the Anchorage Municipality, the State and Federal governments all working with Fish and Game.
- Using dogs trained for bear management could make a difference in rural areas, but could probably not be done in Anchorage because there are too many attractants and problems such as private properties, fences, dogs, traffic, unaware people, and often no suitable place to chase the bear.
- Why are we not enforcing the law forbidding the feeding of carnivores? In Kodiak they are aggressively seeking this, as well as imposing fines on wanton waste violations. In other areas it is not a high priority as it is not prosecuted once a citation is issued. People will simply plead that they are feeding birds or rabbits. On oil development sites where open kitchens exist, little is done in the way of precautions. In Anchorage, a high profile case might make a short lived difference.
- The state and municipalities should make feeding bears a violation similar to a traffic infraction, in which violators are subject to fines rather than mandatory court appearances.
 - ❖ Letters of recommendation to the court system could be written suggesting this.
 - ❖ A letter from the state troopers to the court system might have some influence.
- It is a community problem so the focus should be that it should become a community project.
- Make it so State Park rangers could issue a citation for unattended food left where bears can get it on the outdoor tables. Citing people for garbage can also be effective.
- In Southeast Alaska, e.g., Petersburg, the police kill *every* bear that comes into town.
- Try to spread out responsibility. Some states, such as Montana, do not have laws making it illegal to feed bears or carnivores. It should become a citation for it is considered to be creating a public nuisance. This can be effective even if the violation occurs on private land.

Handouts (copies available from session chair)	
Title	Author
Bears and the Electric Landfill	Larry Van Daele, Ron Reimer
Why did they die?	Larry Van Daele
Backyard Bears	Larry Van Daele
If a person reports seeing a bear along the Kodiak road system, here's what to do	Larry Van Daele
Letter to Lacey Berns of Kodiak	Larry Van Daele
Reducing Nonsport Losses Attributable to Food Conditioning: Human and Bear Behavior Modification in an Urban Environment	Thomas M. McCarthy, Roger J. Seavoy
Brown Bear (<u>Ursus arctos</u>) Use of the Dillingham Dump in Southwestern Alaska	Kellie N. Pierce

Handouts (copies available from session chair)	
Title	Author
Is Alaska's Largest City <u>Unbearable</u> ? (In two separate handouts photos and data slides)	Rick Sinnott
Anchorage Bear Facts	Rick Sinnott
Bears in Anchorage	Rick Sinnott
Bear-related Injuries and Deaths [in the Anchorage area]	Rick Sinnott
Nuisance Bear Response Policy for Anchorage Area	Rick Sinnott
Guidelines for Responding to Incidents Involving Humans Injured or Killed by Bears in the Anchorage Area	Rick Sinnott
ADF&G Memorandum re: bear policies	Lew Pamplin



Interim discussion: bear/human encounters

Discussion leader: Bruce Bartley

Discussion regarding bear/human encounters ensued at lunchtime. The following concepts were either discussed or precisely worded:

- When confronting a bear, and you know it is aware of your presence:
 - ❖ it is important to hold your ground. It is important not to show vulnerability. Try to project an attitude of neutrality or even that of being slightly aggressive unless the bear actually makes contact.
 - ❖ take a second to allow the bear to react.
 - ❖ assess your situation.
 - ❖ possibly retreat or veer off at an oblique angle, while maintaining visual contact with the bear to monitor the bear's response to one's own movement.
- In resource rich-areas, bears are generally moving from resource to resource. Therefore, one should get out of the line of travel. Traveling, not remaining standing in one place, is a good choice to make.
- People should still identify themselves, stand ground and demonstrate neutrality.
- Eye contact, in and of itself, is unlikely to influence the bear or to effect the outcome of an encounter [with a bear]. Whether you look a bear directly in the eye is less important than keeping the bear in sight at all times so that you can detect important visual clues regarding bear behavior.
- For the public we should change the language of "aggressive" to give a more accurate message. The term "aggressive" to biologists has a different meaning than it does for the public.
- Simply inform the bear you are human and present. Do not push the public towards "aggressiveness."
- Notice *circumstantial* differences and in what instances one should retreat, e.g., in the presence of a sow with cubs one should retreat.
- One should try to discourage human aggressive behavior if the bear is not aware of one's presence.
- One should move away. Standing has signal value. Standing is not outwardly aggressive, but does not demonstrate passivity either.
- Humans whose presence is known, should wait for the bears to react and allow the bear to scope out the situation. Think, don't panic. Respond, don't react. Be as neutral as possible.



Session III: Beyond Prevention

Chair: Dick Shideler
Presenters: Tom Smith
Tim Manley
Dick Shideler

Dick Shideler, Tom Smith and Tim Manley presented an overview of various bear repellents.

Shideler discussed noisemakers and projectiles (ref. handouts "Evaluation of Bear Repellents" and "Use of Projectiles to Deter Bears")

General Considerations

- Repellents are activated by the individual, and used to increase the distance between the bear and the individual.
- Good repellents are those which are: (a) effective, (b) easy to deploy, (c) transportable, and (d) safe both for the user and the bear. It is important to note that no repellent has been 100% effective.
- Noisemakers may divert the bear only temporarily, and if used repeatedly without some sort of associated discomfort, bears will learn to ignore (habituate to) the noise.
- Projectiles are designed to cause some pain. Bears respect something that "reaches out and touches" them.
- All repellents have advantages and disadvantages. Some have been developed for prison and crowd control, and subsequently modified or used as a bear repellent.

Specific Types

- The 12-gauge cracker shell has the best range. It is the first step in a three shot system, consisting of a cracker shell at a distance of 75 yards or more, a rubber bullet or beanbag at 20-40 yards, and lastly a lethal slug if the first two do not deter the bear. The cracker shell alone may stop the bear, although some do not respond to it. The three-shot system was developed in northern Canada, where the government issues rubber slugs and cracker shells to the public in an effort to reduce bear deaths, human injury and property damage.
- Noisemakers such as the 12 ga. and the 6 mm screamers have been effective with grizzlies and some polar bears and black bears. Unlike cracker shells, the sound and visual flash of the screamer can be tracked to its origin (the person using it) thus reinforcing the association of the noise with a person.
- The pen launcher, available in Canada, is not recommended as it is dangerous to the user. Travelers up the Alaska Highway see them in Canada and then look for a source in Alaska. The boat horn is effective in some situations and is used often in place of bear bells. It is cheap and easy to find as well as to operate.
- The "Critter Gitter" is similar to a burglar alarm but more obnoxious. It changes tone so that the bears do not habituate to the sound. It also stops once the bear leaves its detection field. It costs approximately \$50. It is primarily a deterrent, (i.e., placed at a location to prevent a bear from approaching and activated by the bear) but can be used as a repellent by carrying

the unit activated. One disadvantage is that it requires several seconds to warm up, thus is not useful in a sudden encounter.

- Highway flares create a big visual display. A smell may or may not be part of the effect. They are portable, easy to use, and commonly available.
- Roman candles and bottle rockets are also effective because they combine a visual and auditory display that originates with the user—bears can track the source and connect the noise with humans.
- The “Strike Two” type of 12 ga. rubber slug is recommended as it is less likely to injure a bear. These are soft rubber slugs. One should not aim for the bear’s head or ribs, but rather for major muscle areas, such as the shoulder or rump.
- The beanbag (or “pillow round”) is another 12 ga. repellent round that is less likely to cause damage. As with rubber slugs, one should not aim for the bear’s head or ribs, but rather for major muscle areas, such as the shoulder or rump.
- Sage control makes a 37 mm gun which shoots a softer, safer rubber baton than the standard law enforcement riot gun. Over-the-counter (OC) dispersant rounds are also available.
- Questions on rubber bullets pertained to Nome. Nome had issued these to minors and others.

Safety issues related to repellents

- Quality control on repellents varies. Due to their generally smaller amount of powder, small variations in loads can dramatically affect accuracy.
- The wad from 12 ga. non-lethal rounds, especially cracker shells, can jam in the barrel.
- Another problem with noise maker shells is that they go 75 yards before exploding. Experience with the range of the projectile is important. It is undesirable for it to go over and past the bear, thus chasing it toward the user.
- Mark Agnew (AST-FWP) cautioned that one should make absolutely sure one is shooting something that is non-lethal versus something that is lethal. The rounds should be painted colors so it is clear which rounds are lethal versus non-lethal OR one could have some guns loaded solely with non-lethal rounds and these guns should be kept segregated from the guns loaded with lethal rounds.
- Beanbags can be shot at a range of 10 yards or less and they will not have a harmful effect on the bear if it is hit in the shoulder or rump area.

Discussion

- Use simple tactics such as pot banging, noise making, yelling, and hand clapping first. Techniques that require additional tools should be saved for last.
- One should emphasize that the original attraction should be eliminated first. Bears can endure a lot if there is a good attractant, thus, one should get rid of the attractant.
- Only shotguns with open chokes (cylinder bore or slug barrel) should be used as tighter chokes may cause the projectile wad to become stuck. Automatic shotguns should not be used because the low powder charge in most deterrents may not activate the autoloader mechanism.
- When first introduced in Canada, there was concern these repellents would only make the bears angrier and thus more likely to attack. Experience has shown that this is not likely, and many villages there now use repellents. The repellents do not seem to predispose a bear to be

more aggressive. In training a bear, we want it to know that the repellent comes from a human so at the next encounter with a human, the bear will be more inclined to be intimidated.

- One issue discussed was whether or not agencies should either (a) supply repellents (specifically, 12 ga. projectiles such as bean bags) to the public, or (b) inform the public that they could obtain the rounds as commercial sources. Some ADFG area offices have provided individuals (such as miners, in one case) the actual rounds because they were having bear problems in a remote area and requested a non-lethal alternative. See Recommendations section.

Tom Smith discussed the use of pepper spray (ref. Handout "Red pepper Spray and Bears")

- Avoidance of the bear is the key issue and should occur long before a need exists to use pepper spray.
- Pepper spray is not necessarily the most effective deterrent, and is a "last ditch" technique.
- People should still be encouraged to have it because:
 1. it does give people a reason not to run, which in turn, may evoke a charge.
 2. it startles the bear and might cause it to run.
 3. it is a strong irritant.
- The key factor: the spray has to be in aerosol form to be effective.
- Tom played a video that showed two young bears approaching the videographer, who sprayed some OC on the ground. The bears stopped and rolled where pepper spray residue was on the ground. The use of pepper spray discontinued the behavior of following the human. The bear was sufficiently distracted to keep it from pursuing the human. However, this is NOT a technique we should recommend to the public.
- One should carry at least two types of deterrent, pepper spray being one. This gives people an option.
- A federal agency can be held liable for using sprays that are not registered with EPA (see handout "Bear Deterrent and Repellent Products" for list).
- Some bears need to be sprayed two to three times; therefore a full can may be necessary. Before taking it into the field, one should consider the volume levels of a can, and not take a partially filled can.
- All major manufacturers will sell inert versions which can be purchased to use for training and demonstration.
- There have been no formal studies on the rate of product leakage. Manufacturers advise that cans should be tested in advance with a short burst before taken out into the field.
- At airports, major airlines will take it in baggage only, if stored in an air-proof container. Military surplus ammo cans and plastic boxes with good rubber seals are acceptable. Some air-taxi operators will not allow it unless stored in the floats.
- Discarding them with normal refuse is possible as the chemicals are degradable.
- The best spray actuators are fire extinguisher quality from Great Britain. The least reliable are from China.

Discussion on various products, contents, packaging and marketing.

- Tom Smith recalled how one woman had sprayed a bear and the bear attacked her anyway.
- Pepper spray seems to fare better as a deterrent than firearms as it usually takes more than one shot to kill a bear. Bears are good at aggressive showdowns.
- It should be emphasized to people that they should not spray themselves down as if it were mosquito repellent.
- For additional information on pepper spray products see Web site listings on p. 9 of handout "Red Pepper Spray and bears: Baseline Information and Insights" by Tom Smith.
- In a test in Washington state, OC was micro-encapsulated as a powder and spread on a landfill which had black bears feeding in it. The bears reportedly absorbed the OC through their feet, giving them a "hotfoot", and they abandoned the landfill.

Tim Manley discussed the use of dogs as a bear repellent in Montana.

- The Karelian bear dog is a breed from a province in Finland. These dogs were bred for hunting and are an effective tool in bear management.
- The dog is purchased young (10 weeks) for approximately \$1,500.
- Not only are the dogs adept at handling and tracking bears, they also serve as good diplomats, especially when one is talking to landowners.
- They were used previously for hunting bear, moose, lynx and caribou in Finland and Russia. They were never used for bear management, but rather as a safety measure. [A video presentation depicted a Karelian dog's interaction with a chained bear in Russia.] They are bred to work with bears. The average American dog would get killed in this situation.
- The Karelian breed is aggressive toward bears, quick, agile, and bred to hold the bear for the hunter. You can call a Karelian off of a grizzly bear, and the dog will respond within a few minutes, when it safely can retreat without being attacked.
- They do not bring a bear back to humans. The bear thus learns it should not be in a campground or near a cabin.
- The Karelian is also people friendly if socialized properly.
- Tim has applied for and received "service dog status" (similar to search-and-rescue dogs) from the airlines for his trained dogs, allowing them to fly in the cabin rather than as baggage.

Disadvantages

- These dogs cannot be considered house dogs because they are high energy dogs, noisy and active. They love to track and are nose oriented. Working with them takes a considerable amount of time and patience.
- If not socialized with other dogs properly, they can become dog-aggressive.
- They are independent-minded, require lots of training, and are more responsive to positive reinforcement techniques than to punishment. Most of the handful of dogs that are currently active in bear conflict work have over 1,000 hours of training each.

Shideler presented an overview of aversive conditioning.

- Aversive conditioning means simply using negative reinforcement to train bears. In most cases the training goal is for the bear to learn to avoid specific situations (e.g., campground, cabin, or other human activity)
- What are the stimuli that bears pick up? They can discriminate and figure out what you want them to learn: avoid people. You also want them to generalize—i.e., to apply this to all areas and not just the one area where you first encountered them.
- The key point: provide aversive stimuli (e.g., dogs barking, noise, pain from projectiles) and let the bears respond with the appropriate behavior. Remove the aversive stimuli once the bear performs the desired behavior.
- The difference between hazing and aversive conditioning is that in the former, the goal is to move the bear away from a specific spot immediately and it is often a one-time event. The bear may or may not have learned to avoid the situation or location subsequently. In aversive conditioning, the goal is for the bear to learn to avoid the situation not only at the specific location but also at similar locations. This usually requires follow-up “training” bouts with the same bear.
- Aversive conditioning is most effective in a controlled environment, or it takes longer.
- Superstitious behavior and third-level associations can develop, that is, they make associations between the aversive stimulus and certain specific human behaviors, clothing, vehicles, etc.
- In aversive conditioning, one must consider:
 - ❖ What is the bear doing wrong?
 - ❖ What can we do to teach the bear?
 - ❖ What can we do to eliminate attractants?

Tim Manley discussed on-site release as a form of aversive conditioning being tested in Montana:

- On-site release is a relatively new management option being tested in the Lower 48 and Canada that is an alternative to the classical options of lethal removal or relocation.
- Tim showed a video of the release process, where management (“nuisance”) bears are captured at the site where they get into conflict, are radio-collared, and released at the site. At the time of release, bears are subjected to extreme hazing (including use of the dogs) to teach them to avoid the situation. Follow-up “booster sessions” may be required to teach the bear to avoid similar situations.
- We can teach the “management bear” something at that site instead of relocating it altogether.
- Out of 18 aversive-trained bears, only 15% returned.
- Fewer grizzlies are being removed from the ecosystem because they are being trained to avoid conflict situations. Because the grizzly population is listed as “Threatened” this is especially important in maintaining enough female grizzlies.
- The program is being used on black bears also, although the emphasis has been on grizzlies.
- With the use of bean bags, shooting of cracker shells, yelling and using dogs, monitored management bears never came back to the release site, even though they stayed in the area.

Potential problems

- It is very time intensive (and therefore expensive)
- It requires careful execution because bears can make undesirable associations to certain things: e.g. repelled by vehicles but attracted to tourists.
- The public must be informed about purposes and results because oftentimes the individuals in the immediate area of the release (if in a developed area) want the bear removed from their area. (However, Tim's experience has been that once local people understand that the bears will be monitored and perhaps given "booster sessions" to facilitate learning, they become advocates for the technique in lieu of removal.)

The Balance between Education about Prevention and Firearms Training in Agency Bear Safety Training (Discussion leader: Bruce Bartley)

- Agency bear safety training often emphasizes firearms safety and focuses less on teaching prevention, such as interpretation of bear behavior and safe human behavior around bears. This imbalance appears to be because of liability concerns about safety with firearms, but does not adequately consider that adequate prevention would reduce the need to use a firearm in many situations.
- In some agencies, field personnel are required to carry firearms and receive basic training in firearm use. This policy should be reviewed, because some individuals are not comfortable using firearms at all, and others do not feel that the training offered would be useful in a real bear conflict situation.
- Non-lethal projectile use is not part of most firearms training, but should be.
- In most agencies, firearms training is mostly a qualification-of-use standard. Firearms discussion and practice do not simulate real life. They just satisfy the attorneys. Universal messages should be: a charge happens lightning fast, and a firearm does not make a person impervious to harm. Inexperienced people should not be advised to have guns.

Recommendations:

- Firearms in the field should be optional, not mandatory, in most situations. The decision on firearms should be delegated to the project leader.
- Field personnel should have bear-awareness training as well as firearms training, and should undergo periodical retraining in both. Training should be increased on preventive measures. There should be an emphasis on balance between bear-awareness training and firearms training.

Dick Shideler presented a List of Resources (Ref. Handout "Bear Deterrent and Repellent Products")

- The list consists of bear repellents, bear-resistant food and garbage storage, and electric fence materials. Sources are included.
- It is considered a "work in progress," and additions or revisions are requested.
- The list will be converted to a web page at the ADFG web site so that other agencies and the public can access the resources listed.
- On-going evaluation of other products is encouraged in order to keep the list updated. Dick Shideler is the contact person. In your evaluation, consider the situation in which it is used

(e.g., geographic location, human activity, “persistence” of the bear if relevant, how long the bear was repelled—temporary or permanent) species of bear, ease of use, caveats on use, etc.

- We should also be tracking products that DO NOT work in case someone requests information on such products.

Handouts (copies available from session chair)	
Title	Author
Evaluation of Bear Repellents	Dick Shideler
Use of Projectiles to Deter Bears	Dick Shideler
Bear Deterrent and Repellent Products	Dick Shideler
Red Pepper Spray and Bears: Baseline Information and Insights	Tom Smith
Attraction of brown bears to red pepper spray deterrent: caveats for use	Tom Smith



Session IV: Range Session on repellent uses

Chair: Dick Shideler
Rangemaster: Bruce Bartley
Assistants: Corey Rossi
Mark Agnew
Mike McDonald

Summary of activity

- Workshop participants fired projectile and noisemaker rounds from 12 ga. shotgun and 6mm (.22 cal) single-shot and revolver bird scare cartridges.
- Repellents included 12 ga. and 6mm "screamers," 12 ga. cracker shells, two types of 12 ga. rubber bullets, and 12 ga. beanbag (or "pillow") rounds.
- Emphasis was on gaining experience with the range and accuracy of the various products, safety for both bears and humans, and advantages and disadvantages of each type of repellent.

Handouts (copies available from session chair)	
Title	Author
Evaluation of Bear Repellents	
Use of Projectiles to Deter Bears	



Session V: Incident response and reporting

Chair: Mike McDonald
Presenters: Tom Smith
Larry Van Daele
LaVerne Beier

Tom Smith (Biological Resources Division, USGS) discussed his developing Alaska bear encounter database

- His research database goes back 100 years. His goals are to create a data base of bear-human confrontations so he can test both common and novel hypotheses and promote bear conservation and improved safety in bear country. Already entered into the database are 460 confrontations with 82 variables.
- Included in his database is an ArcView spatial display of encounters with the ability to do temporal analyses; 1,352 action-ArcView pairs are recorded to three levels of behavior state for humans and bears. At the lowest level, a bear can be low-level aggressive or "submissive." At level two, humans make noise. At the third level, the bear is more aggressive. A preliminary analysis is underway to determine what is the appropriate response
- The ArcView database also can be used to generate conflict-probability contours to provide insight into historical records. Overlays of encounters with geo-spatial data sites should provide additional insights. Factors are being investigated which may explain regional bear aggressiveness.
- Database analysis provides insight into confrontation prevention, helping us understand where bear-safety emphasis should be placed. Analyses provide insights as to how to avoid confrontations with bears, where humans are at fault and at what point more severe injuries occur. Detailed analysis may lead to new insights in respect to people who tend to fight back. Those individuals are most subject to mauling.
- Among Smith's preliminary findings is that bear density is related to food sources. Because bears in higher density areas have more encounters with other bears, they tend to be less aggressive than bears in lower density areas.

Larry Van Daele (ADF&G) explored whether a database is needed or practical for bear encounters not resulting in human injury, but resulting in destruction of property and/or bear. Also considered was deliberation as to what data needs to be collected and why.

- There is no means of reporting when a person gets hurt -- only when a bear is killed. Injuries are generally listed under a generic "animal attacks."
- ADF&G strives for consistency in responding to nuisance-bear calls. Liability is covered if procedural rules are followed, i.e., Fish and Game policies. Consistency entails:
 1. prevention measures taken
 2. accepting bears' existence
 3. realizing that food/garbage are the number one attraction
 4. giving bears a chance to live

5. not relocating bears, except on rare occasions
 6. not transferring bears to zoos, except on rare occasions
 7. leaving orphan bear cubs in the wild, except on rare occasions
 8. killing bears on occasion, in the event of mauling, if the assault was unprovoked
- The Park Service has parallel policies.
 - If someone is hurt, what is ADF&G's response? In rural areas, coordinating with other agencies, such as police and state troopers, is seen as the best policy. If a bear is belligerent, ADF&G personnel are responsible for responding. ADF&G does not need to respond to each and every bear sighting. No active response is necessary for mere sightings.
 - In the event of a mauling, evaluate the situation: is it a remote site or a high-density setting? Always try to interview the victim as well as any companions.

Mike McDonald (ADF&G) addressed how we respond in different areas. The first was Anchorage and immediate vicinity:

- If we catch a bear early enough, before it is habituated to garbage, we have been successful with moving them to the Turnagain Arm area.
- For habitual offenders, the bear is shot. The community dislikes it, but has come to accept that some bears have to be destroyed. In a 20-year period, from the mid-1970s to the early 1990s, the department killed five black bears in town. In recent years, Rick Sinnott and McDonald have killed more than that in just a few months.
- Until recently, there was no city protocol for the police to call ADF&G in the event of a mauling. Now, we are notified ASAP. Our goal is to dart and collar any bear in the area, using the troopers' helicopter, if available. In the past, bears have been shot which were not involved in maulings. DNA analysis can now be done within 24 hours, although some problems exist with this. Comparisons are made with evidence from the mauling site to the apprehended bear, enabling us to make an informed decision. DNA evidence can be tricky to collect without contamination.
- In the case of a mauling, some people want something killed, regardless if it is the right animal. One popular outdoor site drastically reduced visitation numbers due to a mauling.

La Verne Beier spoke on dealing with bears in Southeast Alaska.

- There is no hard-and-fast policy on moving bears in Southeast. It depends on the political environment of an area as well as the philosophy of the biologist. In some areas, bear transfers are acceptable; in some they are not. Flexibility is the key.
- The farther the biologist is from an area, the poorer the [community] response. Response is very site-specific. For example: Ketchikan has a garbage policy, but it is not enforced.
- Available tools are contingent on different communities. One must deal with the views of those communities to make decisions. Seventy-eight bears were relocated, 20 were killed and five or six of those relocated came back. The relocation of bears appears to be a highly positive response of community public relations' efforts.
- There are still plenty of traditional garbage bears. What is one to do? Helicopters are not always available. What is done most frequently of late has been to simply kill them. In some communities, authorities do it; in others, private individuals. There is a fair amount of SSS [shoot, shovel and shut-up.]

- There is a garbage ordinance in Juneau. Fourteen bears were killed the year prior to the ordinance. This was unacceptable to the community. Officers then started to issue tickets for improper storage of garbage. Signs were posted to educate the public. The city became more involved in the education process. The ordinance still exists but, it is not well enforced. They still receive a lot of nuisance calls. New tools now exist to move bears, such as by boat.
- Lethal removal occurs when a bear is persistent, aggressive or returns after translocation. This might be done by another agency's people such as the police.
- The climate of the community determines dealings with bears. Some say there is an abundance of bears, so kill them, whereas some say there is an insufficient number of bears. The mayor and city council might allocate money to relocate bears by boat, helicopter, helio-courier. They usually consider the cheapest method.
- The criterion for determining a relocation site is the abundance of food at the site (e.g. salmon.) ADF&G warned if there is insufficient food at a relocation site, the bear will probably return.
- Logging camp personnel kill bears both legally and illegally. Salmon hatchery personnel kill bears routinely.
- In 1995, Petersburg changed from a landfill to an open-bailer program. Twenty bears showed up. The issue was a matter of local concern to remove the bears. Snares were used. In five days, 30-40 bears were captured and moved. None returned. However, the climate in Petersburg since 1995 has changed. Now, almost every bear that comes into town does not get a second chance and is killed.
- In Angoon, bears are moved. The city pays for it and it is considered to be a positive thing. Angoon has poor sanitation facilities in town (i.e., poor garbage collection services), which serves as an attraction.

Discussion ensued regarding bear removal programs as well as on a data base collection program:

- If a bear gets killed, few, if any tools, are used to gather information. Bears are moved often in disregard to policy. It is considered largely a success if a bear is saved and relocated to an area where it is not a nuisance.
- How do we estimate the nature of the environment where the bear is relocated to in terms of chances of survival for the bear?
- How do we get an accurate figure of bears actually killed?
- How do we get an accurate figure of people killed or injured? More dramatic maulings are typically reported. It is possible that individuals have been killed or injured and these figures never showed up in hospital records or other official records.
- How much danger do the bears pose and what can we do about it, and how can we best pass this information on to the public?
- Is it valid to ask how many injuries have resulted from an encounter with a bear?
- Encounters can be counted as having to take some form of deterrent action. To document them is difficult, because it entails encouraging people to report such incidences. Thus, we have a highly biased database.

- Managing bears also means managing humans. A data base can be highly valuable as to where trails are to be placed and would also be a valuable tool in the future, for the long term.
- Is a database valuable and worthwhile? How should it be collected, and by whom?
- The public, especially in Kodiak, will not report all encounters, but maulings and fatalities need to be reported and this, then, would result in a valuable database.
- A statewide public survey might be valuable. The problems related to this are: cultural differences, the unwillingness of some to participate, illiteracy.

Recommendations:

- We should put forth an interagency effort to gather the most important data about maulings and fatalities through a public survey of encounters (including descriptions). The purpose of the information would be to statistically evaluate the risk of injury from bears and to say what people are doing incorrectly/correctly.
- A survey could document what people are doing correctly to avoid maulings and fatalities: we would derive a list as to what a person could do in dealing with bears that has been successful.
- It would not be all-inclusive, but it would be a good sample. Some charges, resulting in bear fatalities never end up in reports. The survey might also indicate if a bear was shot because it was a nuisance but not reported as a DLP because the shooting occurred during an on-going hunting season and the animal was reported as a sport kill. A few questions might reveal (surreptitiously ferret out) the true nature of the kill and whether the bear was genuinely a nuisance or not.
- Have an ADF&G (or multi-agency) systematic review of DLP (including mauling and fatalities) information every 10 years. Review/revise sealing forms to gather information about the circumstances of the kill. Ask questions on the distance of shooting. (Much information is not accurately divulged.) On DLP forms, people try to cover themselves.

Handouts (copies available from session chair)	
Title	Author
Communities and Remote Locations Of Southeast Alaska Where Nuisance/Garbage Bears Occur	La Vern Beier
Memorandum on two departmental policies regarding bears	Larry Aumiller, et al
BEAR ALERT	Larry Van Daele, et al.
Human Injury from Bear Attacks in Alaska, 1900-1985	John P. Middaugh, M.D.
Brown Bear-Human Conflicts in the Kodiak Archipelago, Alaska	Roger B. Smith, et al.
Brown Bear-Human Interactions Associated with Deer Hunting on Kodiak Island	Victor G. Barnes
Alaska Bear Encounters Data Base-Year 1900 to 1999 Category Definitions	Tom Smith and Steve Herrero



Session VI: Liability

Chairs: Dee Galla
Sue Mills

Presenters: Kevin Saxby
Joe Darnell

Kevin Saxby of the State Department of Law, Natural Resources Section, spoke first on Liability Principles and the State.

- State law forms the basis for most claims of liability against managers. Federal law adds an overlay when federal agencies are parties.
- Tort law is a branch of civil law where the remedy is usually financial remuneration.
- The most common tort theories for assessing liability for bear-related injuries involve claims of negligence. Negligence is the failure to exercise the standard of care that a reasonably prudent person would have exercised in a similar situation. Negligence claims require proof of four elements:
 1. the existence of a duty;
 2. a breach of that duty;
 3. causation; and
 4. damages [See definitions as follows.]
- The Carlson case was discussed [see handout]. In this case, the DOT trash containers were placed by a bus stop. The woman appellant, (Julie Carlson), was mauled at the site of the camper. She pled that there was a failure on behalf of the DOT to warn the public of bears as well as a failure to clean-up the trash. The charges were dismissed by the trial court. This was overturned by the State Supreme Court. The decision was: a state agency can be held responsible for a bear mauling if it fails to act reasonably in fulfilling a duty owed to land users.
- Breach of duty can be found if statutes are not fulfilled, or common law obligations like a duty to warn of dangerous conditions on land that one owns are not followed. Generally, there will be an argument that managers owe no duty to individuals who are injured by bears; however, the state is more likely to be found to owe a duty to protect or warn users of state land where a known hazard exists. If an attack does not occur on state land, then a duty is less likely to be identified. It is also less likely that any duty will be found to protect against mere economic harm (property damage). The existence of a duty does not equate to liability.
- Defense of sovereign immunity: people cannot sue the state if a policy-type decision is made based on an exercise of discretion. There are numerous areas where courts cannot second guess state agencies. This is especially the case in managing natural resources. Generally, discretionary decisions are generally protected in court, even if the discretion is abused.
- Significance of the Carlson case: policy-based decisions must still be implemented in a non-negligent manner.

Definition of Terms

- *Duty* – an obligation owed by one person to another which is imposed by law (statutory or common law) based on the particular circumstances in each case.

- *Breach of Duty* – the failure to act reasonably, under the circumstances, where a duty to act to protect or warn someone else exists – this will be determined by a jury. Generally, the legal obligation of a state agency would be to act reasonably to protect human life, if a duty is found to exist.
- *Causation factor* – defined as "but for the failure of action by the state, the injury would not have occurred." Agencies can then argue contributory behavior of the individual involved.
- *Damages* – without this there would be no court case.

Joe Darnell of the Department of the Interior spoke on tort action and the Federal Government.

- Until the 1940s the U.S. Federal government could not be sued for a tort. The ability to sue the federal government in tort cases exists only to the extent the U.S. government waives its sovereign immunity which it did with the Federal Tort Claims Act.
- There are some claims excluded from the waiver of sovereign immunity, and therefore covered under the Federal Tort Claims Act. These claims are based upon 1). an act or omission of an employee of the Government; 2) the exercise or performance, or the failure to exercise or perform, a discretionary function or duty on the part of a federal agency; or 3) the exercise or performance, or the failure to exercise or perform, a discretionary function or duty on the part of an employee of the government irrespective of whether the discretion involved was abused.
- Under federal case law, it is the discretionary nature of the challenged conduct, rather than the status or level of the actor, that governs the application of the discretionary function exception.
- For the discretionary function exception to be applicable, the challenged conduct must involve a matter of choice or judgment for the acting employee. If a statute, regulation, or policy mandates a course of action, and there is no choice or discretion given to the employee, the exception does not apply.
- If the challenged conduct does involve a choice or judgment, to be covered by the exception, such choice or judgment must involve considerations of public policy. The Ninth U.S. Court of Appeals, which covers Alaska, has set out a two-step process in making the discretionary function determination where it is asserted as a defense:
 1. The court must determine whether the challenged action is a matter of choice for the acting employee; and
 2. If yes, was the judgment made grounded in social, economic or political policy?
- Delegation of discretion to act to the lowest levels is desirable.
- Department of Justice makes the decision as to whether to assert the discretionary function exception for an agency.
- If a decision is made to not assert the discretionary function exception, then look to reasonableness of conduct, basically follow State law.
- What is expected of a land manager varies greatly between highly regulated and managed intense bear environment/experience like Brooks Camp as opposed to Wrangell-St. Elias National Park.

Two Bear Cases:

1. Rubenstein v. United States, 338 F. Supp 654 (N.D. Calif. 1972)

Plaintiff camper sued U.S. for injuries suffered when he was attacked by a grizzly bear in his tent at a crowded camp ground in Yellowstone National Park. The court denied the claim.

Plaintiff had been given standard park brochures when he entered the Park which included suggestions on how to conduct oneself while camping to minimize problems with wildlife. Included was the following warning: "Like all animals in our National Parks, bears are wild animals. Because of their protected status they have lost their fear of man. While this may make them appear tame, actually in this state they are more dangerous."

The plaintiff claimed to have inquired of the available park rangers as to whether there would be any problems and was assured there would be none. The ranger who allegedly gave the assurance could not be identified. It does not appear the government disputed the allegation.

The court ruled for the government. It stated:

"Mr. Rubenstein maintains he was lulled into a "false sense of security" in that he was led to believe that if he obeyed all the rules and regulations he would not be attacked by a bear. The courts holds that a reasonable man under circumstances similar to those described herein would have realized this type of danger exists in a wild life park and that Mr. Rubenstein either knew or should have known of the risk of an unprovoked attack."

2. **Claypool v. United States, 98 F. Supp. 702 (S.D. Cal. 1951).**

The court in Rubenstein distinguished its situation from that found in Claypool where the court had ruled for plaintiff. In Claypool the plaintiff was badly mauled by a bear in Yellowstone at the Old Faithful Camp Ground. Plaintiff had camped in the campground the first night and then left for a day and a night returning to camp again in the campground on the third night. Upon returning, plaintiff asked the park rangers if there was any problem. Plaintiff was assured there was nothing to fear. Left unsaid by the Park Rangers was that the night before there had been a raid by a bear, or group of bears, in which several campers were attacked at that same campground. Applying Wyoming law the court held that defendant United States owed plaintiff a duty to warn him of known dangers and that it had breached that duty by failing to warn plaintiff of the attack the preceding night.

Questions sent to presenters by session chairs prior to workshop:

1. What if someone is mauled while following our advice?
2. What pitfalls should/do we avoid?
3. Is liability different at a bear viewing area?

Answers to these and other questions:

1. When advice is generally generic. On behalf of state agencies, a strong argument will usually be available that there is no duty owed to individuals which would permit compensation. If that fails, the question will be: "Was that advice reasonable under the circumstances?" The agencies should consider, "What do other experts say and do we deviate from that?" Advice should be given both to prevent and minimize injuries, but it should be emphasized that one cannot eliminate their occurrence. Bears are highly individualistic and some may not fit into the broad categories on which policies are based. Thus: put in disclaimers, e.g. stating specifically that individual responsibility for a certain amount of risk, given the environment, must be assumed. Agencies could/should work towards a consensus on policies as a defense against litigation.
2. What about area-specific advice? Are there nuances which need to be respected? Potential landowner liability exists. In some areas human conduct is strictly regulated: dress, discussion, location, etc., are all factors. Expectations of governmental protection are higher

in such places. Very specific warnings would sometimes be expected, even in respect to certain bears, and the maximum amount of notice that would be considered reasonable in all circumstances should be given. Decisions about how to inform the public of dangers should be made at the policy level. The advice and guidance given should be informal and based on information and experience accumulated over the years, but always with appropriate disclaimers.

3. What about bear traps on private property or near this property? Signs should be seen as a form of prevention. Signs should be done reasonably. If there is a known problem and you can warn people, but do not, the courts may rule against you. Providing general information is desirable for campgrounds if no specific problems are known to exist. If specific dangers are identified, then more steps should be taken to inform users. With black bear bait stations, the state has little liability as the state has little control over where the baiting occurs.
4. Should we maximize information to public land travelers? Absolutely. The more information given out (which both makes sense and is not contradictory), and the more ways it is done, the better. Agencies should post generic warnings at locations where it is reasonable to do so and specific warnings where they are warranted. The court would ask, "Were reasonable actions taken" [by the state?]
5. What do we do with bear contingency plans? Avoid imposing strict policies and procedures if at all possible. If you do, expect to be held to those policies and procedures in court, give as much discretion to field personnel as possible, and provide for that in written policies and procedures. In the end, actions will be judged for reasonableness under the circumstances.
6. What actions in the field expose us to liability? Failure to follow statutes, regulations, or established policies which dictate a specific course of action increase the risk of liability. Managers should always act reasonably, taking into account any known dangers. For example: in the event of a policy on garbage pick-up: Are reasonable decisions made as to the frequency of garbage pick-up? Are reasonable decisions made as to the frequency of trap-checking?

1990 Arizona State Policies on Bears (for case study):

Note: These are not the recommendations of the legal advisors; these were some of the underlying policies that led to claims of liability in the Arizona case.

Even when bears presented an immediate threat to human safety, the agency used the minimum of violence towards the animal (favored relocation over lethal measures). Problem bears were deliberately relocated to an area of high recreational use and developed facilities. If bears presented no immediate threat to human safety, even though they were clearly problem bears, the policy was to take no response.

Recommendations:

- Leases for public land should have specific clauses dealing with any known or anticipated bear dangers, and should require the lessee to accept liability for injuries occurring on the leasehold. No policy whatsoever is not a way to avoid liability. Policies with clearly worded statements which are applied allowing for discretion should be written up.
- If F&G lets a bear off the hook for human injury and that bear then injures someone else, then the risk that F&G may be found liable is greatly increased.

- Risk management is coupled with policies, but they (the policies) should not be governed by an obsessive fear with liability issues. Safety concerns should be the decisive factor governing the formation of policies, not fears of liability.

Handouts (copies available from session chair)	
Title	Author
Carlson vs. State (Alaska, 598 P .2d 969)	Pacific Reporter, 2d Series
Outline of Arizona bear mauling case study	Gerald L. Perry and Michael J. Rusing, Esq.



Session VII: Public Outreach

Chair: John Neary

John Neary coordinated discussion groups on public outreach methods.

- Outreach (whether for bear safety or any other) occurs along a spectrum of the informal and reactive sort to the more formal and proactive types. Much legitimate outreach can be informal and telling stories can be engaging, but it is not enough to reach the non-traditional audiences. We should not only react to crises and misinformation nor should we just conduct the minimum safety outreach required to keep the lawyers happy (posting signs warning of bear danger) and yet we usually are not given the budget nor do we necessarily have the skills to get more formal. Yet the purpose of a more formal outreach approach is to build long term consensus on vexing issues thereby preventing many crises.
- How are we to deal with crises? Try to limit dangers before they occur. Interpretation of outreach messages should also be inspirational. They should be inspirational without preaching. Audiences are usually open to this kind of message. Information is not education. It comes in a variety of forms.

The Model Outreach Program:

See Handout: "Session 7, Alaska Interagency Bear Safety Education workshop, March 24, 2000, Anchorage, Alaska, Public Outreach for Bear Safety, what sort do you do? What is the most effective?" by John Neary

1. *Develop goals*--goals should be written, and simple to serve the purpose of communicating to others what one is after.
2. Who is the audience and why should it care? Who can it affect the most, and who is most affected by it? Who is the target audience?
3. Form messages unique to each target audience.
4. To obtain the desired outcome, customize the message to the audience. Set up an outreach program as a grass roots movement so that materials can be distributed. Typically, many ideas are not written down which could be shared.

General Recommendations

- Target problem groups--isolate who they are and focus one's efforts on them. Be very frank in communication.
- Contract hired help or work with an education specialist to come up with an outreach plan.
- Write a companion guide to "Living in Harmony with Moose" focusing in on brown bears and targeting Kodiak and Kenai.
- Key: Have a local person involved and not out-of-towners.
- Do not discredit audience members or dismiss them; include them in the program presentation.
- Have an outreach program that is flexible, transportable, and easy to learn with a series of focus groups.

Recommendations for schools

- Develop a school curriculum with brochures for bear safety for schools K-12.
- Do not put all the responsibility on the teachers in the schools.
- Create tools for teaching that would be age-appropriate. Approach the teachers themselves and ask what their needs are.
- Adapt the bear program into their already existent educational curriculum.

Outreach summation

- We do not write things down as we are too busy. However, the potential for utilizing these ideas is great and unrealized.
- Web sites constitute a huge outreach activity.
- Commercial operators have information which counteracts our efforts. We should try to encourage them to have web sites, and then we would provide them with updates. E.g. provide them with an updated list of repellents.
- The message should be consistent among agencies.
- We should work together for more grants (with skilled help) to expand the educational outreach.

Small groups discussed 8 bear safety education messages and bear management methods

- A. Black or brown bear-does it matter?
- B. Holding your ground, when to back off.
- C. Different or same message for kids?
- D. Pepper spray, what do we recommend for its use?
- E. Bluff charges, what do we say about them?
- F. Target audience in rural areas, who and how
- G. Aversive tools: should we supply them or encourage their use?
- H. On-site release: should we pursue this?

Consensus conclusions on the eight points:

A. Should messages differ on black vs. brown bears?

- ❖ People's reaction to, and behavior around, both species of bears should be the same up to the point where contact is made.
- ❖ At the point of actual contact with black bears-fight back; brown bears-play dead.
- ❖ If you do not know species or are uncertain, play dead, unless assault persists to the point where the bear may be treating you as prey, and then fight back. If species is unclear, then the recommendation should be more oriented toward the situation or behavior rather than the species. Common wisdom is that one should initially play dead, if one is under the circumstances of an assault by an unknown species of bear, then fight back if the predacious assault continues. The age of the bear is also a factor. One should put one's self in the individual's position. They are going to do what they can to protect themselves. Immediate aggression of the human can provoke the bear and lead to a fatality. Stress disables many people from doing the right thing. In some light, one's ability to discern the

color of the bear is reduced. What one tells people may be the only information they have to react on and that is what their response might be. The initial contact "play dead" response when a bear's species cannot be identified, or when the individual does not know, buys some time. Remember: few people have the composure or presence of mind to make a rational decision. Even most informed people will panic. Unfortunately, a little bit of information on bears does not constitute training.

- ❖ **Recommendation:** Do not play dead until contact is made. Bear behavior is more important than species.

B. Holding your ground:

- ❖ When detected by an approaching bear: Stop and think. Does it know you are there? What is it doing? The thinking part helps a person to assess the situation. This also gives them the advantage of appearing not to be running away.
- ❖ Leave the area if you are blocking the food source or blocking the corridor of travel.

C. Kids' message:

- ❖ The prevention message should be the same as for adults until the point of contact is made.
- ❖ Emphasize: stay in groups, stay with parents, use whistles, stay out of brush.
- ❖ Do not encourage parents to let children be around bears unless they are completely under their control.
- ❖ Children move differently, the interaction with a bear is different.

D. Pepper Spray.

- ❖ It is a legitimate tool but it can also be an attractant.
- ❖ Problems with pepper spray are that it gives people a false sense of security due to misinformation.
- ❖ Consider distributing a brochure or pamphlet with an objective message, more so than what the manufacturer states. Include a statement of proper use.
- ❖ Explore unknown factors. Look at research on how black vs. brown bears respond. Look at species reactions, differences in chemical carriers of can differences, habituated bears' reactions vs. food conditioned or more wary bears reactions.
- ❖ Note dangers of pepper spray possession when traveling.

E. Charges, bluff or otherwise:

- ❖ Bear safety messages should not use the word "bluff." All charges should be described as "charges." These are signals of stress. Your reaction matters. Your behavior may effect the outcome of the charge. Holding your ground is more likely to result in no contact by the bear.
- ❖ Reaction to stress signals should be consistent and should be appropriate to the level of stress shown by the bear.

F. Target Audience

- ❖ multi-media audience
- ❖ garbage message
- ❖ reach out to community leaders
- ❖ bear "groupies" have a considerable amounts of information already; instead of them, try to target community leaders (e.g. city council members, native leaders, other leaders.)
- ❖ bird feeder message
- ❖ un-reached hunters
- ❖ tourism operators who are using the back country: game guides, tour guides.

- ❖ Native Alaskans in rural areas
- ❖ Other Alaskans in rural areas
- ❖ kids

G. Aversive tools:

- ❖ Agency should not supply these tools directly.
- ❖ Encourage people to do things on their own with their own tools (starting with banging pots and pans and proceeding to more invasive tools as needed.)
- ❖ Agency should use discretion on training:
- ❖ Liability issues, especially on rubber bullets, become an issue.
- ❖ If individual purchases such tools, they should know that the liability is their own.
- ❖ Focus in on prevention and using simpler, less invasive tools so that the human's/bear's life is not at stake. Field personnel should be able to make exceptions in extreme situations.
- ❖ Alert public of availability of these items on the market.
- ❖ Electric fence is a tool for high-risk areas: garbage sites and dumps.

H. On-site release

- ❖ This is a good alternative to killing bears; it is the middle ground between translocation and killing them.
- ❖ Communicate the results of on-site releases to other members of AIBSEC.
- ❖ It is a good application in some cases.
- ❖ Consider including this in one's policy.

Handouts (copies available from session chair)	
Title	Author
Session 7 outline	John Neary
One Step at a Time: An Outreach Workbook	USFWS, Region 5

Appendix A: Workshop Schedule

Thursday, March 23

8:30	Introductions	Organizing Committee
9:00	<i>Session 1: Interpreting bear behavior</i> Predacious vs. defensive attacks <ul style="list-style-type: none"> Detecting levels of stress Proper human behavior in response to threatening bear Should the public be concerned with black vs. brown bear identification? 	Chair-DeBruyn Presenters-Aumiller
10:20	Break	
10:30	<i>Session 2: Dealing with bears in human habitat</i> <ul style="list-style-type: none"> Prevention of DLPs, maulings, property damage in rural v urban areas Cultural impacts cloud bear safety messages Dealing with police and public officials in urban settings 	Chair-Van Daele Presenters-Sinnott, Manley
12:00	Lunch Tables of equipment and references	(catered)
1:00	<i>Session 3: Beyond Prevention</i> <ul style="list-style-type: none"> Noisemakers and projectiles Pepper spray advice Dogs On-site release (aversive conditioning) List of resources Firearms vs. bear behavior training: How much is optimal? 	Chair-Shideler Presenters-Shideler, Smith, Manley
3:00	<i>Session 4: Range Session on Repellent Uses</i> <ul style="list-style-type: none"> Hands-on with a variety of techniques 	Chair-Shideler, Range-Bartley
5:00	Adjourn	
6:00	Dinner on your own	
7:00	Bear Safety Presentation/Critique	Bartley

Friday, March 24

8:30	<i>Session 5: Incident response and reporting</i> <ul style="list-style-type: none"> Existing databases Is a database needed or practical for bear encounters not resulting in human injury, but resulting in destruction of property and/or bear? What data need to be collected and why? How to determine the fate of the bears involved in mauling No action vs. lethal vs. translocation 	Chair-McDonald Presenters-Smith, Van Daele, Beier
10:20	Break	
10:30	<i>Session 6: Liability</i> <ul style="list-style-type: none"> What if someone gets mauled using your advice? Can incident documentation or bear safety information/warnings influence our liability exposure? Can our bear management actions expose us to liability? Other relevant cases 	Chairs-Galla, Mills Presenters-Kevin Saxby, Joe Darnell
11:30	Lunch Tables of equipment and references available for review	(catered)
12:30	<i>Session 7: Public Outreach</i> <ul style="list-style-type: none"> Sharing outreach models Review of Bear Facts, kid's stuff, videos Misinformation: how do we deal with it? 	Chair-John Neary Presenters-Bartley, Wagner
3:00	<i>Session 8: Follow-up</i> <ul style="list-style-type: none"> Recommendations and action plan What's next for AIBSEC? 	Chair-Matt
5:00	Adjourn	

Loussac Library, Wilda Marston Theater

7:00 Presentation by Tim Manley

Appendix B: Roster of workshop participants

	Name	Agency/ Company/ Title	Bear Education Responsibilities	Address	Phone	Fax	Email
1.	*Bartley, Bruce	ADF&G, Public Information	Public talks	333 Raspberry Rd. Anchorage, AK 99518-1599	267-2269	267-2433	bruce_bartley@fishgame.state.ak.us
2.	*DeBruyn, Terry	NPS, Biol. Res. Team reg. biologist		2525 Gambell St. Anchorage, AK 99503	257-2564	257-2448	terry_debruyn@nps.gov
3.	*Galla, Dee	USFS Wrangell RD, Anan Creek	Bear Viewing Area Mgt.	Box 51 Wrangell, AK 99929	874-7551	874-7595	dgalla/r10_stikine_wrangell@fs.fed.us
4.	*Matt, Colleen	ADF&G, Reg. Refuge Mgr.	Public talks	333 Raspberry Rd. Anchorage, AK 99516	267-2382	267-2433	colleen_matt@fishgame.state.ak.us
5.	*McDonald, Mike	ADF&G, Region Biologist	Public talks	333 Raspberry Rd. Anchorage, AK 99518-1599	267-2198	267-2433	mike_mcdonald@fishgame.state.ak.us
6.	*Mills, Sue	NPS, biological resources team	bear/human conflicts	2525 Gambell St. Anchorage, AK 99503	257-2573	257-2448	sue_mills@nps.gov
7.	*Neary, John	USFS Admiralty I Pack Cr. co-mgr	Bear Viewing Area mgt.	8461 Old Dairy Road Juneau, AK 99801	790-7481	586-8795	jneary/r10@fs.fed.us
8.	*Shideler, Dick	ADF&G, Habitat biologist	Industry Education	1300 College Rd Fairbanks, AK 99701-1599	459-7283	459-7289	dick_shideler@fishgame.state.ak.us
9.	*Van Daele, Larry	ADF&G, Area Biologist	Public talks	211 Mission Road Kodiak, AK 99615	486-1876	486-1869	larry_vandaele@fishgame.state.ak.us
10.	*Wilker, Greg	USFWS, Bear Biologist		1390 Buskin River Rd. Kodiak, AK 99615	487-2600	487-2144	greg_wilker@fws.gov
11.	Agnew, Mark	AK Public Safety, FW Prot. Officer	Enforcement/education	453 S. Valley Way Palmer, AK 99645	746-9140	269-5465	mark_agnew@dps.state.ak.us
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