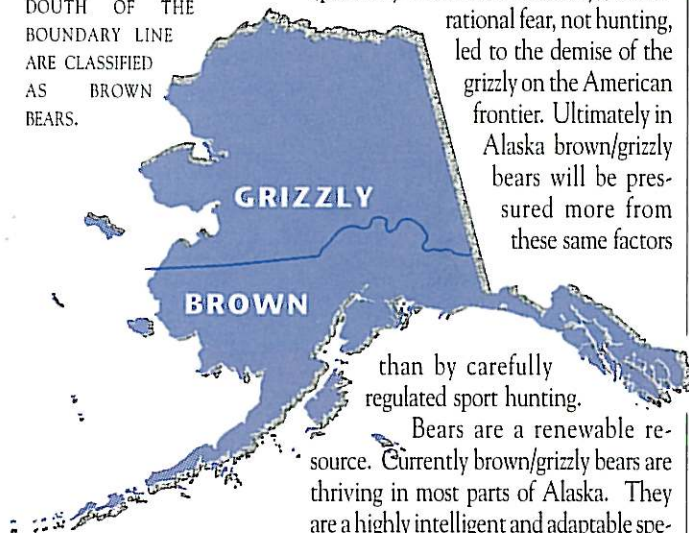


INNOVATIVE BIG GAME MANAGEMENT

Brown/Grizzly Bear: A Challenge for the Hunter and Wildlife Manager

BY DICK SELLERS
PHOTOS COURTESY OF GEORGE
A. BETTAS & ERWIN C.
NIELSEN OF NATIONAL
GEOGRAPHIC

THE BOONE AND CROCKETT CLUB HAS DRAWN THE BOUNDARY THROUGH ALASKA TO SEPARATE THE TWO CATEGORIES OF GRIZZLY BEAR. THE LINE FOLLOWS THE 62ND PARALLEL AND THEN FOLLOWS THE TOP OF THE ALASKA RANGE MOUNTAINS AND THEN PROCEEDS DOWN THE EASTERN BORDER OF THE STATE. BEARS LOCATED TO THE NORTH OF THIS LINE, ARE CLASSIFIED AS GRIZZLY BEARS AND ANY TO THE SOUTH OF THE BOUNDARY LINE ARE CLASSIFIED AS BROWN BEARS.



Often cited as the ultimate challenge in North American big game hunting, the brown/grizzly bear may also pose the biggest challenge for wildlife managers.

First a word to bear hunters. Many people, including some hunters, view bear hunting rather unsympathetically, if not with downright hostility. Here's a species that was eliminated from over 90 percent of its former range in the lower 48 states. It's the ultimate symbol of remaining wilderness, hunted merely for its trophy value rather than for its meat. But don't become defensive when asked rather pointedly why you want to kill one of these magnificent animals. You each will have your own justification, although it's often hard to explain your inner motivations. Just remember the following.

Conflicts with economic interests (primarily the livestock industry), and irrational fear, not hunting, led to the demise of the grizzly on the American frontier. Ultimately in Alaska brown/grizzly bears will be pressured more from these same factors

than by carefully regulated sport hunting. Bears are a renewable resource. Currently brown/grizzly bears are thriving in most parts of Alaska. They are a highly intelligent and adaptable species.

You, the hunter, typically hold your quarry in the highest esteem, generally are more knowledgeable about its



PHOTO COURTESY OF ERWIN C. NIELSEN FROM THE NATIONAL GEOGRAPHIC SPECIAL, ISLAND OF THE GIANT BEARS, WHICH IS AIRING ON PBS.

Unfortunately even the scientific community has not settled on one name or the other, so I will use the title *brown/grizzly* for all of them, including the Kodiak subspecies.

Biologists estimate that between 52,000 and 63,000 brown/grizzly bears remain in North America, with about two-thirds of them living in Alaska. Most of the rest are found in Canada, with just remnant populations, totaling about 1,000, left in the U.S. Rockies. Brown/grizzly bears are found throughout Alaska except on the islands south of Frederick Sound in south Alaska, the Aleutian Islands west of Unimak Island, and the islands of the Bering Sea. Populations have remained robust in most areas of the state despite increasing harvest and expanding human developments. A note of caution is warranted; few biologists believe that recent record harvests can continue to increase with out some impact on the population of bears.

Brown/grizzly bears are not an easy species to manage because they don't lend themselves to accurate trend surveys, and a recently developed census method is expensive. Bears have a very low reproductive rate, which means that an over harvest takes longer to correct in these species than it does for highly productive species like deer. Consequently, brown/grizzly bear hunting seasons take on a complexity that some hunters liken to the income tax regulations. Types of seasons vary from wide open to drawing permits and last anywhere from only two weeks per year to nine months. Basically, these diverse seasons reflect hunting pressure, means of access, hunter success and characteristics of the bear population.

CHALLENGES OF MANAGING BROWN BEARS

Over the past 10 years more time and money (including sizable contributions by other agencies) has gone into research on brown bears than on any other species in Alaska (on the management side much more money goes to moose and caribou). The need for so much research is based on the variability of the species, the difficulty in evaluating population status (bears are difficult

biology, and contribute much more to the conservation of the species and its habitat than do most of your detractors. If this description doesn't fit you, maybe you should do some serious soul-searching!

This little sermon is offered to emphasize that you, the bear hunters, and we, the wildlife managers, have a responsibility to cooperate so that Alaskan bear populations remain viable and we can continue to point to hunting as a legitimate and non-damaging use of this resource.

A BROWN OR A GRIZZLY?

There tends to be confusion over the terms *brown* and *grizzly*. There are only three species of bears present in North America - the polar bear, the black bear (which comes in several color phases just as Labrador retrievers come in different colors), and the brown/grizzly bear. The number of subspecies of brown/grizzly bears has been debated over the years, but modern genetic testing points to only two subspecies, the brown bear of the Kodiak Archipelago, and all other brown and grizzly bears on this continent. The continuing confusion between brown and grizzly bears is partially due to the way bears are registered within the Boone and Crockett record book, which has arbitrarily drawn a line to separate the larger coastal bears from generally smaller interior bears. This distinction between brown and grizzly bears is totally arbitrary.

to count), the susceptibility of bears to impacts from development projects, and on the prolonged recovery required if bad management decisions are made. When it comes to establishing harvest objectives, we managers tend to be conservative because the consequence of making an error with bears is potentially more damaging and harder to correct than for most other species.

Detecting that a population may be over harvested is not easy and may not be apparent until the population decline is fairly severe. Also, because bears have a much lower reproductive rate than other game species, recovery from over-drafts will be slow unless hunting opportunities are severely restricted. So, just how do we go about making our recommendations?

ANALYSIS OF HARVEST DATA

Brown bears killed in Alaska must be sealed; hides and skulls are tagged. The information we collect on the sex, age, and location of the bears harvested has traditionally been the main tool of the manager to gauge the status of the bear population within this area. First, we look at trends in numbers of bears harvested within management areas. Changes in hunting regulations or even a hunting story in a magazine can lead to shifts in hunting pressure. Some lightly hunted areas of the state might be able to absorb a bit more hunting pressure while other areas cannot take more harvest. Thus accurate kill locations reported by hunters is truly the basis of any successful management program.

Next we look at the sex and age composition of the harvest. The theory behind looking at harvest statistics as a reflection of the population status is this. Because hunters generally select large bears, bear behavior (such as females entering dens earlier in the fall and leaving dens later in the spring) and regulations that protect females and their cubs, male bears are more likely to be killed than females. In very lightly hunted populations, adult males predominate in the harvest. As hunting pressure on a population increases, old males are cropped off faster than they are replaced. Conse-

quently more females and young bears show up in the kill. If a manager sees a change in the pattern of the harvest such as an increasing percentage of females, a declining average in males, combined with higher total harvest, he or she is likely to conclude that hunting needs to be reduced. It sounds fairly simple, but it isn't!

Many factors affect the size and composition of the bear harvest. Here are two brief examples. The characteristics of the bear harvest vary considerably between spring and fall hunting seasons (adult males are more vulnerable in early spring and late fall than are females). Thus any change in the hunting season dates may affect the composition of the harvest somewhat independent of the composition of the living bear population. For instance, if a spring hunt is

the correction.

In another case, a stable bear population might suddenly begin to increase in size because of an expanded food supply, more favorable weather, etc. With higher cub production and/or survival, in a few years there would likely be more young bears showing up in the harvest. This change in age structure of the harvest could fool a manager into thinking the population is being over harvested, when in fact it is growing.

ESTIMATING ALLOWABLE HARVEST

In the ideal world, each manager would know exactly how many bears are in an area. He would know what the population, sex and age composition is, and what the reproductive and survival rates are. With these data he could

project a sustainable harvest rate that likely would be between 2-6 percent of the total population each year, depending on how low the natural mortality rate is and how successful females are at adding new bears to the population. A complete data package of this type is difficult to get even for a very small study area after years of expensive and de-

tailed research, much less for an entire Game Management Unit. Fortunately several studies in Alaska have produced useful data which we are putting to use in our management schemes.

ESTIMATING POPULATION SIZE

Actual population estimates are extremely difficult to make for most game animals, and brown bears certainly are more difficult than most. Often the best that can be hoped for is an index of abundance that will reflect changes in the



U.S. FISH AND WILDLIFE BIOLOGIST, JOHN SARVUS, RIGHT, AND HIS ASSISTANT, SEAL A BROWN BEAR SKULL IN A REMOTE HUNTING AREA NEAR COLD BAY, ALASKA.



LARGER BEARS ARE USUALLY FOUND NEAR COASTAL AREAS. THIS HUNTER EXAMINES BROWN BEAR TRACKS ALONG THE BERING SEA COAST.

population size and composition. Aerial counts of bears concentrated along salmon streams is one technique used in some parts of the state where the tree/brush cover is minimal. We are evaluating this technique to see if trends in bear abundance can be detected on the Alaska Peninsula. Past studies by the department have shown that even under the best circumstances we are able to see fewer than half the bears known to be present in a survey area. Although the results appear encouraging, this technique is best applied in areas where a dense bear population uses a stable fish run in open habitat where bears are easily seen.

With the advent of radio-collars, individual bears can be located regularly from airplanes and their home ranges plotted. If most of the bears within a study area were fitted with radio collars, at least a number of bears could be estimated. Moreover, bears often travel long distances to feed seasonably on concentrated food resources, such as a salmon stream, a rich intertidal sedge meadow, or a particularly good berry patch. Thus, deciding on where to put the boundary of a count area is crucial. A disadvantage of this technique is its high expense; also, it must be done over a prolonged time period.

Recently, an old technique originally used to estimate the number of fish in a lake has been modified for bears. This involves putting radio transmitters on a representative cross-section of the bear population and then intensively searching the area from small aircraft to see as many bears as possible. Each bear located is then checked to determine if it has a radio collar. Because the exact number of marked bears within the search area is verified each day by a radio tracking airplane, the total population can be

estimated from a mathematical formula that calculates the ratio of marked to unmarked bears. After several days of replicate searches, the independent estimates can be averaged to provide a statistically valid population census. For a census to be useful to managers, the re-

sults have to be extrapolated to a much larger area—such as an entire Game Management Sub-unit. A typical census area might be 300-500 square miles, whereas a management sub-unit is 10 to 20 times larger.

A QUESTION OF TROPHIES

Before discussing where these brown/grizzly bear hunting meccas are in Alaska, let's look at some other decisions that need to be considered in preparing for a brown/grizzly bear hunt. Is there a particular type of trophy desired. Such as a large coastal "brown bear" versus a beautifully pelted blond Interior "grizzly"? Is a spring or fall hunt preferable? What is the best way to select a guide-outfitter? In Alaska, nonresidents hunting for brown/grizzly bears must hunt with a registered guide or an Alaskan relative within the second degree of kinship. And remember that most prime bear hunting areas have a bag limit of one bear every four regulatory years.

WHEN TO HUNT

One of the first considerations is whether you want to hunt in the spring or fall. Among nonresident bear hunters, the success rate is roughly the same for either season, about 60-65 percent; but resident hunters report a lower success rate for fall hunts (5 percent) than for spring hunts (10 percent). This difference isn't as striking as it appears because many residents buy a bear tag just in case they run into a brown/grizzly bear while out hunting some other big game species. So basically, for the serious bear hunter, the chances of success aren't much different, but the characteristics of bears taken do vary slightly between seasons.

Spring seasons, especially early

portions of them, produce the highest percentage of adult males, which generally are the first bears out of dens. Several factors make males more vulnerable in the spring. Food is much less available so bears are active more hours per day and cover larger areas. In addition, by mid-May males are beginning to look for mates, again causing them to be more active than they are in the fall. Compared to October, day length and weather conditions are more favorable in spring. Spring hides are more variable, ranging from the very best in terms of hair length and thickness to some that may be badly rubbed. Fall hides are more uniform and it is rare to get one that is really poor. One significant advantage of a fall hunt is the possibility of combining it with other hunting opportunities.

WHERE TO HUNT

After deciding when you want to hunt, you need to choose which general region of the state you are interested in. About 50 percent of the annual harvest comes from just three coastal Game Management Units. Coastal areas generally produce larger bears and consequently attract the most hunting pressure. All three of these popular areas have special regulations; hunts in most of Unit 8 (Kodiak Archipelago) are conducted under a drawing permit; Unit 4 (Southeast) hunts now require a registration permit; and seasons in Unit 9 (the Alaska Peninsula) are staggered, with a fall hunt in odd numbered years (1991, 1993, etc.) and spring hunts in even years (1992, 1994, etc.).

MANAGEMENT OBJECTIVES

All of the available biological data must be merged with management objectives to finally arrive at a desired harvest level. If providing for top quality trophy hunting is a primary objective, the harvest must be kept below the maximum sustainable level so that more bears will reach older age classes.

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