By Ken Taylor and Mark McNey

BOOM OR BUST ?

ALASKA PENINSULA CARIBOU

Banking steeply, the helicopter swings smoothly behind a running herd of caribou. The gunner leans out the window and at precisely the right moment fires an immobilizer dart into the rump of a mature female.

"Got her!" he cries as the helicopter pulls away to circle high above the group. Apparent danger past, the caribou slow to a trot. Suspiciously they stop, test the air with their noses and begin to feed. The darted female lags behind as her band moves on. Location, time of darting and drug dosage are all recorded while we circle. The drug generally takes 10 to 20 minutes to work, and fewer complications occur if the animal is calm before she becomes completely immobilized.

Fifteen minutes pass before she loses the last of her muscle control, stumbles in a snow drift and stays down. We land, and in the space of a few moments a radio collar is fitted comfortably around her neck, measurements and samples are taken, the antidote to the immobilizing drug is administered and we are off again. The cow quickly regains her senses and is soon moving slowly towards the rest of her band.

We repeated this sequence 20 times in the Mulchatna herd and 25 times on the Alaska Peninsula--with some variations, of course. Not all animals that were drugged became completely immobilized, and even at a quarter speed they were generally faster than we were. A specialized gun designed to fire a large net was used quite successfully in these cases.

With the increasing demands placed on caribou and their habitat, new management programs are incorporating space-age technology to get more accurate information in less time and at less cost. Radio collars were used in the Mulchatna and Peninsula herds to help us get more accurate population estimates of these caribou. Basically, a population estimate (census) is made by flying through as much of the herd's range as the budget will allow and locating and photographing all concentrations of caribou found. This technique works particularly well just after the calving season when most of the animals in the herd group up in large aggregations (generally referred to as post-calving concentrations). Having a number of radio collars scattered among the herd makes these concentrations much easier to find and reduces the probability of missing any major portions of the herd.

The payoff has already begun. During the summer of 1981 radio-collared caribou led biologists to groups as large as 2,000 animals in remote valleys of the Aleutian range more than 50 miles from

Continued on next page

BARREN GROUND—*The Mulchatna and Alaska Peninsula caribou herds range over the hillsides and forest edges of the Bristol Bay region. Radio collaring and tracking have aided in getting accurate information about these animals.*

the main herd. Similar instances occurred in the Mulchatna herd where radio collars led us repeatedly to tightly packed groups of 1,000 or more caribou tucked away on hillsides of the Alaska Range where they would be easily missed on a random flight. As a result, estimates of total herd size have increased substantially in Bristol Bay, enabling the Department to recommend changes in hunting regulations that provide more opportunity for sportsmen and subsistence users.

To ensure a bright future for the Bristol Bay caribou, however, biologists need to know more than just the current population statistics. They must get the "big picture," combining a historical perspective with projected future demands. Caribou have roamed the barren lands and forest edges of Alaska for at least 150,000 years. The great herds move with the seasons and have locally disappeared and reappeared with changes in the climate and in the distribution of their food. The short growing season and constant winds that characterize the caribou's range inhibit the growth of plants. Of necessity, caribou are nomads, constantly on the move, gleaning the tundra for a ration of inch-high lichens or wind-battered sedges.

Although caribou may annually range over several thousand square miles, their movements are not random. Groups that are widely scattered during late summer and winter traditionally converge on a common calving ground. It is that traditional collection of animals that has led to our current concept of a herd. Presently there are 22 well-defined herds in Alaska with a total population of over 300,000 animals. The Alaska Peninsula and the Mulchatna herds each number approximately 20,000 caribou and are two of the larger herds in the state.

The history of these herds has probably been one of boom or bust, but for at least the last 200 years caribou have continuously occupied the Bristol Bay region. While the animals always were important to the natives as a source of food and clothing, caribou hides became a commercial resource in the 1800's. Domestic caribou, or reindeer, were herded by many Bristol Bay villagers early in the 20th century, but severe winters in the late 1930's caused drastic declines in both domestic and wild populations. Most remaining reindeer herds were abandoned and mixed with the wild caribou. Since then, however, favorable conditions have generally prevailed, herds have increased and present populations are at optimum levels, well able to sustain the current annual harvest of nearly 3,000 animals. But what about the future?

In terms of natural resources and recreational opportunities the Bristol Bay region is one of the most diverse areas of the State. The salmon runs are among the largest in the world, and most residents are either directly or indirectly dependant upon the commercial fishery for their livelihood. The numerous sport fishing lodges and registered hunting guides operating in the area attest to the excellent recreational opportunities, and demands on those resources are increasing. There is a subsistence priority to be met. There is also the potential for significant reserves of natural gas and oil under both the sea bed of Bristol Bay and the tundra of the mainland. Some people feel there is a need for a road system linking Bristol Bay to Anchorage, and several hydroelectric power sites are currently under consideration. It is difficult to predict what effects activities associated with these developments will have on the caribou herds. Direct effects of disturbances and increased hunting pressure notwithstanding, wild, free-ranging populations inevitably suffer as large tracts of their range are converted to roads, cities and agricultural lands.

Federal, state and private agencies are presently cooperating in the development of a long-range plan for the future of Bristol Bay. The Bristol Bay Cooperative Management Plan will consider all the demands, needs, and projected growth of the region. We hope it will guarantee a future that includes the great caribou herds of Bristol Bay. ▲

Ken Taylor is the area management biologist in Dillingham where he has responsibility for the Mulchatna caribou herd, the Walrus Islands State Refuge and furbearers in the Bristol Bay region. He also has worked in Anchorage and Talkeetna since joining the Department in 1974. He received his bachelor's degree in wildlife science from Colorado State University. Mark McNey is the assistant area management biologist in King Salmon working on the Alaska Peninsula's game species including caribou, moose, brown bear and waterfowl. He received his bachelor's and master's degrees from the University of Montana and has been with the Department for just over a year.

Alaska FISH & GAME

Alaska Department of Fish & Game

Summer, 1982