PIPELINES AND CARIBOU CROSSINGS – AGENCY PERSPECTIVE

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NOTE – THE FOLLOWING IS A SUMMARY OF MR. SHIDELER'S PRESENTATION. A COMPLETE MANUSCRIPT OF HIS TALK HAS NOT YET BEEN MADE AVAILABLE.

I had originally planned on concluding my talk by presenting the Department of Fish and Game Management Responsibility, but Mike did such a good summary that I guess I should start with it. I would summarize our philosophy regarding caribou management on the North Slope as this:

Because the Department is ultimately accountable to the public for the welfare of the Central Arctic Herd, we must scrutinize any influences on its sustainable viability, and make appropriate recommendations to land management agencies and to those making political decisions. Those recommendations are of necessity sometimes based on fuzzy results or trends rather than absolute evidence. The challenge is to ensure that the agencies, industry, and the public use the best available evidence to ensure that our collective decisions keep the welfare of the herd in mind.

The point I want to make from our perspective is that when it is all said and done we ***all*** have a responsibility in terms of what happens caribou, although the Department of Fish and Game is the actual management authority. When things happen with any population of animals, whether it is caribou or another species, for which we have management authority, we're going to be concerned about it, and we are going to scrutinize any kind of major change in the environment of that population. Certainly siting an oilfield into the area occupied by the Central Arctic Herd of caribou comes under that standard.

Regardless of the shared responsibility, I should point out that whenever something does go bad with respect to one of these species, we are ultimately the management authority responsible. And we are going to be the ones who are directly accountable to the public and who are going to have to make management recommendations. That doesn't mean we don't all share the responsibility - we're just the ones left holding the bag when problems arise. By necessity, we are going to be a little more conservative toward or protective of the animals than maybe others might. That doesn't indicate whether one side is right or wrong, but that is kind of the position we feel we must take.

I'd like to start out discussing the issue of caribou calving. One of the things we feel we really need is thorough predevelopment studies - but only recently have we really good before and after data. But for caribou calving, the bottom line is that response of the caribou to the roads and facilities really does complicate what our mitigation options are for future oil fields. If they are so very reactive, it is essentially unrealistic to expect that an oil field the size of Kuparuk or Prudhoe would shut down all traffic during calving, and in fact this might not be effective anyway. So we have to look at other options.

Mike pointed out that we have had a shift in proportional caribou habitat use. There has always has been some calving occurring in the hills south of Kuparuk, up through an area known as the Itkillik Hills. I can remember doing calving surveys with Ray Cameron in the mid-80s during heavy snow years on the coast, and we had a little more calving down in the southern parts of the field, south of Kuparuk. So some of the observed shift is probably related to snow conditions down on the coast.

We do not feel that the caribou can't physically get to the calving area. There is an impediment to ewes crossing the pipeline and roads, but it really has more to do with their behavioral response. On the east side of the Sag River where there is not yet any oil development other than the Bedami site, it can be used as a semi-control of what has been happening on the west side of the River where we have not seen a shift in calving of the magnitude we have seen on the east side. We have to remember that some caribou herds, like the Beverly Herd for example, will go through major shifts in calving area almost annually. On the other hand, herds like the Western Arctic Herd hasn't significantly changed its calving area in recent years, although its population has grown from 65,000 to almost a half a million animals in the last 25 to 30 years. The Teshekpuk Herd hasn't changed much either. From a biologist's standpoint, trying to integrate all of this conflicting information is difficult. The bottom line, and Mike as already alluded to this, is that we may never know why some of these trends occur.

So the real question is "what does it mean"? or "so what", as Mike put it. A lot of information is based more on modeling than on real data, and we are dealing more with inference than fact, but some of the modeling suggests that forage availability might be an important factor. The nutritional value of foliage might be better in Kuparuk, and the caribou are being selective in terms of their feeding. But modeling also suggests that it may not make any difference in what happens with the herd until there is a really severe environmental stress like a dramatic change in the weather, we really don't know.

Increased predation has probably been more hypothesized as a factor for the Porcupine Herd area, as there is evidence of their shifting their calving area. Certainly, grizzly bear densities are a bit higher in the Itkillik Hills area than along the coast, and we have collared bears in the area. Data from these collared bears indicate that the home regions of these bears are often overlapping both areas. However, what we do see as we progress southward farther is that grizzly bear density and wolf density both increase, with the highest density of grizzly bears and wolves in the foothills area. Wolves up until now have probably not been a factor in this herd, as trapping from the villages up there does a pretty good job of keeping the wolves down. We've seen quite a few wolves just in working with the grizzly bear population again in the hills, and there have even been a few reported down along the coast, but most of the wolf activity is found in the calving area during the winter. So I don't think really that predation at this point is a major effect. As for golden eagles, I think that there are more than we used to see, both along the coast and in the hills. So, I'm not sure what we can conclude from all of this in terms of predation on calving, but we feel that we really need to keep track of things, and there may be a negative aspect to that displacement. We'll have to see if we have a change in weather patterns over the next ten years of so, maybe that will help answer some of the questions of population fluctuations.

I also want to mention summer mosquito season, and I'll make the distinction between mosquito and fly season even though they overlap for part of the summer. I think that most people would agree that access to that coastal area for the CAH is really critical.

They don't have a lot of mountains, and they therefore don't have the alternatives in habitats that the other herds have. It is therefore really important that they able to get to the coast. When the mosquitoes are bad down to the south, caribou move northward, up into the continuum of air temperature and wind where mosquito harassment abates and they can start feeding again. Sometimes they move way up to the coast, but sometimes they don't go that far. However, most of the movements observed early in the development days were strongly north-south along the major tributaries. More recently, their movements have become more of an "end run" around the densely developed areas.

Well, what does this mean? The movements themselves don't mean that much to caribou because they are so efficient at walking that the effect on their energetics are not significant. Really the only change is a minor loss of foraging time, and there is a question as to whether that is critical or not for these long movements. The real key might be to make sure that they get back to the south to feed as soon as they can. And, as Mike pointed out, caribou also respond strongly to traffic, probably just as a normal response of a prey animal to their predators, so any time you have traffic in conjunction with any kind of obstruction, that is going to create problems.

I'll speak a little about the separation of roads and pipelines. I think that Mike's mitigation list is a pretty good one, and we agree that all of those types of things work. As Mike pointed out, there are certain situations where ramps may work better than just pipe separator or a high pipe by itself, and those include some of the intersections where the caribou essentially get themselves into a corner. So in terms of designing pipelines or oil fields, if you can minimize those kinds of things you are better off. Ramps are probably of some use in these situations, but there is still a residual question because you don't have success in getting caribou in large groups under mosquito harassment to cross than we do with some of the smaller herds.

Unlike the case of the calving, we do feel that there has been habituation with caribou. The Central Arctic caribou over the course of oilfield development have lessened their reactivity to structures during mosquito season. I wouldn't say that they have habituated as far as calving is concerned, but they are definitely habituated during mosquito season.

During the fly season you get a lot of caribou movement onto the pads. This also occurs during certain parts of the mosquito season, but the caribou are definitely attracted to the taller roads for insect relief. What are the long-term consequences or benefits of this?

In general, I think we can conclude that the CAH has habituated to the activity in the Kuparuk area in general, and that the mitigation measures we have applied there can be used in designing future oil fields. However, we also conclude that there has been an effect of human activity in Kuparuk in terms of caribou calving. This is still being investigated. We hypothesize that if any substantial effect occurs, it might not show up until the population is really stressed, probably mostly by weather or some other factors. We have to be careful how we extrapolate from what we've done in the CAH to some of the other herds where the conditions may not be the same both in terms of human development and in terms of their habitat.

Thank you.