

Delineating a Protective Buffer Zone for Eastern Denali Wolves

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Introduction

Full protection from hunting and trapping has long been advocated for the two major “road corridor” groups of wolves in Denali National Park and Preserve. The 63-year-old or older Toklat (East Fork) family lineage and at least four successive groups occupying the adjacent eastern area – Savage, Headquarters, Sanctuary, and Margaret - have provided more viewing opportunities and scientific insight than wolves anywhere else in the world. Yet they are not accorded full protection from hunting and trapping, and losses continue with serious harm to their world-class scientific and viewing values and despite legitimate ethical concerns (Haber 1996, 2002a). Three successive eastern groups - Savage, Headquarters, and Sanctuary – have been terminated over the past 20 years (in 1983, 1995, and 2001) due largely to hunting and trapping, and Toklat has been hit hard at least several times.

In November 1992, the Alaska Board of Game created a no-wolf-hunting/trapping buffer zone of approximately 600 square miles along the northeast and east park boundaries of Denali National Park, to better protect the eastern Denali wolves. However, the Board rescinded this buffer two months later after Gov. Walter Hickel suspended several proposed wolf control programs the Board had wanted for other areas. In November 2000, the Board again agreed that a buffer

was justified but designated only 29 square miles along the northeast park boundary for this purpose. In May 2001 it expanded this to about 90 square miles.

In this report, I consider why the present Board of Game should restore a buffer virtually identical to the one the Board created in 1992 (widened somewhat on its northern end, narrowed on its southern end). The proposed buffer, shown in Figure 1, should eventually also include about 300 square miles of the 1980 national park addition, but this will require separate federal action.

As of this writing (early October 2002), the new eastern group – Margaret – consists of four adult wolves and the six pups they produced in May 2002. I will not know Toklat's status for certain until completing intensive radio tracking surveys in late October. My current observations indicate Toklat's five 2002 pups probably died, due to unknown natural causes, and that there are 4-5 adults at present.

Wolf movements

To understand why a buffer is needed and how it should be delineated, it is necessary to distinguish among three types of movements: (a) the more-or-less routine, recurring movements that define the "territory" of each group, (b) the unpredictable *extraterritorial forays* by each group well outside these areas, and (c) dispersals, during which certain individuals – most commonly 2-3-year-olds – leave a group (depending on its size and other variables) and do not return, usually because they form/join a new group or die in a distant area.

The third type of movement, (c), is not relevant to the buffer objective; dispersers are "lost" from the original groups with or without a buffer. The two others, (a) and (b), are relevant. Figures 2-6 show the winter radio-tracking locations that I recorded for Toklat, Sanctuary, and Margaret involving these two types of movements from 1995-2002. Table 1 summarizes similar data that I recorded for Savage (a Sanctuary and Margaret predecessor) and Toklat during the same two kinds of movements from 1969-1974. In Figures 2-6, each location represents all radio-collared wolves that were present - e.g., two radio-collared wolves of the same group tracked to the same location at the same time are represented by one dot, not two. Two or more locations are plotted together only if I found the wolves there on separate dates, successive or otherwise. In some cases I tracked the wolves represented by these locations over extended routes for up to 7-10 days; this information is not shown in Figures 2-6. I emphasize that all of the outlying locations shown in Figures 2-6 represent forays from which the wolves returned, usually within a few days to a week; no dispersals are included.

The Table 1 data (Table 37 of Haber 1977) are derived from much longer, continuous sampling intervals, during which I followed and observed each group daily for up to three weeks at

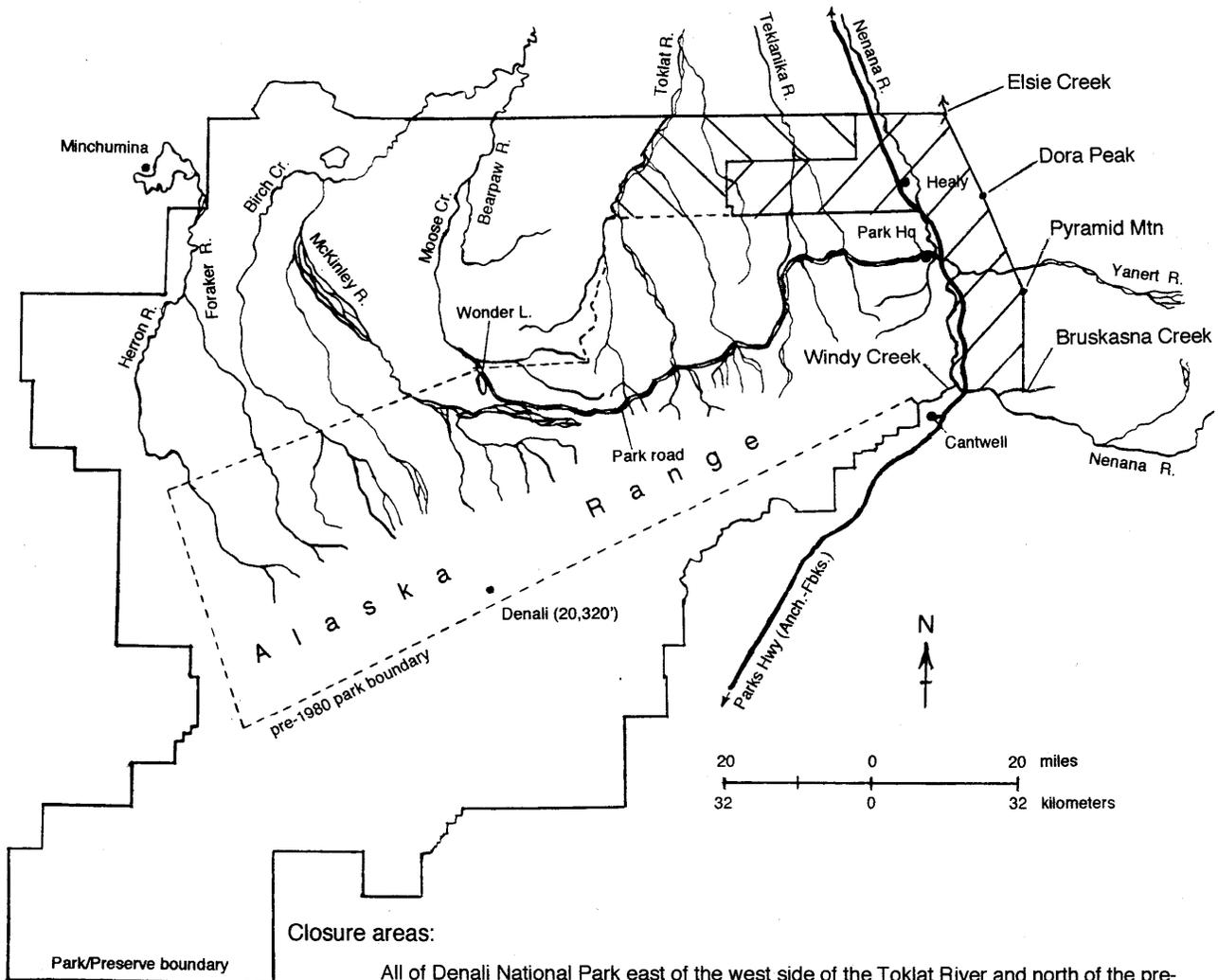


Figure 1. Proposed Denali no-wolf-hunting/trapping buffer zone. Cross-hatching indicates areas that would be closed to wolf hunting and trapping: right = areas outside park lands, left = inside.

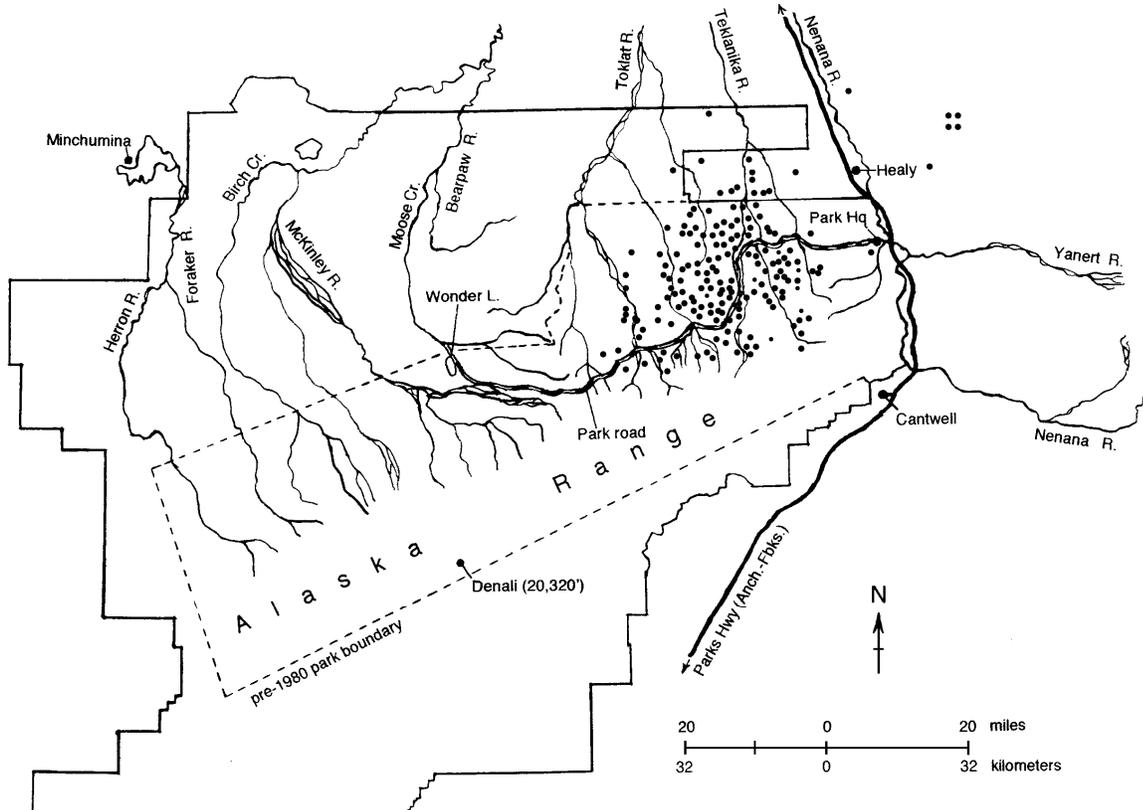


Figure 2. Toklat winter locations, October 1995-April 2001 (171).

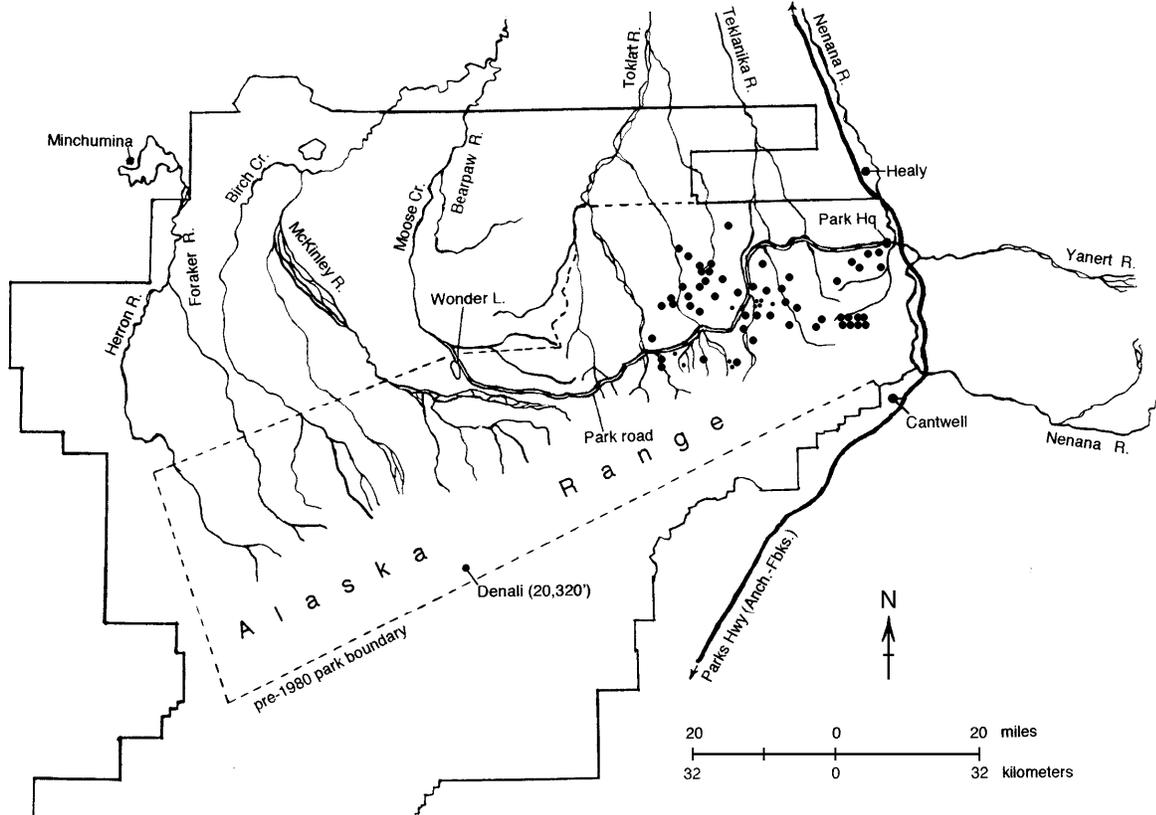


Figure 3. Toklat locations, May 2001-April 2002. Large dots=Oct-April (53), small=May-Sept (10).

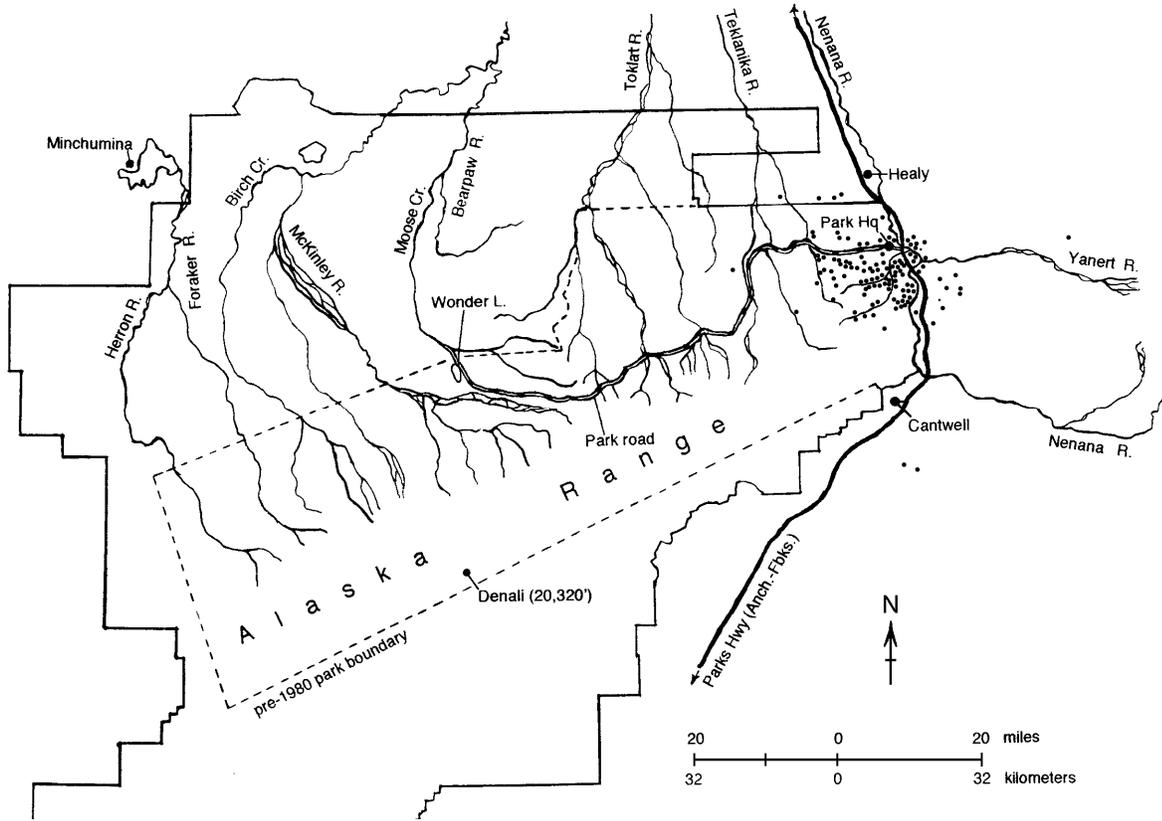


Figure 4. Sanctuary winter locations, October 1995-April 2001 (119).

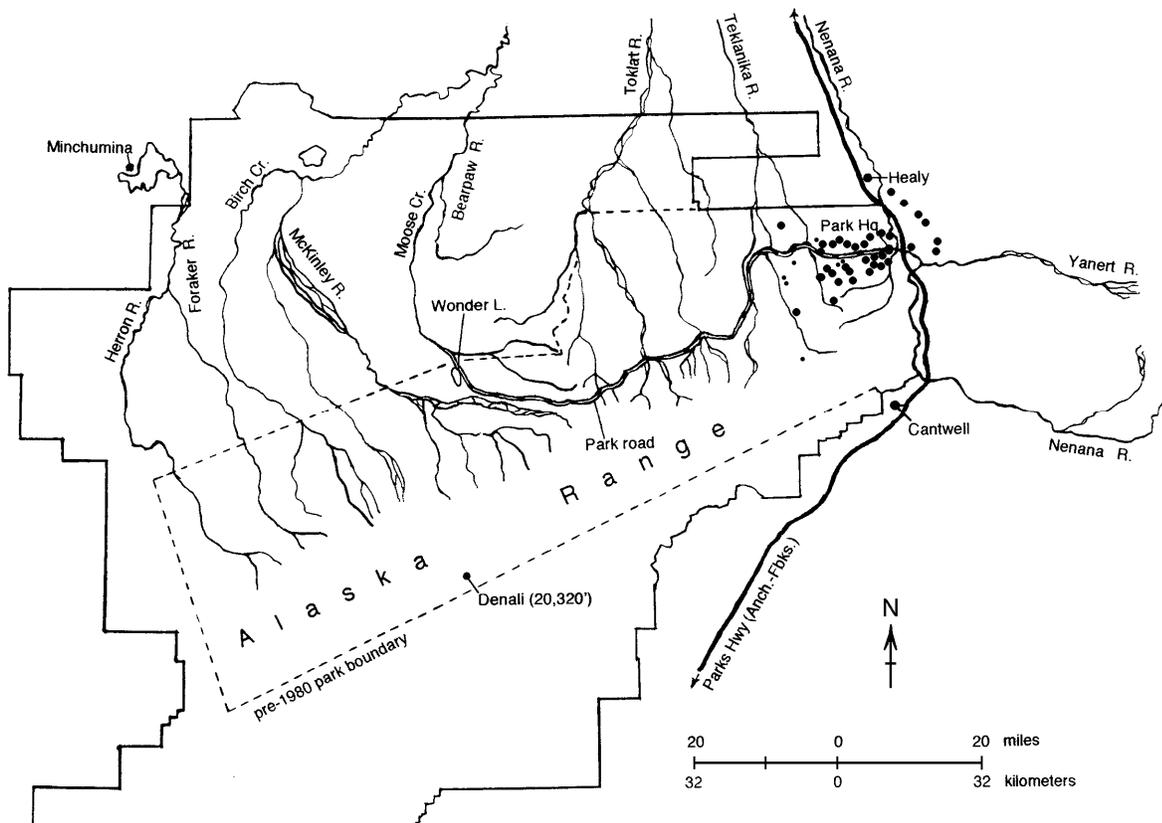


Figure 5. Margaret locations, May 2001-April 2002. Large dots=Oct-April (34), small=May-Sept (7).

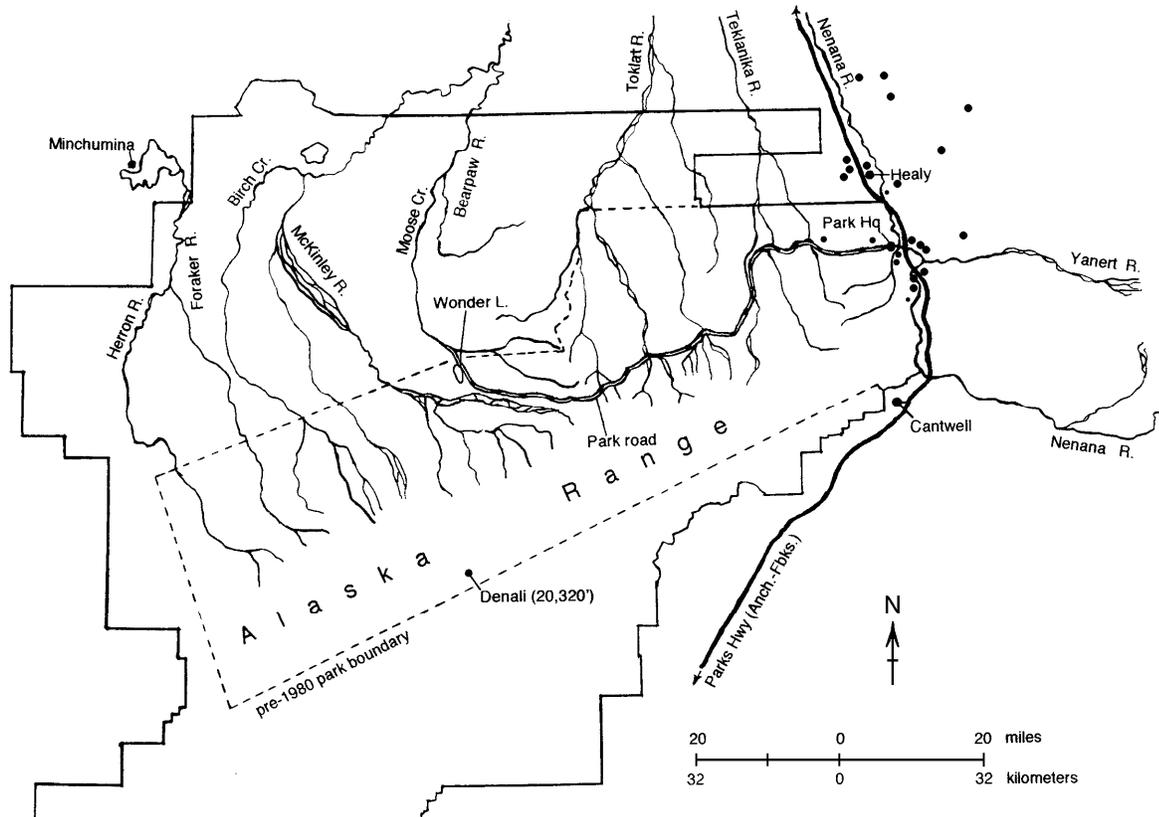


Figure 6. Sanctuary survivor locations, May 2001-March 2002. Large dots=October-March (17), small=May-September (6).

Table 1. Savage and Toklat winter travel mileages, 1969-1974 (Table 37 of Haber 1977).

Winter	<u>Savage – miles traveled</u>				<u>Toklat – miles traveled</u>			
	Inside territory	Outside	Total	Miles per day	Inside territory	Outside	Total	Miles per day
1969-70	269.3	0	269.3	17.3	210.7	48.3	259.0	25.4
1970-71	452.2	16.6	468.8	7.2	169.1	7.9	177.0	13.2
1971-72	288.3	128.7	417.0	10.8	68.1	9.5	77.6	7.9
1972-73	294.6	1.2	295.8	10.3	316.4	21.8	338.2	22.3
1973-74	254.2	6.3	260.5	12.5	102.6	0	102.6	20.2

a time via aerial snow tracking, the method used by researchers and aerial wolf hunters at that time (radio tracking was not yet available).

I have not included most of the summer data from either period of research, because of the wolves' much different routines at that time of the year. During summer, wolves base their activities at dens and rendezvous sites, whereas during winter they range more-or-less continuously as a single group or in varying subunits without any fixed bases. Combining summer and winter data disproportionately weights the overall sample within central areas (where most of the dens and rendezvous sites are located) and thus produces a misleading portrayal of the relationship between central and outlying movements during the winter, when most of the problems occur. There is some travel outside the park boundaries during summer, but this is generally negligible and much less than during winter.

Although the Figures 2-6 vs. Table 1 data are not strictly comparable, both samples illustrate an important aspect of behavior that is critical toward designating buffer zone boundaries: A relatively small but significant and widely-varying portion of the wolves' winter travel, excluding dispersals, is outside their established territories. During these extraterritorial forays, which range from a few miles to 40-50 miles or more and last from 1-2 days to a week or two, an entire family group or a temporary subunit hunts, explores, and/or aggressively pursues wolves from other groups (Haber 1977; Mech et al 1998). Table 1 indicates that from 1969-1974 - a five-winter sample covering a wide range of snow conditions - 9% of all travel (in miles) observed for *both* Toklat and Savage was outside their established territories but with wide variation in the winter-to-winter percentages: 0-19% for Toklat and 0-31% for Savage. Figures 2-4 indicate that from 1995-2002, 13-15% and 13% of my winter radiolocations for Toklat (n=224) and Sanctuary (n=119), respectively, were outside their established territories. The outside-location winter-to-winter variation was 0-32% for Toklat and 7-45% for Sanctuary. Sanctuary's successor, Margaret, recolonized approximately the northern half of the Sanctuary vacancy as of its first winter there (Figure 5). About 18% of its winter radiolocations (n=34) were outside the established (Sanctuary) territory. A female Sanctuary pup survived on her own for 12 months after the other Sanctuary wolves were gone, obviously without much knowledge of the established territory. 65% of my winter radiolocations for her during this period (Figure 6; n=17) were outside the established Sanctuary territory, although she ultimately returned to its eastern area and was trapped there in March 2002.

Figures 2-6 provide an indication of the importance of buffer areas to the two eastern groups relative to the total area that each uses. Buffer usage consists of routine, fairly regular movements within each of the two ("core") territories where these extend somewhat outside the protected park areas *and* sporadic extraterritorial forays (above) further into and through the buffer.

Combining the Figures 2-6 winter radiolocations from both kinds of movements produces overall “buffer-use indices” of 8-9% for Toklat (n=224), 20% for Sanctuary-Margaret (n=153) excluding the Sanctuary pup’s locations, and 27% for Sanctuary-Margaret (n=170) including the pup locations.

These indices could change substantially over the next year or two, given that so far Margaret has recolonized only the northern half of the Sanctuary vacancy and much of the rest still seems open to dispute. Toklat’s increased eastward probes in winter 2001-02 (Figs. 3 vs. 2) suggest that it may be in the running for a portion of the Sanctuary vacancy. On several of these forays Toklat wolves were within an easy 1-2 hour jaunt of crossing central and southern segments of the east park boundary, into areas of high hunting and trapping danger where at least two successive eastern groups (Headquarters and Sanctuary) were eliminated. This serves as a reminder as to how easily Toklat can get to these dangerous east boundary areas and how closely its safety from hunting and trapping is tied to what happens to the eastern group. Note from Figure 2 the Toklat radiolocations well to the north and east of Healy - in the Ferry, Jumbo Dome, and Usibelli coal mine areas, illustrating that its extraterritorial forays not only can but *do* take it into and through seemingly distant areas of the proposed buffer. Data from earlier years and decades on Toklat, Savage, Headquarters, and other Denali groups show much the same (Haber 1977 and unpubl.; Mech et al 1998), including forays into and beyond southern sections of the proposed buffer.

Hunting-trapping risk and buffer protection

It does not follow that drawing a protective buffer around *most* of the Toklat and Sanctuary-Margaret radiolocations shown in Figures 2-6 will eliminate *most* of the hunting-trapping risk for these wolves. The level of risk is not determined only by where the wolves go. It is determined by where they go *with respect to* hunting-trapping access. There are fewer outlying locations, but most of these represent known extraterritorial forays into northeast and eastern areas where the risk increases dramatically because of much higher human activity and easier hunting-trapping access.

The buffer area shown in Figure 1 includes Healy and extends southward almost to Cantwell. Between these two communities and west of Healy there are major residential subdivisions, commercial developments, and numerous individual residences. All of this is tied together along the east park boundary by the Parks Highway and Alaska Railroad, and west of Healy by the Stampede Trail/Road. Snowmachine and ATV access is enhanced by the Anchorage-Fairbanks Electrical Intertie right-of-way, major trails up the Yanert valley, secondary roads and trails in the Dry Creek-Healy-Usibelli-Ferry areas, other roads and trails, the gravel bars of numerous rivers and creeks, and large expanses of open tundra in the northeast boundary area, i.e., the so-called Wolf Townships. The Stampede Trail/Wolf Townships, Yanert valley, and Cantwell areas have become

major snowmachining and dog-mushing destinations, complete with accommodations and weekly snow-condition reports in the Fairbanks Daily News-Miner.

Extraterritorial forays can take Toklat and Margaret unpredictably in almost any direction from their core territories. However, when they cross the northeast and east park boundaries - which becomes more likely because of the lure of traditional caribou wintering activity, the high human activity and easy hunting-trapping access gives special urgency to protecting them. It is relatively easy to identify from Figures 2-5 where the two core territories extend across the park boundaries but impossible to know where, beyond these cores, Toklat and Margaret will go on their next extraterritorial forays. Toklat's next trip outside its established territory might be five miles to the north for two days, or it might be 30 miles to the northeast for a week or two (as in 1999, when all six of the Toklat wolves went northeast to Jumbo Dome [northeast of Healy], then southward through the Usibelli area and to Montana Creek before re-entering the park near the main Parks Highway entrance). Margaret's next foray outside its territory might be 5-10 miles northward to the Healy area (as in March 2002) or 25 miles eastward up the Yanert valley.

The only way to reasonably ensure protection in the face of this unpredictability is to incorporate all of the developed and easily accessible northeast and eastern areas within the buffer, in a way that permits relatively easy field identification of the boundaries. Hence the buffer proposed in Figure 1, which the Board of Game first designated for these reasons (in nearly the same form) in 1992.

There will be continued risk for Toklat and Margaret when they venture north and east of the proposed buffer. However, the buffer is delineated so that it includes the bands of heavy development and easy access along and extending from the Parks Highway and Stampede corridors. The wolves will be legally protected while passing through these areas, and when they exit the north or east sides of the buffer the human activity and hunting-trapping access will have decreased just as dramatically as it increased when they entered on the opposite sides.

Mobile protection

The objective is to protect the Toklat and Margaret wolves from hunting and trapping. This can be done primarily with the Figure 1 no-wolf-hunting/trapping buffer. Nevertheless there should be additional flexibility when the buffer is not enough and there is an opportunity to do more. The Board should give the Commissioner of Fish and Game authority to take immediate emergency action to protect Toklat and Margaret (or any successor group) when they are on *any* unprotected state or private lands.

Toklat and Margaret are monitored regularly via aerial radio tracking. It will often be known when they are beyond protected areas. It should often be possible to watch them closely when this happens (as I am already doing). If they are radio tracked to an unprotected area where there is current snowmachine or aerial-assisted trapping activity, the Commissioner should have the authority to issue an immediate emergency order protecting them from shooting and new ground or aerial trapping. If any are caught in previously set traps or snares, the Commissioner should have the authority to immediately release them and provide whatever on-scene veterinary assistance is needed to help ensure recovery from trap or snare injuries. There could be a provision to pay the trapper above market value for wolves thus released, but the key would be fast action and hence authority for the Commissioner to act before the usually difficult process of identifying and contacting the trapper.

These will be rare occurrences. It will be possible to confirm the identity of the wolves and determine that they are not simply dispersing. Hence this kind of mobile protection is unlikely to be “abused” or result in a serious burden for anyone.

Pitfalls and misconceptions

It is often assumed that separate buffers can be considered for Toklat vs. Margaret – one buffer along the northeast park boundary for Toklat and another along the east park boundary for Margaret. This is a serious mistake. Per above, the unpredictable extraterritorial forays of each group can extend in both directions. In addition, although Margaret’s recent territorial (vs *extraterritorial*) movements haven’t extended into the northeast area yet, they likely will as recolonization of the Sanctuary vacancy continues. Both the Sanctuary (Fig. 4) and Savage (Haber 1977) territories extended into this area as well as outside the east park boundary. Indeed, Margaret’s original territory – for about a year and a half prior to the Sanctuary vacancy – was “wedged” between the Toklat and Sanctuary territories and extended further to the north. Thus, whether the concern is for Toklat, Margaret, or both groups, a buffer including both areas (northeast and east) is needed for effective protection against hunting and trapping.

As also emphasized earlier, it is not possible to delineate an effective buffer based on the *core* radiolocations, because of the disproportionately much higher hunting-trapping risk associated with the outlying locations, however fewer in number they are. This was the flawed reasoning behind the delineation of a 90-square-mile northeast boundary “Toklat buffer” in 2001. The 2001 buffer has also enabled vindictive trappers to focus their revenge along a north-south line (lower Savage River – the east side of the 2001 buffer) right through the middle of a traditional caribou wintering area, where Toklat (and other groups) have hunted in past winters. I monitored a trapline

along lower Savage River in winter 2001-02 but there was unusually low caribou activity. This and Toklat's eastward probes into the Sanctuary vacancy were among the lucky circumstances that forestalled Toklat trapping losses in the lower Savage area for at least one winter.

The Board declined to add any east boundary areas to the buffer in 2001 largely because it felt this would result in heavy habituation of the eastern Denali wolves and problems for east boundary residents. However, most of the contact that these wolves have with people takes place well *inside* the park, such that any additional "habituation" outside is likely to be of secondary importance. More to the point, the bold behavior of Denali wolves around people is typical of what is "natural" and "wild" for this species, probably results much less from habituation than is generally assumed, and has characterized these wolves for at least four decades without evolving into dangerous aggression (Haber 2002b).

An argument often heard in opposition to a Denali buffer is that wolf family groups disappear regularly due to natural causes, and that these mortalities essentially "swamp out" and render insignificant the effects of human-caused mortality. I challenged this argument in detail in Haber (1996, 1998, 1999, 2002a). But perhaps the most obvious counter to it is Toklat's long history, Savage's 17+ years, and the well-documented role of hunting and trapping in the succession of eastern turnovers. In other words, absent hunting and trapping, persistence would more likely be the rule than the exception in eastern Denali. Wolf family lineages ("packs") are the fundamental biological units of a wolf population. There are good scientific, esthetic, ethical, and viewing reasons why, at least in eastern Denali, these should be allowed to survive for however long – years, decades, or longer - natural circumstances alone may dictate in each case.

Another frequent argument is that the buffer is a back-door attempt to expand the park. Park entrance areas inherently attract people, development, and easy access. This usually creates sharp lines of demarcation, with natural conditions prevailing on the inside and development and access just outside. Resident wolves and other wildlife will continue using natural habitats close to the park boundary. Thus it is inevitable that their forays, migrations, etc will take them into areas of human activity and easy hunting-trapping access. The purpose of the proposed buffer is nothing more than to neutralize the negative impacts of this entrance-area activity and access on two especially vulnerable and valued park wildlife groups. The buffer is a response to a problem generated largely by human activity and access, not a back-door attempt to expand the park. It is a logical way to counter resulting hunting-trapping impacts and help to preserve what attracted most of the entrance-area human activity in the first place.

Opponents often imply that there is local subsistence dependency on wolf hunting and trapping in the proposed buffer area. To the contrary, most if not all of the wolf killing within this

area is opportunistic and/or recreational. It is done primarily by a handful of local residents from households with one or more wage earners – not uncommonly earning more than \$50,000 – and by weekend hunters/snowmachiners from Fairbanks and Anchorage. I am a resident of the proposed buffer and know most of the locals who trap or shoot wolves well enough to debunk the notion that any of them will suffer a significant lifestyle or income change if they cannot kill wolves in this area.

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