

## MONTANA FISH, WILDLIFE & PARKS

### OFFICE MEMORANDUM

**TO: Pat Flowers**  
**FROM: Tom Lemke**

**DATE: 2/14/06**

**SUBJECT: Bison Habitat Evaluation East of the Yellowstone River from Dome Mountain to YNP**

The following is a description of current and potential bison distribution and habitat use in the Gardiner Basin east of the Yellowstone River between Dome Mountain and the YNP boundary. This information and attached map are based on ground and aerial observations of bison made in this area since 1989. It has been common for bison to move as far north as Little Trail Creek in most years before being hazed back to the south, because of proximity to livestock or the potential for property damage. In the winter of 1988/89 a small number of bison moved much farther north with a few animals making it past Slip and Slide Creek into Dailey Basin, north of Dome Mountain (see below).

This memo and map augment or add to bison habitat information provided for the west side of the Yellowstone River in the FWP report entitled "Wildlife Habitat and Wildlife Use On and Near the Royal Teton Ranch" July 7, 1997. Comparisons of bison numbers, movement patterns, origin, and habitat use on the east side versus the west side are also provided.

**Preferred Habitat:** Preferred bison habitat on the east side of the Yellowstone is determined largely by topography, elevation, and vegetation. Bison tend to use relatively low elevation habitat, typically using flat areas or rolling foothills dominated by sagebrush grassland vegetation. When available they will also use irrigated hay meadows, livestock pastures, and wet riparian sedge/grass areas. Bison habitat east of the river ranges from approximately 5,100' to 7,200' in elevation, with most of the heavily use areas occurring below 6,400' (see map). Bison typically avoid using steep rocky terrain or densely timbered habitat for any length of time. They can of course pass through these areas, but are constantly looking for open paths of least resistance in moving from one preferred area to the next. Bison have no problems traveling along narrow corridors to avoid steep, rugged or timbered terrain. Local examples of this include use of Yellowstone River Trail through the Black Canyon to Bear Creek, several narrow, steep game trails that cross Bear Creek Canyon, and their use of roads ranging from driveways, to primitive gravel roads, to U.S. Hwy 89.

There are certain areas of heavily used preferred habitat south of Little Trail Creek which accommodate small numbers of bison in most years for several weeks or months without the need to move farther north (see map). There may be similar small winter range areas on public land in Cedar Creek and Slip and Slide Creek (see map) that could accommodate small numbers of bison for a period of time, if they were "naturally

discovered” by bison (see map). Unfortunately, based on the behavior and biology of the species, there is relatively little high quality winter range for bison on public land east of the Yellowstone north of Little Trail Creek.

**Movement Patterns:** The general movement patterns of bison east of the Yellowstone are marked on the map (see arrows). For the area north of Little Trail Creek the arrows represent expected or potential movement patterns based on the experiences of 1988/89 and the location of potential side drainage winter habitat. In areas that bison have previously occupied, they are creatures of habit, using the same general routes to return as a social unit to preferred locations. However, when exploring new territory without a known destination, bison travel routes may be determined largely by terrain or topography. Without a relatively easy pathway, bison may easily “miss finding” suitable adjacent winter range areas such as those in Cedar and Slip and Slide Creek drainages. In both cases there are existing roads that may help lead bison into these areas.

The natural travel route for bison on both sides of the Yellowstone leads to Yankee Jim Canyon. Once there, bison can easily and quickly traverse the narrow canyon using the county road and the abandoned railroad right-of-way on the west side and Hwy 89 on the east side to enter Paradise Valley. When bison leave Yankee Jim Canyon they enter a huge area of biologically suitable bison winter range. However, in reality, for disease and private landownership reasons among others, wild bison are not currently allowed in this area.

**Bison Numbers, Origin, and Extent of Northward Movement:** The number of bison using the east side of the Yellowstone in the winter depends on a complex combination of total population size, forage conditions, winter severity, and management actions/efforts of federal and state agencies. In recent years 50-150 bison have occurred outside YNP east of the Yellowstone. They are predominately bulls, however, in the last several years small cow/calf groups are also using the area. In recent years we have observed newborn bison calves in late April/early May in the Eagle/Bear Creek area prior to their movement back into the Park. Occasionally an old bull or two will remain in the area well into or through the summer. Currently bison are allowed to move as far north as Little Trail Creek before they are hazed back toward the Park, due to the proximity of livestock. As mentioned above, a larger number of bison migrated into the area in the winter of 1988/89 with some bison moving as far as Corwin Springs, Cedar Creek, and Slip and Slide Creek, with a handful of animals moving north of Slip and Slide drainage into Dailey Basin, north of Dome Mountain. Tracks indicated those animals (<6) crossed the hydrologic divide east of Joe Brown Creek. A few other bison moved as far north as Big Creek that winter, but they traveled through Yankee Jim Canyon on the west side of the Yellowstone River.

Based on bison behavior since 1989, it appears that many more bison migrate out of YNP on the west side of the river than on the east side. Movements of several hundred to 1,000+ bison are possible (and fairly common) on the west side under the right conditions, while under the same conditions, maximum numbers of 200-300 bison could be expected on the east side. The origin of these animals is somewhat different as well.

While most, if not all, of the “east side bison” come from the Northern Herd subpopulation, “west side bison” are probably a mix of both the Northern Herd and the Central Yellowstone subpopulations. It should be mentioned, however, that once bison are north of YNP they can easily cross the Yellowstone River at several spots between Gardiner and Yankee Jim Canyon. Although rare, bison crossings in both directions have occurred in the past as a result of natural movement and hazing activities.

**Potential Conflicts and Safety Concerns:** If bison are allowed to move north of Little Trail Creek on the east side of the Yellowstone River there are numerous potential problems and issues to consider. The majority of bison will move along the narrow Hwy 89 corridor, using the road, barrow pits, and private land that borders the highway to move north. Movements could be expected to occur at any time to include the early morning hours or at night. Bison could easily leave the roadway via side roads and driveways, entering numerous small private ownerships ranging in size from a few acres to 10-20+ acre hay meadows or livestock pastures. Where fencing exists, much of it could be easily breached by bison if they decided to. Concerns related to bison migration along this corridor include vehicle collisions (particularly at night), conflicts with dogs and horses, property damage (primarily to fencing), and personal safety issues when bison are in close proximity to people or occupied buildings. Bison management along this corridor is complicated by the numerous small ownerships and how individuals feel about bison. Some owners would be tolerant and try to accommodate bison and others would not. Addressing individual complaints by hazing or killing bison would become difficult due to these mixed ownership and attitudes. Bison migration on the west side of the Yellowstone creates far fewer conflicts and safety concerns because of fewer people, relatively little human development, much less vehicle traffic, and basically a single private land ownership to work with.

**Bison Hunting Opportunities:** Currently bison are legally hunted under a limited permit system in a specified area south of Little Trail Creek. This area is primarily on public land within the Gallatin National Forest where the goal is a fair chase bison hunting experience. There appears to be considerable public interest in expanding both the number of bison harvested and the area that can be hunted. Simply allowing bison to move north beyond Little Trail Creek may not substantially increase the opportunity for fair chase bison hunting. As mentioned above, once bison are north of Little Trail Creek the majority of them will funnel into the narrow private land corridor along Hwy 89. There are really no safe, fair chase hunting opportunities to harvest bison in this corridor. Hunting in this area would resemble a return to agency guided bison “hunting seasons” of the 1980’s that did not provide fair chase hunting situations and ultimately met with public disapproval. There could be a chance for some additional fair chase hunting opportunities if bison migrated up side drainages to public land, but due to topography and available habitat, that possibility appears rather limited. Increasing the number of bison on public land (where they could be hunted) would probably require hazing bison from the Hwy 89 corridor into these areas, violating the premise of a fair chase hunt. By comparison, if bison were allowed to move farther north on the west side there may be more opportunities for fair chase bison hunting on public lands on that side of the Yellowstone river.

