

Wolf Survey (Excerpted from Western Interior Regional Advisory Council briefing book, fall 2008 meeting). Author: Lisa Saperstein. Date prepared: 9/25/08

A late winter aerial wolf survey was conducted March 18 – 22, 2008. As in 2005 and 2006, the Stephenson method (Stephenson 1978) was used and the same pilot, Harley McMahan, was contracted. A survey was planned but not conducted in 2007 due to poor snow tracking conditions. As noted in previous reports, results from this type of survey are considered a minimum count that represents a “snapshot in time” for when the survey was conducted.

The designated survey area is 3,949 mi², but 1,105 mi² (28%) were unworkable due to windy conditions, thus reducing the survey area to 2,844 mi² (Figure 2). This is similar to conditions during previous surveys when 30% and 28% of the area was windblown in 2006 and 2005, respectively. McMahan noted that *“snow conditions for assessing wolf numbers on Kanuti Refuge in March, 2008 would have been comparable to 2005 and 2006, when I flew similar surveys, except for the incessant wind this year!”* Wind presents several problems: wolves tend to move less when winds are high, so they make fewer tracks; track systems can get blown over, especially in exposed areas; and turbulence can make flying conditions dangerous. On the positive side, wind will erase old tracks that can obscure fresher ones.

The survey took 30.37 hours, not including travel time to and from Bettles, which is consistent with the flight hours in 2006 (30.24 hours) and 2005 (30 hours). A total of 51 wolves were estimated to be within the “workable” survey area. Only 6 wolves were actually seen; the remainder was estimated from tracks. This is fewer than the 78 estimated in 2006 and very similar to the 2005 survey when 48 wolves were estimated to be within the survey area.

Wolf densities are usually reported as the number of wolves per 1,000 mi². The 2008 survey resulted in a density estimate of 18 wolves/1,000 mi², which is fewer than the 28 wolves/1,000 mi² estimated in 2006 and very similar to the 2005 density estimate of 17 wolves/1,000 mi² (Figures 4 and 5). A 2001 survey, with different pilots and slightly different methods, resulted in an estimated density of 14 wolves/1,000 mi². According to pilot McMahan, *“the Kanuti wolf population appears to be smaller this year compared to previous times I have surveyed the refuge. On the other hand, past surveys have left me thinking wolf numbers might be artificially high, considering available prey.”*

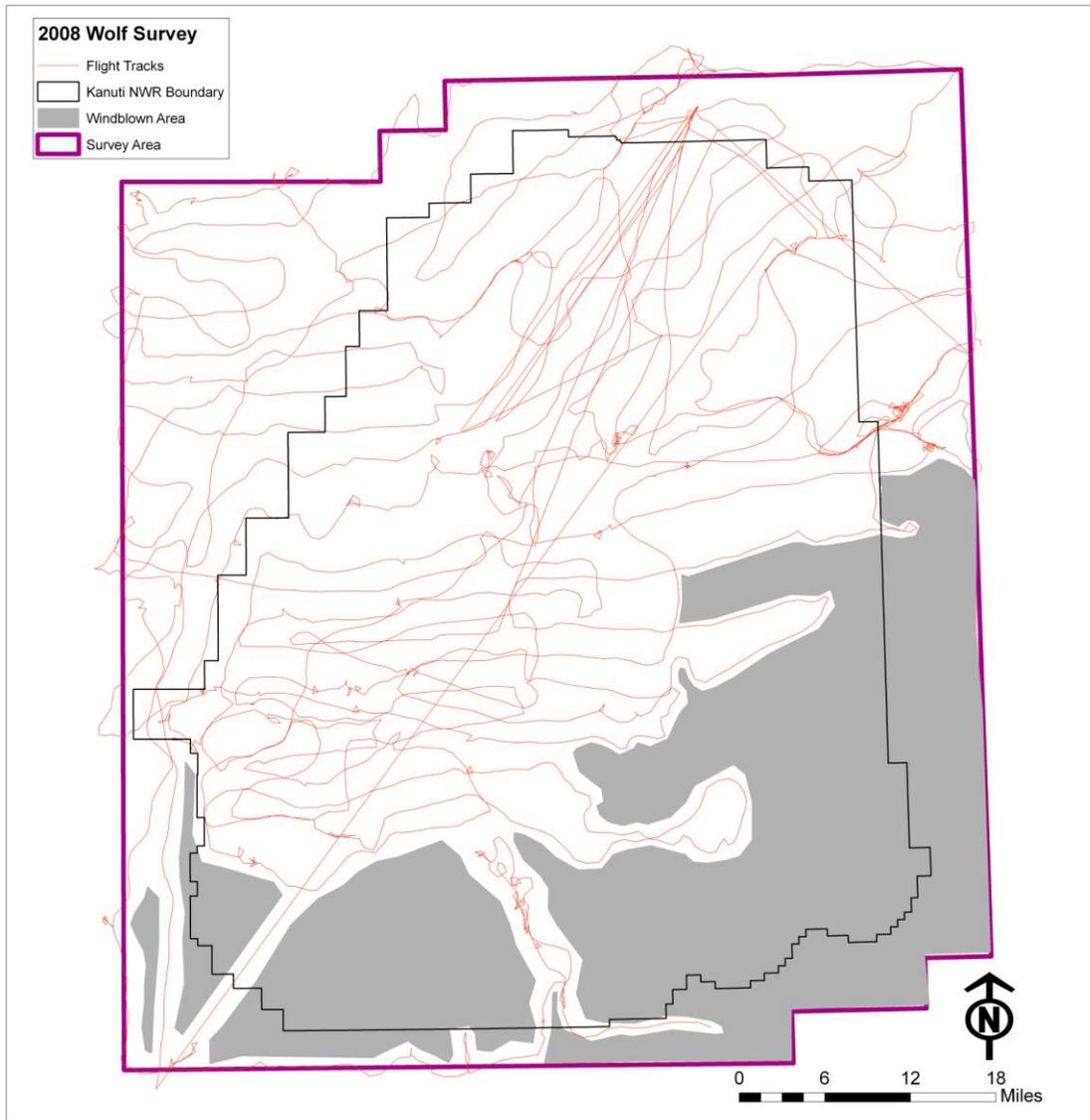


Figure 2. Survey area and flight lines for Kanuti NWR 2008 winter wolf survey. The gray area was windblown and could not be surveyed.

The Alaska Department of Fish and Game management goal for wolves in GMU 24, of which the survey area is only a portion, is a fall density of 13 – 23 wolves/1,000 mi² (McNeill 2006). Wolf density during the 2008 spring survey was within this range; a fall estimate of wolf density is not available. A rough rule of thumb is that ratios over 30 moose/wolf could result in stable to increasing moose populations *if* the habitat can support this number of moose and *if* other sources of mortality from factors such as hunting or severe weather were not excessively high (Gasaway et al. 1983). Based on the 2007 fall moose survey and the 2008 spring wolf survey, there are about 9 – 15 moose per wolf within the survey area (Table 2). The observed moose/wolf ratio is low, but consistent with other low moose density areas in interior Alaska.

In summary, we estimated there were about 18 wolves/1,000 mi² in the survey area during the spring 2008 survey, a decline from the last survey in spring 2006. Factors affecting the wolf survey should be kept in mind, particularly tracking conditions and movement of wolves in and out of the survey area. Moose density in the survey area is low, resulting in an estimate of 9 - 15 moose/wolf based on a fall 2007 moose survey.

Table 2. Summary of data used to calculate moose/wolf ratios.¹

Wolf Survey	2008	2006	2005
Estimated spring wolf density (wolves/1,000 mi ²)	18	28	17
Estimated moose (fall surveys)	463 – 714 (2007 survey)	581 - 1,470 (2005 survey)	602 - 1,083 (2004 survey)
Estimated moose density (moose/1,000mi ²)	170 - 263	214 - 542	222 - 400
Estimated moose per wolf	9 - 15	8 - 19	13 - 23

¹Numbers have been rounded and may differ slightly from what has been reported in the text.