

Part II: Appendix 10

A) Kangerlussuaq-Sisimiut caribou herd (KS), North region

Photographs taken during the helicopter survey, 3-8 March 2010

Compass headings: North (N), South (S), East (E) and West (W).

North region: High-density stratum, transects in the order flown



Figure 22. Transect 15, view towards ENE, 3 March 2010. Photo by: C. Cuyler.



Figure 23. Transect 73, view towards NW, 3 March 2010. Photo by: C. Cuyler.

KS Herd North region: High-density stratum, transects in the order flown.



Figure 24. Transect 183, view to the W, 3 March 2010. Photo by: C. Cuyler.



Figure 25. Transect 10, view to the NW, 3 March 2010. Photo by: C. Cuyler.

KS Herd North region: High-density stratum, transects in the order flown.



Figure 26. Transect 34, view to the NE, 3 March 2010. Photo by: C. Cuyler.



Figure 27. Transect 200, view to the NW, 3 March 2010. Photo by: C. Cuyler.

KS Herd North region: High-density stratum, transects in the order flown.



Figure 28. Transect 211, view to the NW, 3 March 2010. Photo by: C. Cuyler.



Figure 29. Transect 175, view to the NW from west end, 3 March 2010. Photo by: C. Cuyler.

KS Herd North region: High-density stratum, transects in the order flown.



Figure 30. Transect 24, view to the ENE, 3 March 2010. Photo by: C. Cuyler.



Figure 31. Transect 153, view to the NE, 4 March 2010. Photo by: C. Cuyler.

KS Herd North region: High-density stratum, transects in the order flown.



Figure 32. Transect 9, view NE, 4 March 2010. Photo by: C. Cuyler.



Figure 33. Transect 59, view to the NE, 4 March 2010. Photo by: C. Cuyler.

KS Herd North region: High-density stratum, transects in the order flown.



Figure 34. Transect 70, poor light, view NNW, 4 March 2010. Photo by: C. Cuyler.



Figure 35. Transect 142, poor light, view to the SSE, 4 March 2010. Photo by: C. Cuyler.

KS Herd North region: High-density stratum, transects in the order flown.



Figure 36. Transect 192, view NNW, valley dunes in poor light, 4 March 2010. Photo by: C. Cuyler.



Figure 37. Transect 106, view to the SW, poor light & foggy, 4 March 2010. Photo by: C. Cuyler.

KS Herd North region: High-density stratum, transects in the order flown.



Figure 38. Transect 58, view to the W, poor light & foggy, 4 March 2010. Photo by: C. Cuyler.



Figure 39. Transect 36, view to the NNW, poor light & foggy, 4 March 2010. Photo by: C. Cuyler.

KS Herd North region: High-density stratum, transects in the order flown.



Figure 40. *Transect 137, view to the NNW, poor light & foggy, 4 March 2010. Photo by: C. Cuyler.*



Figure 41. *Transect 149, poor light, view to SW, 5 March 2010. Photo by: C. Cuyler.*

KS Herd North region: High-density stratum, transects in the order flown.



Figure 42. Transect 197, view to WNW, 1 caribou in highlands, 5 March 2010. Photo by: C. Cuyler.



Figure 43. Transect 197, view to E in valley at N end transect, 5 March 2010. Photo by: C. Cuyler.

KS Herd North region: High-density stratum, transects in the order flown.



Figure 44. Transect 189, view to the NW, 5 March 2010. Photo by: C. Cuyler.



Figure 45. Transect 112, four caribou, view to the NW, 5 March 2010. Photo by: C. Cuyler.

KS Herd North region: High-density stratum, transects in the order flown.



Figure 46. Transect 210, view to the N, 5 March 2010. Photo by: C. Cuyler.



Figure 47. Transect 209, one caribou standing still & looking at us, view to the E, 5 March 2010. Photo by: C. Cuyler.

KS Herd North region: High-density stratum, transects in the order flown.



Figure 48. Transect 65, one caribou running away (follow tracks) view to the SE, 5 March 2010. Photo by: C. Cuyler.



Figure 49. Transect 172, view to the NE, 5 March 2010. Photo by: C. Cuyler.

KS Herd North region: High-density stratum, transects in the order flown.



Figure 50. Transect 92, view to the NW, 5 March 2010. Photo by: C. Cuyler.



Figure 51. Transect 122, view to the NW, 6 March 2010. Photo by: C. Cuyler.

KS Herd North region: High-density stratum, transects in the order flown.



Figure 52. Transect 76, view to the ENE, 6 March 2010. Photo by: C. Cuyler.



Figure 53. Transect 115, view to the WSW, 6 March 2010. Photo by: C. Cuyler.

KS Herd North region: High-density stratum, transects in the order flown.



Figure 54. Transect 202, view to the NE, 6 March 2010. Photo by: C. Cuyler.



Figure 55. Transect 203, view to the NW, 6 March 2010. Photo by: C. Cuyler.

KS Herd North region: High-density stratum, transects in the order flown.



Figure 56. Transect 193, view to the NNW, 6 March 2010. Photo by: C. Cuyler.



Figure 57. Transect 120, view to the SE, 6 March 2010. Photo by: C. Cuyler.

KS Herd North region: High-density stratum, transects in the order flown.



Figure 58. Transect 139, wide Isortoq River valley covered in windblown loess dirt, view to the NW, 6 March 2010. Photo by: C. Cuyler.

KS Herd North region: Low-density stratum, transects in the order flown



Figure 59. Transect 125, view to the E, 3 March 2010. Photo by: C. Cuyler.



Figure 60. Transect 32, view NW as nearing north end, 3 March 2010. Photo by: C. Cuyler.

KS Herd North region: Low-density stratum, transects in the order flown



Figure 61. Transect 8, view to the NW, 3 March 2010. Photo by: C. Cuyler.



Figure 62. Transect 29, view to the SE, 6 March 2010. Photo by: C. Cuyler.

KS Herd North region: Low-density stratum, transects in the order flown



Figure 63. *Transect 87, view to the WNW, 6 March 2010. Photo by: C. Cuyler.*



Figure 64. *Transect 143, open fjord at the N end of Transect, view to the SE, 6 March 2010. Photo by: C. Cuyler.*

KS Herd North region: Low-density stratum, transects in the order flown



Figure 65. Transect 155, thick fog in lowlands prevented flying this line, view SE, 8 March 2010. Photo by: C. Cuyler.



Figure 66. Transect 47, E end of line, view WNW, 8 March 2010. Photo by: C. Cuyler.

KS Herd North region: Low-density stratum, transects in the order flown



Figure 67. Transect 101 view WNW, 8 March 2010. Photo by: C. Cuyler.



Figure 68. Transect 113, S end line, view NW, 8 March 2010. Photo by: C. Cuyler.

KS Herd North region: Low-density stratum, transects in the order flown



Figure 69. Transect 161, S end of line, view NE to Dye 1 station, 8 March 2010. Photo by: C. Cuyler.



Figure 70. Transect 151, S end of line, view NE, 8 March 2010. Photo by: C. Cuyler.

KS Herd North region: Low-density stratum, transects in the order flown



Figure 71. Transect 27, S end of line, view ENE, 8 March 2010. Photo by: C. Cuyler.



Figure 72. Transect 77, view N, 8 March 2010. Photo by: C. Cuyler.

KS Herd North region: Low-density stratum, transects in the order flown



Figure 73. Transect 64, view E, 8 March 2010. Photo by: C. Cuyler.



Figure 74. Transect 150, view E, 8 March 2010. Photo by: C. Cuyler.

KS Herd North region: Low-density stratum, transects in the order flown



Figure 75. Transect 5, view NE, 8 March 2010. Photo by: C. Cuyler.



Figure 76. Transect 135, view N, 8 March 2010. Photo by: C. Cuyler.

KS Herd North region: Low-density stratum, transects in the order flown



Figure 77. Transect 61, poor light, view NW, 8 March 2010. Photo by: C. Cuyler.

Appendix 10

B) Akia-Maniitsoq caribou herd (AM), Central region

Photographs taken during the helicopter survey, 9-13 March 2010

Compass headings: North (N), South (S), East (E) and West (W).

Central Region: High-density stratum, transects in the order flown.



Figure 78. *Transect 107, view NE, 9 March 2010. Photo by: C. Cuyler.*



Figure 79. *Transect 84 marks on windshield shown up by view to the sun; view SSW, 9 March 2010. Photo by: C. Cuyler.*

AM herd, Central region: High-density stratum, transects in the order flown.



Figure 80. Transect 39, view SSW, 9 March 2010. Photo by: C. Cuyler.



Figure 81. Transect 17, view SSW, 9 March 2010. Photo by: C. Cuyler.

AM herd, Central region: High-density stratum, transects in the order flown.



Figure 82. Transect 97, rain on windshield, view SW, 9 March 2010. Photo by: C. Cuyler.



Figure 83. Transect 68, view ESE, 9 March 2010. Photo by: C. Cuyler.

AM herd, Central region: High-density stratum, transects in the order flown.



Figure 84. Transect 77, Akia lowlands, view SW, 9 March 2010. Photo by: C. Cuyler.



Figure 85. Transect 227, view ENE, 10 March 2010. Photo by: C. Cuyler.

AM herd, Central region: High-density stratum, transects in the order flown.



Figure 86. Transect 124, Fiskefjord in background, view N, 10 March 2010. Photo by: C. Cuyler.



Figure 87. Transect 87, which is just E of Olive mine, view ENE, 10 March 2010. Photo by: C. Cuyler.

AM herd, Central region: High-density stratum, transects in the order flown.



Figure 88. Transect 200, view WSW, 10 March 2010. Photo by: C. Cuyler.



Figure 89. Transect 164, view W, 10 March 2010. Photo by: C. Cuyler.

AM herd, Central region: High-density stratum, transects in the order flown.



Figure 90. *Transect 181, view NW, 10 March 2010. Photo by: C. Cuyler.*



Figure 91. *Transect 199, view SSW, 10 March 2010. Photo by: C. Cuyler.*

AM herd, Central region: High-density stratum, transects in the order flown.



Figure 92. Transect 58, in river bottom, view NW, 10 March 2010. Photo by: C. Cuyler.



Figure 93. Transect 56, view NW, 10 March 2010. Photo by: C. Cuyler.

AM herd, Central region: High-density stratum, transects in the order flown.



Figure 94. Transect 3, poor light, view SSE, 10 March 2010. Photo by: C. Cuyler.



Figure 95. Transect 183, view ESE, 10 March 2010. Photo by: C. Cuyler.

AM herd, Central region: High-density stratum, transects in the order flown.



Figure 96. Transect 1, poor light, view S, 10 March 2010. Photo by: C. Cuyler.



Figure 97. Transect 18, poor light, view ESE, 10 March 2010d. Photo by: C. Cuyler.

AM herd, Central region: High-density stratum, transects in the order flown.



Figure 98. Transect 96, note the snow cover and elevation changes ahead on this transect line, view to the N, 12 March 2010. Photo by: C. Cuyler.



Figure 99. Transect 64, the E end at Ice Cap, view E, 12 March 2010. Photo by: C. Cuyler.

AM herd, Central region: High-density stratum, transects in the order flown.

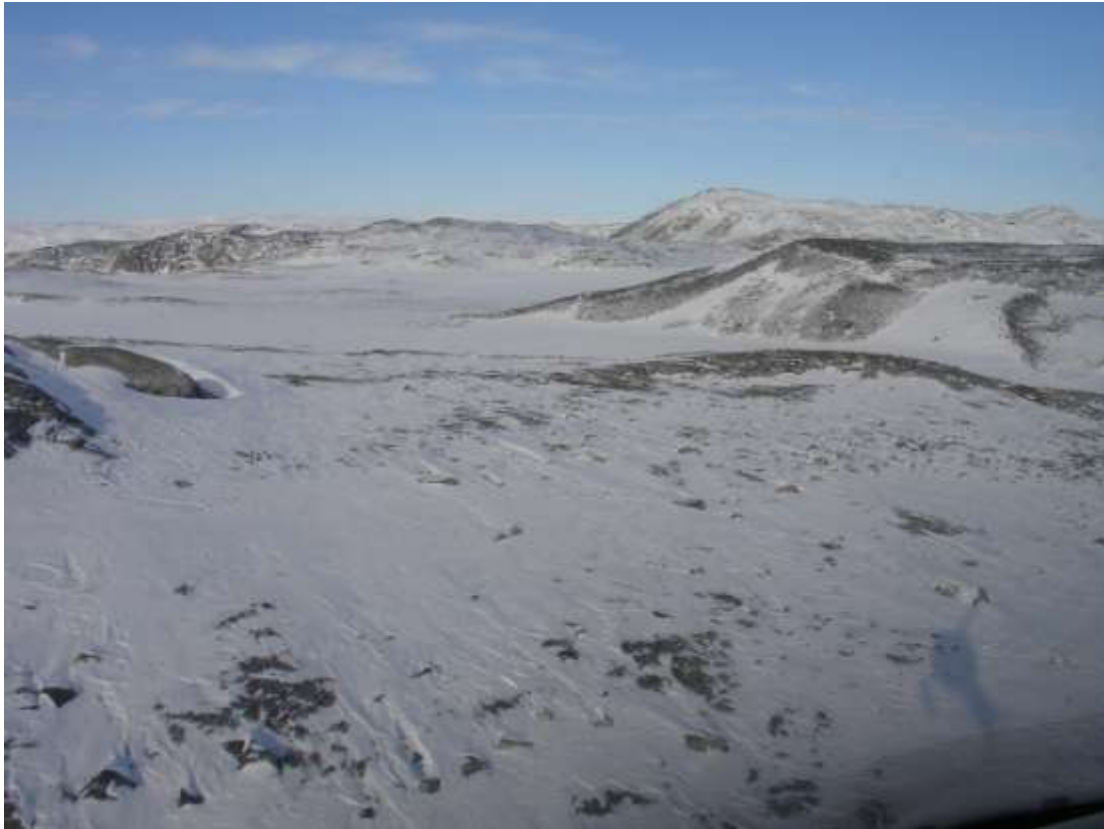


Figure 100. Transect 136, view NW, 12 March 2010. Photo by: C. Cuyler.



Figure 101. Transect 166, view NW, 12 March 2010. Photo by: C. Cuyler.

AM herd, Central region: High-density stratum, transects in the order flown.



Figure 102. Transect 108, Ilulialik fjord & Bird Mountain in background, view SSW, 12 March 2010. Photo by: C. Cuyler.



Figure 103. Transect 191, E end, view W, 12 March 2010. Photo by: C. Cuyler.

AM herd, Central region: High-density stratum, transects in the order flown.



Figure 104. *Transect 36, "Eldorado", view NW along zero line, 12 March 2010. Photo by: C. Cuyler.*



Figure 105. *Transect 193, "Eldorado", view SE along zero line, 12 March 2010. Photo by: C. Cuyler.*

AM herd, Central region: High-density stratum, transects in the order flown.



Figure 106. *Transect 21, Narssarssuaq Valley in background, view SE, 12 March 2010. Photo by: C. Cuyler.*



Figure 107. *Transect 8, view NW, 12 March 2010. Photo by: C. Cuyler.*

AM herd, Central region: High-density stratum, transects in the order flown.



Figure 108. Transect 46, view SE, 12 March 2010. Photo by: C. Cuyler.



Figure 109. Transect 65, view NW, 12 March 2010. Photo by: C. Cuyler.

AM herd, Central region: High-density stratum, transects in the order flown.



Figure 110. Transect 186, poor light, view NW, 12 March 2010. Photo by: C. Cuyler.



Figure 111. Transect 201, poor light, view NE, 12 March 2010. Photo by: C. Cuyler.

AM herd, Central region: High-density stratum, transects in the order flown.



Figure 112. Transect 203, poor light, view NE, 13 March 2010. Photo by: C. Cuyler.



Figure 113. Transect 197, poor light, view E, 13 March 2010. Photo by: C. Cuyler.

AM herd, Central region: High-density stratum, transects in the order flown.



Figure 114. Transect 135, poor light, view ENE, 13 March 2010. Photo by: C. Cuyler.



Figure 115. Transect 141, poor light, view S, 13 March 2010. Photo by: C. Cuyler.

AM herd, Central region: High-density stratum, transects in the order flown.



Figure 116. *Transect 19, poor light, view NNW, 13 March 2010. Photo by: C. Cuyler.*

AM herd Central region: Low-density stratum, transects in the order flown



Figure 116. Transect line 105, view to the SSE, 9 March. Photo by: C. Cuyler.



Figure 117. Transect line 126, poor light, view to the SW, 9 March. Photo by: C. Cuyler.

AM herd Central region: Low-density stratum, transects in the order flown



Figure 118. Transect line 168, poor light, view to the SE, 9 March. Photo by: C. Cuyler.



Figure 119. Transect line 53, poor light, view to the WSW, 9 March. Photo by: C. Cuyler.

AM herd Central region: Low-density stratum, transects in the order flown



Figure 120. Transect line 139, poor light, unable to see 300 metres to left of helicopter, which is an example of dead ground, view to the W, 9 March. Photo by: C. Cuyler.



Figure 121. Transect line 52, view to NW, 10 March. Photo by: C. Cuyler.

AM herd Central region: Low-density stratum, transects in the order flown



Figure 122. Transect line 95, view to S, 10 March. Photo by: C. Cuyler.



Figure 123. Transect line 155, view to SE with line ending in fog, 10 March. Photo by: C. Cuyler.

AM herd Central region: Low-density stratum, transects in the order flown



Figure 124. Transect line 121, view to NE, 10 March. Photo by: C. Cuyler.



Figure 125. Transect line 28, view to NE, 10 March. Photo by: C. Cuyler.

AM herd Central region: Low-density stratum, transects in the order flown



Figure 126. Transect line 149, view SW, 10 March. Photo by: C. Cuyler.



Figure 127. Transect line 61, view to SW, 10 March. Photo by: C. Cuyler.

AM herd Central region: Low-density stratum, transects in the order flown



Figure 128. Transect 15, view NE, 13 March 2010. Photo by: C. Cuyler.



Figure 129. Transect 157, view SE, 13 March 2010. Photo by: C. Cuyler.

AM herd Central region: Low-density stratum, transects in the order flown



Figure 130. Transect 96, view NE, 13 March 2010. Photo by: C. Cuyler.

Appendix 11

Satellite collared caribou cows: Photographs taken during the Akia-Maniitsoq helicopter survey, 9-13 March 2010



Figure 131. Caribou cow wearing a yellow-black iridium satellite collar with her male calf, at the south end of transect 21, which is at the mouth of the Narssarssuaq Valley as it meets Qugsuk Bay/Fjord. 12 March 2010. Top original photo from 15 m altitude & Bottom: cropped. Photo by: C. Cuyler.



Figure 132. Caribou cow with orange Telonics satellite collar. An antlered juvenile male (age < 3 years) is to her left. Her calf is just below two more caribou in the upper left of this photo, which was taken at the mouth of the Narssarssuaq Valley as it meets Qugsuk Bay, 13 March 2010. Flight height was ca. 15 m. Photo by: C. Cuyler.



Figure 133. Two caribou ca. 100 m (upper centre); one to the left and to the right a cow (blends into background) with an orange Telonics satellite collar, Ilulialik, 13 March 2010. Photo by: C. Cuyler.

Appendix 12

Caribou aggregation in the Narssarsuaq Valley, Central Region Photographs taken during the helicopter survey, 9-13 March 2010



Figure 134. Minimum 31 caribou within < 1 km of helicopter, 12 March 2010, north end of Narssarsuaq Valley, view NE. Photo by: C. Cuyler.



Figure 135. Group of 5 & 12 caribou, and minimum 25 more in far background, 12 March 2010, north end of Narssarsuaq Valley, view NW. Photo by: C. Cuyler.



Figure 136. On the left are same group of 12 from figure 135, plus six more to their right, and minimum 35 in far background, 12 March 2010, north end of Narssarssuaq Valley. Photo by: C. Cuyler.



Figure 137. This is the same far background as figure 136, however, now a minimum of 40 caribou, 12 March 2010, north end of Narssarssuaq Valley, view NW. Photo by: C. Cuyler.



Figure 138. Closer yet again to the same animals as in figure 137, and now a minimum of 50 caribou within 700 m, 12 March 2010, north end of Narssarssuaq Valley, view to north. Photo by: C. Cuyler.



Figure 139. Closer yet again to the same animals as in figure 138, and now a minimum of 58 caribou within 700 m, 12 March 2010, north end of Narssarssuaq Valley, view north. Photo by: C. Cuyler.



Figure 140. Closer yet again, this time only with a portion of the animals from figure 139, and now there are a minimum of 48 caribou within 300 m, 12 March 2010, north end of Narssarssuaq Valley, view NW, 12 March 2010. Photo by: C. Cuyler.



Figure 141. In this frame there are a minimum of 61 caribou within 300 m, 12 March 2010, north end of Narssarssuaq Valley, view SW, 12 March 2010. Photo by: C. Cuyler.



Figure 142. Closer and in this frame there are a minimum of 68 caribou within 300 m, 12 March 2010, north end of Narssarssuaq Valley, view SW, 12 March 2010. Photo by: C. Cuyler.



Figure 143. Closer to the caribou and in this frame there are a minimum of 74 caribou within 300 m, 12 March 2010, north end of Narssarssuaq Valley, view SSW, 12 March 2010. Photo by: C. Cuyler.



Figure 144. Closer to the same caribou in this frame, there are minimum 78 caribou within 200 m, 12 March 2010, north end of Narssarssuaq Valley, view south, 12 March 2010. Photo by: C. Cuyler.



Figure 145. Large group of 15 caribou, followed by three, while in the upper right on the ridge are two more caribou, 13 March 2010, at the southern mouth of the Narssarssuaq Valley where it meets Qugsuk Bay. Photo by: C. Cuyler.

Appendix 13

How difficult is it to spot caribou?

Unaltered photographs were taken from ca. 15 m height above ground.

Distances are approximate and in metres from the transect's "zero-line" on the ground.



Figure 146. Four caribou <50 m, transect 1, Akia-Maniitsoq, 10 Mar 2010. Photo by: C. Cuyler.



Figure 147. Five caribou ca. 75 m, transect 18, Akia-Maniitsoq, 10 March 2010. Photo by: C. Cuyler.



Figure 148. Three caribou just standing, ca. 25 m, transect 18, Akia-Maniitsoq, March 2010. Photo by: C. Cuyler.



Figure 149. Seven caribou ca. 200 m distant, on north shore Godthåbsfjord, Akia-Maniitsoq, 12 March 2010. Photo by: C. Cuyler.



Figure 150. Three caribou on ridge ca. 175 m distant. transect 191, Akia-Maniitsoq, 12 March 2010. Photo by: C. Cuyler.



Figure 151. One caribou ca. 200 m distant, on transect 36, Eldorado valley bottom. Akia-Maniitsoq, 12 March 2010. Photo by: C. Cuyler.



Figure 152. *Nine caribou easy to see, < 150 m, at the south end of transect 21. View is to the SSW out towards Qugsuk Bay in the background. Akia-Maniitsoq, 12 March 2010. Photo by: C. Cuyler.*



Figure 153. *Three caribou < 100 m, at mouth of the Narssarssuaq Valley to Qugsuk Bay, Akia-Maniitsoq, 13 March 2010. Photo by: C. Cuyler.*



Figure 154. Four caribou < 25 m, Ilulialik, 13 March 2010. Photo by: C. Cuyler.



Figure 155. Four caribou < 15 m, Ilulialik, 13 March 2010. Photo by: C. Cuyler.



Figure 156. One caribou < 100 m, flight height ca. 50 m, 13 March 2010. Photo by: C. Cuyler.



Figure 157. One caribou < 200 m, 13 March 2010. Photo by: C. Cuyler.



*Figure 158. Three caribou < 50 m, Narssarssuaq Valley SE side, 12 March 2010.
Photo by: C. Cuyler.*