

South Dakota's Wind Classifications



Credit to NREL for their Wind Classification Data

Credit to Microsoft Office Online for the Wind Turbine Template.

Cartographic Designs by Shanon R. Conley

Site description:

Elevation: 766 m (2512 ft)

Latitude: 43° 56' 16" N

Longitude: 100° 40' 42" W

Date of activation: June 29, 2005

Data averaging interval: 10 minutes

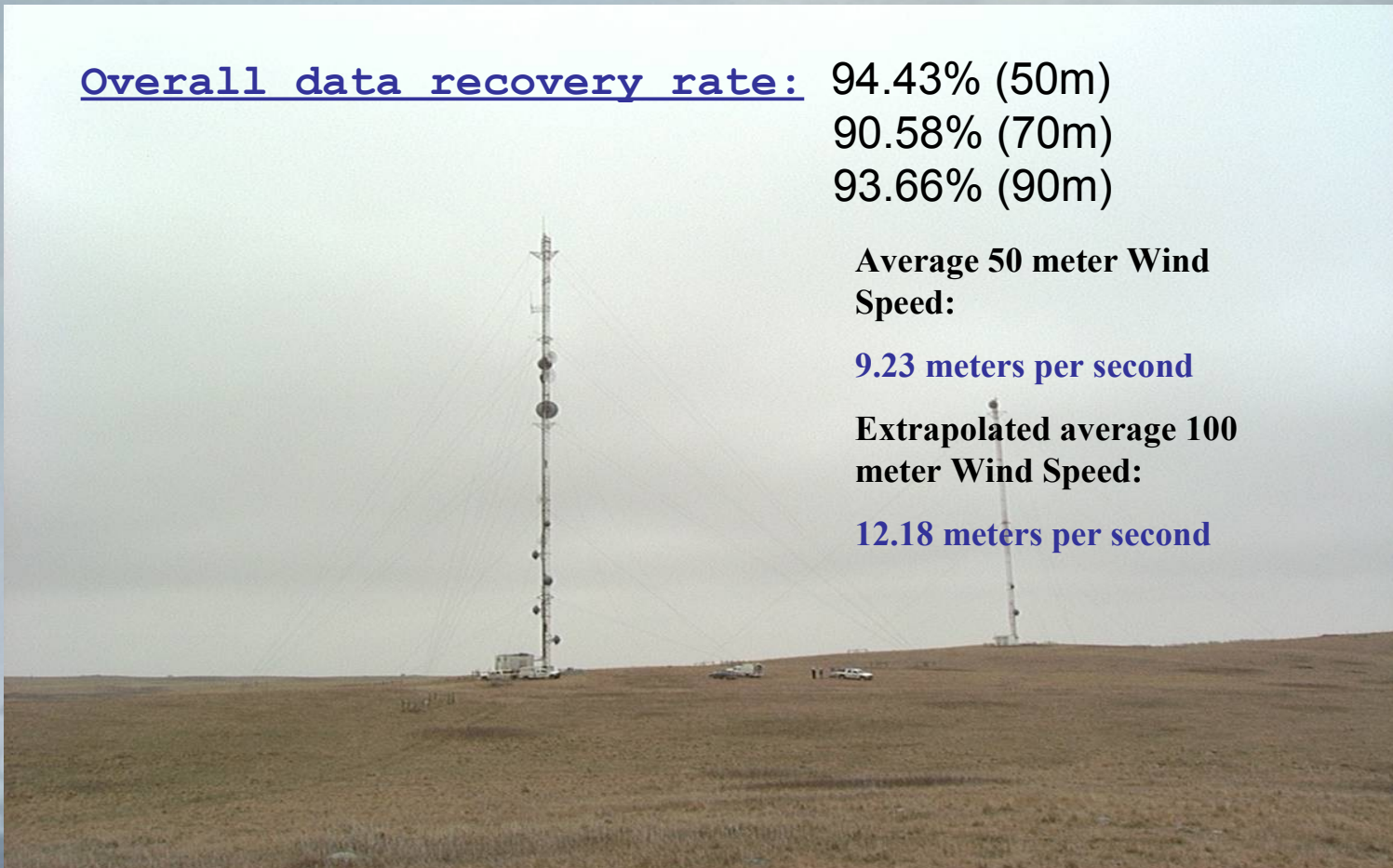
Overall data recovery rate: 94.43% (50m)
90.58% (70m)
93.66% (90m)

**Average 50 meter Wind
Speed:**

9.23 meters per second

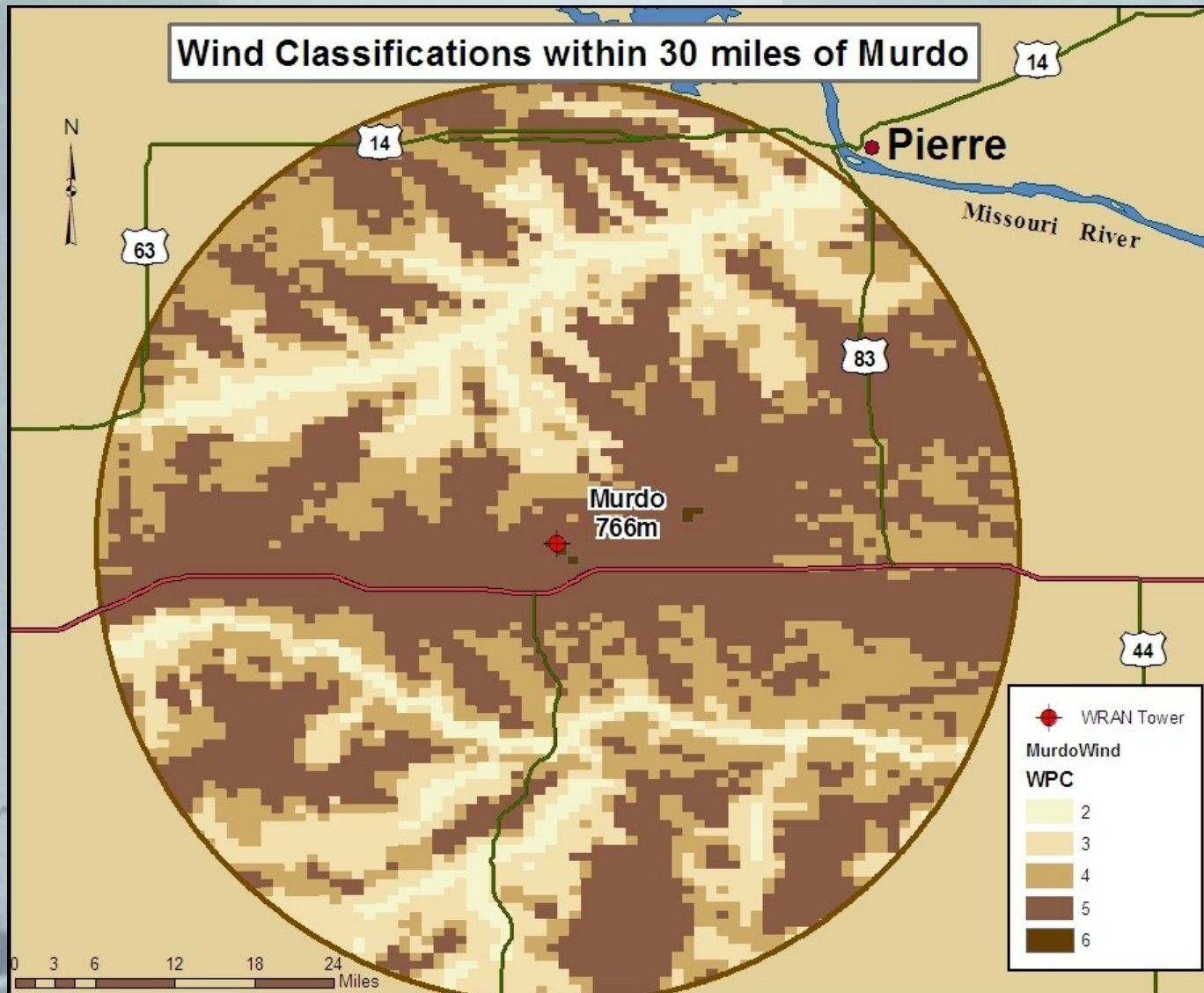
**Extrapolated average 100
meter Wind Speed:**

12.18 meters per second



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Electrical Engineering Department
Wind Resource Assessment Network Project
Site: Murdo

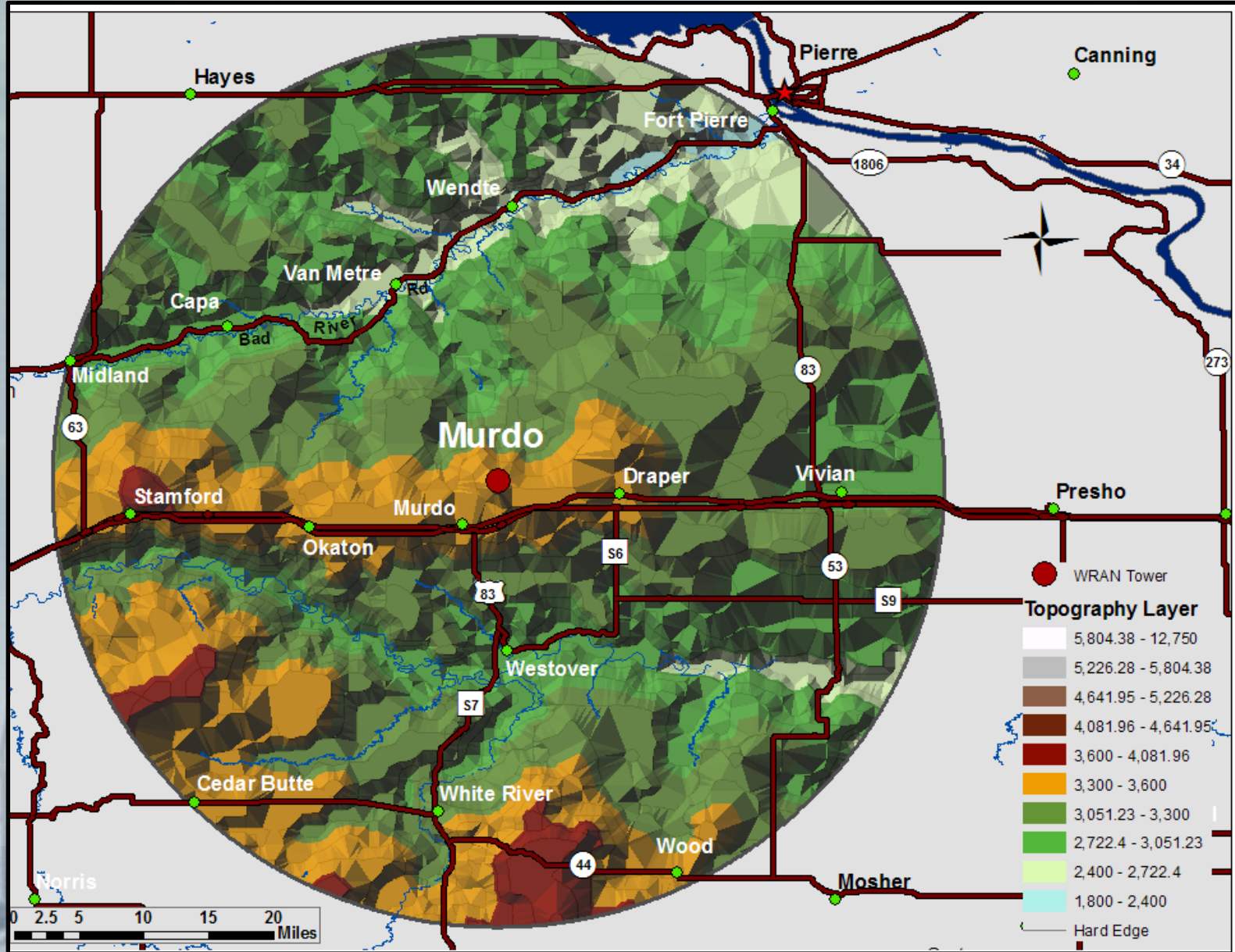
Data collection period:
June 29, 2005 –
July 31, 2007



NREL's Wind Classification around the Murdo Tower

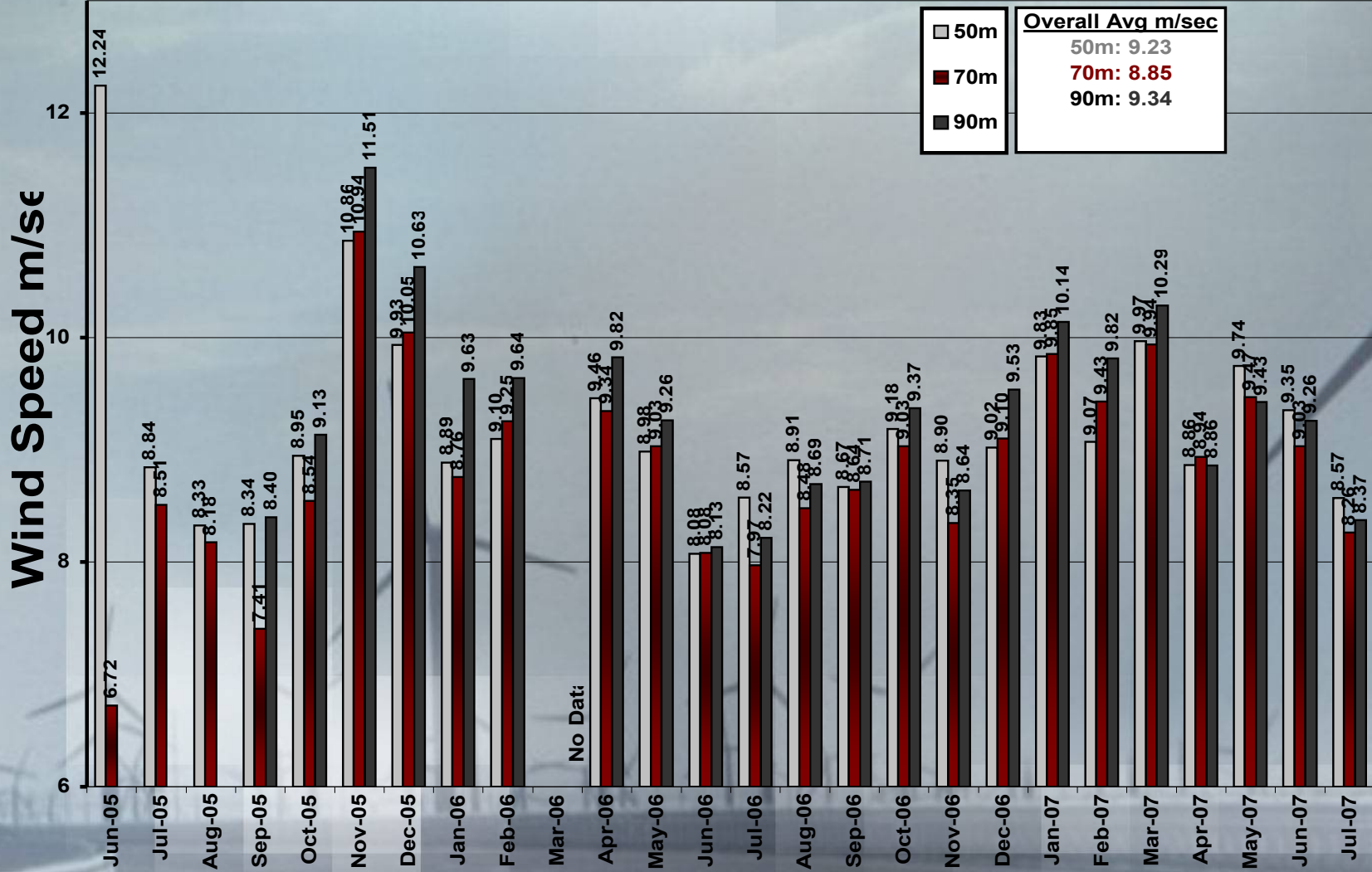


Topography Within 30 Miles of Murdo



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This slide shows the monthly average wind speed in m/sec at this site, and also the overall average wind speed (in the inset box), at each measurement height. Last Updated 8/06/2007.



Overall Avg m/sec
 50m: 9.23
 70m: 8.85
 90m: 9.34

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**Notes for data
interpretation (pg 1/1)**

Month	Notes
June 29- September 9, 2005	<p>When the datalogger was initially installed on this site, we were able to fully activate the 50 meter level, but at the 70 meter level, only one anemometer and the direction vane could be activated, and none of the sensors at 90 meters were activated. This problem was corrected on September 9, 2005.</p> <p>For this time period the 50 meter data are reported normally. At 70 meters, if the direction vane indicated that the working anemometer should be used, then those data are reported. If the direction vane indicated that the inactive anemometer was the one to use, then those data are reported as missing. That is the reason for the lower data recovery rate at 70 meters.</p> <p>No 90 meter data are reported during this time.</p>
September 2005	<p>Data set for this month was incomplete due to an suspected communication error.</p>
February 2006	<p>Data set for this month was complete until 2/24/05 when all instrumentation went down at the site. last few days of November. These sensors will be monitored in the future for defects.</p>
March 2006	<p>Data set for this month was missing until the end of the month when all the instruments began working but with very low data readings. This months data will not be used.</p>
April 2006	<p>Data set for this month was complete except for eighty-four missing data points, which was attributed to a communication error.</p>

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This slide shows the expected maximum capacity factor that could be expected from a wind turbine on this site. The capacity factor can be thought of as the percentage of maximum possible energy that the turbine would actually produce, given the variability of the wind resource at the site. This data is taken over the entire period of collection. Updated 08/06/2007.

