

Appendix D

Pinedale Anticline Zone Test Analysis

Pinedale Anticline Zone Test Modeling

Due to the close proximity and physical alignment of the PAPA to the Bridger Wilderness sensitivity “zone” modeling was performed using CALPUFF to determine whether there are any areas within the PAPA that could potentially result in much greater impacts at the Bridger Wilderness as a result of the meteorology and source location. Visibility impairment was used as the impact criteria to test the zone influence. CALPOST method 6 for visibility processing combined with FLAG natural background data and regional haze rule monthly relative humidity factors applicable to the Bridger Wilderness were used.

The PAPA was divided into three distinct zones, south, north, and central. 10 drill rigs were randomly placed in each of the three zones. Emissions for a 4000 hp, Tier 1 emissions level, drill rig were used (NO_x – 25.6 lb/hr, SO_2 – 0.5 lb/hr, $\text{PM}_{10}/\text{PM}_{2.5}$ – 1.5 lb/hr).

Three years of CALMET wind fields were used (2001 – 2003). CALPUFF was used to model the 10 drill rigs for each of the three zones for the three years of meteorology data. CALPOST was used to process visibility impacts at the Bridger Wilderness.

Figures D.1 through D.6 present the results for the zone test analysis. Results are presented as the number of days per year above a 1.0 deciview (dv) change (Figures D1, D2, and D3) and the maximum dv change (Figures D4, D5, D6) at each receptor in the Bridger Wilderness. The values are the maximum results from any of the three modeled years. Figures D.1 and D.4 present the modeling results at the Bridger Wilderness for the 10 drill rigs when modeled from the south zone. Figures D.2 and D.5 present the model results for the drill rigs in the central zone, and Figures D.3 and D.6 illustrate the results for drill rig impacts from the north zone.

These modeling results indicate that the PAPA sources tend to have a larger impact at areas in the Bridger Wilderness that are northeast of the PAPA.

Figure D.1
Pinedale Anticline Zone Analysis for Drill Rigs in South Zone
Maximum Number of Days/Year Above 1.0 Delta Deciview Over Three Years (2001-2003)

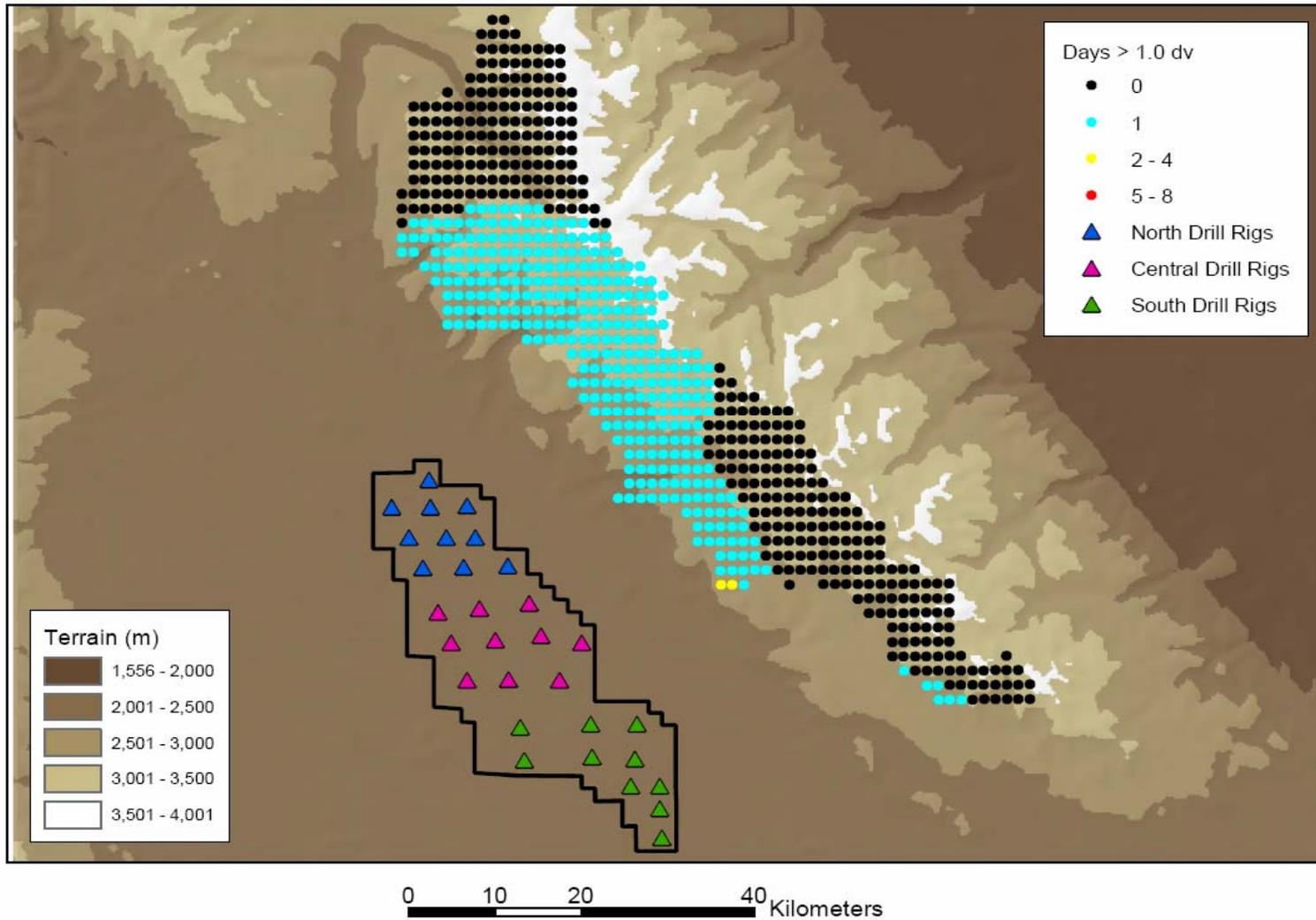


Figure D.2
Pinedale Anticline Zone Analysis for Drill Rigs in Central Zone
Maximum Number of Days/Year Above 1.0 Delta Deciview Over Three Years (2001-2003)

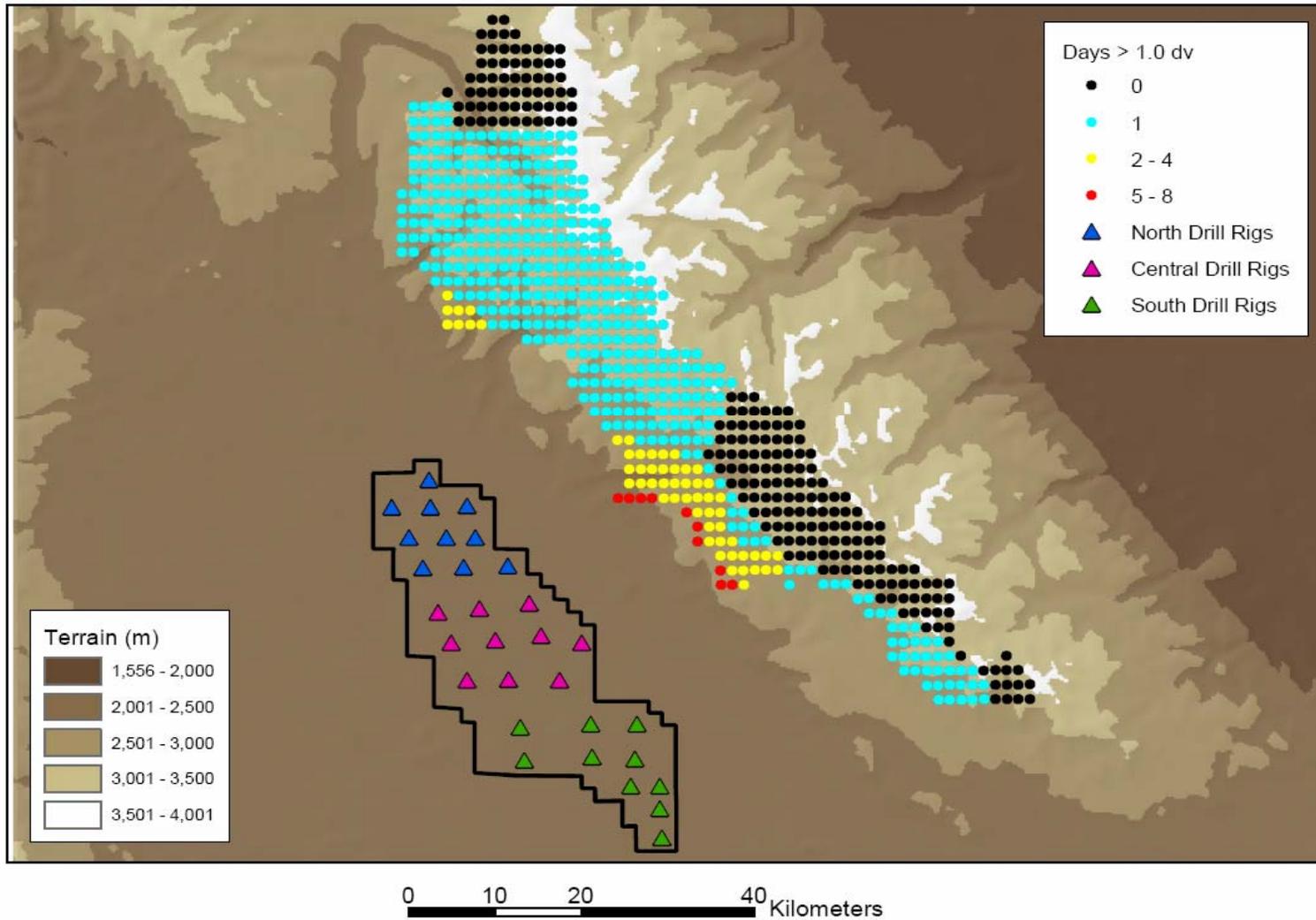


Figure D.3
Pinedale Anticline Zone Analysis for Drill Rigs in North Zone
Maximum Number of Days/Year Above 1.0 Delta Deciview Over Three Years (2001-2003)

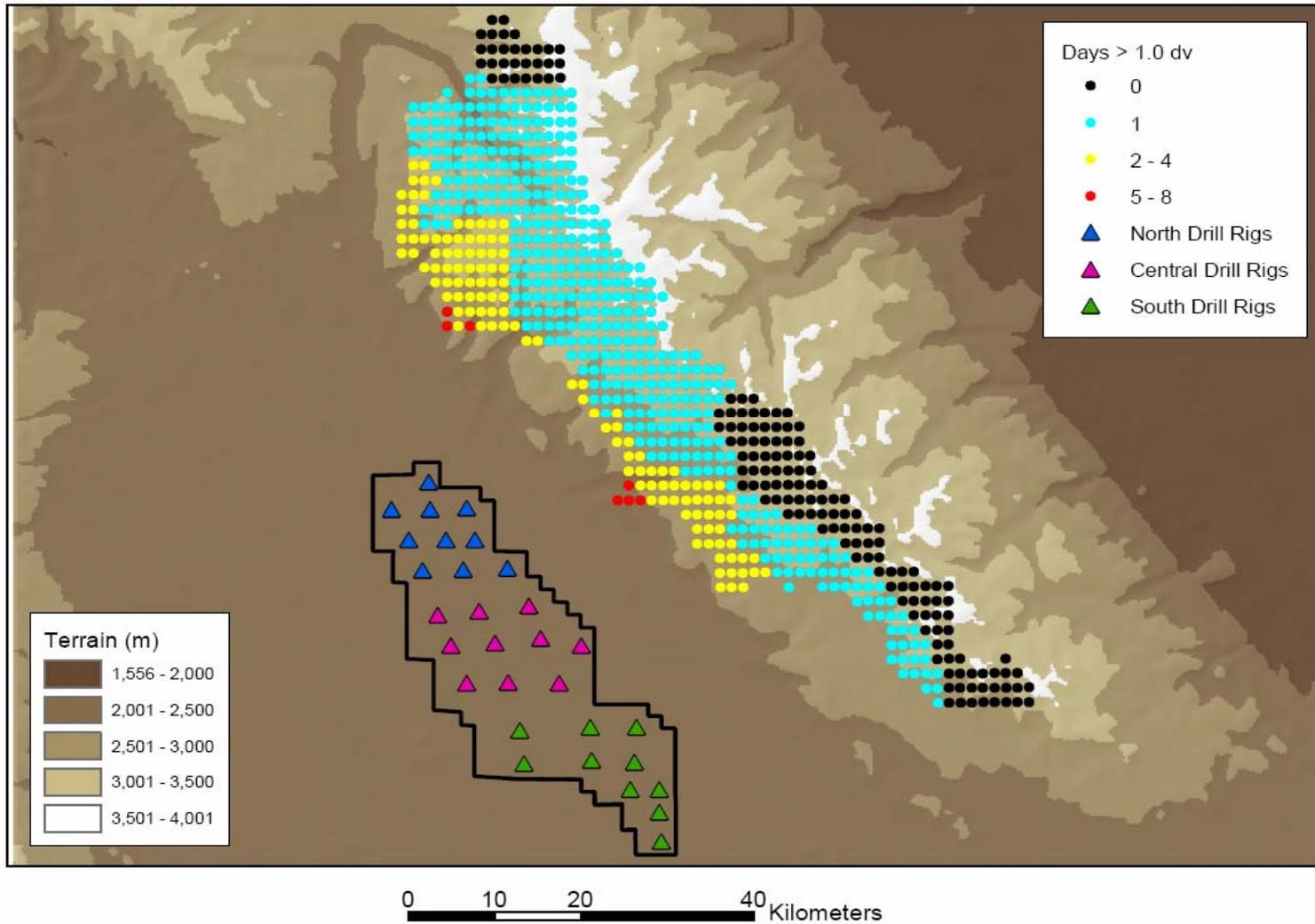


Figure D.4
Pinedale Anticline Zone Analysis for Drill Rigs in South Zone
Maximum Predicted Delta Deciview Over Three Years (2001-2003)

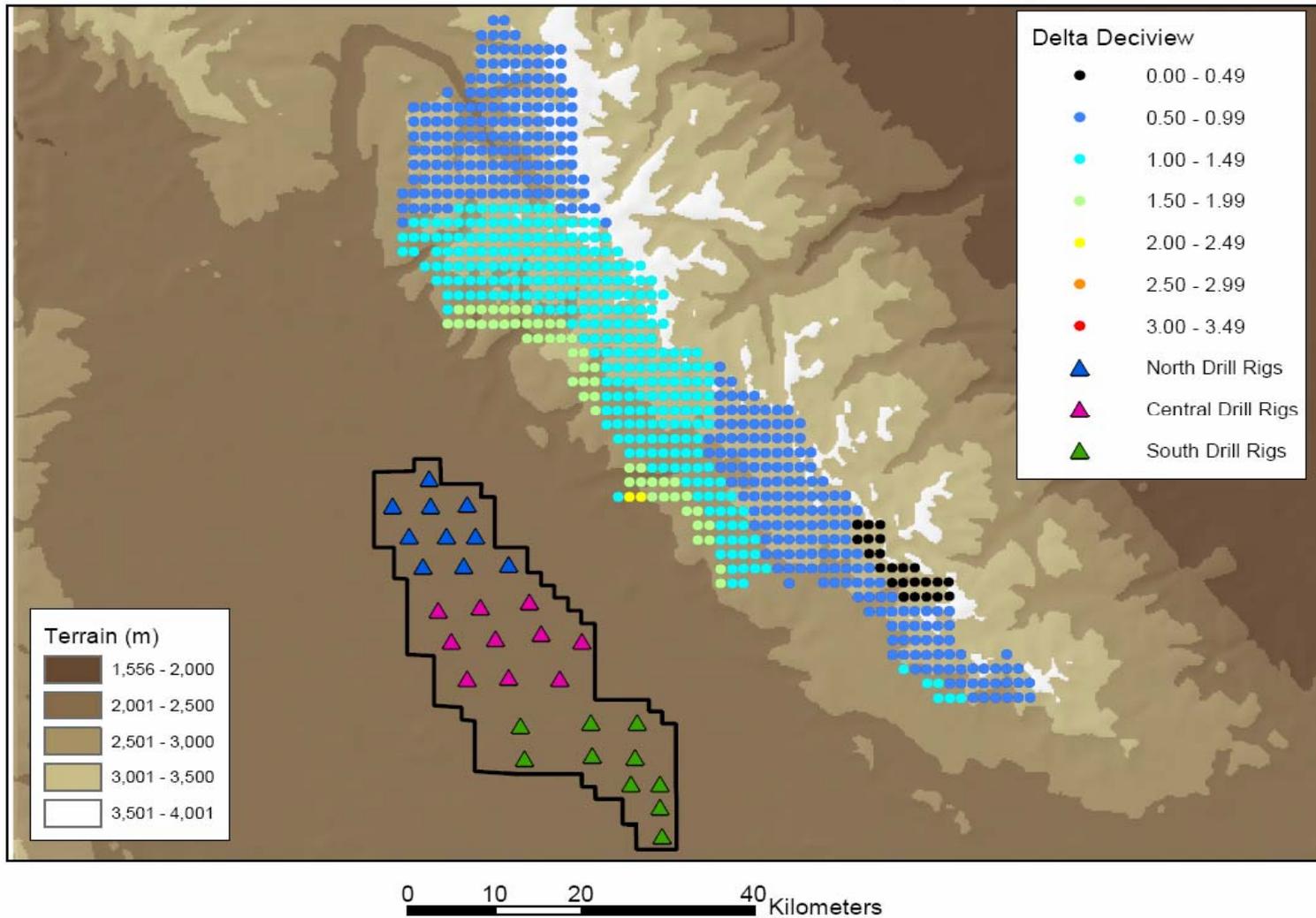


Figure D.5
 Pinedale Anticline Zone Analysis for Drill Rigs in Central Zone
 Maximum Predicted Delta Deciview Over Three Years (2001-2003)

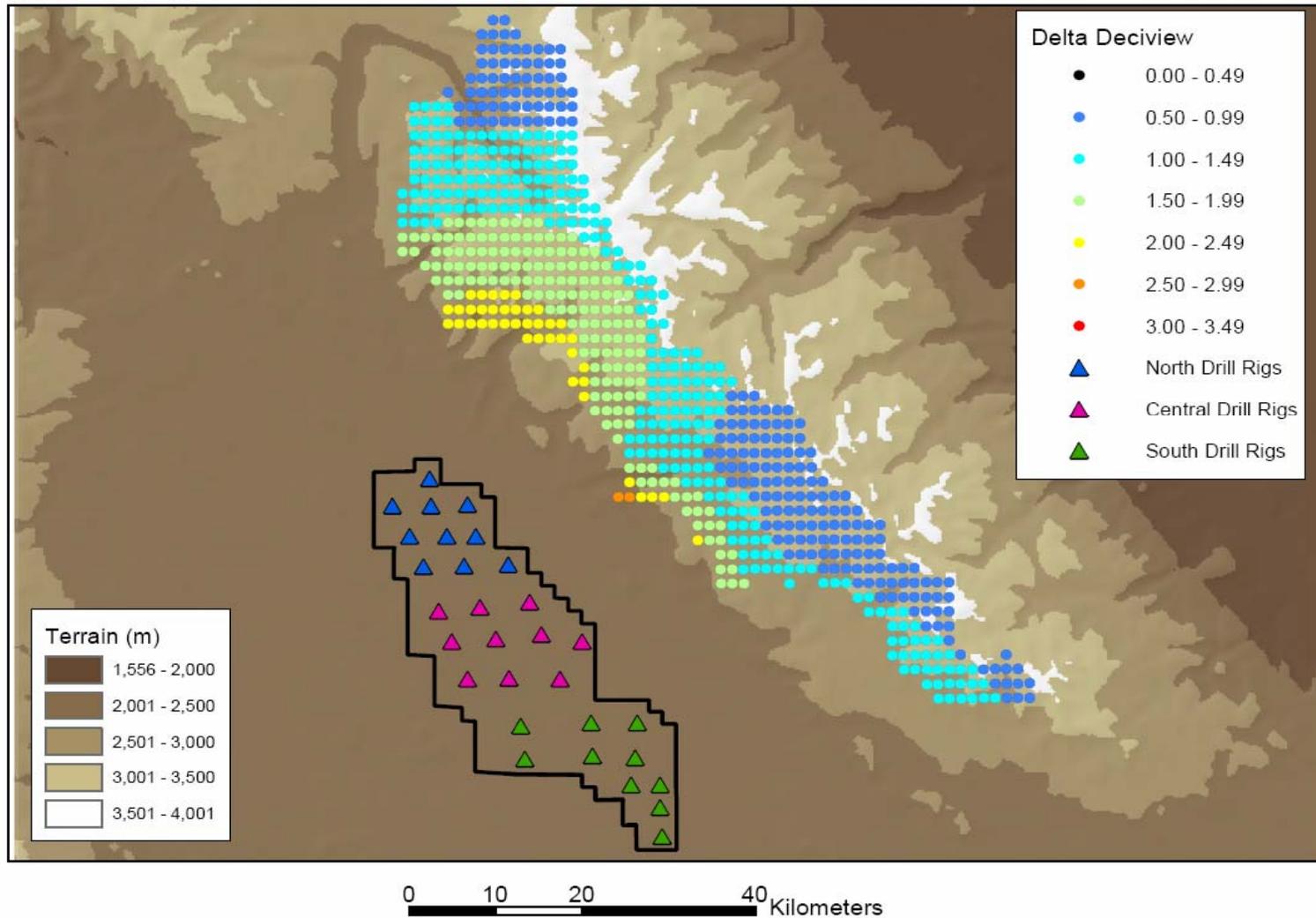


Figure D.6
Pinedale Anticline Zone Analysis for Drill Rigs in North Zone
Maximum Predicted Delta Deciview Over Three Years (2001-2003)

