

Pitt County Tar-Pamlico Portion

The preliminary checkpoint spreadsheets were received from NCGS on July 26, 2001. Two spreadsheets were included for each county, which compared the independent QAQC survey checkpoints with the interpolated LIDAR "Z" value as provided by the contractors. The spreadsheet summaries included:

1. All the checkpoints with the RMSE calculation for combined land cover
2. 95% of the checkpoints with the RMSE calculation (5% of points having the largest error removed)

All data was reviewed and further analyzed to assess the quality of the data. The review process examined the statistics for the combined land cover and the trends for each specific land cover type. The following graphs and figures illustrate the data quality as per the RMSE criteria.

Table 1 summarizes the RMSE using:

- 100% of the checkpoints
- 95% of the checkpoints
- Checkpoints categorized by land cover type

Table 1. RMSE by Land Class				
%	RMSE (cm)	# of Points	Land Class	RMSE Criteria (cm)
100	17.4	72	All	
95	11.7	68	All	25
18	9.7	13	Grass	
15	10.2	11	Weeds/Crop	
13	13.5	9	Scrub	
29	13.5	21	Forest	
19	10.5	14	Built-up	

The LIDAR data for Pitt County meets the specification as per the RMSE criteria of 25 cm.

All figures represent the data with the 95% data set. The number of data checkpoints reflects that this particular county spans two basins, which accounts for the lower total number. Based on 72 checkpoints, the data is of good quality.

LIDAR Accuracy Assessment Report- Pitt County Tar-Pamlico Portion

Figure 1 illustrates the RMSE by specific land cover type.

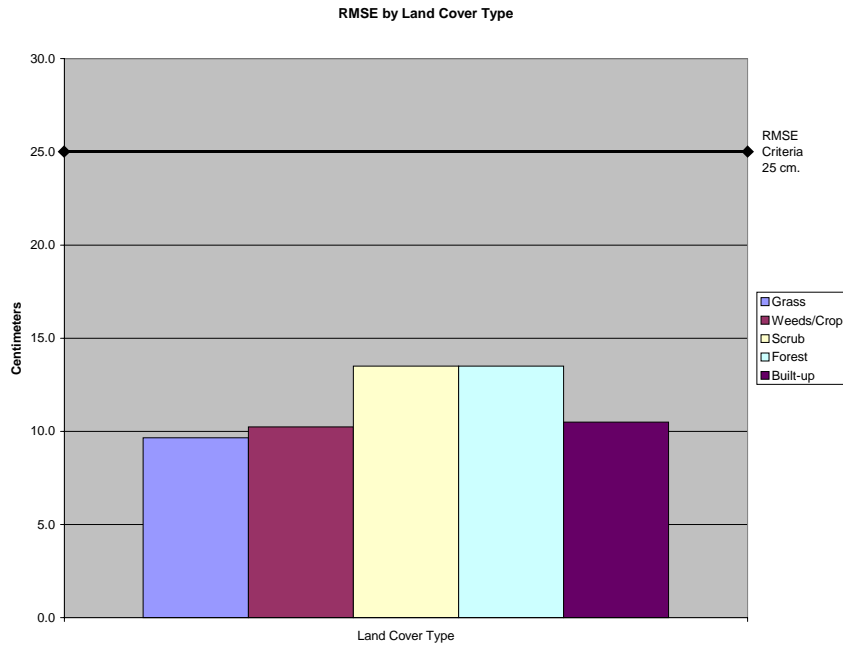


Figure 1

Figure 2 illustrates the magnitude of the differences between the checkpoints and LIDAR data by specific land class type and sorted from lowest to highest.

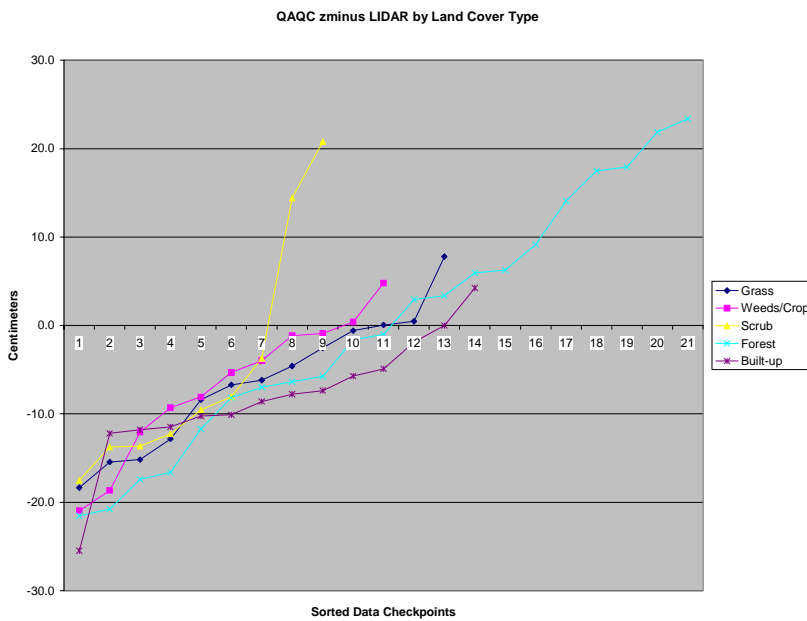


Figure 2

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Table 2 illustrates the Delta between the QAOC survey checkpoints and that of the interpolated LIDAR.

Table 2. Elevation Delta					
Delta (cm)	Land Cover				
-18.3	Grass	0.4	Weeds/Crop	6.0	Forest
-15.4	Grass	4.8	Weeds/Crop	6.3	Forest
-15.2	Grass	-17.5	Scrub	9.2	Forest
-12.8	Grass	-13.7	Scrub	14.1	Forest
-8.4	Grass	-13.7	Scrub	17.5	Forest
-6.7	Grass	-12.2	Scrub	17.9	Forest
-6.2	Grass	-9.5	Scrub	21.8	Forest
-4.6	Grass	-8.1	Scrub	23.4	Forest
-2.5	Grass	-3.7	Scrub	-25.5	Built-up
-0.6	Grass	14.4	Scrub	-12.2	Built-up
0.0	Grass	20.8	Scrub	-11.8	Built-up
0.5	Grass	-21.5	Forest	-11.5	Built-up
7.8	Grass	-20.8	Forest	-10.3	Built-up
-20.9	Weeds/Crop	-17.4	Forest	-10.1	Built-up
-18.7	Weeds/Crop	-16.6	Forest	-8.6	Built-up
-12.0	Weeds/Crop	-11.7	Forest	-7.8	Built-up
-9.3	Weeds/Crop	-8.2	Forest	-7.4	Built-up
-8.1	Weeds/Crop	-7.0	Forest	-5.7	Built-up
-5.3	Weeds/Crop	-6.4	Forest	-4.9	Built-up
-4.0	Weeds/Crop	-5.8	Forest	-1.9	Built-up
-1.2	Weeds/Crop	-1.6	Forest	0.0	Built-up
-0.9	Weeds/Crop	-1.0	Forest	4.2	Built-up
		2.9	Forest		
		3.4	Forest		

Table 3 illustrates the overall statistics for the checkpoint data.

Table 3. Overall Descriptive Statistics								
	RMSE (cm)	Mean (cm)	Median (cm)	Skew (cm)	Std Dev (cm)	# of Points	Min (cm)	Max (cm)
Total	11.7	-4.6	-6.3	0.7	10.9	68	-25.5	23.4
Grass	9.7	-6.3	-6.2	0.0	7.6	13	-18.3	7.8
Weeds/Crop	10.2	-6.8	-5.3	-0.5	8.0	11	-20.9	4.8
Scrub	13.5	-4.8	-9.5	1.3	13.4	9	-17.5	20.8
Forest	13.5	0.2	-1.0	0.1	13.8	21	-21.5	23.4
Built-up	10.5	-8.1	-8.2	-0.7	6.9	14	-25.5	4.2