Granville - Tar-Pamlico Portion

The preliminary checkpoint spreadsheets were received from NCGS on September 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	15.6	48	All				
95	13.3	46	AII	25			
17	10.1	8	Grass				
17	12.3	8	Weeds/Crop				
12	13.4	6	Scrub				
33	15.6	16	Forest				
17	12.0	8	Built-up				

The LIDAR data for Granville, Tar Pamlico Basin meets the specification as per the RMSE criteria of 25 cm.

All figures represent the data with the 95% data set. The data is of good quality for all land class types.

Figure 1 illustrates the RMSE by specific land cover type.

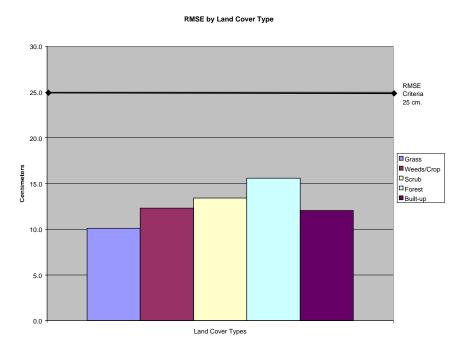


Figure 1

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

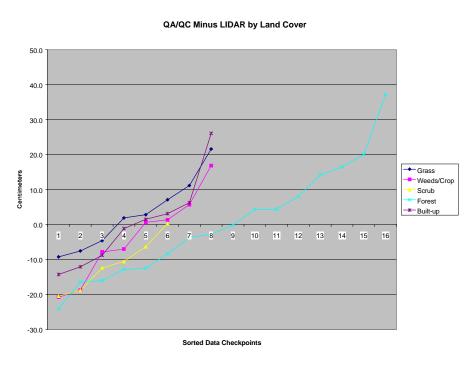


Figure 2

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

Table 2. Elevation Delta					
Delta (cm)	Land Cover				
-9.2	Grass				
-7.5	Grass				
-4.6	Grass				
1.9	Grass				
2.8	Grass				
7.1	Grass				
11.2	Grass				
21.6	Grass				
-20.8	Weeds/Crop				
-18.7	Weeds/Crop				
-7.8	Weeds/Crop				
-7.0	Weeds/Crop				
0.7	Weeds/Crop				
1.3	Weeds/Crop				

5.7	Weeds/Crop			
16.9	Weeds/Crop			
-20.5	Scrub			
-18.8	Scrub			
-12.4	Scrub			
-10.5	Scrub			
-6.3	Scrub			
0.3	Scrub			
-24.1	Forest			
-16.5	Forest			
-16.0	Forest			
-12.8	Forest			
-12.5	Forest			
-8.3	Forest			
-3.7	Forest			
-2.8	Forest			

-0.2	Forest
4.3	Forest
4.4	Forest
8.1	Forest
14.2	Forest
16.5	Forest
20.1	Forest
37.2	Forest
-14.3	Built-up
-12.1	Built-up
-8.8	Built-up
-1.1	Built-up
1.5	Built-up
3.1	Built-up
6.2	Built-up
26.1	Built-up

Table 3 illustrates the overall statistics for the checkpoint data.

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Table 3. Overall Statistics								
	RMSE	Mean	Median	Skew	Std Dev	# of	Min	Max
	(cm)	(cm)	(cm)		(cm)	Points	(cm)	(cm)
Total	13.3	-1.4	-1.9	0.67	13.4	46	-24.1	37.2
Grass	10.1	2.9	2.4	0.66	10.4	8	-9.2	21.6
Weeds/Crop	12.3	-3.7	-3.2	0.13	12.5	8	-20.8	16.9
Scrub	13.4	-11.4	-11.5	0.35	7.8	6	-20.5	0.3
Forest	15.6	0.5	-1.5	0.64	16.1	16	-24.1	37.2
Built-up	12.0	0.1	0.2	1.11	12.9	8	-14.3	26.1

Figure 3 illustrates a histogram of the associated delta errors between the data checkpoints and the interpolated TIN values.

