

September 01, 2011 Eco3D SIMPL Data

Flight_Location = New Hampshire, Maine, South East Quebec, Maryland

Label = 01Sep2011_SIMPL_NH_ME_QC_MD

Comments = New Hampshire: Hubbard Brook and Bartlett Forests, SIMPL on during DBSAR Lines 1 and 2 at 2.6 km (no SIMPL lines); Maine: Howland and Penobscot Forests, SIMPL Lines 1 and 4 at 2.0 km; South East Quebec: ICESat ground track, SIMPL Lines 1 and 3 at 2.6 km; Maryland: Chincoteague Bay Roll and Pitch Calibration at 2.0 km.

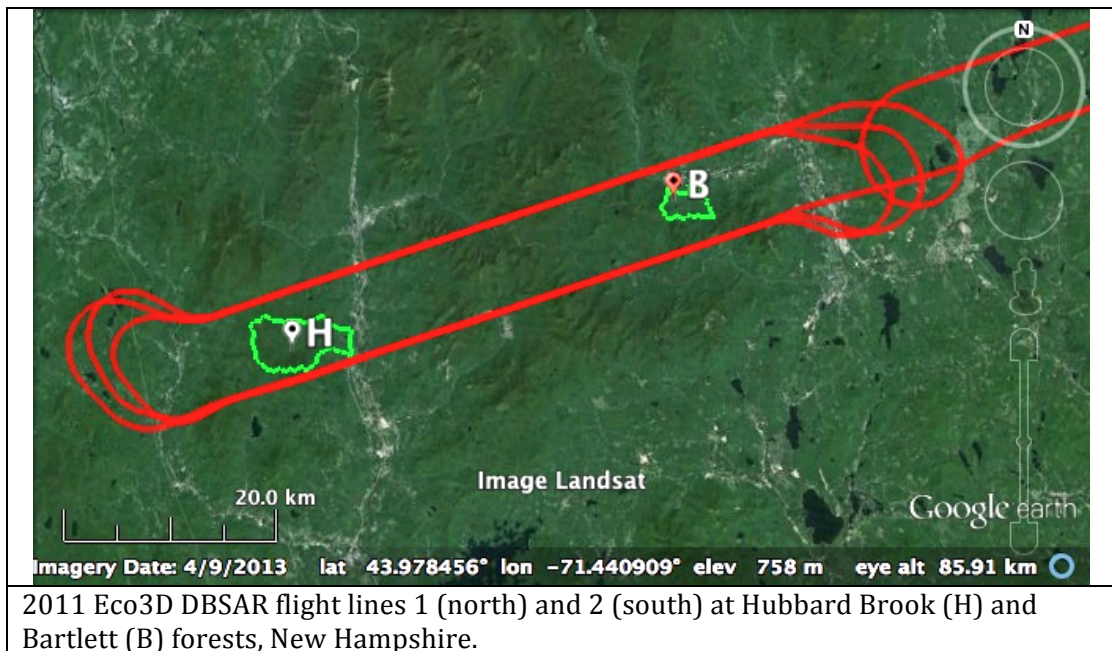
<p>flight direction</p> <p>↑</p>		<p>D</p> <p>⊙</p>	<p>←</p> <p>2.2 mrad</p> <p>→</p> <p>⊙</p> <p>C</p>	<p>B</p> <p>⊙</p> <p>↙</p> <p>76 μrad</p>	<p>A</p> <p>⊙</p> <p>↙</p> <p>233 μrad</p>
<p>At 2 km range: 4.4 m spacing</p> <p>At 500 km range: 1.1 km</p>				<p>0.15 m footprint</p> <p>37 m</p>	<p>0.47 m FOV</p> <p>117 m</p>
Channel Mode	Channel Mode	Channel Mode	Channel Mode	Channel Mode	Channel Mode
7 bad fiber	5 1064 _ _	3 1064 _ _	1 bad card		
8 1064	6 1064	4 1064	2 bad card		
15 532 _ _	13 532 _ _	11 532 _ _	9 bad card		
16 532	14 532	12 532	10 bad card		
<p>Polarization relative to plane-polarized transmit beam: _ _ = perpendicular = parallel</p>					
<p>2011 Eco3D SIMPL beam geometry, channel numbers and measurement modes.</p>					

Hubbard Brook and Bartlett Forests, New Hampshire

DBSAR Line	~ Start Time (UTM)	~ End Time (UTM)	~ Range (km)	Field Site Targets
1 E to W	13:39:40	13:46:40	2.5	none
2 W to E	13:49:20	13:56:00	2.5	none
1 E to W offset	13:59:40	14:06:40	2.5	none
2 W to E offset	14:11:07	14:17:30	2.5	none
1 E to W	14:22:00	14:28:50	2.5	none
2 W to E	14:33:26	14:40:20	2.5	none

Line 1 Start 44.114726 -71.209589 End 43.961442 -71.851449

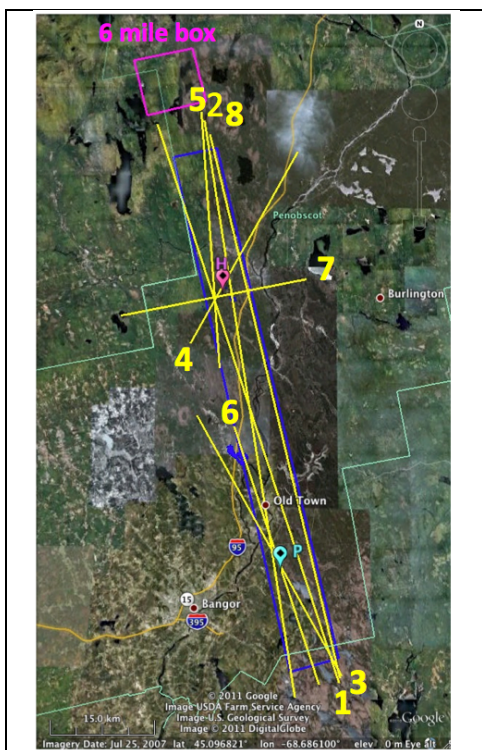
Line 2 Start 43.894000 -71.817928 End 44.038000 -71.209315



2011 Eco3D DBSAR flight lines 1 (north) and 2 (south) at Hubbard Brook (H) and Bartlett (B) forests, New Hampshire.

Howland and Penobscot Forests, Maine

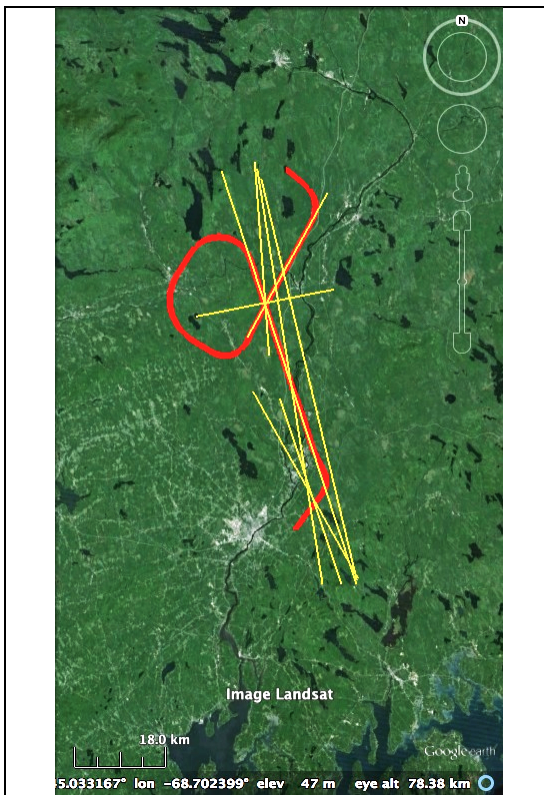
SIMPL Line	~ Start Time (UTM)	~ End Time (UTM)	~ Range (km)	Field Site Targets (measured by GSFC Laboratory for Biospheric Sciences)
1 S to N	15:07:57	15:13:12	1.9	2009 plots: h10, h12 2010 plots: h10, h12, h15, h16, H15 Howland stem map
4 SW to NE	15:19:53	15:23:03	1.9	2009 plots: h02, h06, h09, H17 2010 plots: h1n, h1s, h2, h6, h9 Howland stem map



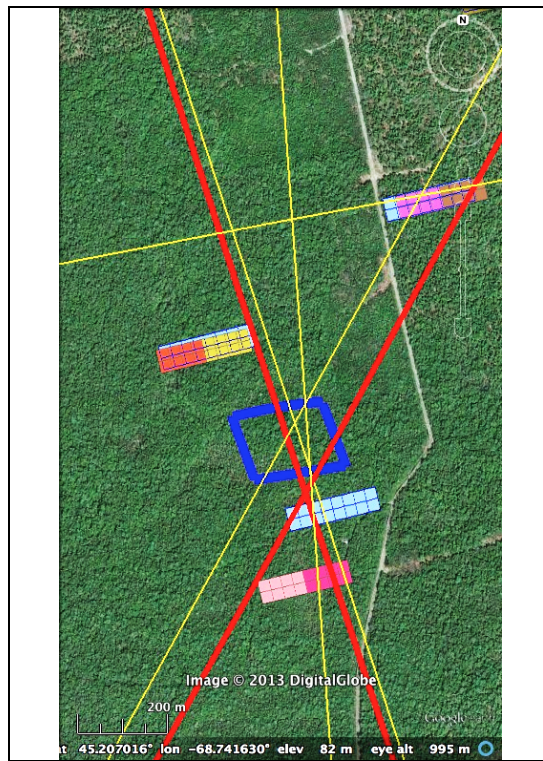
2011 Eco3D SIMPL flight lines at Howland (H) and Penobscot (P) forests, Maine.

Line	Point	N Lat Deg	Decimal Minutes	W Lon Deg	Decimal Minutes
Line 1	S	44	42.33	68	30.71
Line 1	N	45	26.97	68	51.25
Line 2	N	45	27.23	68	45.73
Line 2	S	44	41.24	68	35.57
Line 3	SE	44	42.88	68	30.43
Line 3	NW	45	3.11	68	46.43
Line 4	SW	45	8.84	68	47.25
Line 4	NE	45	24.63	68	34.83
Line 5	N	45	28.03	68	46.11
Line 5	S	45	6.84	68	43.87
Line 6	NW	45	2.21	68	42.23
Line 6	SE	44	42.20	68	32.91
Line 7	E	45	14.08	68	33.90
Line 7	W	45	11.12	68	55.13
Line 8	N	45	28.03	68	46.11
Line 8	S	45	4.99	68	43.70

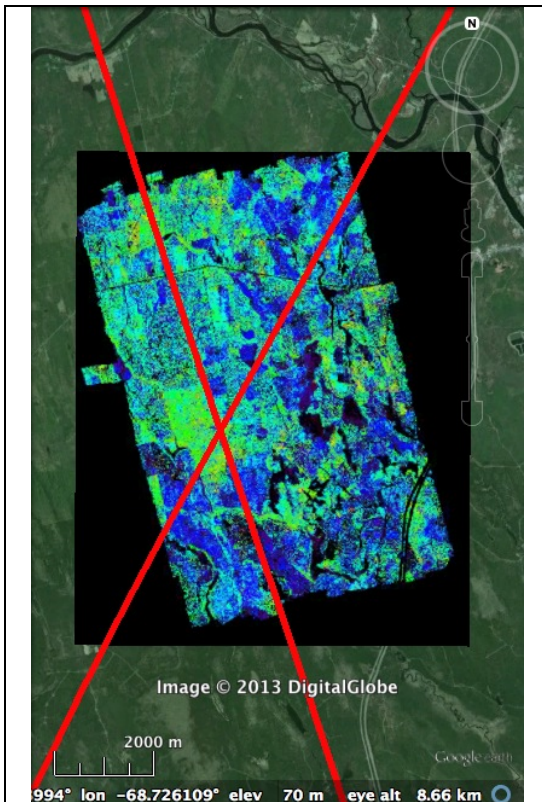
2011 Eco3D SIMPL flight line start and end co-ordinates at Howland and Penobscot forests, Maine.



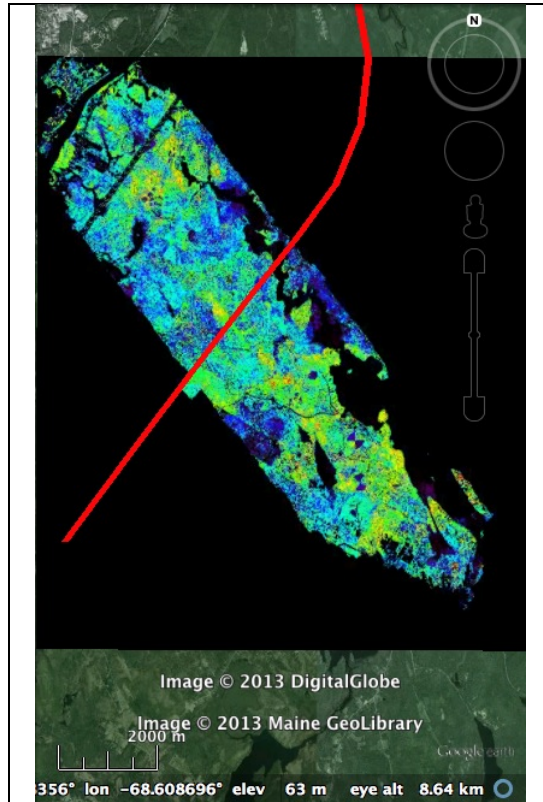
2011 Eco3D SIMPL flight lines (yellow) and flight path (red) on Sept. 1, 2011 at Howland and Penobscot forests, Maine.



2011 Eco3D SIMPL flight lines (yellow) and flight path (red) on Sept. 1, 2011 across Howland stem map (blue rectangle) and nearby field plots.



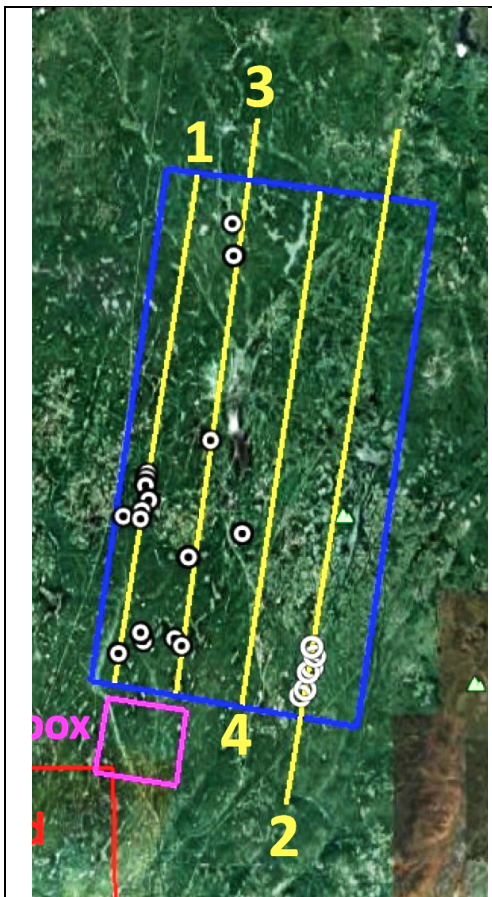
2011 Eco3D SIMPL flight path (red) on Sept. 1, 2011 across Howland forest, Maine G-LiHT canopy height model



2011 Eco3D SIMPL flight path (red) on Sept. 1, 2011 across Penobscot forest, Maine G-LiHT canopy height model

ICESat track in southeast Quebec

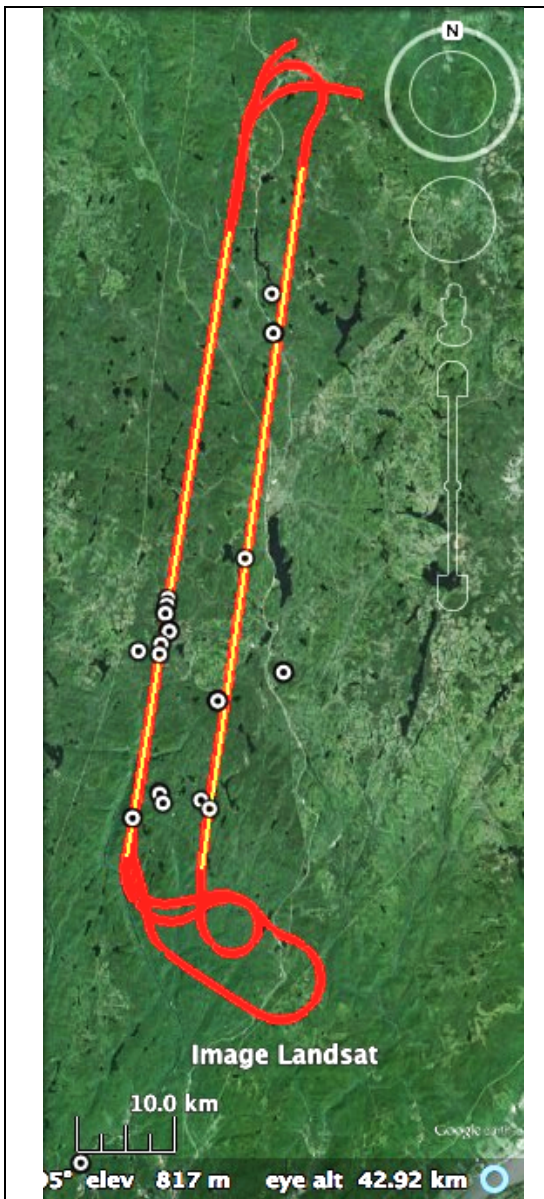
SIMPL Line	~ Start Time (UTM)	~ End Time (UTM)	~ Range (km)	Field Site Targets
1 N to S ICESat track	16:57:32	17:04:55	1.9	Plots 47.54767, -71.37170; 47.54161, -71.37317 47.53537, -71.37466; 47.53377, -71.37498 47.50591, -71.38101; 47.49668, -71.38297 47.34692, -71.41972; 47.34618, -71.41906
3 S to N	17:10:13	17:18:26	1.9	Plots 47.354880, -71.314980 47.584500, -71.266850
1 N to S	17:22:41	17:30:30	1.9	See above
1 S to N	17:39:20	17:46:20	1.9	See above



2011 Eco3D SIMPL flight lines and field plots (circles) in southeast Quebec.

Line	Point	N Lat Deg	Decimal Minutes	W Lon Deg	Decimal Minutes
Line 1	NE	47	53.01	71	17.42
Line 1	SW	47	18.54	71	25.72
Line 2	SW	47	10.63	71	8.70
Line 2	NE	47	55.87	70	57.33
Line 3	NE	47	56.63	71	11.42
Line 3	SW	47	17.91	71	19.61
Line 4	SW	47	17.07	71	13.13
Line 4	NE	47	51.74	71	5.13

2011 Eco3D SIMPL flight line start and end co-ordinates at southeast Quebec. Line 1 follows ICESat track.



2011 Eco3D SIMPL flight lines (yellow), flight path (red) and field plots (circles) on Sept. 1, 2011 in southeast Quebec.



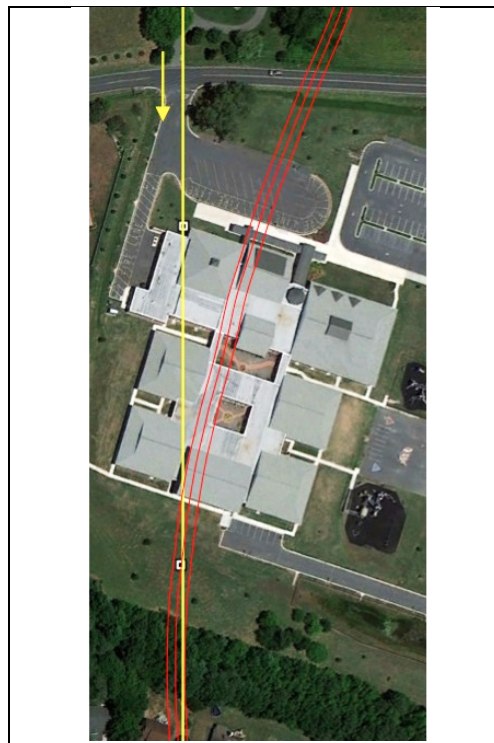
Enlargement of 2011 Eco3D SIMPL flight line 1 (yellow), flight path (red) and field plots (circles) on Sept. 1, 2011 in southeast Quebec.

Chincoteague Bay, Maryland Roll and Pitch Calibration

SIMPL Line	~ Start Time (UTM)	~ End Time (UTM)	~ Range (km)	Events
Calibration N to S	20:14:40	20:15:41	2.0	Ocean City Elementary School crossing
Calibration N to S	20:17:40	20:19:30	2.0	Over water Roll and Pitch maneuver



2011 Eco3D SIMPL calibration flight line on Sept. 1, 2011: Ocean City Elementary School (OCES) crossing and Chincoteague Bay roll and pitch maneuvers.



2011 Eco3D SIMPL calibration flight path (yellow) on Sept. 1, 2011 and location of the three beams across Ocean City Elementary School inferred from roll magnitude and building feature point cloud profiles.