

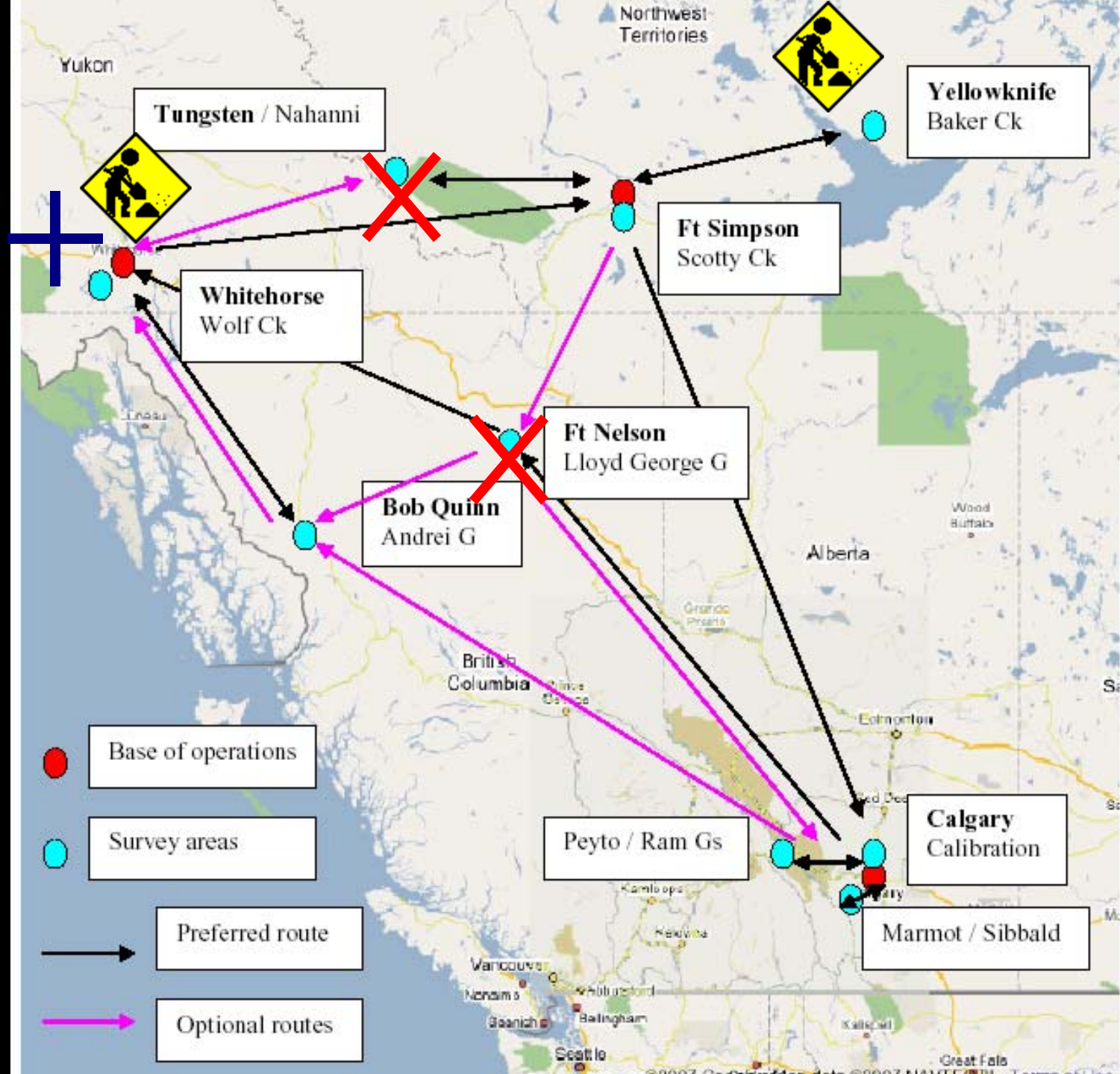
C-CLEAR / IP3 / GSC lidar acquisitions August 2007

Talk summary

Campaign overview

Canopy analysis





Installation

Borek Air Ltd



Calibration

ALTM-NAV Planner 2.0.57

ALTM-NAV Flight Log Flight Plan GPS LIDAR Pilot Display Help

Plan Corridor

Lock First Pass to Edge?

Add New Area Copy at Offset Create Areas from DXF Remove Area

Area 1 of 1

Draw Corridor Edit Waypoints Load Waypoints from File

Flight Profile		LIDAR Settings	
Altitude (m AGL)	1500	System PRF (kHz)	50.00
Pass Heading (deg)	326.63	Scan Freq (Hz)	26
Switch Distance (m)	249.51	Scan Angle +/-	22
Speed (kts)	130	Desired Res (m)	1.273
Turn Time (min)	10	Cross Track Res	1.261
Passes	1	Down Track Res	1.286
Swath (m)	1181.73	Scan Cutoff (deg)	0.5
Pass Spacing (m)	932.22		

Survey Totals

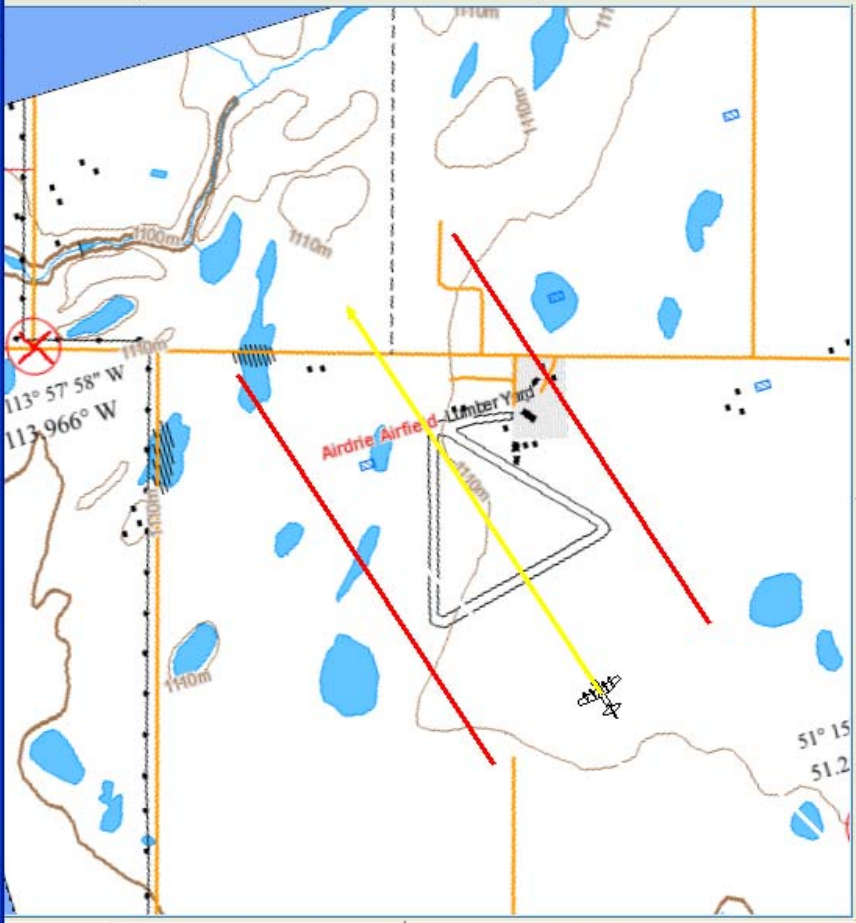
Total Passes	1	Swath Area (km ²)	1.99
Total Length (km)	2.134	AOI Area (km ²)	1.99
Total Flight Time	00:00:32	Total Laser Time	00:00:32

Costs

Use Swath Area Cost per Acre 0 Area Cost \$0

Use AOI Area Cost per Hour 0 Time Cost \$0

Apply Help Close



The map displays a flight corridor (red lines) and a yellow arrow indicating the flight path. The corridor is defined by a series of waypoints. A red 'X' marks a specific location on the map. The map also shows contour lines, water bodies, and the Airdrie Airfield. The flight path is shown as a yellow arrow pointing towards the airfield. The corridor is defined by two red lines that are parallel to each other and follow the path of the yellow arrow. The map also shows a grid of latitude and longitude coordinates.

Windows Taskbar: start, forms, Inbox - Microsoft..., C-CLEAR survey..., Internet Expl..., Perl Comman..., 11:15 AM



Allyson getting to grips with lidar operations

Kananaskis

Plan Survey Grid
[ASL]_Kananaskis_2000AGL_4000ASL_(13,200'ASL).pln

Lock First Pass to Edge?

Add New Area
Create Areas from DXF
Remove Area

Active Area

←
Area **1** of **2**
→

Draw Area
Edit Corners
Generate Box
Load from File

Pass Orientation

Optimize

0 30 60 90 120 150 180 210 240 270 300 330 360

Flight Profile		LIDAR Settings	
Altitude (m AGL)	1600	System PRF (kHz)	33.333
Pass Heading (deg)	211	Scan Freq (Hz)	23
Overlap (m)	691.242	Scan Angle +/-	20
Speed (m/s)	72	Scan Offset	0
Turn Time (min)	10	Desired Res (m)	1.587
Passes	17	Cross Track Res	1.607
Swath (m)	1152.07	Down Track Res	1.566
Pass Spacing (m)	460.83	Scan Cutoff (deg)	0.2

Survey Totals

Total Passes	26	Swath Area (km ²)	217.848
Total Length (km)	383.037	AOI Area (km ²)	204.953
Total Flight Time	05:36:14	Total Laser Time	01:28:38

Costs

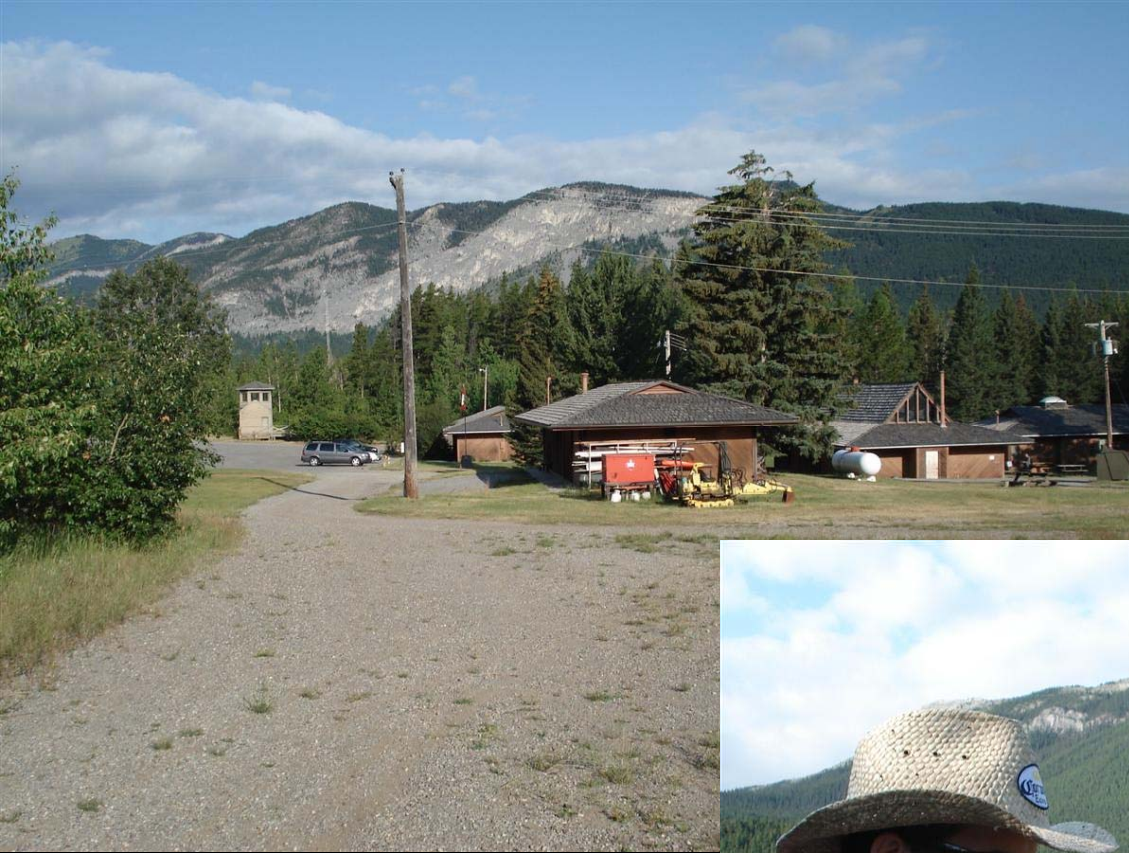
Use Swath Area

Cost per Acre
0
Area Cost
\$0

Use AOI Area

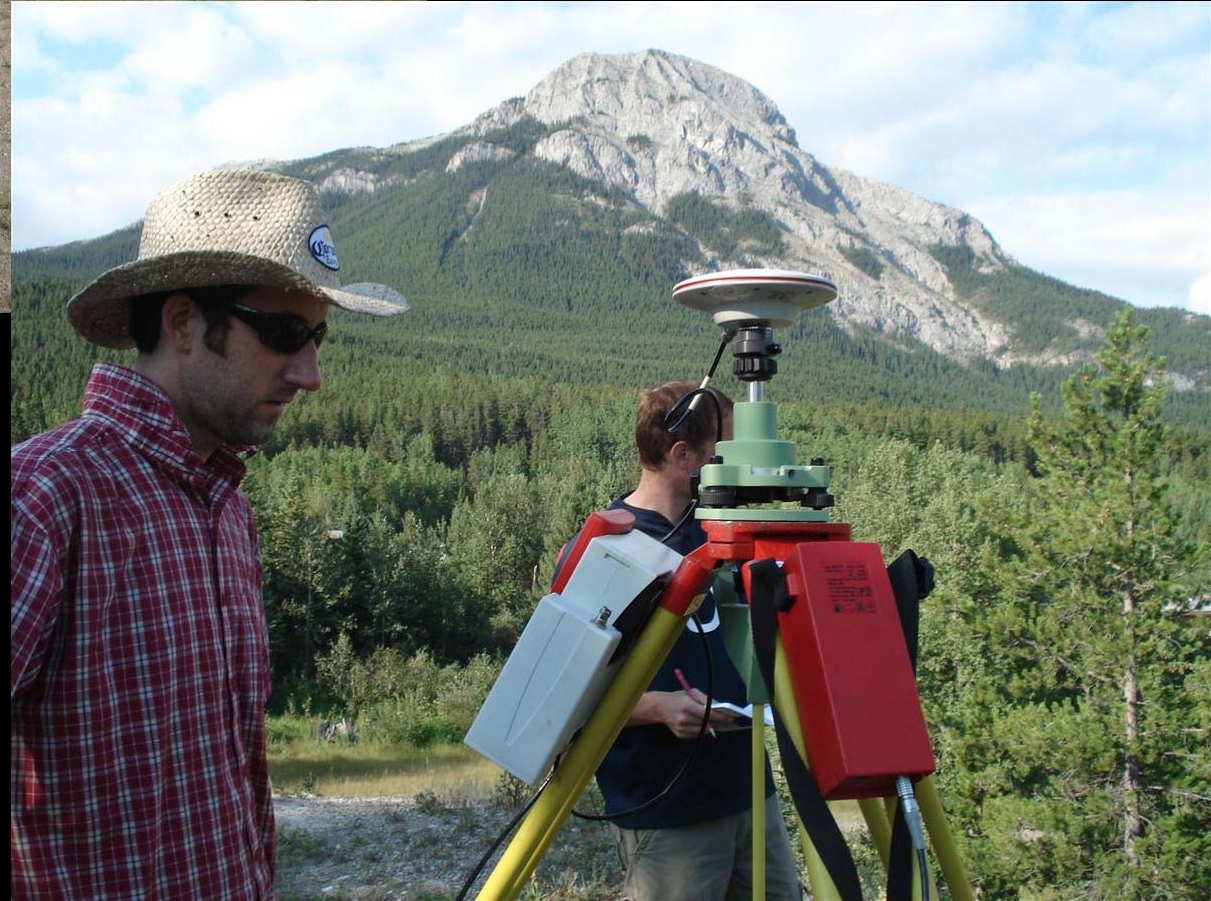
Cost per Hour
0
Time Cost
\$0

Apply
Help
Close



Kananaskis Marmot Creek

- Base station
- Validation work



Peyto Glacier

Plan Survey Grid

Lock First Pass to Edge?

Active Area

Area **1** of **1**

Pass Orientation

Optimize

0 30 60 90 120 150 180 210 240 270 300 330 360

Flight Profile		LIDAR Settings	
Altitude (m AGL)	1600	System PRF (kHz)	33.333
Pass Heading (deg)	131	Scan Freq (Hz)	23
Overlap (%)	53	Scan Angle +/-	20
Speed (kts)	140	Scan Offset	0
Turn Time (min)	10	Desired Res (m)	1.587
Passes	9	Cross Track Res	1.607
Swath (m)	1145.77	Down Track Res	1.566
Pass Spacing (m)	538.51	Scan Cutoff (deg)	0.3

Survey Totals

Total Passes	9	Swath Area (km ²)	35.429
Total Length (km)	65.791	AOI Area (km ²)	33.917
Total Flight Time	01:37:16	Total Laser Time	00:15:13

Costs

Use Swath Area

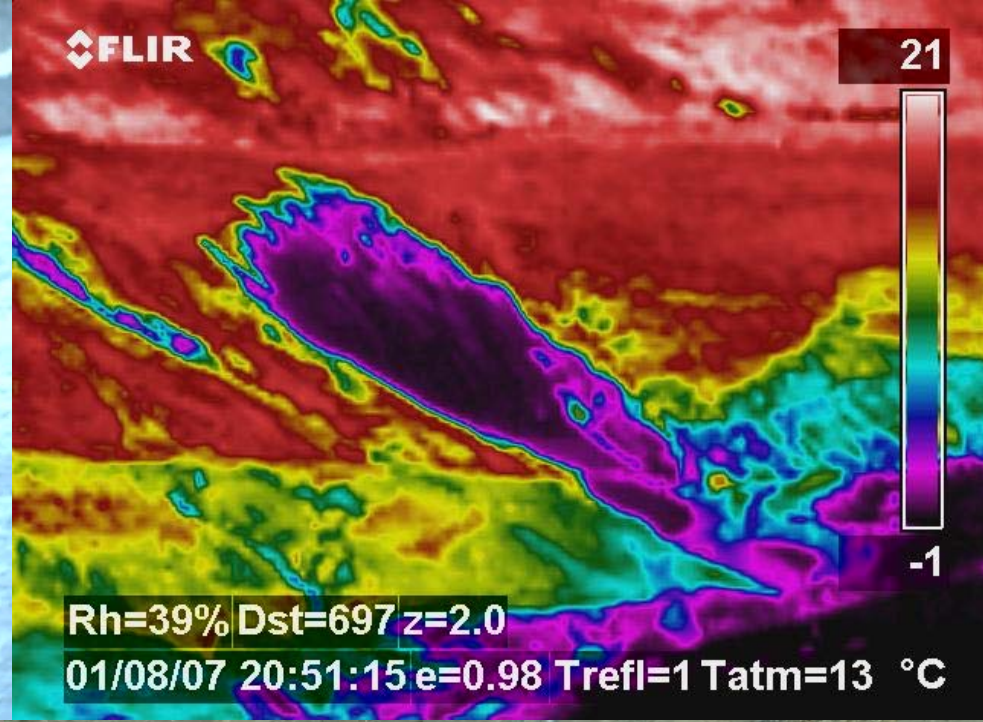
Cost per Acre	0	Area Cost	\$0
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Use AOI Area

Cost per Hour	0	Time Cost	\$0
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15

Peyto field work



ILRIS / IR moraines
GPS validation



Whitehorse – Wolf Creek

Plan Survey Grid

Lock First Pass to Edge?

Add New Area Create Areas from DXF Remove Area

Active Area

Area **1** of **1**

Draw Area Edit Corners Generate Box Load from File

Pass Orientation

Optimize 0 30 60 90 120 150 180 210 240 270 300 330 360

Flight Profile		LIDAR Settings	
Altitude (m AGL)	1500	System PRF (kHz)	33.33
Pass Heading (deg)	58	Scan Freq (Hz)	22
Overlap (%)	51	Scan Angle +/-	20
Speed (kts)	120	Scan Offset	0
Turn Time (min)	10	Desired Res (m)	1.422
Passes	24	Cross Track Res	1.441
Swath (m)	1080.07	Down Track Res	1.403
Pass Spacing (m)	529.23	Scan Cutoff (deg)	0.2

Survey Totals

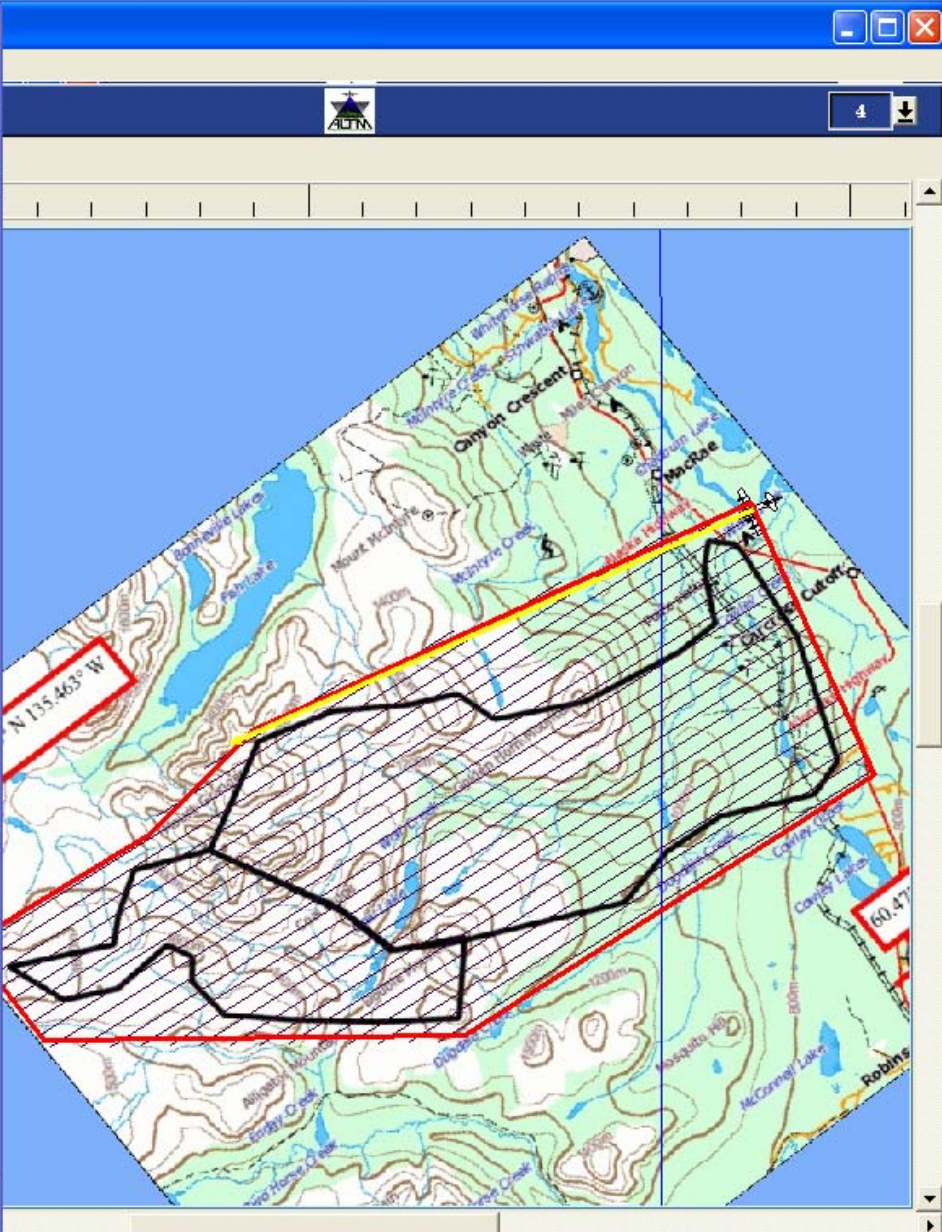
Total Passes	24	Swath Area (km ²)	307.55
Total Length (km)	581.127	AOI Area (km ²)	296.353
Total Flight Time	06:40:33	Total Laser Time	02:36:54

Costs

Use Swath Area Cost per Acre **0** Area Cost **\$0**

Use AOI Area Cost per Hour **0** Time Cost **\$0**

Apply Help Close





BUT!



Grounded due
to broken laser



Ft Simpson - Scotty Creek

Plan Survey Grid

Lock First Pass to Edge?

Active Area

Area **1** of **1**

Pass Orientation

Optimize

Flight Profile		LIDAR Settings	
Altitude (m AGL)	2000	System PRF (kHz)	33.333
Pass Heading (deg)	321	Scan Freq (Hz)	19
Overlap (m)	720.045	Scan Angle +/-	20
Speed (m/s)	61.7	Scan Offset	0
Turn Time (min)	10	Desired Res (m)	1.642
Passes	25	Cross Track Res	1.66
Swath (m)	1440.09	Down Track Res	1.625
Pass Spacing (m)	720.04	Scan Cutoff (deg)	0.2

Survey Totals

Total Passes	25	Swath Area (km ²)	330.258
Total Length (km)	458.667	AOI Area (km ²)	301.886
Total Flight Time	06:17:29	Total Laser Time	02:03:50

Costs

Use Swath Area

Cost per Acre	0	Area Cost	\$0
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Use AOI Area

Cost per Hour	0	Time Cost	\$0
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'Dedicated' Doug - Any opportunity to catch up processing!.....OR.....



THEESIS???

Yellowknife - Baker Creek

Plan Survey Grid

Lock First Pass to Edge?

Active Area

Area **1** of **1**

Pass Orientation

Optimize

0 30 60 90 120 150 180 210 240 270 300 330 360

Flight Profile		LIDAR Settings	
Altitude (m AGL)	2000	System PRF (kHz)	33.333
Pass Heading (deg)	18	Scan Freq (Hz)	20.5
Overlap (m)	720.045	Scan Angle +/-	20
Speed (m/s)	72	Scan Offset	0
Turn Time (min)	10	Desired Res (m)	1.774
Passes	19	Cross Track Res	1.791
Swath (m)	1440.09	Down Track Res	1.757
Pass Spacing (m)	720.04	Scan Cutoff (deg)	0.2

Survey Totals

Total Passes	19	Swath Area (km ²)	273.981
Total Length (km)	380.508	AOI Area (km ²)	259.203
Total Flight Time	04:37:30	Total Laser Time	01:28:03

Costs

Use Swath Area

Cost per Acre	0	Area Cost	\$0
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Use AOI Area

Cost per Hour	0	Time Cost	\$0
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4



AND
AGAIN!



Grounded for
one week!



The C-CLEAR field team 2007

- a few co-pilots!!!



