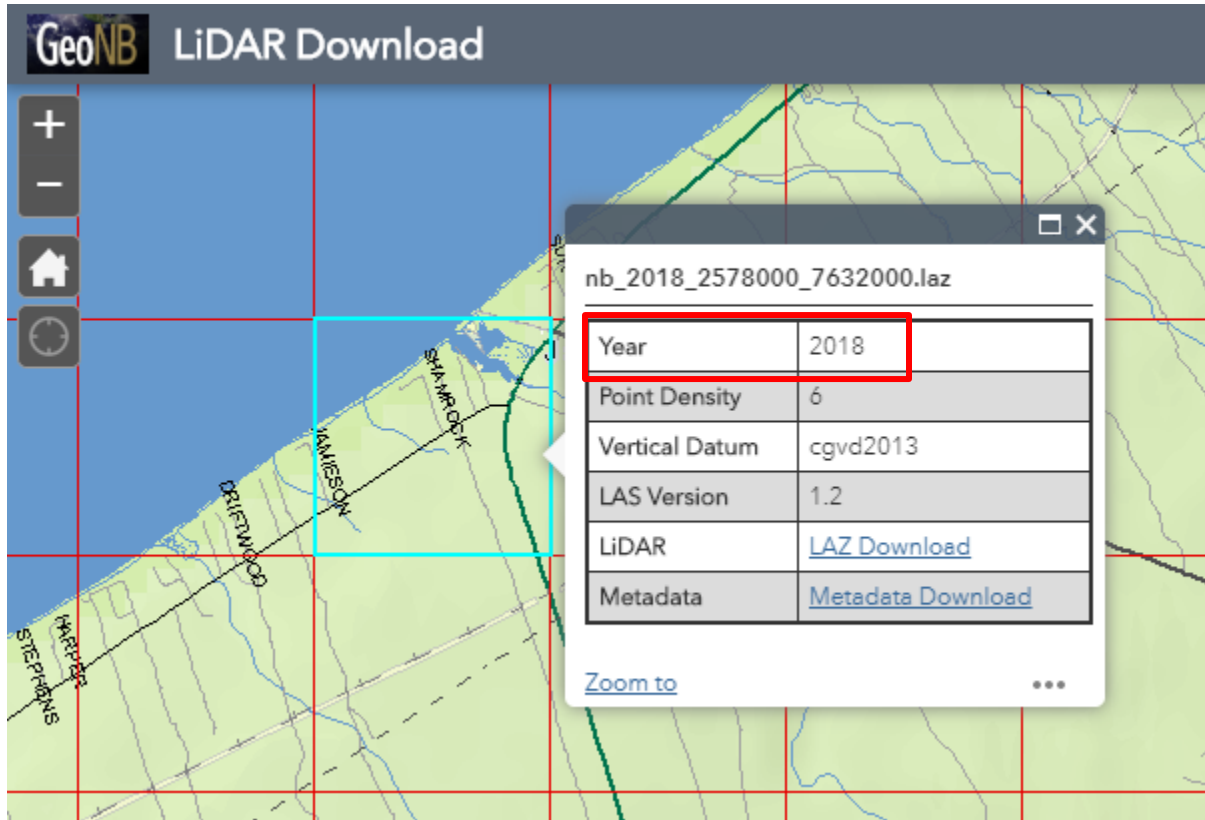


Collection Dates for New Brunswick Lidar Data

There are several ways to determine the date our New Brunswick lidar data was collected. If you only need to know the year the lidar data was collected it is embedded in the filename of every 1 km x 1 km lidar file that is available for [download from GeoNB](#). For example, file "nb_2018_2578000_7632000.laz" was collected in 2018:



If you need to be more precise you can review the metadata file for each lidar project. The metadata file includes a "Beginning_Date" and an "Ending_Date" for each project. Because lidar projects vary from a few square kilometres to thousands of square kilometres, the duration of a project may range from a few days to a few months. Again, using file "nb_2018_2578000_7632000.laz" as an example the [metadata file](#) shows it was part of a project that spanned from July 11, 2018 to August 11, 2018:

```
Time_Period_of_Content:  
Time_Period_Information:  
Range_of_Dates/Times:  
Beginning_Date: 20180711  
Ending_Date: 20180811
```

If you still need more precision you can determine the time range for a single lidar file covering one square kilometre. To do this you will need to use the free "lasinfo" command. Lasinfo is part of the [LAStools](#) software by [rapidlasso](#). Download and install LAStools and then execute the lasinfo command in a DOS window. An example command line for lasinfo is:

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```
"lasinfo -i nb_2018_2578000_7632000.laz -nv -nco"
```

```
F:\testing\temp>lasinfo -i nb_2018_2578000_7632000.laz -nv -nco
lasinfo (190623) report for 'nb_2018_2578000_7632000.laz'
reporting all LAS header entries:
  file signature:      'LASP'
  file source ID:     0
  global_encoding:    1
  project ID GUID data 1-4: 00000000-0000-0000-0000-000000000000
  version major.minor: 1.2
  system identifier:  'LAStools (c) by rapidlasso GmbH'
  generating software: 'las2las (version 181108)'
  file creation day/year: 19/2019
  header size:        227
  offset to point data: 331
  number var. length records: 1
  point data format:  1
  point data record length: 28
  number of point records: 15714107
  number of points by return: 10924981 2485178 1445625 622565 188673
  scale factor x y z:  0.01 0.01 0.01
  offset x y z:        0 0 0
  min x y z:          2578000.00 7632000.00 -114.19
  max x y z:          2578999.99 7632999.99 425.92
the header is followed by 2 user-defined bytes
LASzip compression (version 3.0r1 c2 50000): POINT10 2 GPSTIME11 2
reporting minimum and maximum for all LAS point record entries ...
  X      257800000  257899999
  Y      763200000  763299999
  Z      -11419    42592
  intensity 0      65535
  return_number 1      7
  number_of_returns 1      7
  edge_of_flight_line 0      1
  scan_direction_flag 0      0
  classification 1      18
  scan_angle_rank -30      30
  user_data 54      55
  point_source_ID 19411 49502
  gps_time 215532430.686616 215614375.007324
number of first returns: 10924981
number of intermediate returns: 2302809
number of last returns: 10929406
number of single returns: 8443089
WARNING: there are 40279 points with return number 6
WARNING: there are 6806 points with return number 7
overview over number of returns of given pulse: 8443089 2077786 2467815 1734687
742037 205290 43403
histogram of classification of points:
  90048 unclassified (1)
  4856626 ground (2)
  3024576 low vegetation (3)
  1152679 medium vegetation (4)
  6239889 high vegetation (5)
  86251 building (6)
  2942 noise (7)
  10460 keypoint (8)
  246645 water (9)
  38 bridge deck (17)
  3953 Reserved for ASPRS Definition (18)
```

In the image above circled in red you will find the "gps_time" reported by lasinfo. These two values are the minimum and maximum time stamp for all of the points in the "nb_2018_2578000_7632000.laz" lidar file. The values "215532430.686616" and "215614375.007324" are stored in "Adjusted GPS time". Adjusted GPS time is the number of seconds elapsed since January 1, 1980 minus 1 billion seconds.

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To help you convert these values to a precise date and time we have created a simple [Excel spreadsheet](#). Download the spreadsheet and enter the two GPS time values into the cells shaded green and the results will be displayed:

	A	B	C
1	Time Zone	Minimum	Maximum
2	GPS Time	215532430.686616	215614375.007324
3	UTC	2018-07-13 15:53	2018-07-14 14:39
4	AST	2018-07-13 11:53	2018-07-14 10:39
5	ADT	2018-07-13 12:53	2018-07-14 11:39

The results are circled in red in the image above. So now you know that all the lidar data in file "nb_2018_2578000_7632000.laz" was captured between 11:53 am on July 13, 2018 and 10:39 am on July 14, 2018.

It is possible to achieve even more accuracy. Every point in a lidar point cloud is tagged with the precise GPS time (to 1/1,000,000th of a second) that the point was collected.