



Toolik GIS:

What We Do & Where We're Heading

Requests for Services

- TFS Users Can Request GIS & Remote Sensing Services
- 2 Weeks of Time Per Project
- >2 Weeks: Researcher Should Ask For Funding in Proposal For Their Own GIS Analyst
- User Request Form on Toolik GIS Website



GIS Requests Completed

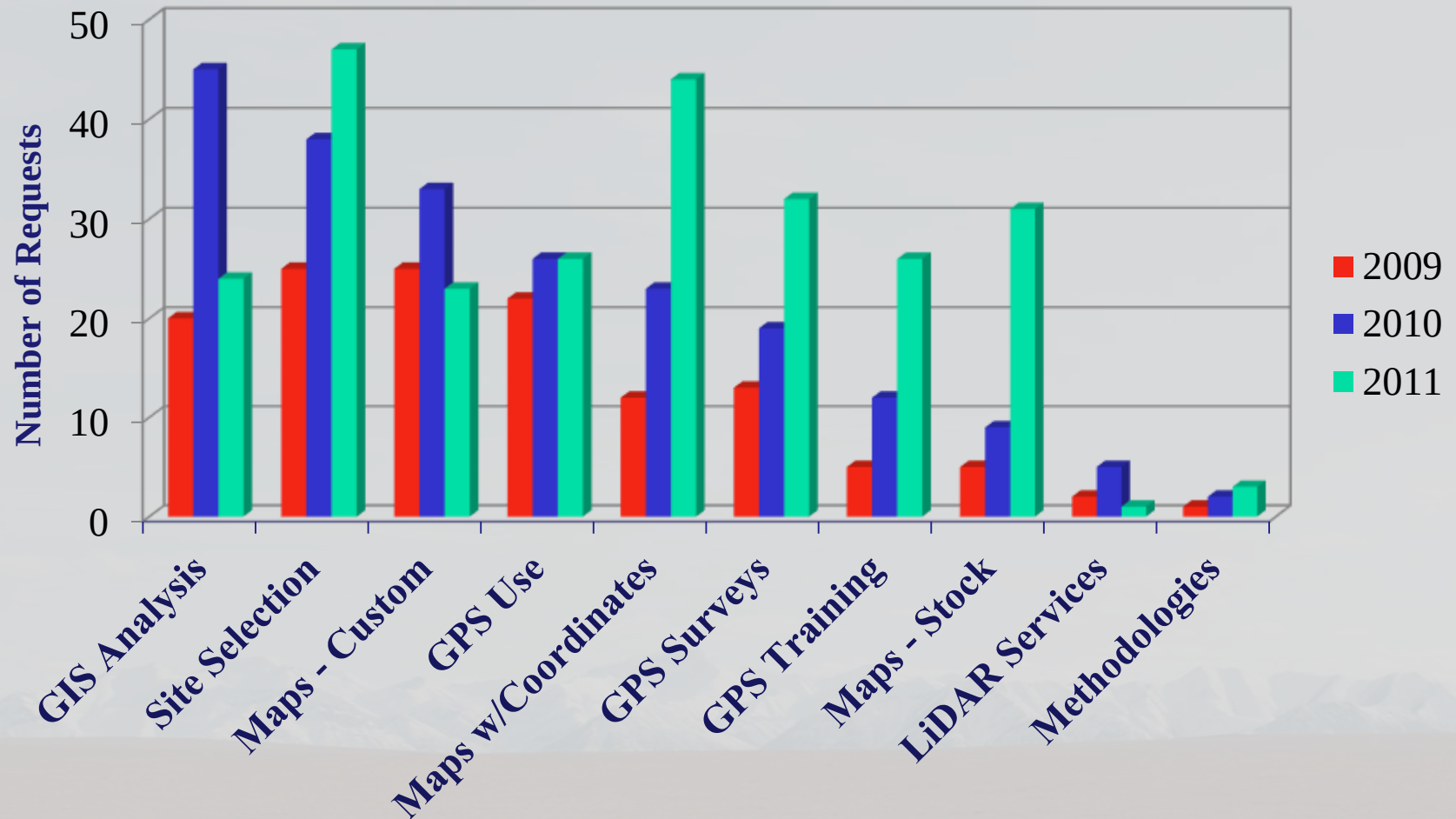
**2009: 110 Requests from 25 Institutions
Received and Completed**

**2010: 195 Requests from 38 Institutions
Received and Completed**

**2011: 250 Requests from 33 Institutions
Received and Completed**



GIS Requests Completed



Basic GPS Services

- **Handheld GPS Equipment Available for Use**
- **GPS Training**
- **Products**
 - **Maps**
 - **Spreadsheets**
 - **GIS & GoogleEarth Files**
 - **Metadata Documentation**



Survey-Grade GPS Services

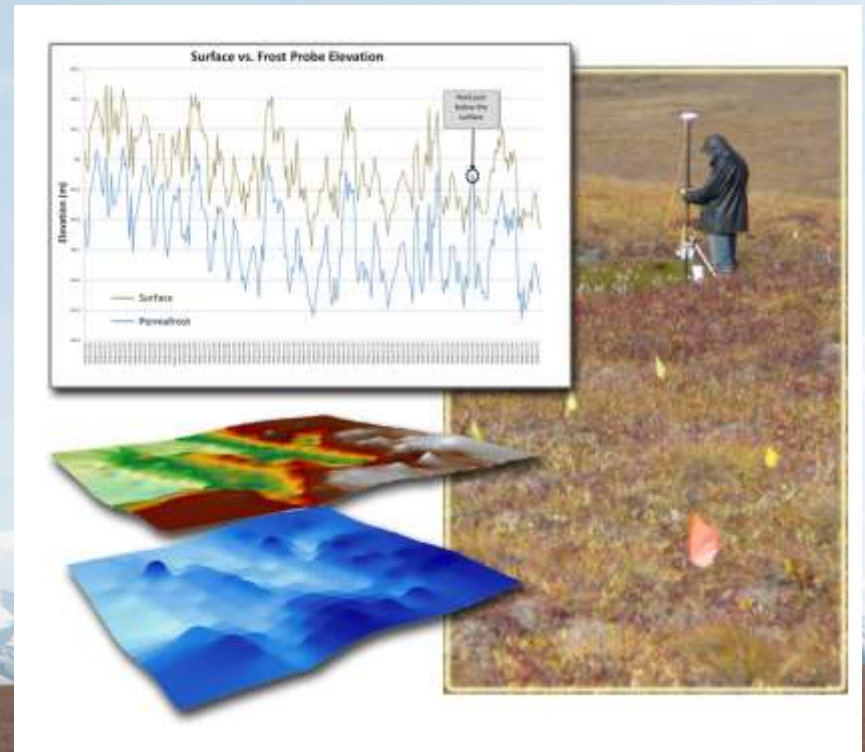
- **High-Accuracy Data Collection & Processing**
- **Products**
 - **Maps**
 - **Spreadsheets**
 - **GIS & GoogleEarth Files**
 - **Metadata Documentation**



Data Collection & Analysis

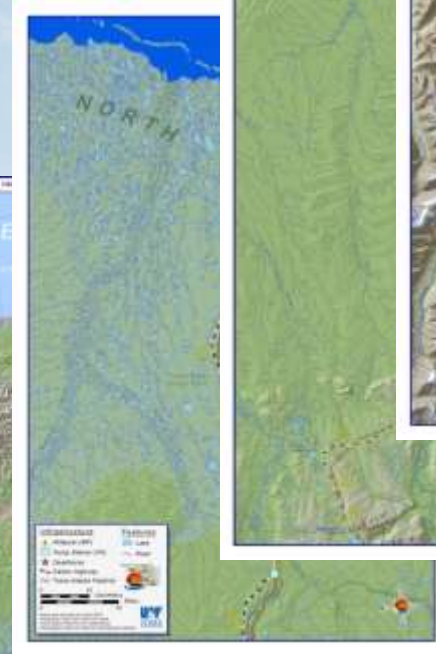
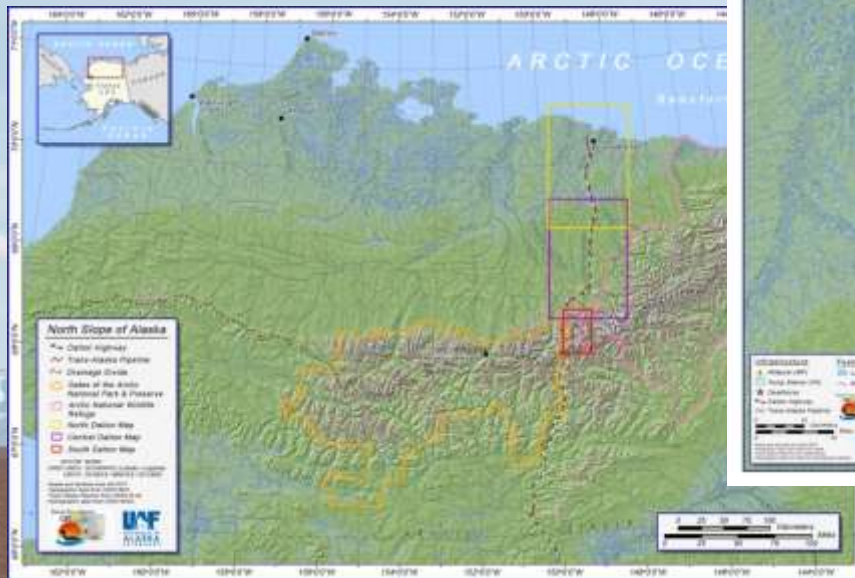
Hydrology and Landscape Dynamics of Innavaik Creek:

- Consultation and Project-Level Support
- Survey-Grade GPS Data Collection
- Graphs and 3D Models



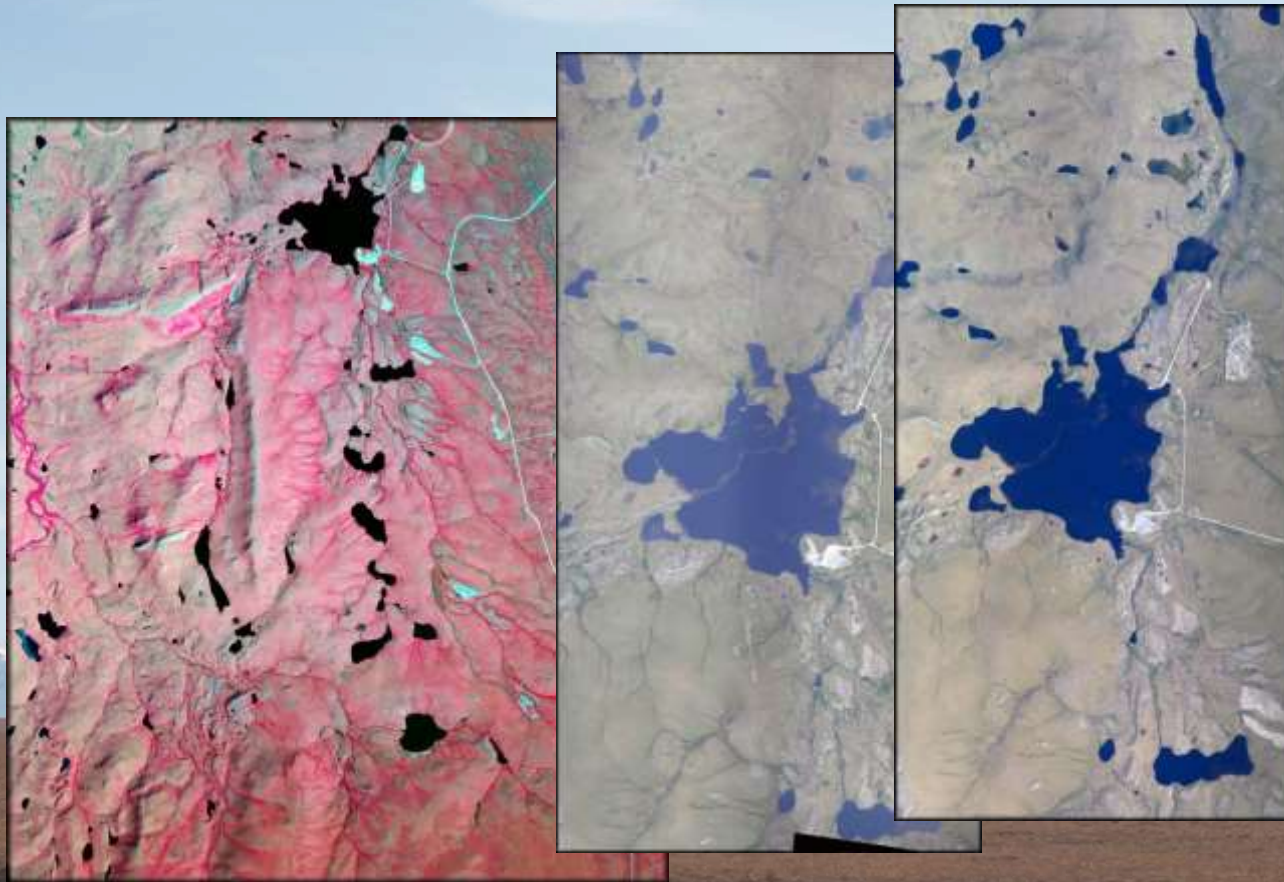
Maps

- Stock Maps
- Field Maps
- Maps for Publication



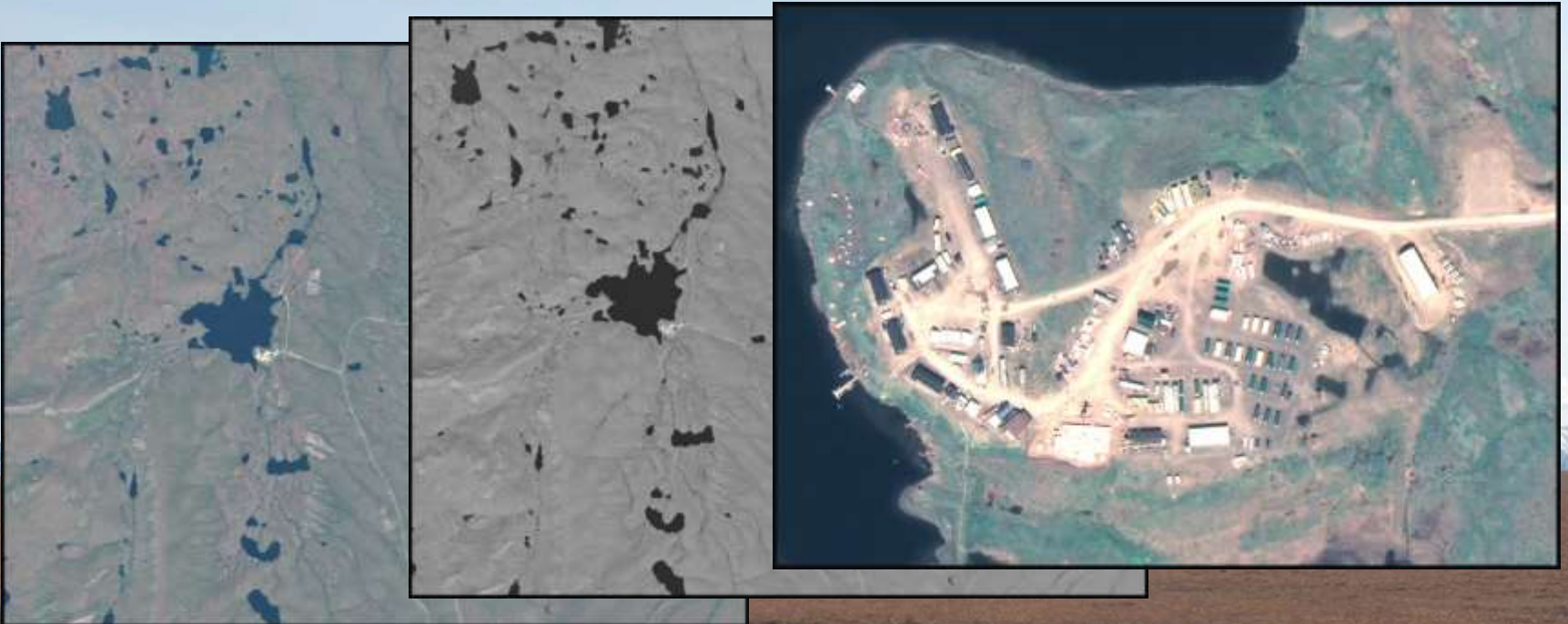
Archive of Aerial Photographs

- Aerial Photographs from 1978, 2002 and 2007



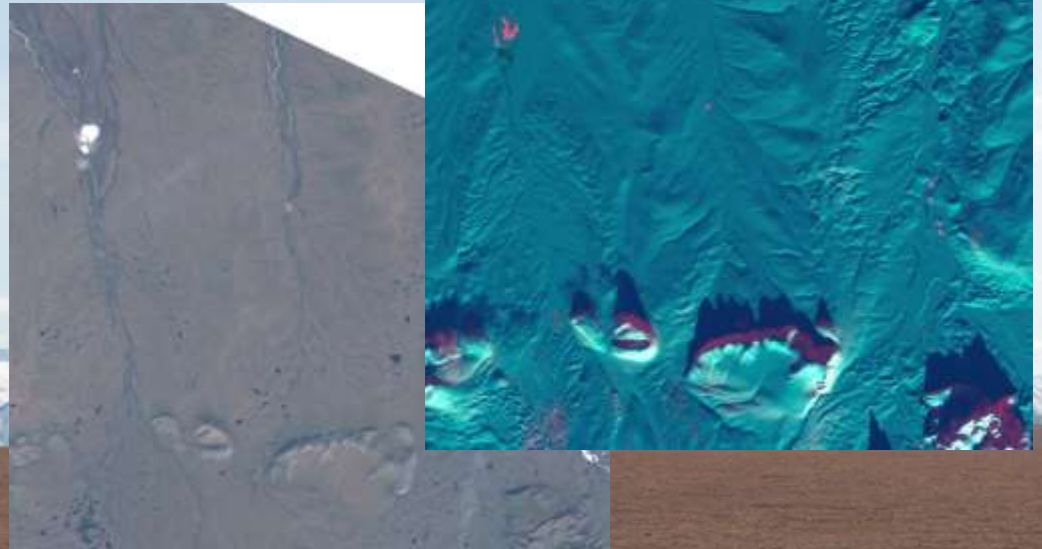
Archive of Satellite Imagery

- LandSat - 30m Multispec / 15m Panchromatic
- Quickbird - 2.5m Multispec / 1m Panchromatic
- Worldview – 2m Multispec / 0.5m Panchromatic



Remote Sensing Applications & Analysis

- Supervised and Unsupervised Classifications
- Classification Accuracy Assessments
- Change Detection
- Thermal Analysis
- NDVI



Bathymetric Map Creation

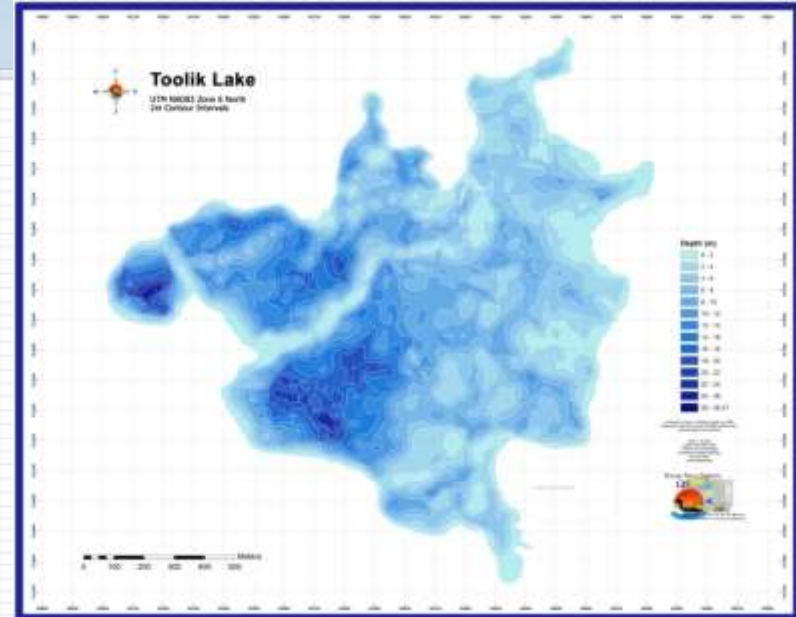
BD Map from Bathymetric Data



Bathymetric Map Archive

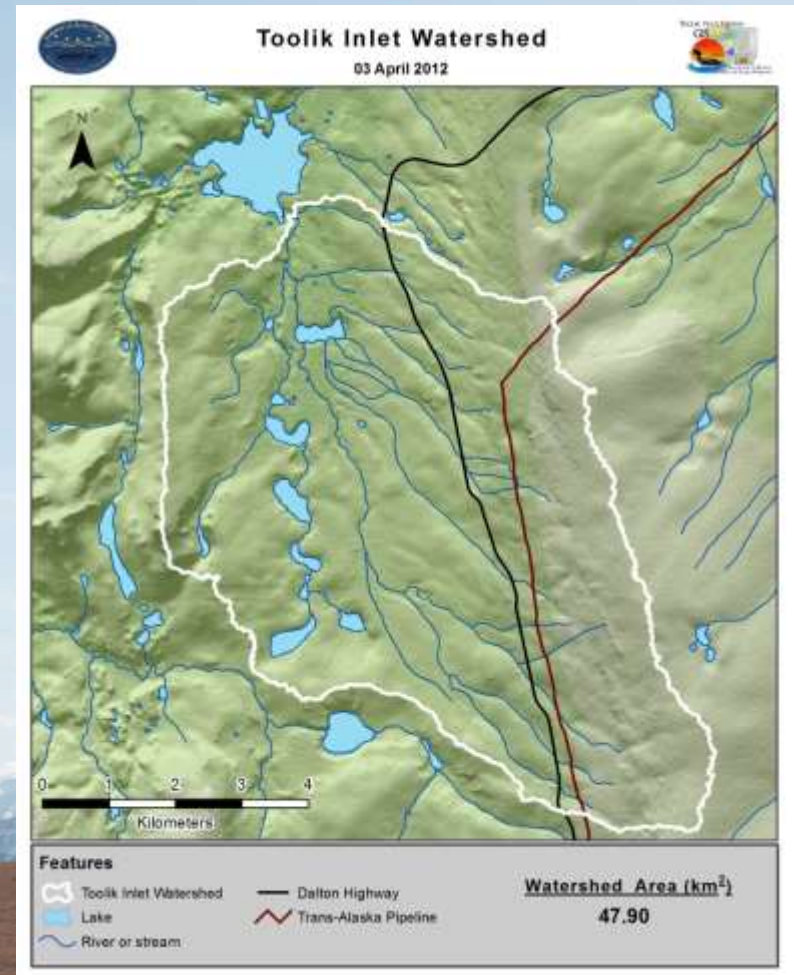
- Nearly 40 Lakes Around the Toolik Region
- 3D Visualization Available
- Hypsographic Curves Also Available

Toolik Lake					
Area values are for the depths between 0-1m, 1-2m, etc.					
Depth (m)	Area (m ²)	Volume (m ³)	Depth (m)	Area (m ²)	Volume (m ³)
0 to 1.00	73058.79	34293.19	0 to 1.00	71958.78	34200.19
1.00 to 2.00	121205.83	109017.08	0 to 2.00	182325.61	160720.27
2.00 to 3.00	118799.17	248591.52	0 to 3.00	311124.78	460311.79
3.00 to 4.00	137224.05	372308.24	0 to 4.00	448348.83	781628.03
4.00 to 5.00	140759.22	513378.79	0 to 5.00	589195.05	1284099.82
5.00 to 6.00	126710.22	643089.55	0 to 6.00	715915.37	1938086.37
6.00 to 7.00	117934.87	763710.44	0 to 7.00	833750.04	2761790.81
7.00 to 8.00	106670.71	872579.68	0 to 8.00	940420.75	3674378.40
8.00 to 9.00	93737.89	971901.44	0 to 8.00	1034158.55	4546277.53
9.00 to 10.00	80824.13	1058440.02	0 to 10.00	1124882.58	5884717.56
10.00 to 11.00	67451.59	1132783.90	0 to 11.00	1192433.87	6737011.85
11.00 to 12.00	53487.24	1187955.83	0 to 12.00	1235841.11	7924567.68
12.00 to 13.00	49048.19	1237569.48	0 to 13.00	1284881.21	9162137.16
13.00 to 14.00	43341.39	1282132.99	0 to 14.00	1328222.39	10444276.15
14.00 to 15.00	47999.83	1323128.33	0 to 15.00	1379123.22	11707386.48
15.00 to 16.00	34779.21	1362443.53	0 to 16.00	1434880.43	13129842.01
16.00 to 17.00	27492.13	1392132.68	0 to 17.00	1432285.56	14521974.68
17.00 to 18.00	26221.57	1419430.55	0 to 18.00	1499607.13	15941455.24
18.00 to 19.00	22514.25	1445010.77	0 to 19.00	1483121.38	17389416.01
19.00 to 20.00	14248.69	1462345.84	0 to 20.00	1497368.94	18849991.95
20.00 to 21.00	7671.67	1473560.37	0 to 21.00	1555639.71	20322232.23
21.00 to 22.00	3884.77	1479186.43	0 to 22.00	1598724.48	21601327.64
22.00 to 23.00	3283.31	1482217.43	0 to 23.00	1512007.79	23283545.07
23.00 to 24.00	1720.52	1484884.22	0 to 24.00	1513737.31	24768429.29
24.00 to 25.00	1092.44	1489189.16	0 to 25.00	1514839.75	26254026.45
25.00 to 26.00	1354.07	1497340.55	0 to 26.00	1515183.78	27742089.09
26.00 to 27.00	92.38	481797.10	0 to 27.00	1515276.16	29143336.10
Total: 1516276.16 29143336.10					
*Areas are the 3D areas of bathymetry not planar areas					



Watershed Delineation & Analysis

- Utilizing DEM's
- Watershed Characteristics
 - Drainage Area
 - Watershed Length
 - Watershed Slope



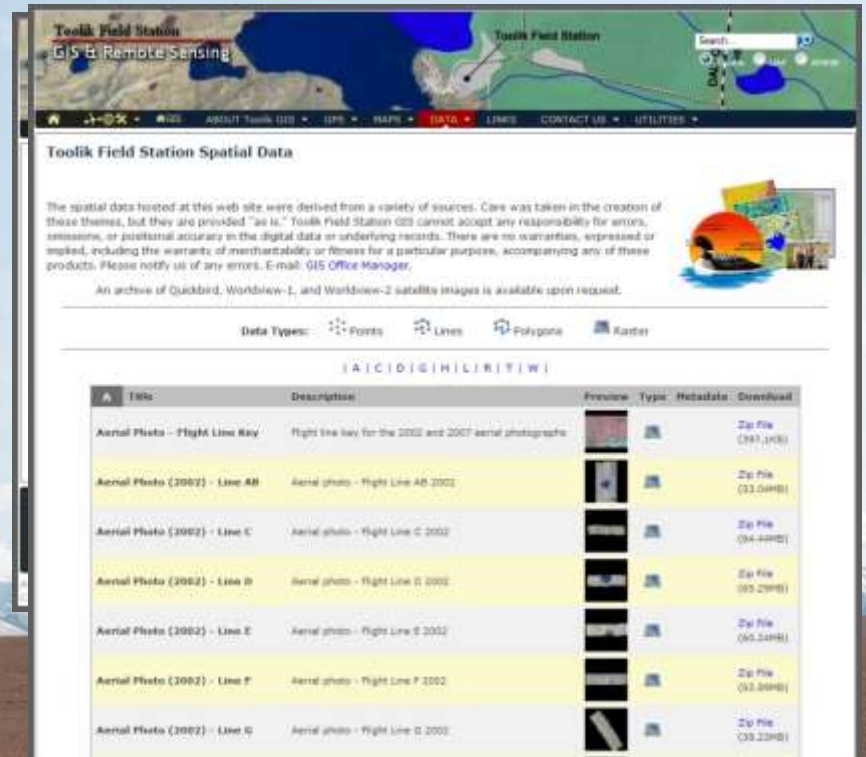
High-Res Digital Elevation Models

- **Ground-based LiDAR**
 - **Elevation Models: 0.1m – 0.5m resolution**
 - **3D Visualization**
 - **Ground-based LiDAR Units Available Through UNAVCO By Request**
- **Aerial LiDAR**
 - **Elevation Models: 0.5m – 1m resolution**
 - **NEON Flights Over Toolik – 2015 (?)**



Toolik GIS Website

- User Request Form
- GPS Equipment & Base Files
- Stock Maps
- GIS Data for Download



Toolik Field Station
GIS & Remote Sensing

Toolik Field Station

Search:

Home | About Toolik GIS | GPS | Maps | Data | Links | Contact Us | Utilities

Toolik Field Station Spatial Data

The spatial data hosted at this web site were derived from a variety of sources. Care was taken in the creation of these themes, but they are provided "as is." Toolik Field Station GIS cannot accept any responsibility for errors, omissions, or positional accuracy in the digital data or underlying records. There are no warranties, expressed or implied, including the warranty of merchantability or fitness for a particular purpose, accompanying any of these products. Please notify us of any errors. E-mail: [GIS Office Manager](mailto:GIS@Toolik.org).

An archive of Quickbird, Worldview-1, and Worldview-2 satellite images is available upon request.

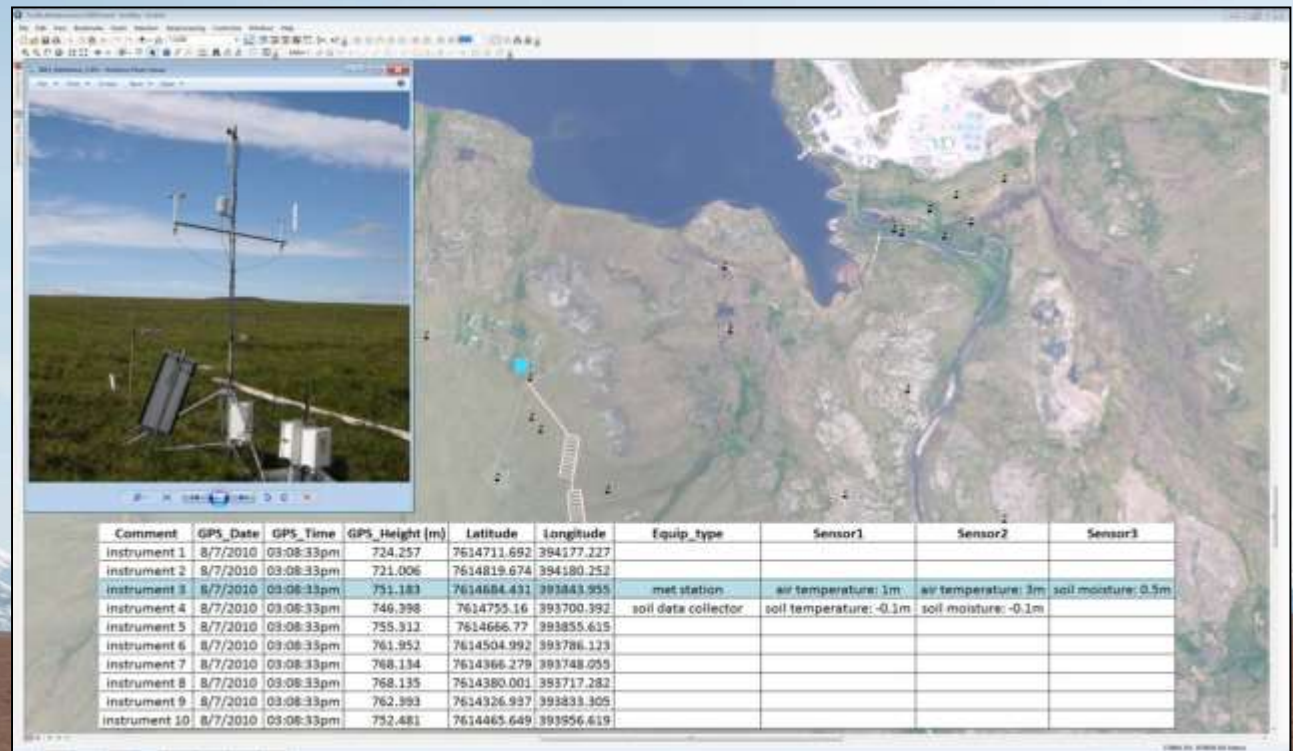
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(A | C | D | G | H | L | R | T | W)

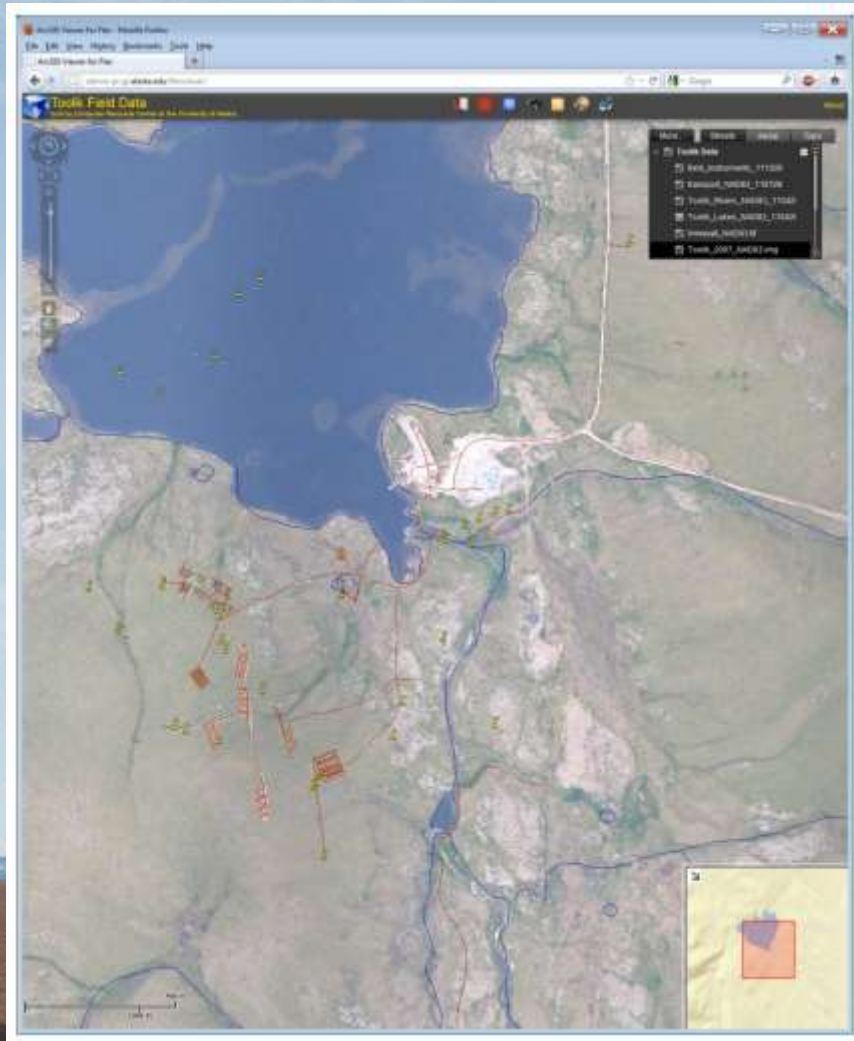
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Aerial Photo (2002) - Line AB	Aerial photo - Flight Line AB 2002				Zip File (31.64MB)
Aerial Photo (2002) - Line C	Aerial photo - Flight Line C 2002				Zip File (34.44MB)
Aerial Photo (2002) - Line B	Aerial photo - Flight Line B 2002				Zip File (33.29MB)
Aerial Photo (2002) - Line E	Aerial photo - Flight Line E 2002				Zip File (35.34MB)
Aerial Photo (2002) - Line F	Aerial photo - Flight Line F 2002				Zip File (33.84MB)
Aerial Photo (2002) - Line G	Aerial photo - Flight Line G 2002				Zip File (38.23MB)

Field Equipment Inventory

- Resource to Researchers
- Help Guide Future Development



Web Mapping Service



Toolik GIS

