

JIRP GPS Data Files and Online Links

ABOUT THE JIRP GPS DATA

Background

The Juneau Icefield Research Program conducts long-term glaciological research and provides glaciological and expeditionary instruction and education on the Juneau Icefield, Alaska.

One of the primary research projects conducted by JIRP is the annual measurement and monitoring of surface elevations and surface velocities of the glaciers of the Juneau Icefield, with emphasis on the Lemon Creek Glacier and the various glaciers of the Taku Glacier system. During JIRP's early years (1950-1992), these measurements were obtained by the use of traditional ground-based theodolite and electronic distance measurement methods. Beginning in 1993, measurements were obtained by the use of survey-grade, differential GPS methods. Since 1995, all measurements have utilized survey-grade, differential, real-time GPS techniques.

GPS Profiles

JIRP has established an extensive network of transverse and longitudinal profiles covering approximately 90% of the Taku Glacier and its numerous tributary glaciers. Additional profiles exist for the Lemon Creek Glacier. Transverse profiles are spaced approximately every 8-12 kilometers along the longitudinal extent of the various glaciers, with point spacing along the profiles of approximately 100-300 meters. Longitudinal profiles extend lengthwise along the center lines of the glaciers, with point spacing of 500 meters.

Survey Methods

All GPS surveys performed on the Juneau Icefield utilize survey-grade, differential GPS units operating in real-time mode. This allows for the yearly reoccupation of the survey points within the transverse and longitudinal profiles to within 50 cm of the standard stakeout coordinates. This ensures that the same points are measured consistently from year-to-year. Typical horizontal accuracy of surveyed points is 1-2 cm, while typical vertical accuracy is 2-3 cm.

GPS Used

All coordinates contained in this dataset were obtained with the following GPS systems:

- Wild System 300
- Trimble 5700
- Trimble R8

Datum and Coordinate System

All coordinates within this dataset are with respect to the standard WGS84 horizontal datum and ellipsoid, and projected into the UTM Zone 8 North coordinate system. The columns in the data files containing these coordinates are identified by the ***Easting_UTM8*** and ***Northing_UTM8*** headings. Heights are with respect to the WGS84 ellipsoid.

In some instances, coordinate values will be shown in the ***Easting_JIRP*** and ***Northing_JIRP*** columns. These coordinates are projected into a custom UTM projection that is centered on the Juneau Icefield.

This system was used during the early years of GPS data collection, but difficulties in sharing the coordinates necessitated transitioning to a standard datum and projection. Thus, these coordinates are now obsolete and should not be used; they are maintained solely for historical purposes.

DATA OWNERSHIP, USE, and CITATION

Data Ownership

All data contained in this dataset were collected and are owned by the Foundation for Glacier and Environmental Research (FGER), which is the parent organization of the Juneau Icefield Research Program (JIRP). Inquiries may be sent to the following:

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Data Use

Provided that FGER/JIRP is properly credited (see below) as the owner/originator of the data contained in these files, the data may be freely used for educational, research, scholarly, and publication purposes. This use may include statistical or other analysis, generation of charts, graphs, and maps, publication in scholarly journals, and other means of presentation, by either print or digital methods.

Data Citation

Use of this dataset requires the following data citation:

Juneau Icefield GPS Dataset, 1993-present. Foundation for Glacier and Environmental Research, Juneau Icefield Research Program, Seattle, Washington.

Listed below are all of the standard GPS profiles that are surveyed by JIRP. Each profile contains the full GPS survey record for that profile. Click the links to download the files.

JIRP Juneau Icefield GPS Survey Data Files	
<u>Juneau Icefield GPS Surveys</u>	<u>Profile 01</u>
<u>Surface Elevation and Velocity Summary</u>	<u>Profile 02</u>
<u>Map of Juneau Icefield Surface Velocities</u>	<u>Profile 03</u>
<u>Taku Glacier Terminus</u>	<u>Profile 03a</u>
	<u>Profile 03b</u>
<u>Longitudinal A</u>	<u>Profile 04</u>
<u>Longitudinal B</u>	<u>Profile 05</u>
<u>Longitudinal C</u>	<u>Profile 06</u>
<u>Longitudinal D</u>	<u>Profile 06a</u>
<u>Longitudinal E</u>	<u>Profile 06b</u>
<u>Longitudinal F</u>	<u>Profile 06c</u>
<u>Longitudinal G</u>	<u>Profile 06d</u>
<u>Longitudinal H</u>	<u>Profile 07</u>
<u>Longitudinal I</u>	<u>Profile 07a</u>
<u>Longitudinal J</u>	<u>Profile 07b</u>
<u>Longitudinal K</u>	<u>Profile 08</u>
<u>Longitudinal L</u>	<u>Profile 09</u>
<u>Longitudinal M</u>	<u>Profile 09a</u>
	<u>Profile 10</u>
<u>Lemon Glacier</u>	<u>Profile 10a</u>
<u>Ptarmigan Glacier</u>	<u>Profile 10b</u>
<u>Matthes-Llewellyn Divide Grid</u>	<u>Profile 11</u>
<u>Vaughan Lewis Longitudinal</u>	<u>Profile 12</u>
	<u>Profile 12a</u>
	<u>Profile 13</u>