FIELD STATION LOCATIONS AND DATA FOR THE GEOLOGIC MAP OF THE HAINES-TAKSHANUK MOUNTAINS-CHILKAT PENINSULA AREA STATEMAP PROJECT, SOUTHEAST ALASKA, COLLECTED IN 2022 AND 2023

Conner M. Truskowski, Sandra L. Walser, Martin C Larsen, Jillian A. Nicolazzo, Robert J. Gillis, Kate F. Bull, Sean P. Regan, Margaret M. Darrow, and Simone Montayne

Raw Data File 2024-17

This report has not been reviewed for technical content or for conformity to the editorial standards of DGGS.

2024
STATE OF ALASKA
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

STATE OF ALASKA
Mike Dunleavy, Governor

DEPARTMENT OF NATURAL RESOURCES
John Boyle, Commissioner

DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS
Melanie Werdon, State Geologist & Director

Publications produced by the Division of Geological & Geophysical Surveys can be downloaded from the DGGS website (dggs.alaska.gov). Publications on hard-copy or digital media can be examined or purchased in the Fairbanks office:

Alaska Division of Geological & Geophysical Surveys (DGGS)
3354 College Road | Fairbanks, Alaska 99709-3707
Phone: 907.451.5010 | Fax 907.451.5050
dggspubs@alaska.gov | dggs.alaska.gov

DGGS publications are also available at:

Alaska State Library, Historical
Collections & Talking Book Center
395 Whittier Street
Juneau, Alaska 99801

Alaska Resource Library and
Information Services (ARLIS)
3150 C Street, Suite 100
Anchorage, Alaska 99503

Suggested citation:
Truskowski, C.M., Walser, S.L., Larsen, M.C., Nicolazzo, J.A., Gillis, R.J., Bull, K.F., Regan, S.P., Darrow, M.M., and Montayne, Simone 2024, Field station locations and data for the geologic map of the Haines-Takshanuk Mountains-Chilkat Peninsula area STATEMAP project, Southeast Alaska, collected 2022 and 2023: Alaska Division of Geological & Geophysical Surveys Raw Data File 2014-17, 3 p. https://doi.org/10.14509/31285

FIELD STATION LOCATIONS AND DATA FOR THE GEOLOGIC MAP OF THE HAINES-TAKSHANUK MOUNTAINS-CHILKAT PENINSULA AREA STATEMAP PROJECT, SOUTHEAST ALASKA, COLLECTED IN 2022 AND 2023

Conner M. Truskowski[1], Sandra L. Walser[1], Martin C. Larsen[1], Jillian A. Nicolazzo[1], Robert J. Gillis[1], Kate F. Bull[1], Sean P. Regan[2], Margaret M. Darrow[3], and Simone Montayne

INTRODUCTION

During July 2022, May 2023, and August 2023, geologists from the Alaska Division of Geological & Geophysical Surveys (DGGS) conducted fieldwork supporting surficial and bedrock mapping for the Haines-Takshanuk Mountains-Chilkat Peninsula area STATEMAP project. The project area includes portions of the Skagway A-1, A-2, B-1, B-2, B-3, and the Juneau D-4 15-minute quadrangles, approximately 300 square miles (fig. 1). This data release provides locations and field descriptions of stations observed during fieldwork. This publication serves as an archive of field site observations and supports research discussion and collaboration. The digital data are available as comma-separated value (.csv) files from https://doi.org/10.14509/31285. The site descriptions may be updated as the work progresses, and we encourage users to visit the DGGS sample and stations database to download the most current site descriptions: https://dggs.alaska.gov/sample/project/id/1666.

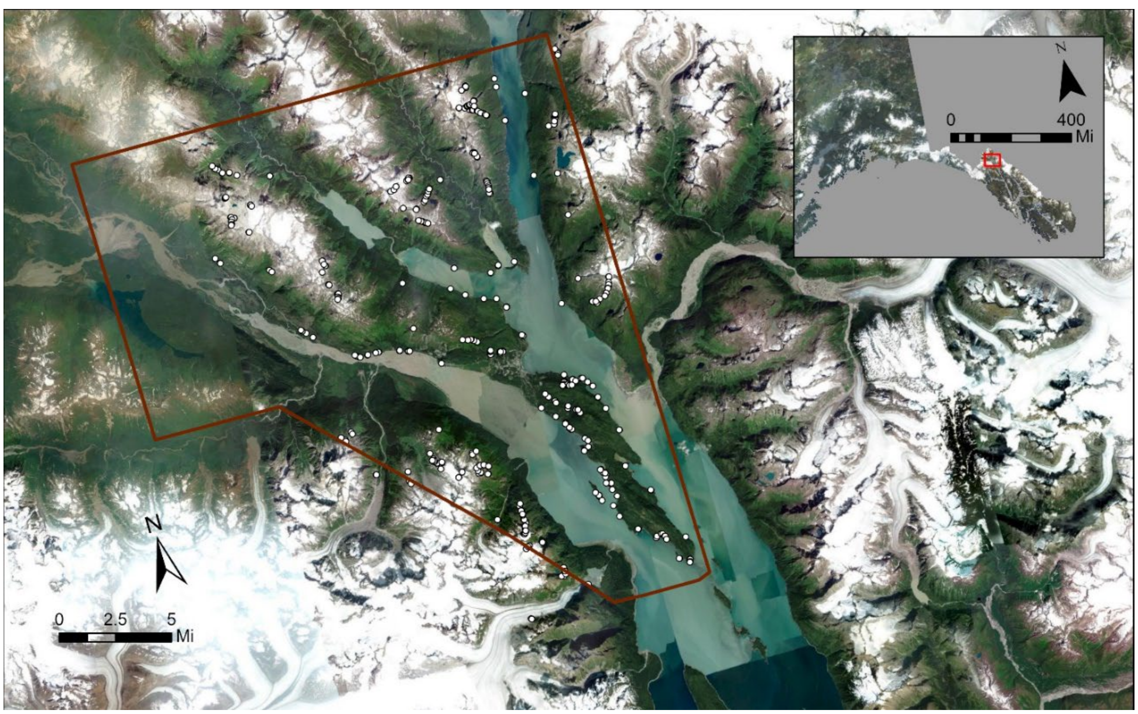

Figure 1. Location map of the project area (red polygon). White dots depict field station locations.

[1] Alaska Division of Geological & Geophysical Surveys, 3354 College Road, Fairbanks, AK 99709
[2] Geophysical Institute, University of Alaska Fairbanks, 900 Yukon Drive, Fairbanks, AK 99775
[3] Department of Civil, Geological, and Environmental Engineering, University of Alaska Fairbanks, P.O. Box 755900, Fairbanks, AK 99775

BACKGROUND

On December 2, 2020, a landslide triggered by an atmospheric river weather phenomenon at Beach Road in Haines, Alaska, claimed two lives. Numerous debris flows were recorded around town during the same rain event, especially along Lutak Spur Road. As a response, the Haines-Takshanuk Mountains-Chilkat Peninsula area STATEMAP project's goal is to create an updated 1:50,000-scale geologic map in paper and digital GIS formats. A comprehensive, detailed map constructed using modern analytical methods is critical to help land managers and residents make informed decisions when planning future development and evaluating risks to infrastructure.

METHODS

We conducted three field investigations (July 23–28, 2022, May 22–30, 2023, and August 13–25, 2023), during which we collected data using GPS-enabled tablets running Esri's ArcGIS Field Maps and Petroleum Experts' Field Move. Latitude and longitude are reported in the WGS84 datum. Data from each collection method were compiled and merged into the DGGS Geologic and Earth Resources Information Library of Alaska (GERILA) PostgreSQL database upon return to Fairbanks (Seitz and others, 2024). Photos associated with field stations may be accessed through the DGGS photo database (maps.dggs.alaska.gov/photodb; Athey and others, 2017). During fieldwork, separate teams of bedrock and surficial geologists collected field station data, detailed below.

Rock and outcrop descriptions from field stations presented in the accompanying data are reconnaissance observations and interpretations made by project geologists in the field. Subsequent data products may update and augment them to reflect further observations, geochemical values, microscopic investigation, or other information. Field rock and outcrop descriptions in this data release have not been reviewed for technical content and should be considered preliminary. In some cases, ground and weather conditions only allowed a brief verification of published map unit interpretations (Berg and others, 1972; Gilbert and others, 1987; Gilbert and others, 1988; Gilbert, 1988; Redman and others, 1984; Wilson and others, 2015.).

Bedrock Station Data Collection

We collected station location information, rock descriptions, sample collection notes, and photographs using Esri's ArcGIS Field Maps, which was set to collect data only if the horizontal location error was equal to or less than 10 m. Each night, we compiled these data into an ArcGIS Online database. We used Petroleum Experts' Field Move application to collect orientation and station measurements where appropriate. Horizontal location error using this method averaged approximately 10 m. When Petroleum Experts' Field Move was unavailable, we used a Brunton compass to take measurements and manually recorded the data.

Surficial Station Data Collection

We collected station data using Esri's Field Maps. Surficial-geologic stations had horizontal errors of approximately 10 m. Collected data includes location information, observed surficial units, photos, material descriptions, general observations, rock mass rating (RMR), and Schmidt Hammer uniaxial compressive strength tests. Where possible, we left the surface undisturbed and made observations from natural exposures or road cuts. Where natural exposures were unavailable, we hand-dug shallow test pits to observe subsurface materials.

ACKNOWLEDGMENTS

This report was funded by the USGS National Cooperative Geologic Mapping Program under STATEMAP award number G22AC00606, 2022, and the State of Alaska General Fund. The views and conclusions contained in this document are those of the authors. They should not be interpreted as

necessarily representing the official policies, either expressed or implied, of the U.S. Government. Mention of trade names or commercial products does not constitute their endorsement by the U.S. Geological Survey or by any branch or employee of the State of Alaska.

REFERENCES

Athey, J.E., Seitz, S.S., and DGGS staff, 2017, Geologic Photos of Alaska: Alaska Division of Geological & Geophysical Surveys Digital Data Series 14, http://doi.org/10.14509/photodb. https://doi.org/10.14509/29735

Berg, H.C., Jones, D.L., and Richter, D.H., 1972, Gravina-Nutzotin Belt; tectonic significance of an upper Mesozoic sedimentary and volcanic sequence in southern and southeastern Alaska, in U.S. Geological Survey, Geological survey research 1972, Chapter D: U.S. Geological Survey Professional Paper 800-D, p. D1-D24.

Gilbert, W.G., Burns, L.E., Redman, E.C., and Forbes, R.B., 1987, Preliminary bedrock geology and geochemistry of the Skagway B-3 Quadrangle, Alaska: Alaska Division of Geological & Geophysical Surveys Report of Investigation 87-2, 2 sheets, scale 1:36,200. https://doi.org/10.14509/2426

Gilbert, W.G., 1988, Preliminary geology of the northern Chilkat Range, southeastern Alaska: Alaska Division of Geological & Geophysical Surveys Report of Investigation 88-8, 2 sheets, scale 1:36,200. https://doi.org/10.14509/2456

Gilbert, W.G., Forbes, R.B., Redman, E.C., and Burns, L.E., 1988, Preliminary bedrock geology and geochemistry of the Kelsall River area, southeast Alaska: Alaska Division of Geological & Geophysical Surveys Report of Investigation 88-4, 2 sheets, scale 1:36,200. https://doi.org/10.14509/2452

Redman, E.C., Retherford, R.M., and Hickok, B.D., 1984, Geology and geochemistry of the Skagway B-2 Quadrangle, southeastern Alaska: Alaska Division of Geological & Geophysical Surveys Report of Investigation 84-31, 34 p., 4 sheets, scale 1:40,000. https://doi.org/10.14509/2390

Seitz, S.S., Montayne, Simone, Freeman, L.K., and DGGS Staff, eds., 2024, DGGS Geologic Earth Resource Library of Alaska (GERILA) Database: Alaska Division of Geological & Geophysical Surveys Digital Data Series 22, https://doi.org/10.14509/gerila. https://doi.org/10.14509/31119

Wilson, F.H., Hults, C.P., Mull, C.G., and Karl, S.M., 2015, Geologic map of Alaska: U.S. Geological Survey Scientific Investigations Map 3340, 196 p., 2 sheets, scale 1:1,584,000, https://alaska.usgs.gov/science/geology/state_map/interactive_map/AKgeologic_map.html.