



West Antarctica Digital Geological Dataset for Cross-discipline Use

<http://www.professionalabstracts.com/POLAR2018/iPlanner/#/presentation/2617>
POLAR2018 Open Science Conference A- 938-0073-01410

Christine Siddoway¹ (csiddoway@coloradocollege.edu), Simon C. Cox, Alex Burton-Johnson, Alexie Millikin, Belinda Smith Lyttle, Samuel Elkind, and SCAR Geomap Initiative, ¹Colorado College, Geology, Colorado Springs, United States,

The SCAR GeoMAP Project has produced a digital geological dataset of West Antarctica, a tectonically active region of thin crust that is undergoing rapid glaciological change. The 1:250 000 map covers the on-continent coastal area bordering the southern Pacific Ocean. Supraglacial features and glacial till, seasonal water and blue ice are mapped using DigitalGlobe high resolution satellite imagery. These provide a baseline for past and future icesheet fluctuation. Sparse bedrock exposures are classified using data from published geological maps and literature, ground-based geological data, and firsthand observations. The bedrock data aid in evaluation of potential geological influences upon the cryosphere, such as bedrock roughness, subglacial volcanism and/or geothermal flux which may affect icesheet stability and the position and velocity of outlet glaciers. The database features links to bibliographic source files for primary literature and published maps. International GeoSciML data protocols are used for feature classification, making the database attribute-rich, queryable, and compatible with national/international geoinformatics and BigData programmes. The development of the resource is timely in respect to several international scientific research programmes, including IODP 379 in the Amundsen Sea, the Thwaites Glacier Project, and ongoing oceanographic surveys along the southern Pacific margin.