MATUSEVICH GLACIER AREA, OATES COATS, EAST ANTARCTICA 1:250,000

(Glaciological Map)

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A colour glaciological map at the scale of 1:250,000 is presented for the Matusevich Glacier area (Oates Coast, East Antarctica). Oates Coast is located between Cape Williams (164° 09' E, 70° 30' S) and Cape Hudson (153° 45' E, 68° 20' S). The glaciological map of the Matusevich Glacier area covers the central part of Oates Coast and the area between Lauritzen Bay (156° 50' E, 69° 07' S) and Suvorov Glacier (160° 00' E, 69° 56' S) along the coast. The glacier tongues here are fed by glaciers draining the Transantarctic Mountains (Lazarev Mountain, Wilson Hills) and the northern part of the Talos Dome area, a peripheral dome in the outermost northeastern sector of the East Antarctic ice sheet. Matusevich Glacier is the largest outlet glacier in this area. The satellite image map with a spatial resolution of 30 m pixel was created using the Landsat TM image (72-109) dated February, 21 1989. The image was georeferenced by identifying the survey control stations of the New Zealand Geological Survey and US Geological Survey maps on the image and rectifying the image in a Lambert Conformal Conic cartographic projection (standard parallels 68° 40' S and 71° 20' S, central meridian 158° E, WGS 84), using a linear conversion matrix with an RMS error of two pixels. The main glaciological features appear on the map, including the ice front, fast ice, ice divides, aeolian morphology and blue ice areas. Satellite images afforded a better distinction of physical features that were often incorrectly identified and defined on earlier maps because of the lack of relevant data. The examination of maps, aerial photographs and satellite images enabled us to determine a reasonably complete history of the last 50 years of Matusevich Glacier tongue and seven other floating glaciers along central Oates Coast. The major calving event for the Matusevich Glacier tongue occurred just before January 1947 when the outer 37 km of the glacier tongue broke away. Remotely sensed data facilitate a detailed mapping of the interior of the ice sheet's prevalent wind direction.