

THE TECTONIC EVOLUTION OF THE TALTSON MAGMATIC ZONE: A RECONNAISSANCE STUDY

BY H.H. BOSTOCK



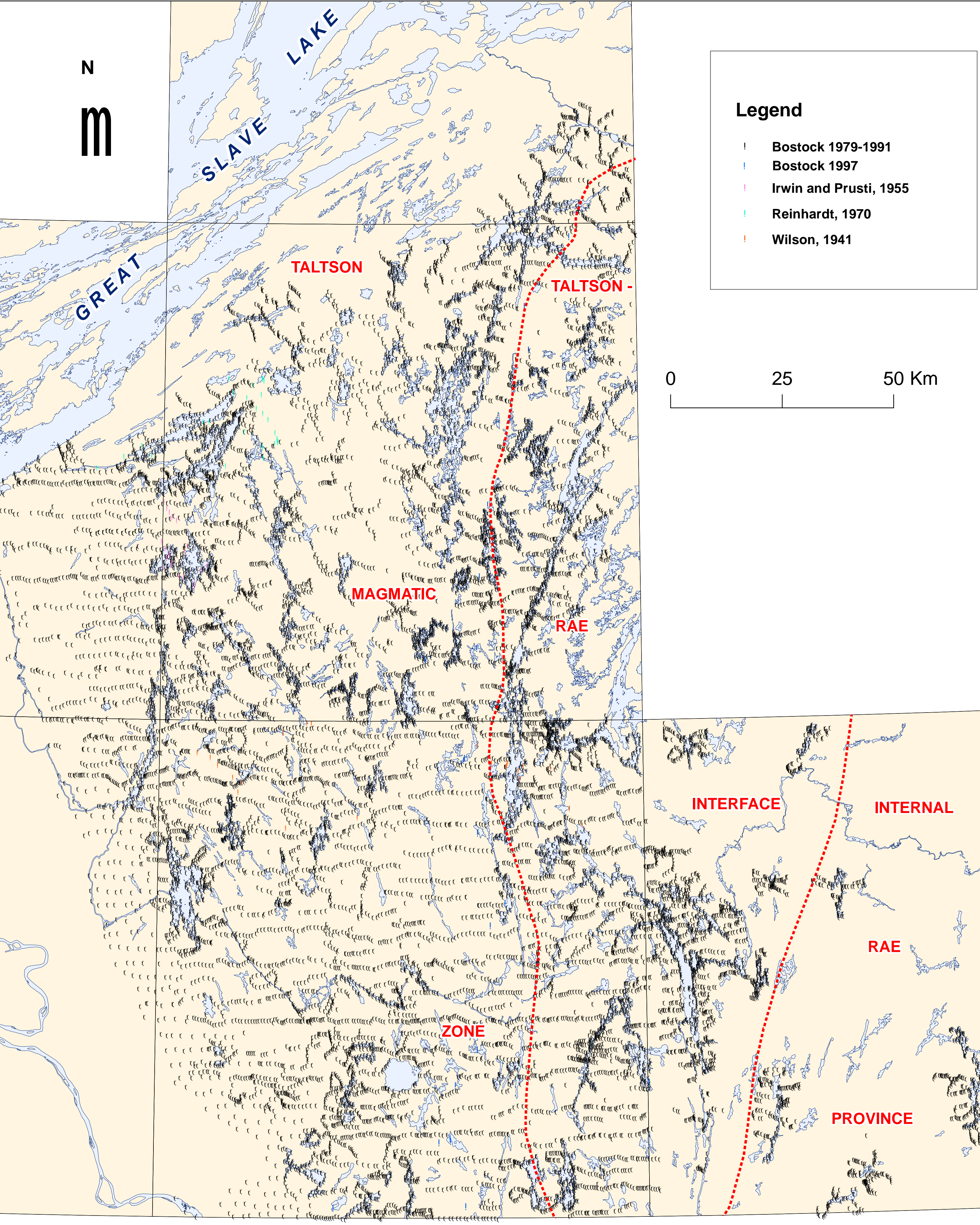
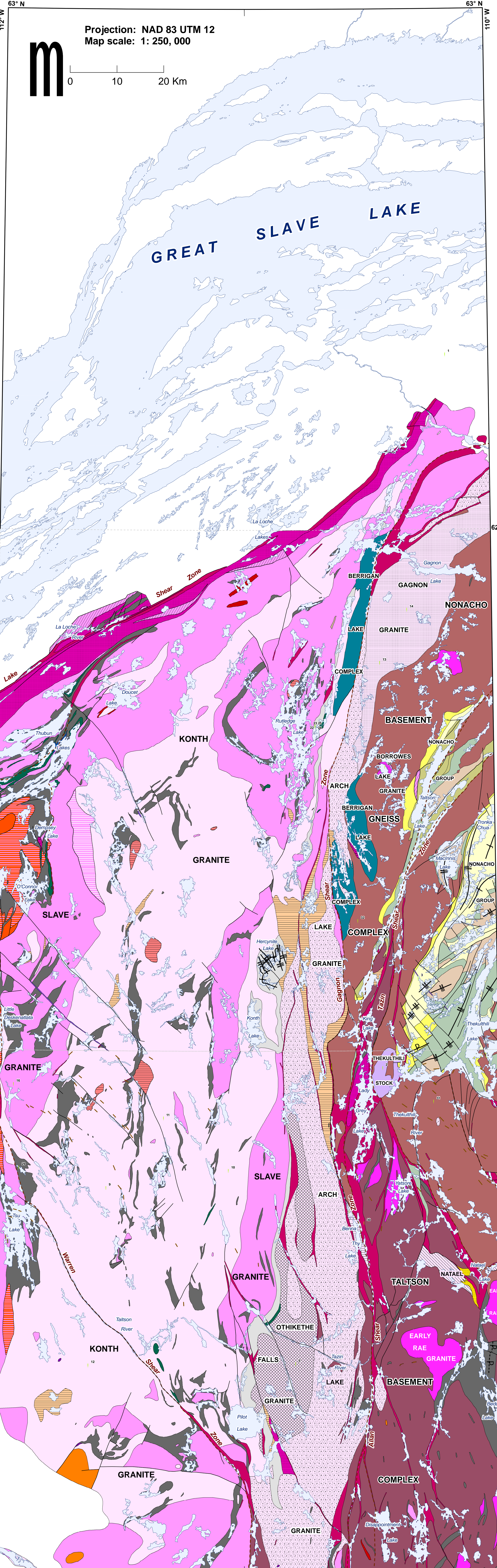
Abstract

This 1:250 000 scale synthesis of the Northern Taltson Magmatic Zone is a posthumous release on behalf of Dr. H.H. Bostock, based on published and unpublished compilations, published figures in papers, primary field station data and geochronology. It encompasses NTS sheets 75D and E, and parts of 85A and H, and 75C and D. It does not incorporate geological data obtained by others during or after his preliminary compilation, unless specifically identified by Dr. Bostock. His primary observations and interpretations were made in 1979-1981, 1985, 1985-1988, 1991 and 1997, including approximately 16,500 observational station sites, 17,500 rock types, lithological descriptions, 26,000 structural and 600 kinematic indicator measurements, 11,400 samples, 2000 Pleistocene measurements and descriptions, 200 economic mineral observations, 200 radiometric measurements, and many metamorphic mineral counts. Laboratory analyses include representative lithology, silicate and ore petrology, mineral identification, geochemistry, paleomagnetic determinations, and structural analysis of oriented samples. Dr. Bostock's tectonic correlation data compilations using standardized data entry and punch cards for a main frame computer are the timeless ground-truth framework for this compilation, and are included in this digital release for future syntheses.

This map spans from west to east three major elements: the Taltson Magmatic Zone (TMZ), the Taltson-Rae Interface (T-RI) and isolated parts of the western Rae Province (Rae). The TMZ comprises mainly north-south trending granitoid suites with infolds and folded envelopes of Rutledge paragneiss with minor metabasites. The granitoid suites include the western 1.986 Ga Deskenatlata granodiorite, a middle 1.956 Ga "Slave-type" monzogranite, which is in turn intruded by the central Konth batholith (1.937 Ga), several other late 1.938 - 1.906 Ga granitoids (Arch Lake, Natael, Othikethe Falls, Gagnon, Berna Thy) and post-TMZ bodies, a 1.882 Ga late Gagnon phase and a 1.613 Ga Thovutill stock. Metasedimentary packages include the pervasive Rutledge River paragneiss which occurs throughout the entire map area and a lithologically similar unit the Marna Moose paragneiss (distinguished by absence of tourmaline and graphite, youngest detrital zircon 2.08 Ga) confined to the eastern margin of the TMZ and may be allochthonous. Within the southern T-RI, the tectonically isolated north-south Hill Island metasedimentary package appears to be intruded by the also-tectonized 1.934 Ga Natael granite at the interface between the Taltson (west) and Nonacho (east) basement gneisses. In the northern T-RI the minimally metamorphosed but folded and faulted syn-tectonic Nonacho Group comprises three alluvial megacycles that rest unconformably upon fault blocks of the Nonacho (and locally Taltson) basement gneisses. The T-RI is intruded by 2.437 and 2.227 Ga early Rae granites, and the 2.340 Ga Thovutill metagabbro. A small area of uncorrelated, presumed Paleoproterozoic quartzite is exposed at the extreme western margin of the Deskenatlata granodiorite, flanked by Quaternary deposits.



Location map



Station density map for compilation area, n=15,385. Station numbers (unique) are included in all datasets. Tectonic domains shown in red.

ID	Unit Name	Rock type	Domain / Group	Age (Ma)	Material	System/Comments	Reference
1	Deskenatlata granodiorite	granodiorite	Slave	1.986	zircon	igneous	Bostock et al. 1985
2	Slave-type monzogranite	monzogranite	Slave	1.956	zircon	igneous	Bostock et al. 1985
3	Konth batholith	monzogranite	Slave	1.937	zircon	igneous	Bostock et al. 1985
4	Berna Thy monzogranite	monzogranite	Slave	1.938	zircon	igneous	Bostock et al. 1985
5	Othikethe Falls monzogranite	monzogranite	Slave	1.938	zircon	igneous	Bostock et al. 1985
6	Natael granite	granite	Slave	1.934	zircon	igneous	Bostock et al. 1985
7	Arch Lake granite	granite	Slave	1.938	zircon	igneous	Bostock et al. 1985
8	Konth batholith	granite	Slave	1.937	zircon	igneous	Bostock et al. 1985
9	Gagnon granite	granite	Slave	1.938	zircon	igneous	Bostock et al. 1985
10	Berna Thy granite	granite	Slave	1.938	zircon	igneous	Bostock et al. 1985
11	Thovutill stock	gabbro	Slave	1.613	zircon	igneous	Bostock et al. 1985
12	Nonacho Group	metasedimentary	Slave	1.938	zircon	metasedimentary	Bostock et al. 1985
13	Nonacho Group	metasedimentary	Slave	1.938	zircon	metasedimentary	Bostock et al. 1985
14	Nonacho Group	metasedimentary	Slave	1.938	zircon	metasedimentary	Bostock et al. 1985
15	Nonacho Group	metasedimentary	Slave	1.938	zircon	metasedimentary	Bostock et al. 1985
16	Nonacho Group	metasedimentary	Slave	1.938	zircon	metasedimentary	Bostock et al. 1985
17	Nonacho Group	metasedimentary	Slave	1.938	zircon	metasedimentary	Bostock et al. 1985
18	Nonacho Group	metasedimentary	Slave	1.938	zircon	metasedimentary	Bostock et al. 1985
19	Nonacho Group	metasedimentary	Slave	1.938	zircon	metasedimentary	Bostock et al. 1985
20	Nonacho Group	metasedimentary	Slave	1.938	zircon	metasedimentary	Bostock et al. 1985
21	Nonacho Group	metasedimentary	Slave	1.938	zircon	metasedimentary	Bostock et al. 1985
22	Nonacho Group	metasedimentary	Slave	1.938	zircon	metasedimentary	Bostock et al. 1985
23	Nonacho Group	metasedimentary	Slave	1.938	zircon	metasedimentary	Bostock et al. 1985
24	Nonacho Group	metasedimentary	Slave	1.938	zircon	metasedimentary	Bostock et al. 1985
25	Nonacho Group	metasedimentary	Slave	1.938	zircon	metasedimentary	Bostock et al. 1985
26	Nonacho Group	metasedimentary	Slave	1.938	zircon	metasedimentary	Bostock et al. 1985
27	Nonacho Group	metasedimentary	Slave	1.938	zircon	metasedimentary	Bostock et al. 1985
28	Nonacho Group	metasedimentary	Slave	1.938	zircon	metasedimentary	Bostock et al. 1985
29	Nonacho Group	metasedimentary	Slave	1.938	zircon	metasedimentary	Bostock et al. 1985
30	Nonacho Group	metasedimentary	Slave	1.938	zircon	metasedimentary	Bostock et al. 1985
31	Nonacho Group	metasedimentary	Slave	1.938	zircon	metasedimentary	Bostock et al. 1985
32	Nonacho Group	metasedimentary	Slave	1.938	zircon	metasedimentary	Bostock et al. 1985
33	Nonacho Group	metasedimentary	Slave	1.938	zircon	metasedimentary	Bostock et al. 1985
34	Nonacho Group	metasedimentary	Slave	1.938	zircon	metasedimentary	Bostock et al. 1985
35	Nonacho Group	metasedimentary	Slave	1.938	zircon	metasedimentary	Bostock et al. 1985
36	Nonacho Group	metasedimentary	Slave	1.938	zircon	metasedimentary	Bostock et al. 1985
37	Nonacho Group	metasedimentary	Slave	1.938	zircon	metasedimentary	Bostock et al. 1985
38	Nonacho Group	metasedimentary	Slave	1.938	zircon	metasedimentary	Bostock et al. 1985
39	Nonacho Group	metasedimentary	Slave	1.938	zircon	metasedimentary	Bostock et al. 1985
40	Nonacho Group	metasedimentary	Slave	1.938	zircon	metasedimentary	Bostock et al. 1985
41	Nonacho Group	metasedimentary	Slave	1.938	zircon	metasedimentary	Bostock et al. 1985
42	Nonacho Group	metasedimentary	Slave	1.938	zircon	metasedimentary	Bostock et al. 1985
43	Nonacho Group	metasedimentary	Slave	1.938	zircon	metasedimentary	Bostock et al. 1985
44	Nonacho Group	metasedimentary	Slave	1.938	zircon	metasedimentary	Bostock et al. 1985
45	Nonacho Group	metasedimentary	Slave	1.938	zircon	metasedimentary	Bostock et al. 1985
46	Nonacho Group	metasedimentary	Slave	1.938	zircon	metasedimentary	Bostock et al. 1985
47	Nonacho Group	metasedimentary	Slave	1.938	zircon	metasedimentary	Bostock et al. 1985
48	Nonacho Group	metasedimentary	Slave	1.938	zircon	metasedimentary	Bostock et al. 1985
49	Nonacho Group	metasedimentary	Slave	1.938	zircon	metasedimentary	Bostock et al. 1985
50	Nonacho Group	metasedimentary	Slave	1.938	zircon	metasedimentary	Bostock et al. 1985

U-Pb age data for plutonic and sedimentary units of the Taltson Magmatic Zone and Taltson-Rae Interface, District of Mackenzie, Northwest Territories. Locations indicated on map face by "Unit code" is keyed to Legend (Sheet 2), and "ID" is keyed to geochronology shapefile "Map_Id" column and included in the legend description for the corresponding unit (Sheet 2). For a complete reference, refer to 'References', Sheet 2.

