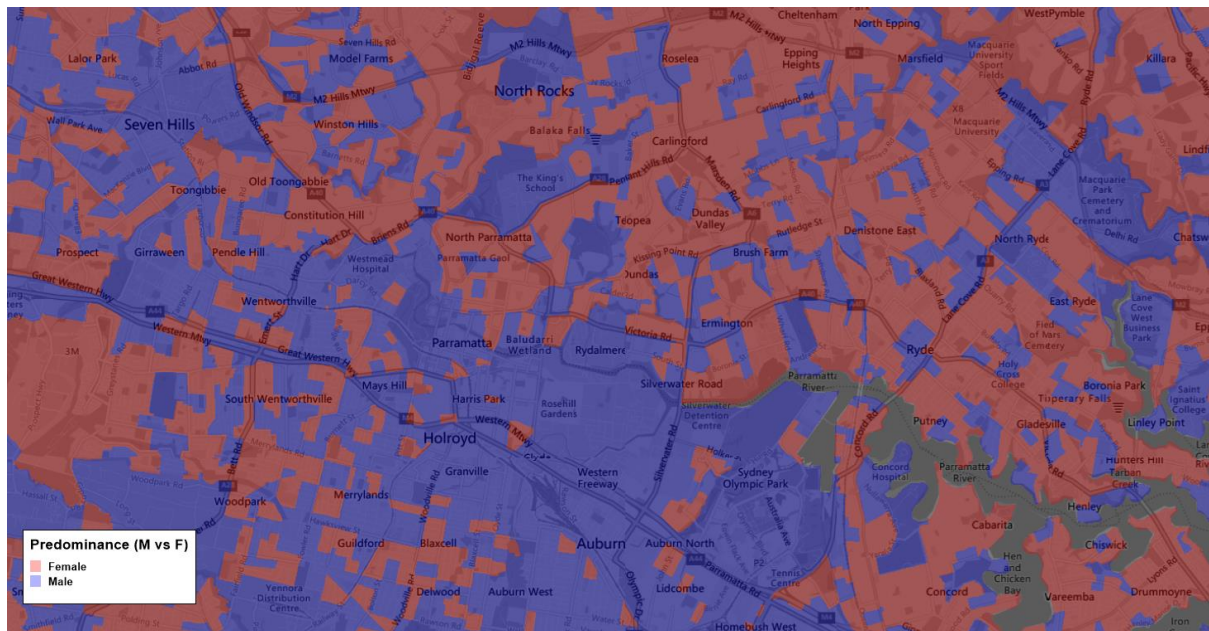


Predominance Helper 1.0

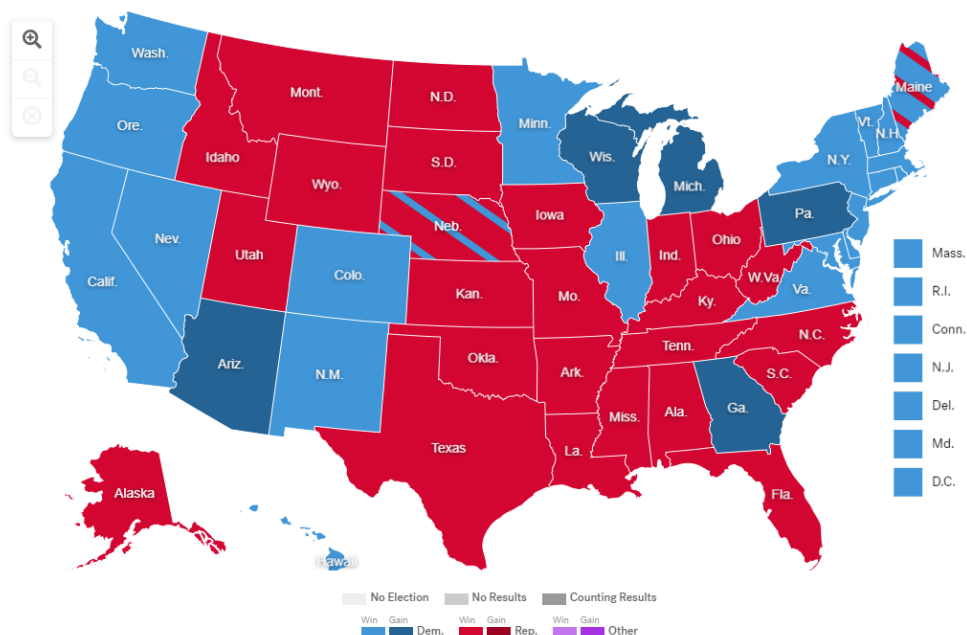
What is predominance and how can I use it?

Predominance allows users to compare multiple attributes within a dataset and show the largest (dominant) category and/or value on the map.

A simple example would be a table of geographic areas with 2 columns of attributes: *Males* and *Females*. Predominance would determine the “dominant” gender (Male or Female) in each region.



An election map (like the one below by ABC News for the 2020 US Election) is another simple example of a predominance map. On a State-by-State basis, it displays which of two or more candidates have the highest total vote count.



With more and more data becoming available, the question of “which is the dominant attribute” from a row with multiple attributes, and then displaying this attribute on a map is a valuable method for analyzing data and providing data-driven output to an end user.

A predominance map can be applied when there are multiple columns of data that share a common subject and unit of measurement. By using predominance to analyze the multiple columns of related data, a user can determine which column contains the highest, or predominant, value for each geographic feature or reference.

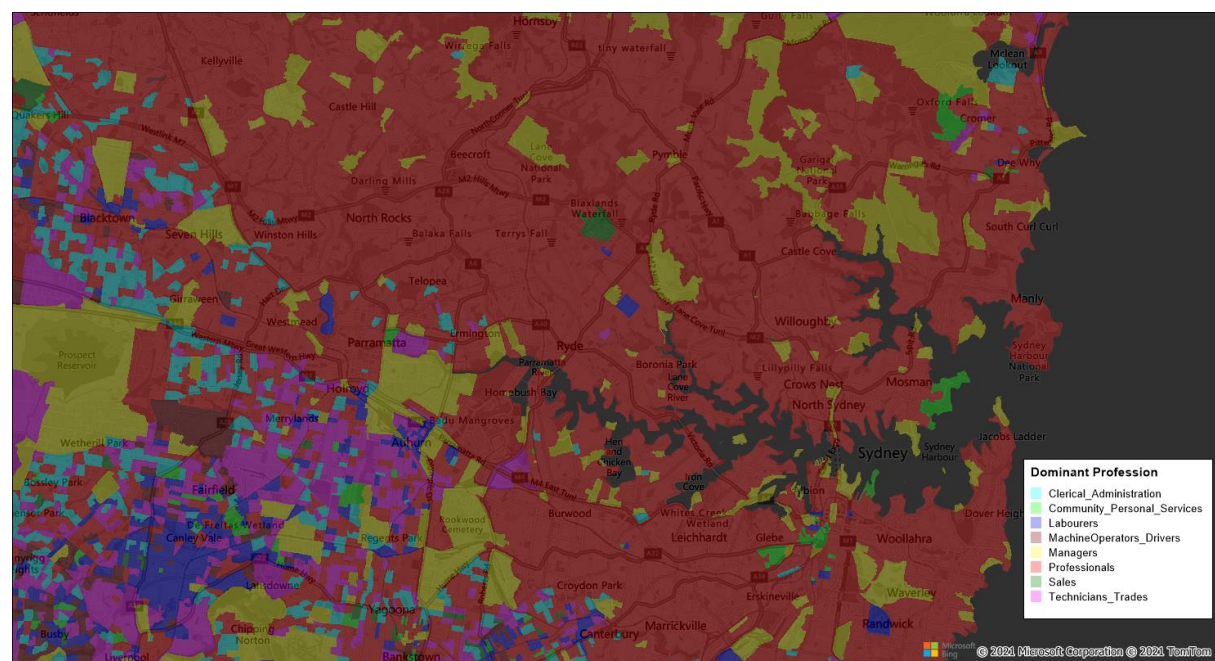
Demographic Data (eg. Census Data) is a prime example of where the value of a predominance analysis could be beneficial. Being able to quickly determine and visualise:

- which Age Band is the most dominant;
- which Income Band is the most dominant; or
- which Profession is the most dominant,

are all simply answered and displayed using the new “Predominance Helper” tool.

The example below illustrates an analysis based on demographic data at a Census geography level to determine which Occupation category is the most dominant in that area. The Predominance Helper tool adds fields for the dominant Category and also the value of that Category (if desired). The resultant Predominance map reflects a clear demarcation across the map-area in terms of “white collar” occupations versus “blue collar” occupations.

SA1_7DIGITCODE_2016	Managers	Professionals	Technicians_Trades	Community_Personal_Services	Clerical_Administration	Sales	MachineOperators_Drivers	Labourers	MAX_Value	CAT_Dominant
1129001	49	93	46	27	61	46	5	22	93	Professionals
1129002	80	135	40	25	46	35	10	23	135	Professionals
1129003	49	97	22	22	49	22	13	6	97	Professionals
1129004	34	90	28	15	59	29	6	11	90	Professionals
1129005	49	141	23	35	61	31	9	17	141	Professionals
1129006	30	51	26	12	34	15	4	6	51	Professionals
1129007	29	60	14	7	23	14	3	7	60	Professionals
1129008	57	90	37	12	54	26	11	23	90	Professionals
1129009	44	55	22	16	35	22	7	21	55	Professionals
1129010	52	83	31	17	43	29	6	7	83	Professionals
1129011	23	55	45	15	23	24	2	4	55	Professionals



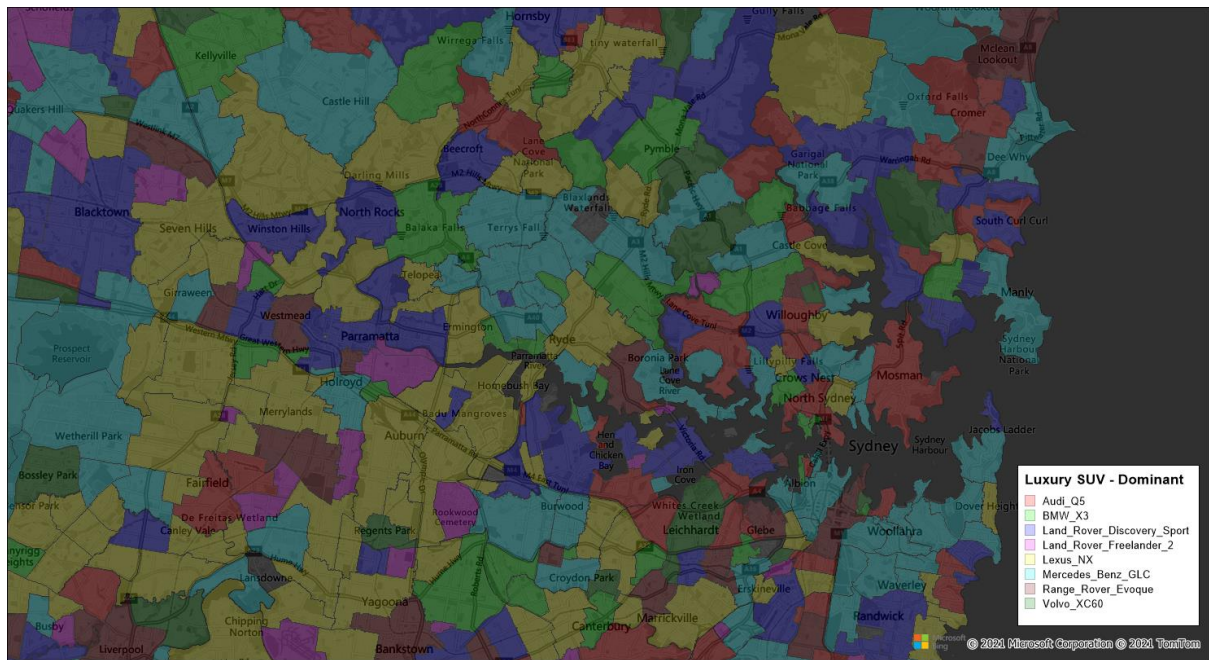
The example below displays the dominant “Household Income Band” as an Individual thematic of the dot displayed, and then uses varying size point Range thematic to reflect the Value of the dominant Category.

SAL	YTDGROSSCODE	2006	144_HrsIndus_150_29_HrIndus_300_39_HrIndus_40_HrIndus_50_64_HrIndus_65_79_HrIndus_80_99_HrIndus_1000_124_HrsIndus_1249_1449_HrsIndus_1500_1714_HrsIndus_1715_199_HrsIndus_2000_2439_HrsIndus_2439_HrsIndus_3000_2439_HrsIndus_3000_2439_HrsIndus_4000_4000_4000	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000
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In this example, we are determining which brand/model of luxury SUV had the most sales (map displays dominant brand/model by region).

SUB_PC	Land_Rover_Freelander_2	Audi_Q5	Range_Rover_Evoque	Volvo_XC60	Mercedes_Benz_GLC	Land_Rover_Discovery_Sport	BMW_X3	Lexus_NX	Dominant	Value
2117 DUNDAS VALLEY	0	1	0	0	2	0	0	2	Mercedes_Benz_GLC	2
2117 OATLANDS	0	0	2	0	1	3	0	1	Land_Rover_Discovery_Sport	3
2117 TELOPEA	0	1	0	0	0	1	1	3	Lexus_NX	3
2118 CARLINGFORD	0	2	2	1	5	4	8	8	BMW_X3	8
2119 BEECROFT	0	0	1	2	4	6	4	4	Land_Rover_Discovery_Sport	6
2119 CHELTENHAM	0	1	0	0	1	0	0	2	Lexus_NX	2
2120 PENNANT HILLS	0	25	1	0	1	1	1	0	Audi_Q5	25
2120 THORNLEIGH	0	1	0	0	2	0	1	3	Lexus_NX	3
2120 WESTLEIGH	0	1	0	0	4	0	1	0	Mercedes_Benz_GLC	4
2121 EPPING	0	2	0	4	9	2	9	9	Mercedes_Benz_GLC	9
2121 NORTH EPPING	0	1	1	0	1	1	0	2	Lexus_NX	2
2122 EASTWOOD	0	2	2	2	13	3	2	8	Mercedes_Benz_GLC	13
2122 MARSFIELD	0	1	1	1	4	2	4	2	Mercedes_Benz_GLC	4
2123 PARRAMATTA	0	0	0	0	2	0	0	0	Mercedes_Benz_GLC	2
2125 WEST PENNANT HILLS	0	4	2	2	8	5	8	10	Lexus_NX	10

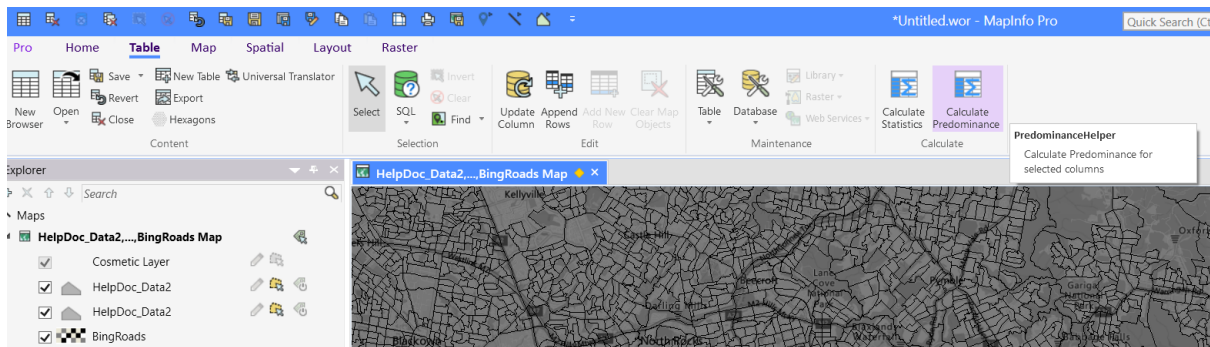


Using the Predominance Helper tool

NOTE: Given this tool does modify the table structure consideration should be given to saving a copy of the original data.

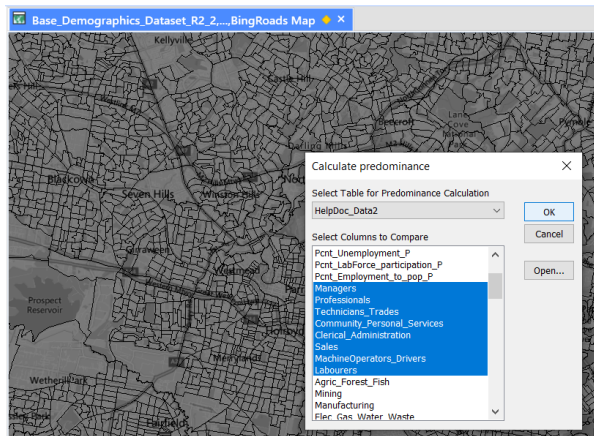
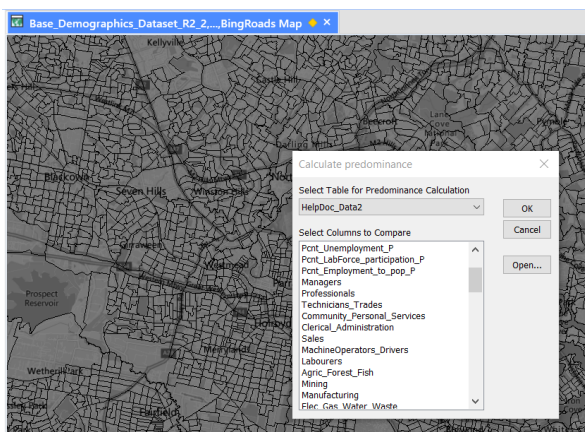
The Predominance Helper tool relies on having a spatially enabled table of data containing multiple numeric variables against each object record.

Access Predominance Helper by going to the TABLE tab and the tool can be found in the “Calculate” group. Click on the icon called “Calculate Predominance”.



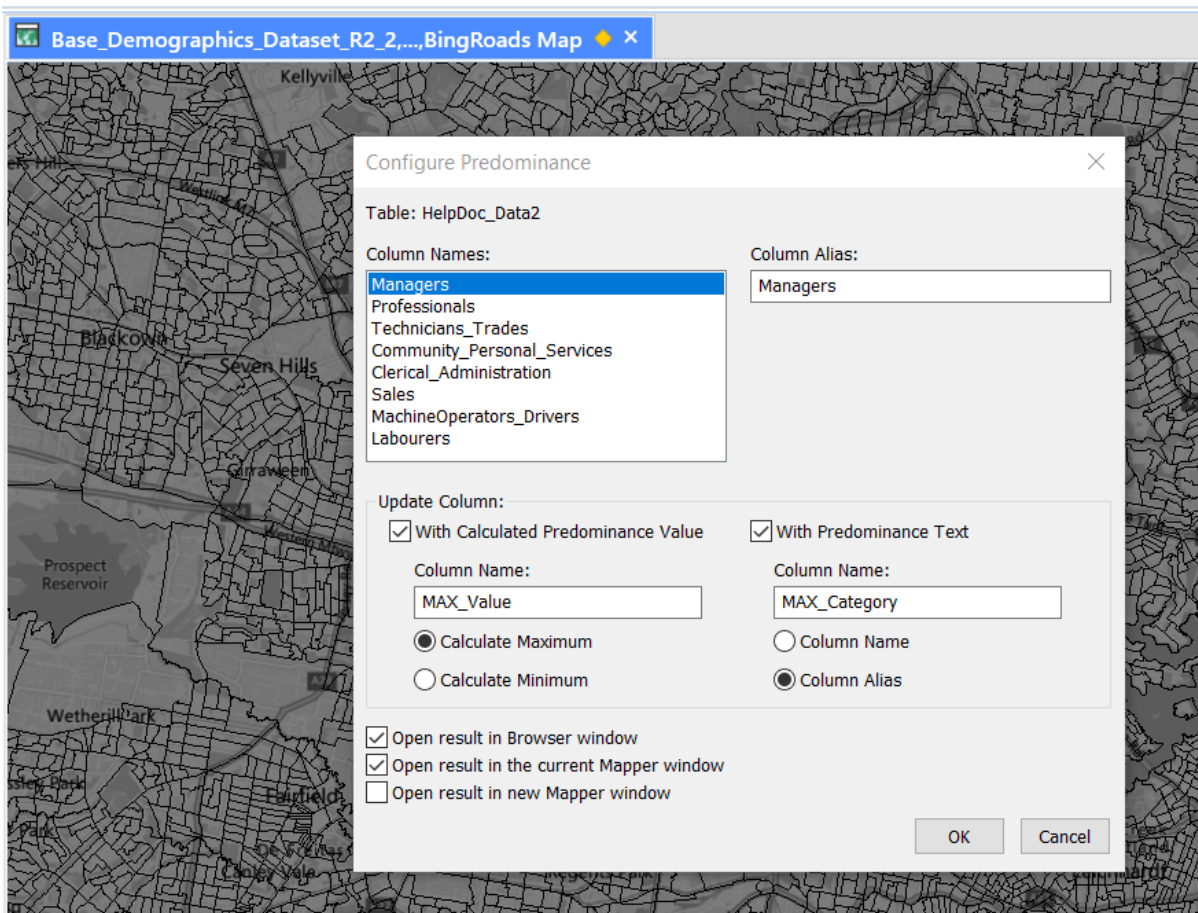
A dialog box will appear allowing the user to choose the relevant table to use and then the desired columns containing the data to be used.

You can use the Open... button to open the table you want to use in case it isn't already open.



Once the columns have been selected, click OK.

The next screen of the dialog will appear allowing the user to specify a friendlier name for any column name if deemed necessary. By default, the Predominance Helper tool changes three underscores into a dash with a space on each side and a single and two underscores into a space.



The user then moves down the dialog to the “Update Column” area. Here, the user can choose either or both of two additional fields that will be added to the dataset. Simply check the relevant box if the result is required in the table.

If the columns specified already exist in the table, the content of these will be overwritten without warning.

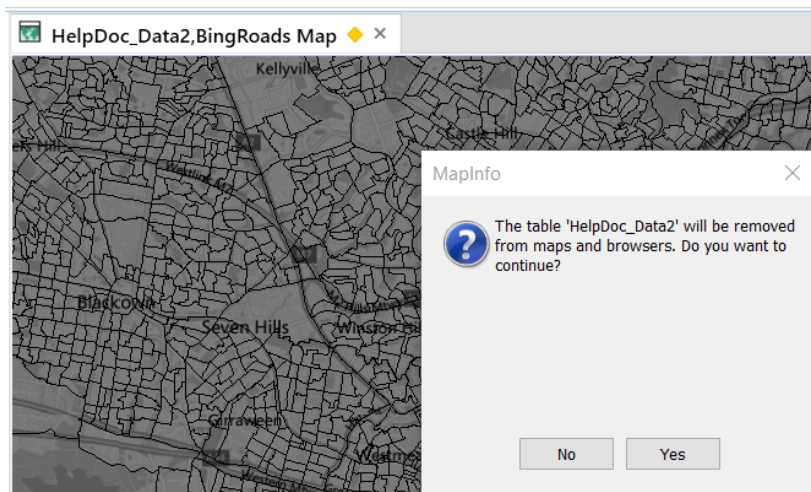
The “With Calculated Predominance Value” will deliver the maximum or minimum value that is found in the chosen columns of data. The column name can entered here will get updated with the predominant value for each record.

Similarly, the “With Predominance Text” will deliver the column name that contains the maximum (or minimum) value in it. The user can choose to use the original column name or the alias they generated above.

It is then just a matter of choosing how the user wants to have the data presented to them (if at all) by checking any or all of the “Open” checkboxes.

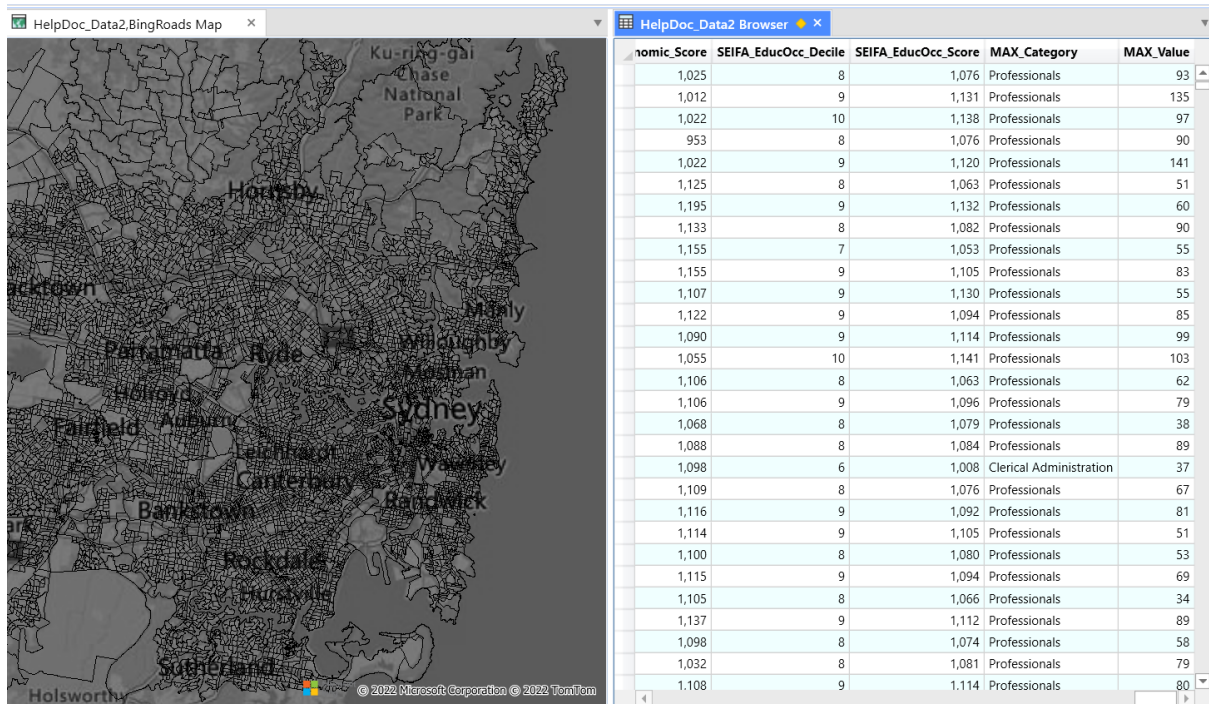
Then click OK and when presented with the dialog below, if the user wishes to continue with the process, click Yes. Clicking No reverts the user back to the original state.

If you click No to the question asked here, the predominant value will not get calculated as the needed columns weren't added.



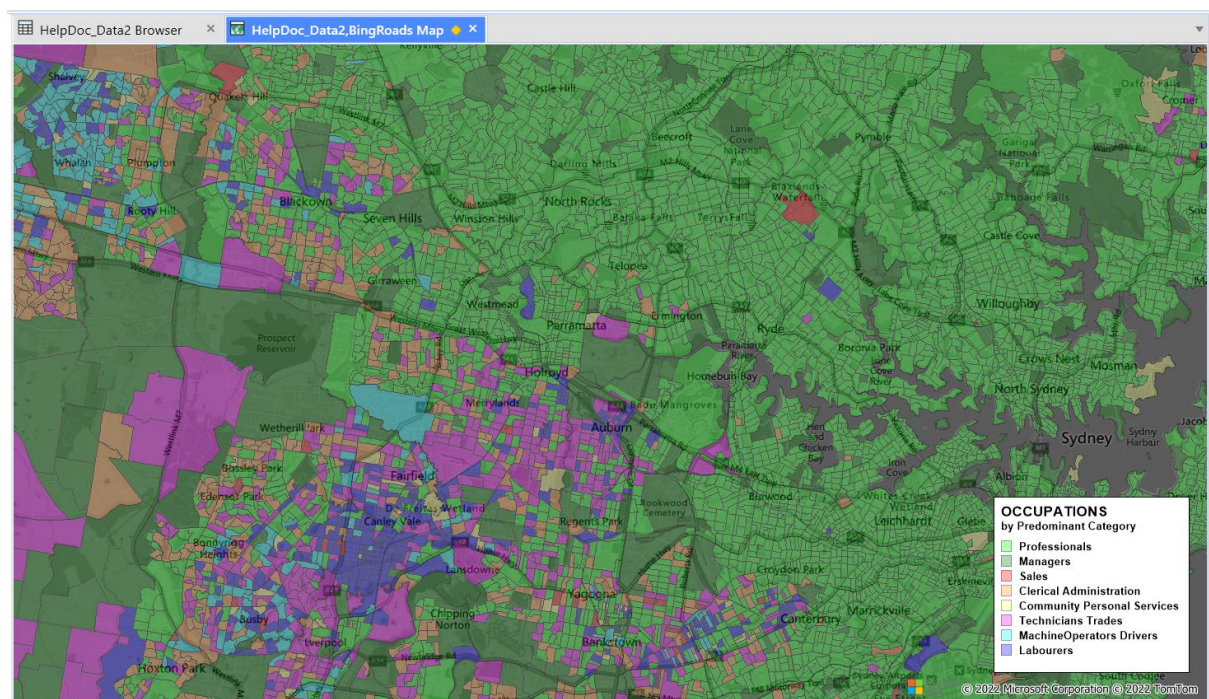
Once the predominance calculations are completed, the user is presented with the table in whichever form they specified in the dialog.

Now it is recommended to save the changes to the table.



The data in these “predominance” fields can now be used for visualisation or further calculations.

For example a thematic map could be presented which displays the “predominant” category of data from the chosen variables. In the example below, the map displays the distribution by Census Statistical Area 1 of the various “Occupation” types selected from Census data.



By extension, a copy of the original spatial table with the predominance data (Category and Value) included could be saved.

This copy could then have X/Y fields added (for example, by using the object centroid). These POINTS could then be mapped in bivariate fashion by using the *Category* as the Individual theme and the *Value* as the Point Ranges – Varying Sizes basis.

An example below.



When next closing the table, the user will be asked if they want to retain or discard changes (if they haven't already saved the table in working with it).

By choosing to save the changes the new predominance fields as well as the data within those fields will be retained.

If the user chooses to discard, the fields are retained in the dataset but are not populated with values.