Interpreting Land Use Change Pivot Tables – June 28, 2021

Data on land use change represent transitions of land use from an early date (e.g., time 1, 2013/14) to a late date (time 2, 2017/18). One of the most concise ways of illustrating such changes is via pivot tables with the early date represented as rows and the late date represented as columns. Pivot tables show all observed land use changes in a single table. The land use change pivot tables for the Chesapeake Bay watershed are produced for all counties and incorporated cities (with unique 5-digit FIPS codes) in the watershed. The data represent all changes in a full county- including portions that may fall outside the Bay watershed.

Below is an example of a pivot table for Wicomico County, Maryland (formatted for extra clarity). The revised 2013/14 Phase 6 land use is represented as rows while the 2017/18 land use is represented as columns. The land use codes are explained below. All units are in acres. The "Loss" column represents the total acreages transitioning from a 2013/14 land use (row labels) to different 2017/18 land uses (column labels). The "Gain" row represents the total acreages of 2017/18 land uses that transitioned from different 2013/14 land uses. The "Net" row represents overall net change in a particular land use from 2013/14 to 2017/18. For example, Wicomico County experienced a net gain of 223 acres of turf grass. Most of net loss in turf grass resulted from turf grass transitioning to Trees over Turf Grass.

Also in this example, one can see that 2173 acres of Mixed Open land use in 14 transitioned to Forest in 2017/18. Likewise, 1070 acres of Forest in 2013/14 transitioned to Mixed Open in 2017/18. Such large fluxes between open space and forest are typical in counties with active forestry industries.

T1-T2 LU	IR	INR	TCI	TG	TCT	FORE	WLF	WLO	WLT	MO	CRP	PAS	WAT	Loss
IR	0	0.01	0.03	0	1.25	3.36	0.03	0	0	0	0	0	0	4.69
INR	1.94	0	0.14	36.93	17.06	3.95	0.7	0.12	0	19.43	21.52	0.47	0.01	102.28
TCI	1.28	30.98	0	11.68	0.42	0.21	0.16	0	0	6.8	1.15	0.13	0	52.82
TG	0.14	41.53	0	0	228.67	28.95	0.99	0.08	0	8.04	1.39	0.01	0.01	309.81
TCT	0.12	77.63	0	83.79	0	0.98	0	0	0	13.02	5.42	0.48	0.02	181.47
FORE	0.23	54.13	0	73.08	63.45	0	0	0	0	1070.32	370.19	79.65	0.19	1711.23
WLF	0	0.03	0	0.01	0	0	0	0	0	0	0	0	0	0.04
WLO	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MO	3.93	257.37	0	321.56	56.92	2173.46	0	0	0	0	2.08	0.2	1.78	2817.3
CRP	1.12	84.93	0	5.03	4.4	249.32	0	0	0	16.24	0	0.03	0.01	361.09
PAS	0	8.25	0	0.75	0.04	45.75	0	0	0	0.19	0	0	0	54.97
WAT	0	0	0	0	1.33	6.54	0.16	0.02	0	0	0	0	0	8.06
Gain	8.77	554.84	0.18	532.83	373.54	2512.52	2.05	0.22	0.01	1134.05	401.76	80.96	2.03	5603.76
Total														
TotGain	8.77	554.84	0.18	532.83	373.54	2512.52	2.05	0.22	0.01	1134.05	401.76	80.96	2.03	
TotLoss	4.69	102.28	52.82	309.81	181.47	1711.23	0.04	0	0	2817.3	361.09	54.97	8.06	
Net	4.08	452.56	-52.64	223.02	192.07	801.29	2.01	0.22	0.01	-1683.26	40.67	25.99	-6.03	

IR = impervious road
INR = impervious non-road
TCI = tree canopy over impervious
TG = turf grass
TCT = tree canopy over turf grass
FORE = forest
WLF = floodplain non-tidal wetlands
WLO = other non-tidal wetlands
WLT = tidal wetlands
MO = mixed open
CRP = cropland
PAS = pasture
WAT = water