

Figure 1: Map of lake maximum depth in the continental United States.

Table 1: Summary of lake depth predictor variables.

variable	Median	Q25	Q75	n
lake_maxdepth_m	7.3	4	13	17400
lake_meandepth_m	3	2	5	6430
lake_elevation_m	340	210	460	17400
lake_waterarea_ha	34	11	100	17400
lake_totalarea_ha	34	11	110	17400
lake_islandarea_ha	0	0	0.088	17400
lake_perimeter_m	3500	1800	7500	17400
lake_islandperimeter_m	0	0	130	17400
lake_shorelinedevfactor_nounits	1.7	1.4	2.3	17400
nws_focallakewaterarea_ha	110	37	410	5190
nws_area_ha	5300	1600	30000	5190
nws_lake_arearatio	49	17	190	5190
nws_perimeter_m	77000	39000	2e+05	5190
nws_mbgonhull_width_m	7700	4200	18000	5190
nws_meanwidth_m	4000	2100	9200	5190
nws_mbgonhull_length_m	13000	7300	33000	5190
nws_mbgonhull_orientation_deg	95	46	140	5190
ws_focallakewaterarea_ha	34	11	100	17300
ws_area_ha	370	120	1500	17300
ws_lake_arearatio	10	4.4	29	17300
ws_perimeter_m	19000	10000	40000	17300
ws_mbgonhull_width_m	2100	1200	4100	17300
ws_meanwidth_m	1000	570	2100	17300
ws_mbgonhull_length_m	3600	2000	7200	17300
ws_mbgonhull_orientation_deg	90	42	140	17300
buffer100m_slope_max	21	16	27	12400

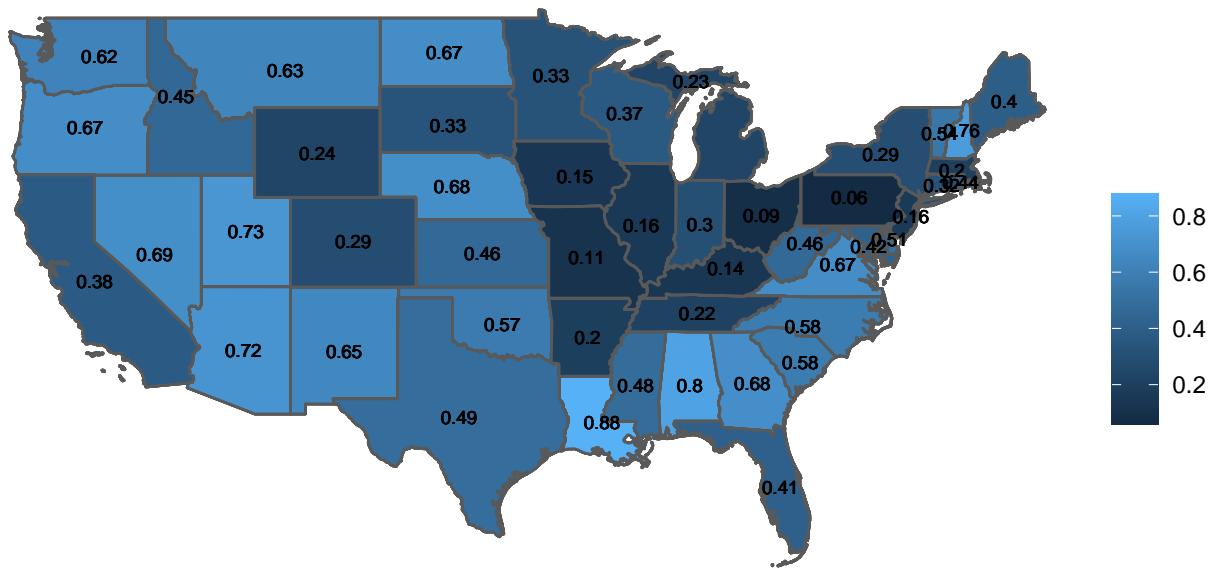


Figure 2: Proportion of lakes greater than 4ha with maximum depth availability by state.

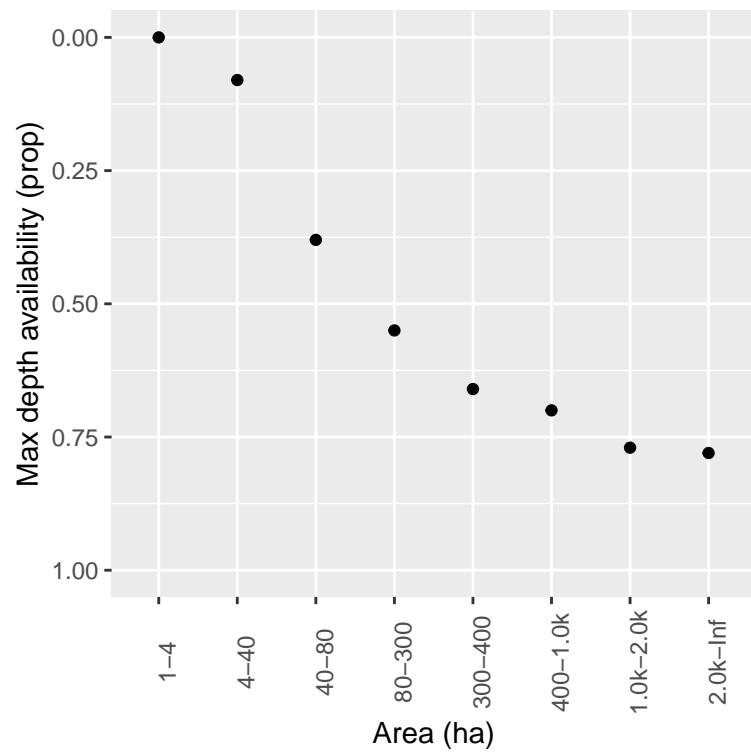


Figure 3: Proportion max depth availability by lake area class.

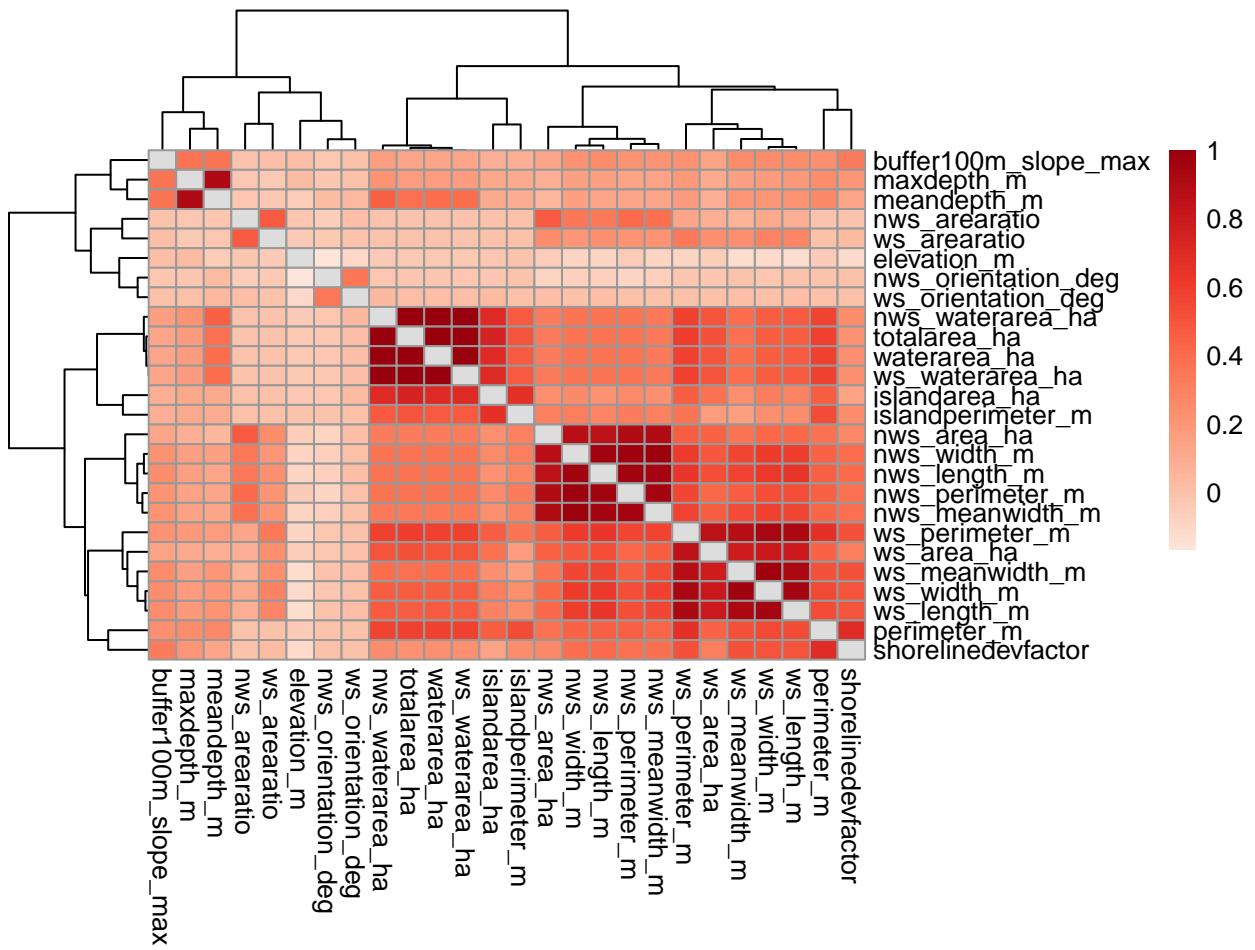


Figure 4: Correlation matrix heatmap.

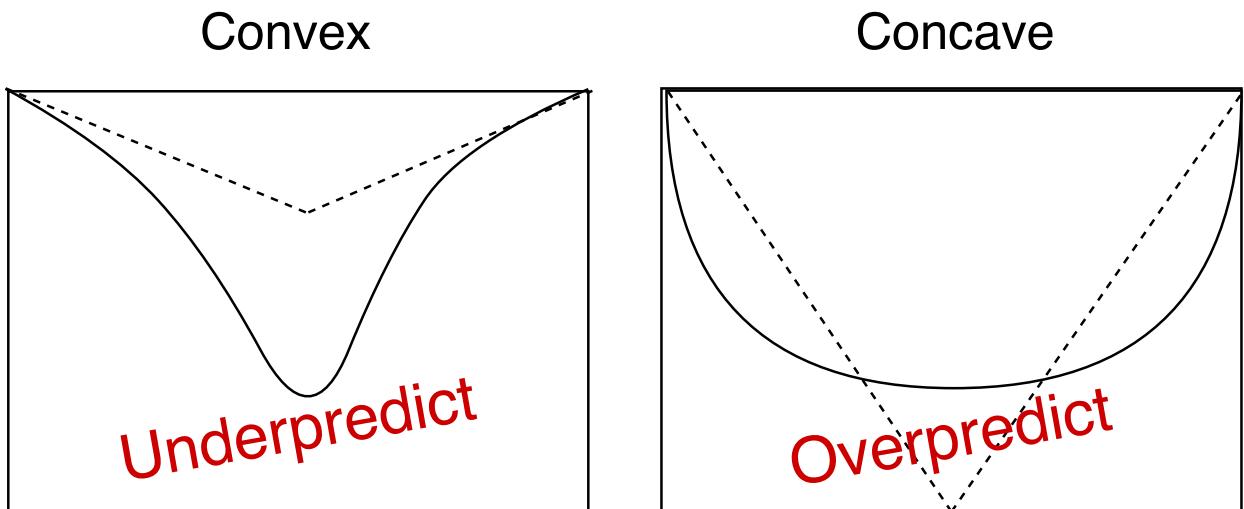


Figure 5: Lake shape caption

## Normalized hypsography for 3379 lakes

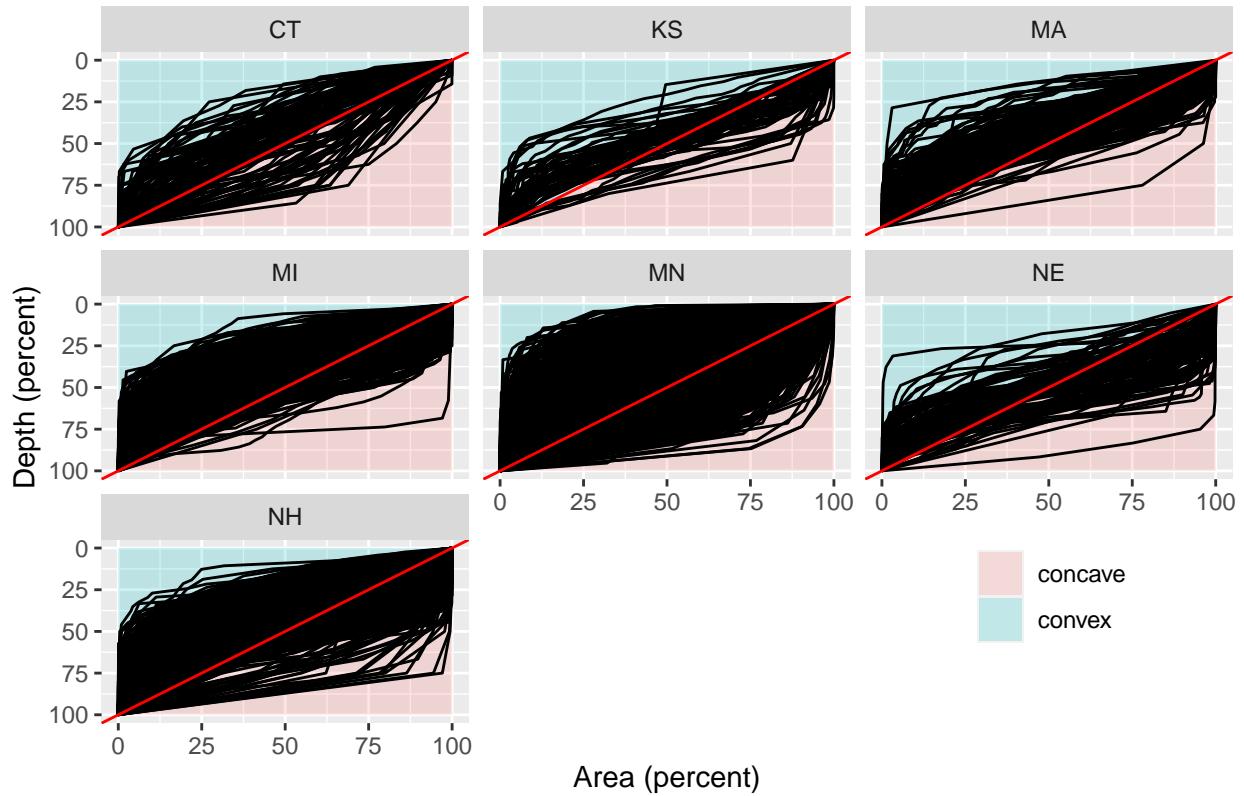


Figure 6: Hypsography classification by state.

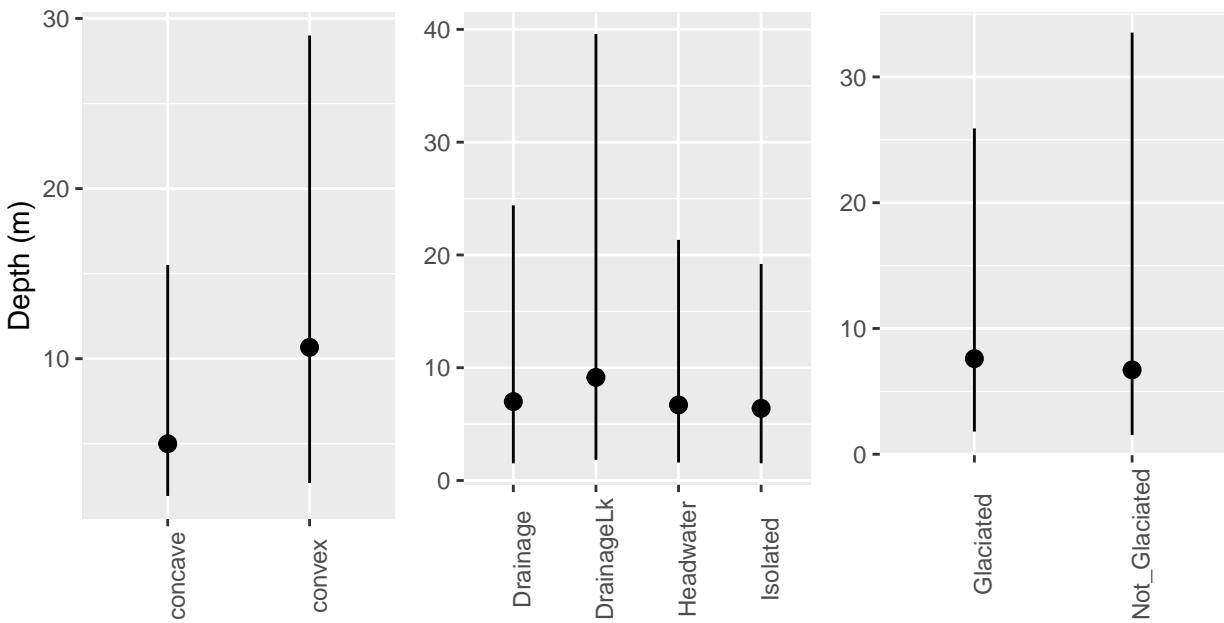


Figure 7: Lake maximum depth by categorical variables.

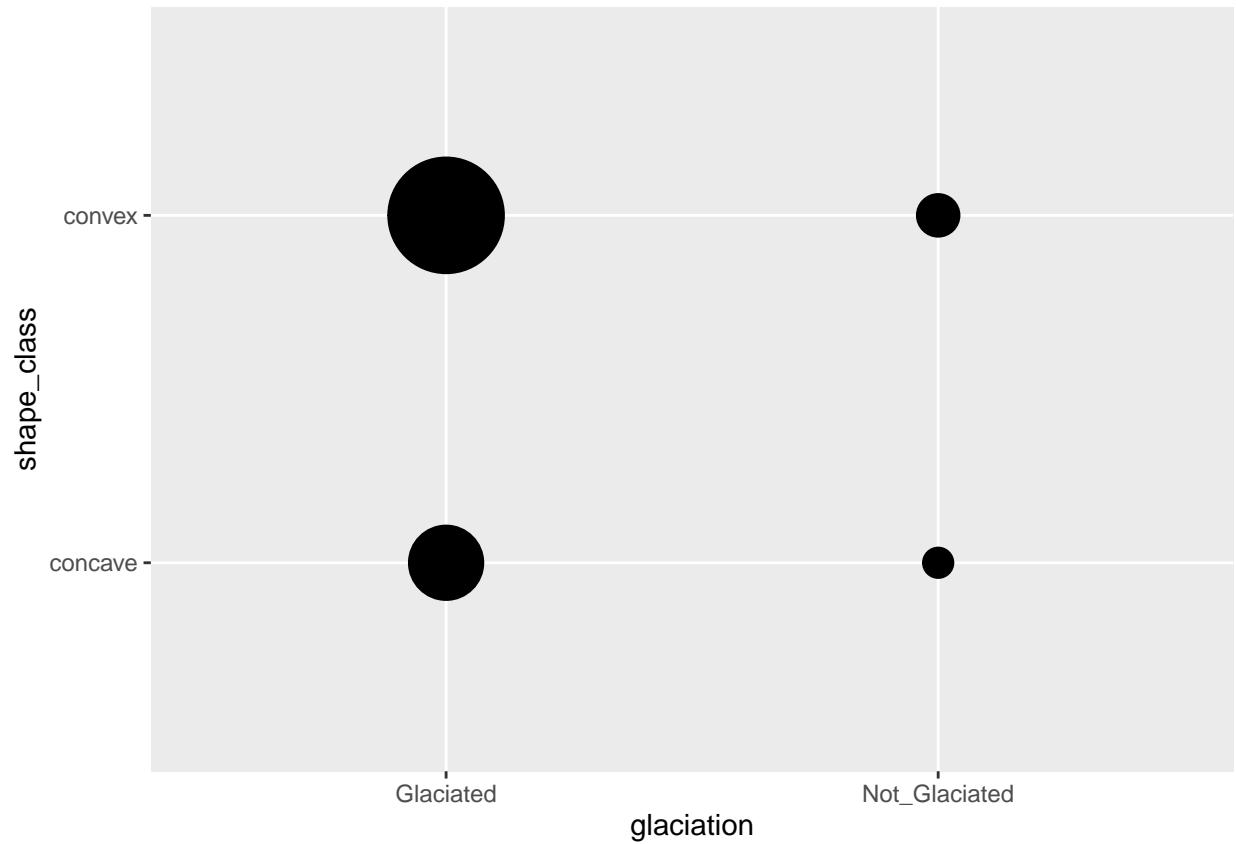


Figure 8: Cross tabulation between lake glaciation and shape class. Circles are proportional to the number of lakes in each category. If a lake has been glaciated it is more likely to be convex. However, if a lake has not been glaciated there is no tendency towards a particular shape class.

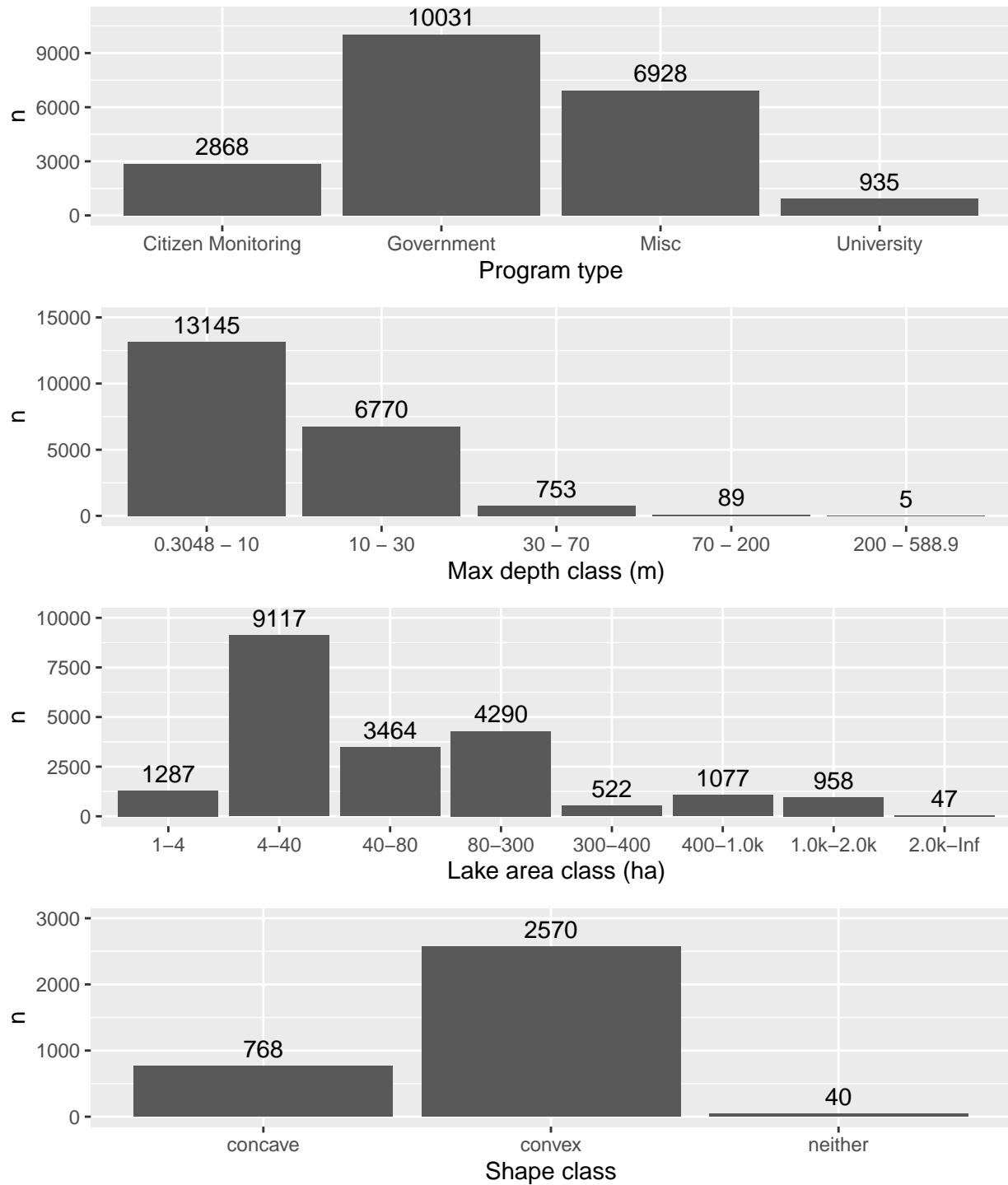


Figure 9: Number of lake depth measurements by categories.

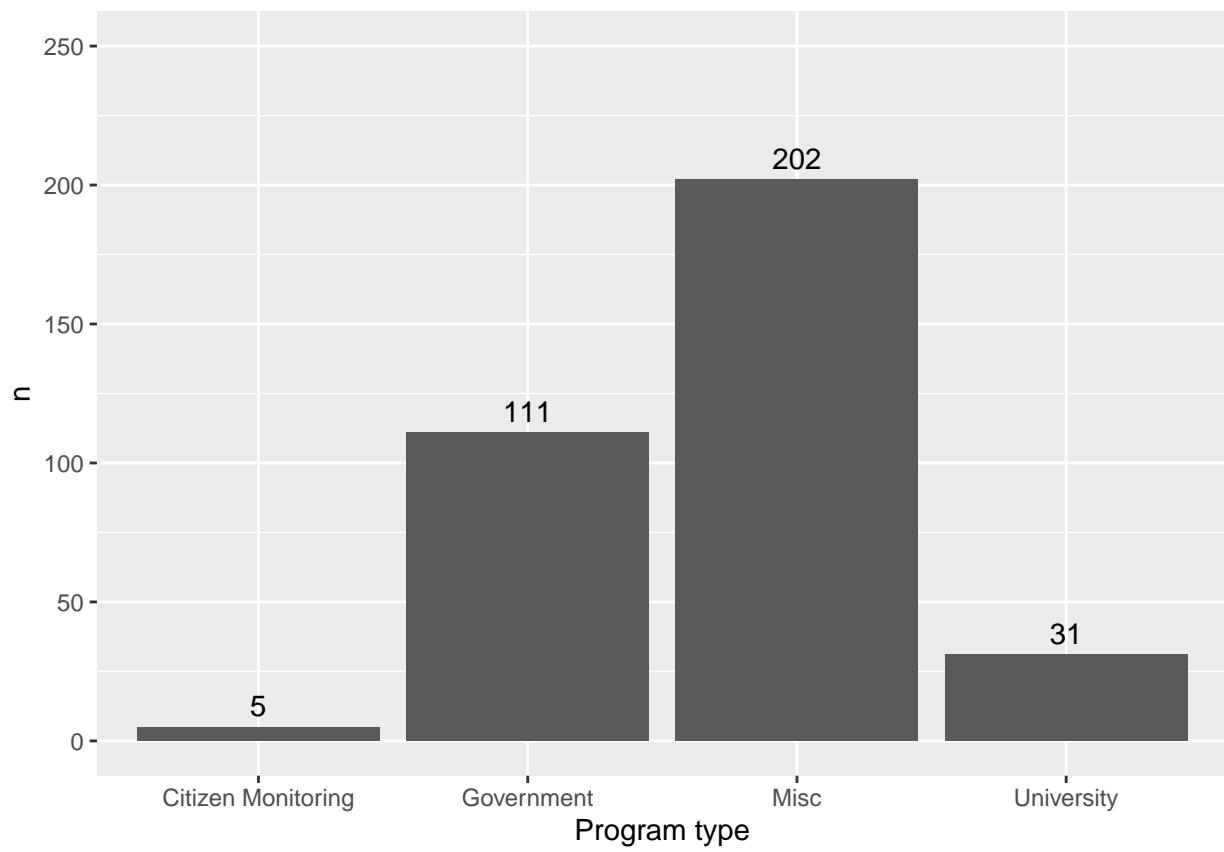


Figure 10: Number of programs by categories.

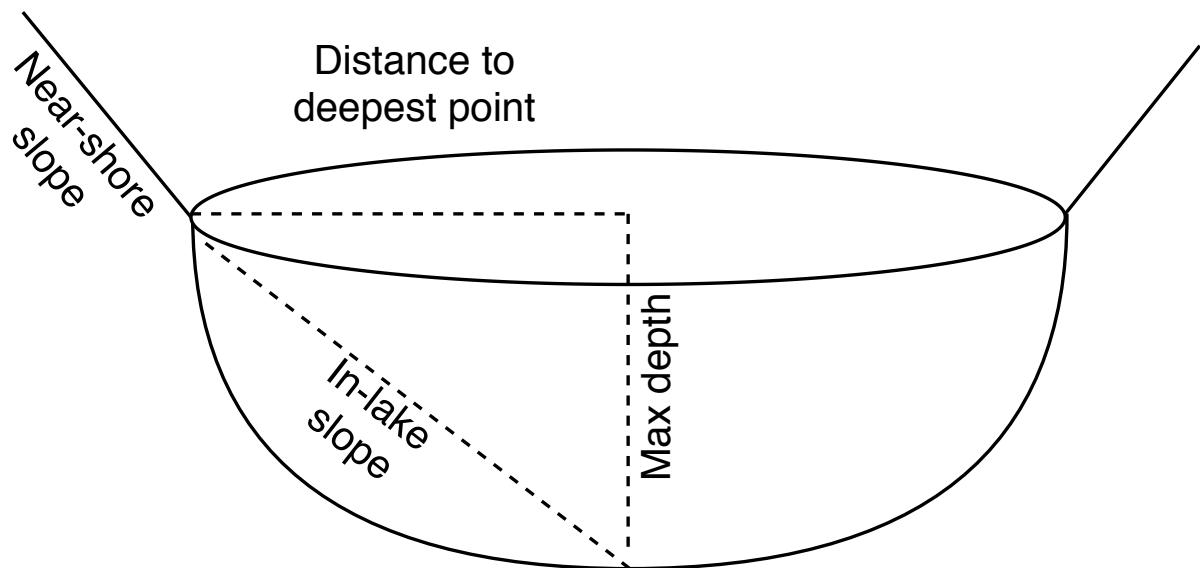


Figure 11: Slope diagram caption

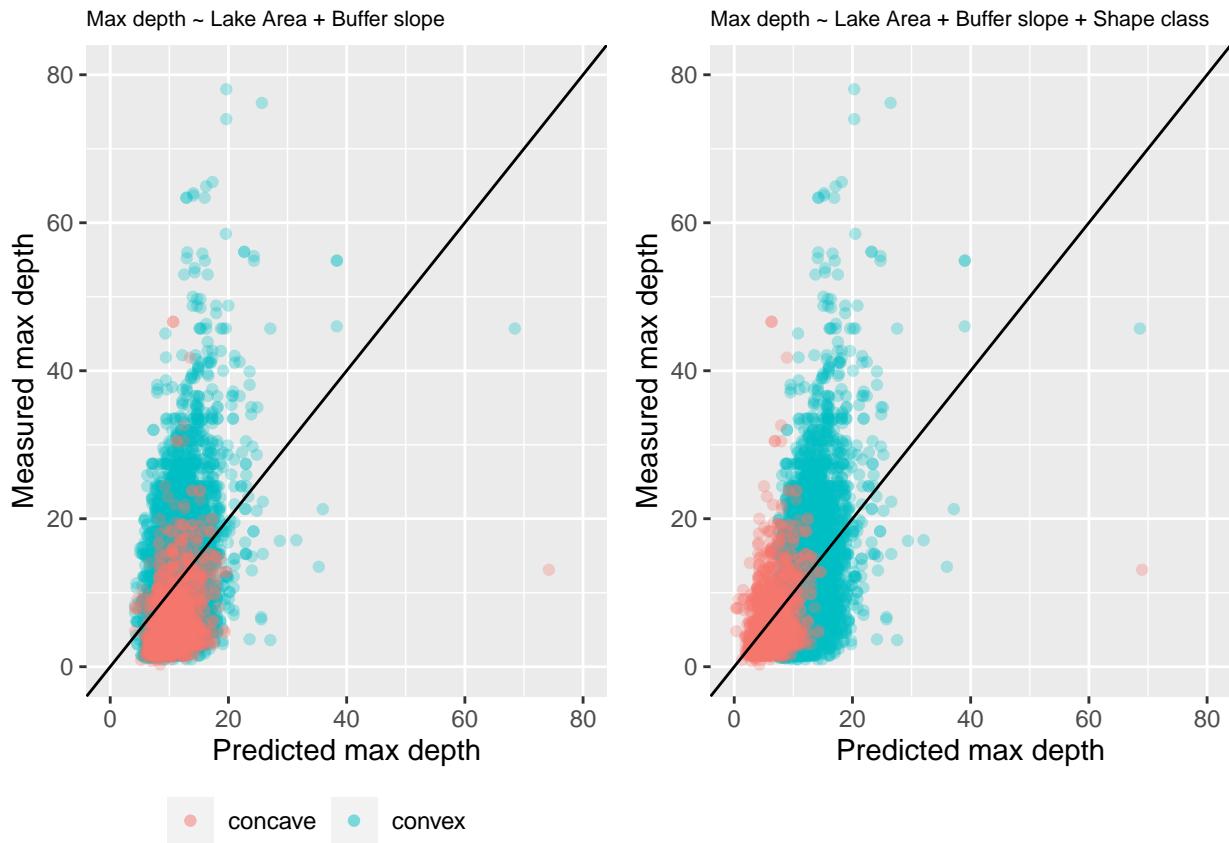


Figure 12: A model that does not include shape class over predicts depth in concave lakes but does not systematically under predict depth in convex lakes.

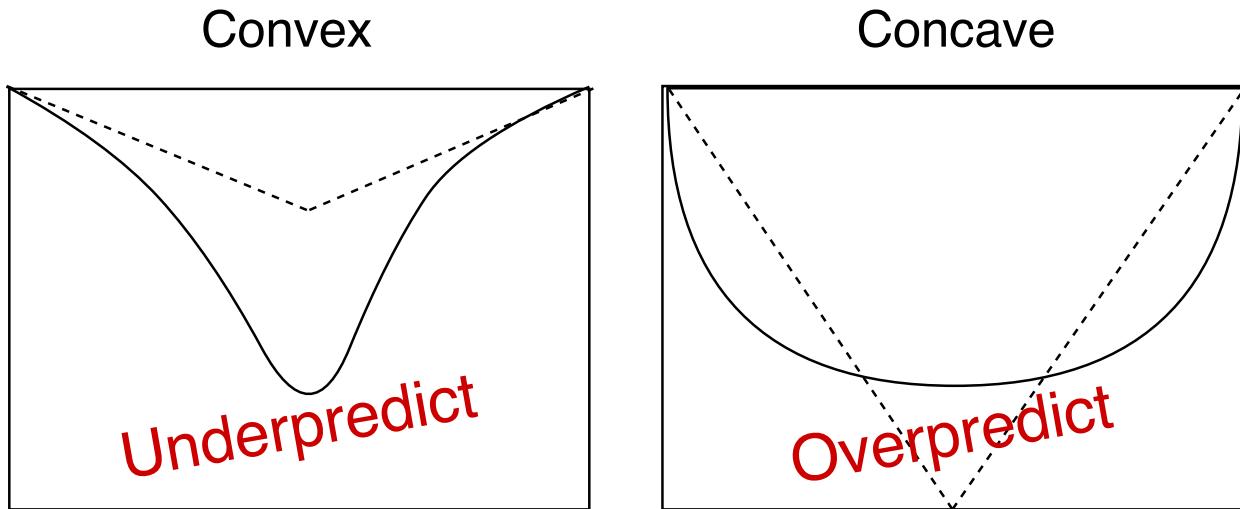


Figure 13: Lake shape caption

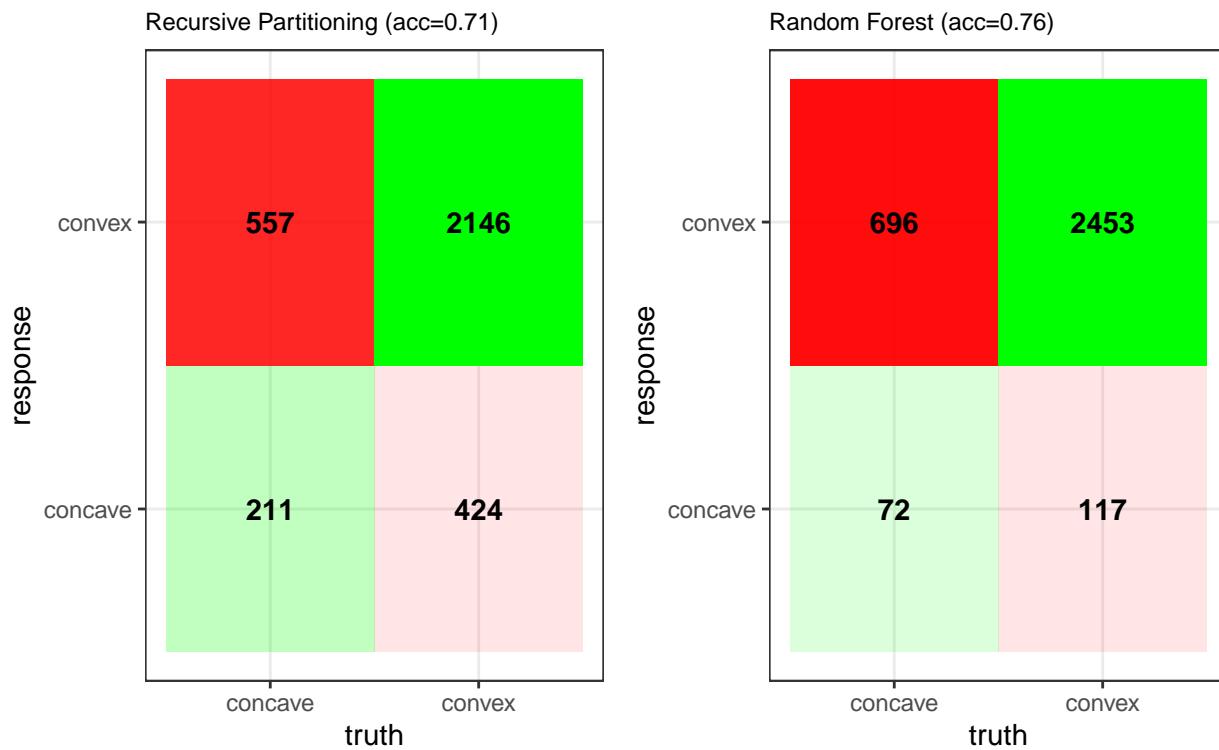


Figure 14: Confusion matrix comparing two classification methods

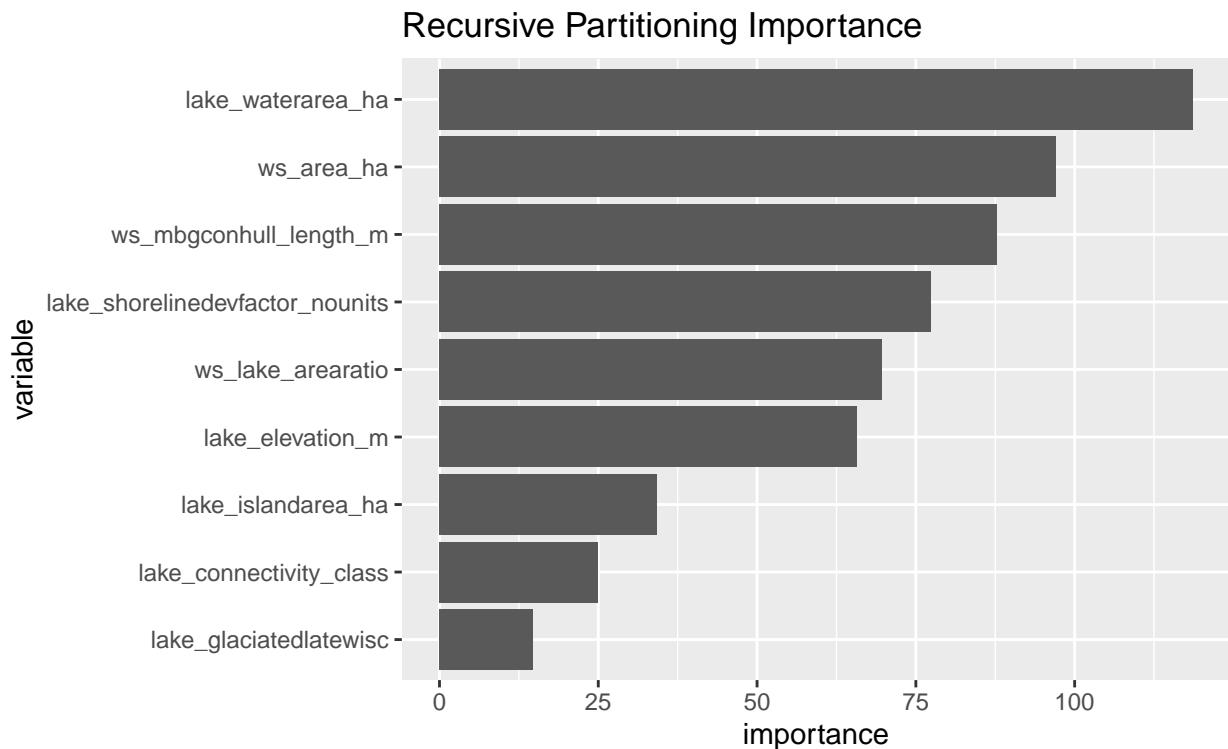


Figure 15: Recusive Partitioning variable importance.