

# Figures

Abb	Scale	Metric	Split Value	Delta k
cd	nws	Closest lake distance	2776.81	0.27
ll	nws	Average Link Length	2237.34	0.19
lc	focal	Lake Connection	NA	0.17
la	nws	Upstream lake area	153.50	0.16
md	focal	Max Depth	19.81	0.15
ll	iws	Average Link Length	2177.08	0.14
sd	nws	Stream density	10.40	0.13
bf	iws	Baseflow	63.76	0.12
sr	iws	Stream order ratio	0.67	0.10
cd	iws	Closest lake distance	3773.61	0.05
sr	nws	Stream order ratio	0.47	0.05
sd	iws	Stream density	4.43	0.03
bf	nws	Baseflow	52.94	0.00

metric	direction	k	connectivity	in_lake_processing	axis	connectivity type
closest lake distance	lower	higher	lower	higher	lake-stream	long
average link length	lower	higher	lower	higher	stream	long
lakeconnection	DR_Stream	higher	lower	higher	lake	long
upstream lake area	lower	higher	lower	higher	lake	lat
stream density	higher	higher	lower	higher	stream	lat
baseflow	higher	higher	lower	higher	stream	lat
stream order ratio	higher	higher	lower	higher	stream	long

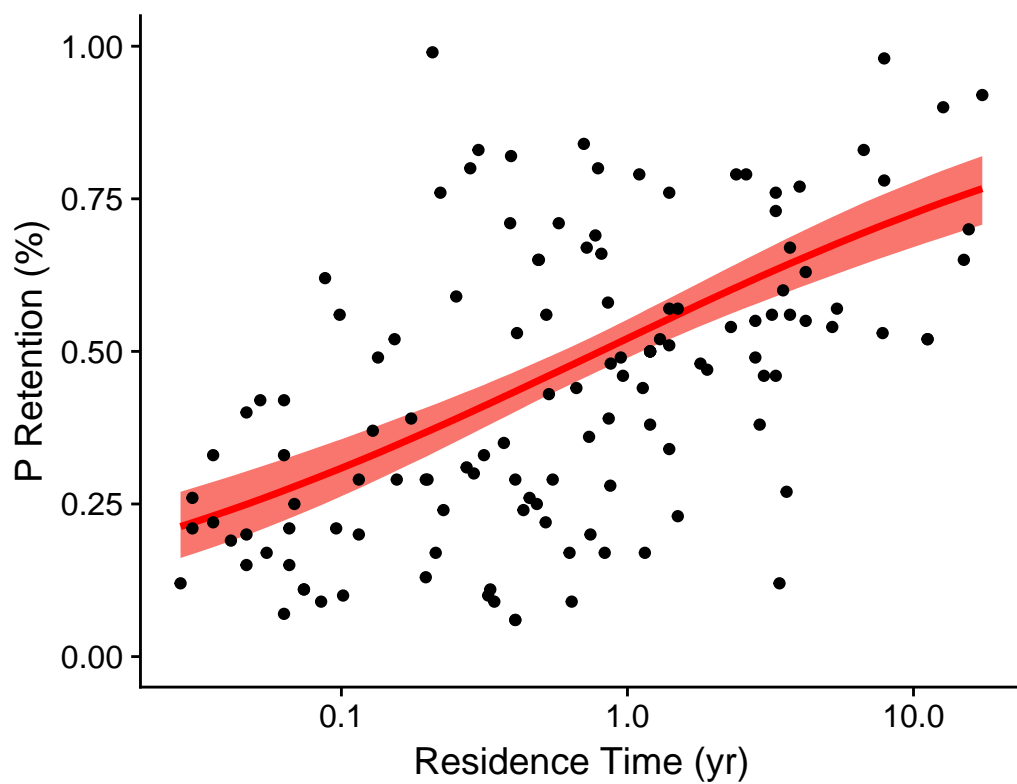


Figure 1: Median and central 95% interval estimates from the non-hierarchical model posterior relative to raw data.

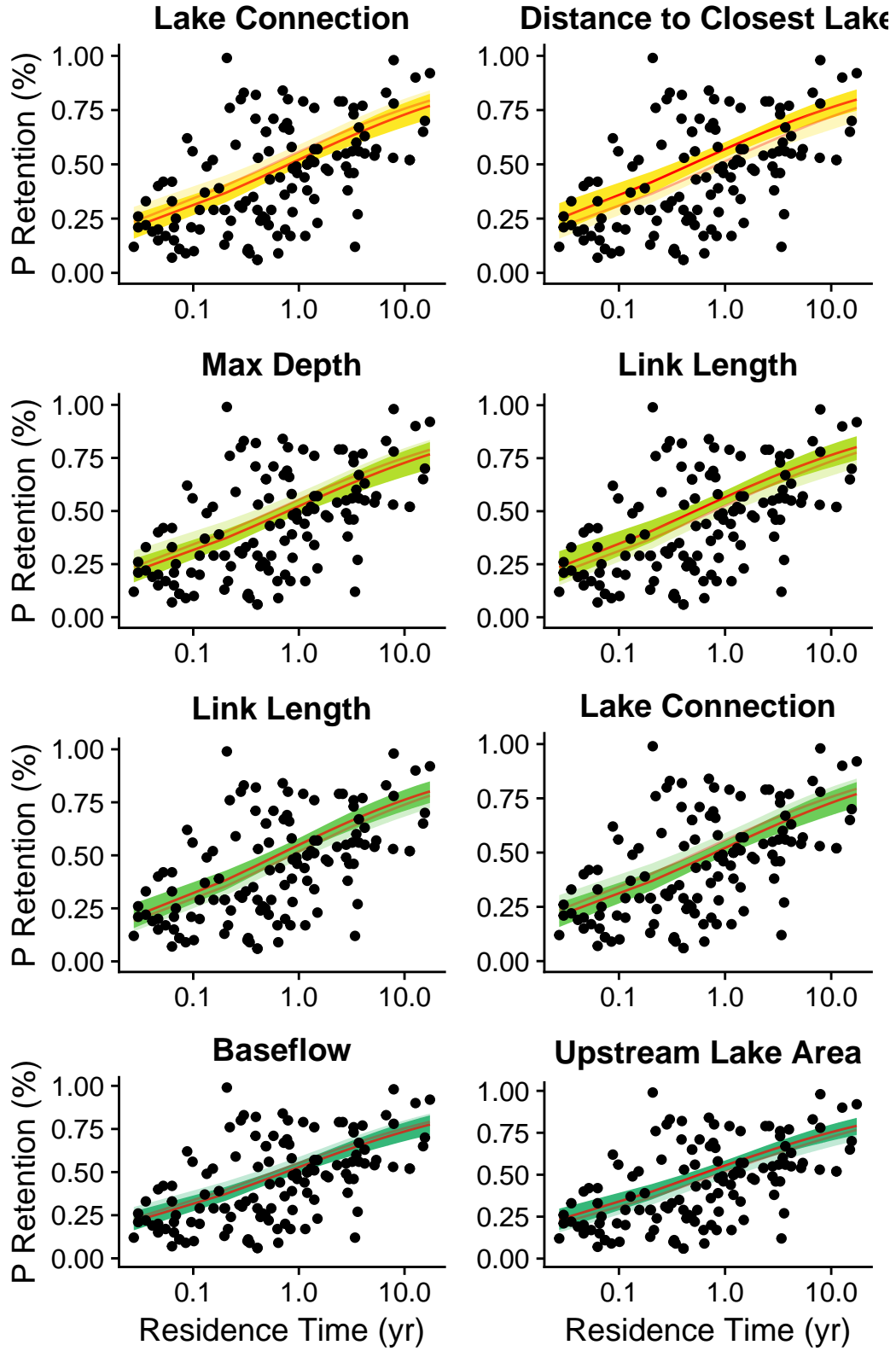


Figure 2: Median and central 95% interval estimates from the hierarchical model posteriors relative to raw data. Dark lines and shaded polygons represent the estimates from the lower of the two partition groups (see Table 1)

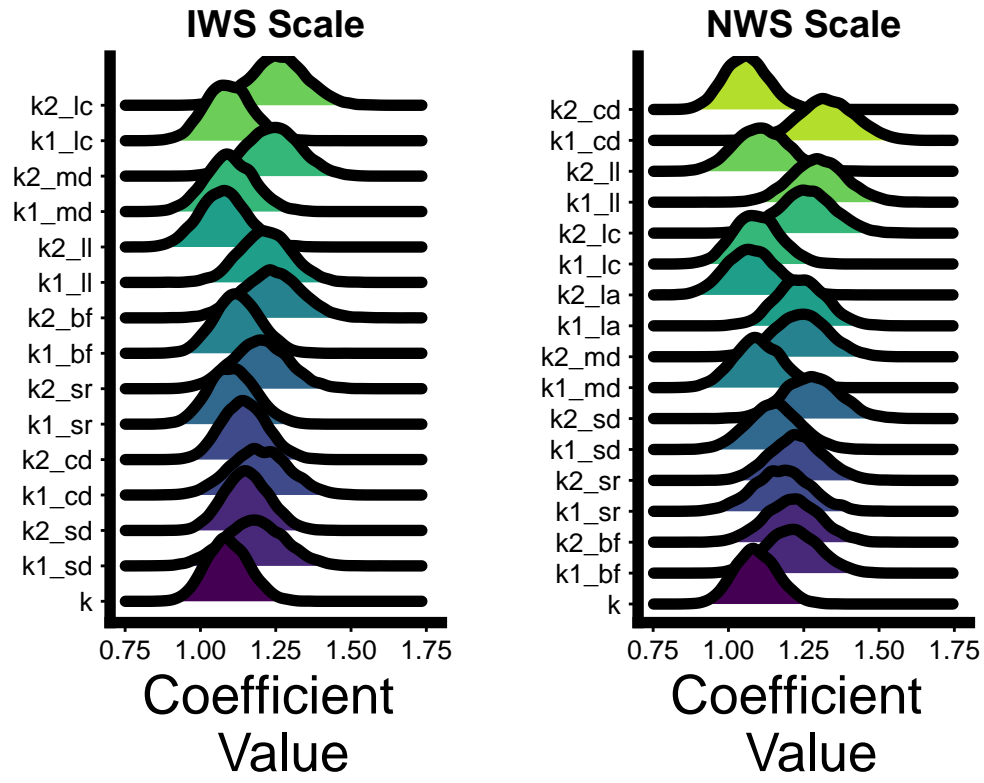


Figure 3: Distribution of Vollenweider's  $k$  in low and high connectivity partitions at the IWS and NWS scales.

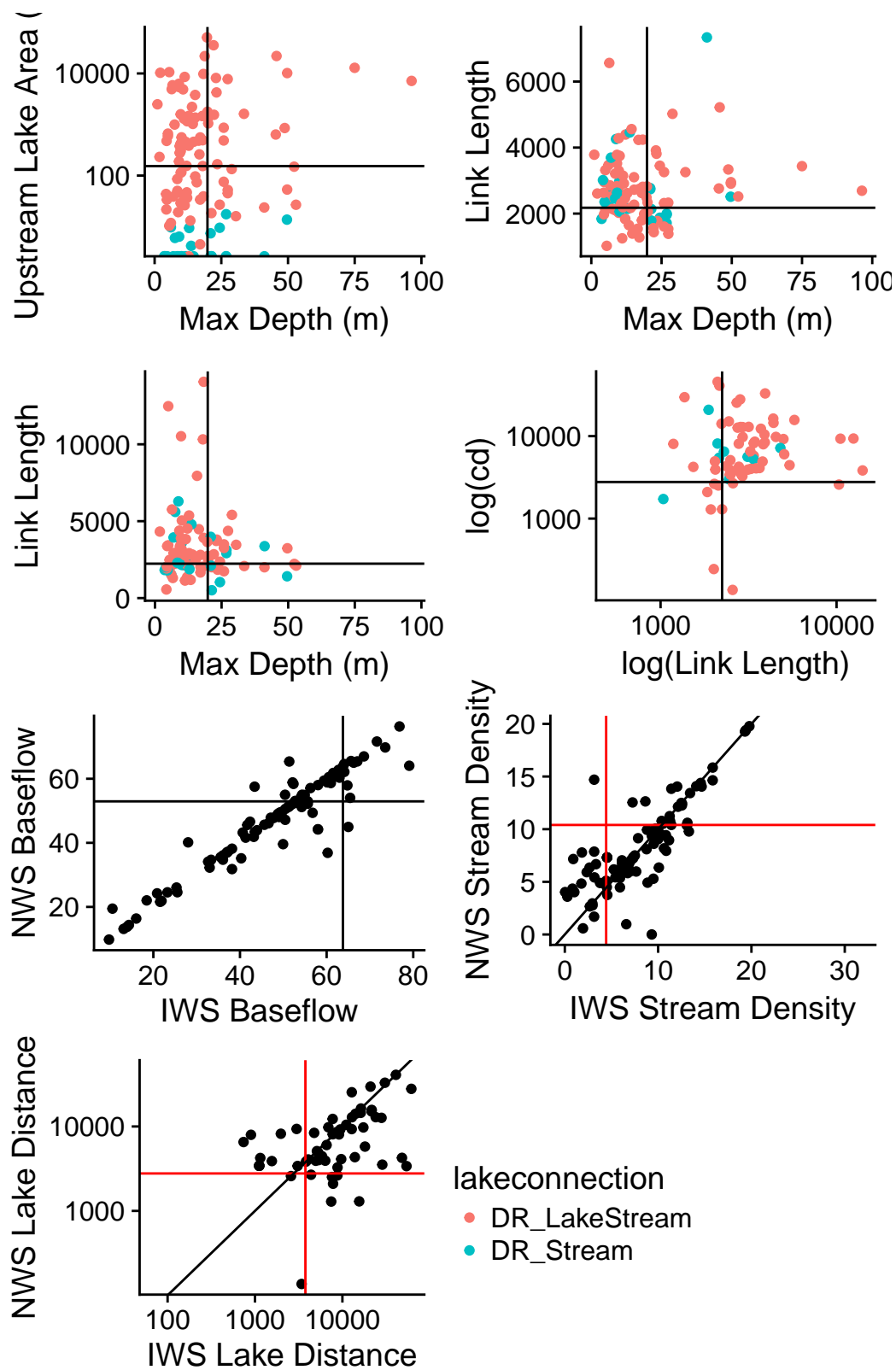


Figure 4: Exploratory plots

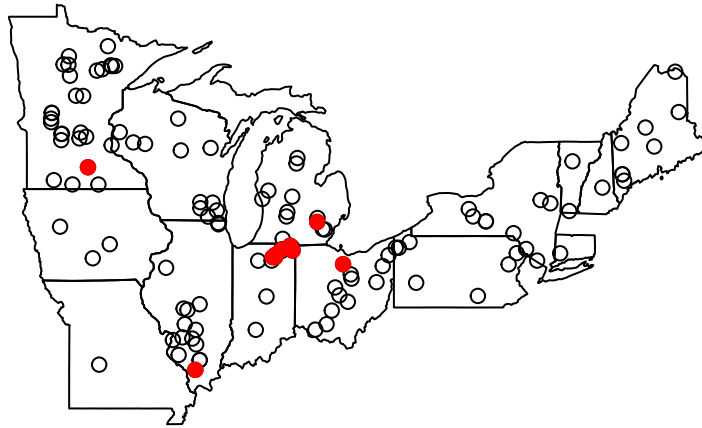


Figure 5: Map of lakes with low distance to nearest upstream lake at the NWS scale.