Mean Annual Stream Flow - Elevation Derivatives for National Applications (EDNA)

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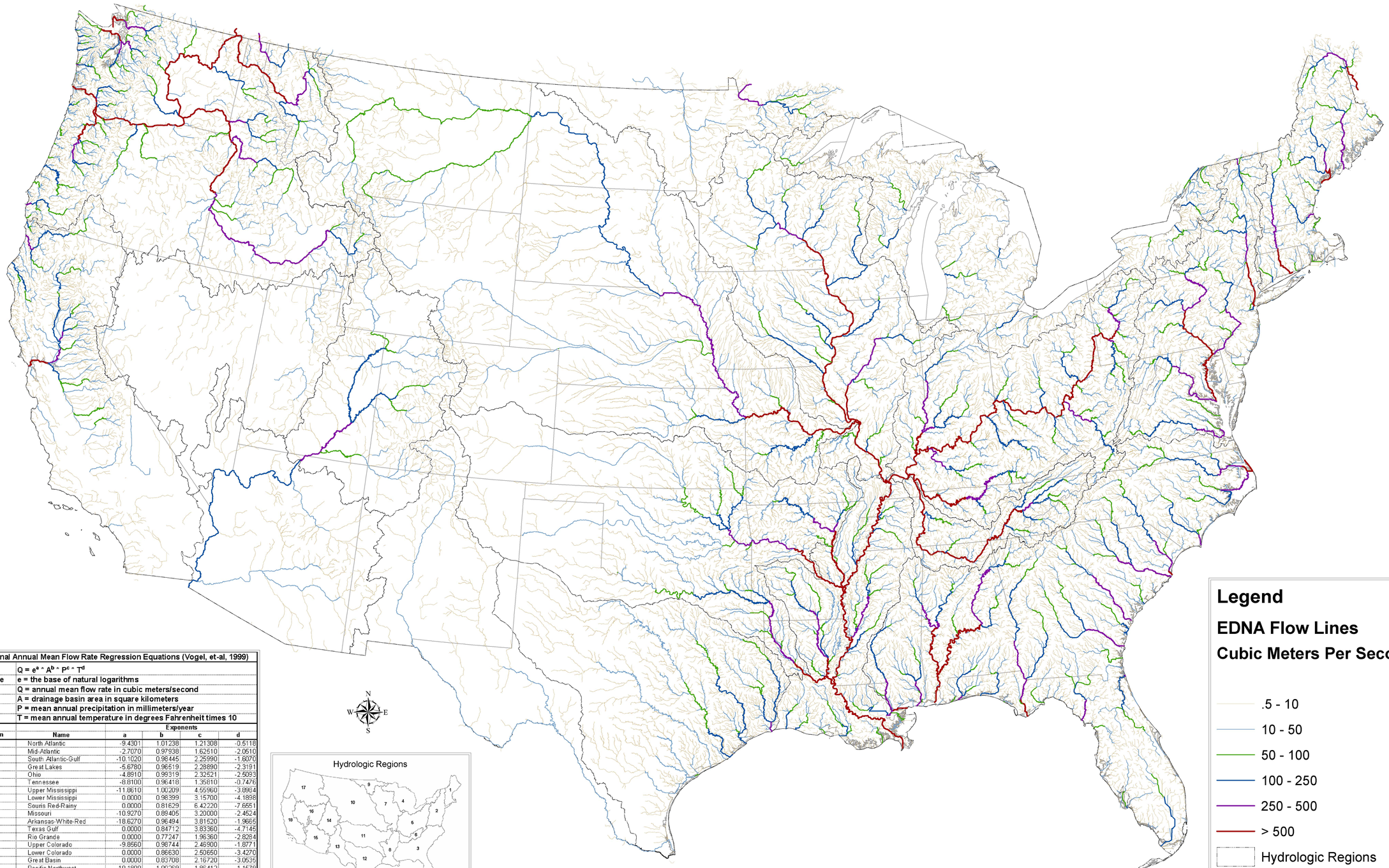
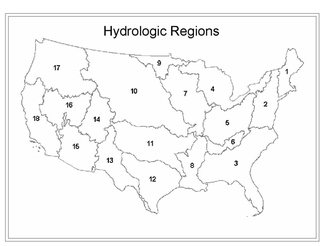


Regional Annual Mean Flow Rate Regression Equations (Vogel, et-al, 1999)					
	$Q = e^a \wedge A^b \wedge P^c \wedge T^d$				
where	e = the base of natural logarithms				
	Q = annual mean flow rate in cubic meters/second				
	A = drainage basin area in square kilometers				
	P = mean annual precipitation in millimeters/year				
	T = mean annual temperature in degrees Fahrenheit times 10				
		Exponents			
Region	Name	a	b	c	d
1	North Atlantic	-9.4301	1.01238	1.21308	-0.5118
2	Mid-Atlantic	-2.7070	0.97938	1.62510	-2.0510
3	South Atlantic-Gulf	-10.1020	0.98445	2.25990	-1.6070
4	Great Lakes	-5.6780	0.96519	2.28890	-2.3191
5	Ohio	-4.8910	0.99319	2.32521	-2.5093
6	Tennessee	-8.8100	0.96418	1.35810	-0.7476
7	Upper Mississippi	-11.8610	1.00209	4.55960	-3.8984
8	Lower Mississippi	0.0000	0.98399	3.15700	-4.1898
9	Souris Red-Rainy	0.0000	0.81629	6.42220	-7.6651
10	Missouri	-10.9270	0.89405	3.20000	-2.4524
11	Arkansas-White-Red	-18.6270	0.96494	3.81520	-1.9665
12	Texas Gulf	0.0000	0.84712	3.83360	-4.7145
13	Rio Grande	0.0000	0.77247	1.96360	-2.8284
14	Upper Colorado	-9.8560	0.98744	2.46900	-1.8771
15	Lower Colorado	0.0000	0.86630	2.50650	-3.4270
16	Great Basin	0.0000	0.83708	2.16720	-3.0535
17	Pacific Northwest	-10.1800	1.00269	1.86412	-1.1579
18	California	-8.4380	0.97398	1.99863	-1.5319

Vogel, R. M., I. Wilson, and C. Daly, 1999, "Regional Regression Models of Annual Streamflow for the United States." *Journal of Irrigation and Drainage Engineering*, May/June 1999, pp. 148-157.