Correlation Matrices

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Carter Lake Water-Quality Data

	Stage	pH	Ca	Mg	Na	K	Alk	SO$_4$	Cl
pH	-0.377	--	--	--	--	--	--	--	--
Ca	-.176	-0.017	--	--	--	--	--	--	--
Mg	.207	.011	0.017	--	--	--	--	--	--
Na	-.069	.253	.160	0.304	--	--	--	--	--
K	.189	.038	.082	.266	0.179	--	--	--	--
Alk	-.230	.061	-.049	.030	.312	0.024	--	--	--
SO$_4$	.225	-.019	-.001	-.015	.333	-.142	0.169	--	--
Cl	-.223	.149	.143	-.068	.266	.141	-.034	0.062	--
Si	-.006	-.007	.110	.262	.097	.093	.107	-.105	-0.056

http://www.craterlakeinstitute.com/online-library/hydrologic-benchmark/historical.htm

Note: 1.0 values are often shown on the diagonal. Why?

Significance

- Each coefficient has an associated p-value

- Like other tests, a low p-value means there IS a pattern/difference/significant relationship

- Remember: correlation doesn't equal causation.

    Let's look at the journal article I emailed you.

Multiple Regression

- Multiple independent varibles

- Implies cause-effect relationship (or at least a predictive value)

- Example: Use latitude, altitude, and season to predict average temperature