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                 Shamsudduha_etal_SI_Final_GRM_full_results_19Nov14
      Supplementary Information: Model results for the final, national-scale GRM

      Model outputs from R programing language:

      Parametric Survival Model: Weibull Distribution

      survreg(formula = Surv(Arsenic, Censor, type = "left") ~ factor(GeolAbb) +
              USCunit + HydCond + WellDepth + GWLtrend + RechPGI + Rchange +
              LongLeg1 + LatLeg1 + LongLeg2 + LatLeg2 + LongLeg1:LatLeg1 +
              IrrigTrends + factor(GeolAbb):WellDepth + factor(GeolAbb):USCunit +
              factor(GeolAbb):RechPGI + cluster(ClusterID), data = model.data,
              dist = "weibull")
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	Value	Std. Err	(Naive SE)	z	p
(Intercept)	4.6475	0.48114	0.528912	9.6594	4.48e-22
factor(GeolAbb)1	-2.0228	2.47101	1.893165	-0.8186	4.13e-01
factor(GeolAbb)2	-3.6682	1.29453	0.876850	-2.8336	4.60e-03
factor(GeolAbb)3	3.0609	0.86422	0.811725	3.5418	3.97e-04
factor(GeolAbb)4	-0.8736	1.30705	1.220783	-0.6684	5.04e-01
factor(GeolAbb)5	1.6829	0.99754	0.782695	1.6870	9.16e-02
factor(GeolAbb)6	-0.0530	1.45670	1.104601	-0.0364	9.71e-01
factor(GeolAbb)7	-1.7956	1.26031	1.273628	-1.4247	1.54e-01
factor(GeolAbb)8	0.4504	0.64950	1.180497	0.6935	4.88e-01
factor(GeolAbb)9	-2.7515	2.23123	2.223838	-1.2332	2.18e-01
factor(GeolAbb)10	1.1280	1.25356	1.839817	0.8998	3.68e-01
factor(GeolAbb)11	0.9383	0.77063	0.860189	1.2176	2.23e-01
factor(GeolAbb)12	-2.5077	1.02506	0.825883	-2.4464	1.44e-02
factor(GeolAbb)13	0.4948	1.21544	0.950879	0.4071	6.84e-01
factor(GeolAbb)14	2.5548	1.94457	1.565542	1.3138	1.89e-01
USCunit	-0.0233	0.01744	0.019820	-1.3357	1.82e-01
HydCond	-0.0256	0.00960	0.007216	-2.6677	7.64e-03
WellDepth	-0.0124	0.00916	0.009720	-1.3532	1.76e-01
GWLtrend	0.0339	0.01409	0.011848	2.4064	1.61e-02
RechPGI	-0.0006	0.00403	0.004033	-0.1489	8.82e-01
Rchange	-0.0043	0.00123	0.000957	-3.5086	4.50e-04
LongLeg1	-0.6278	0.34899	0.367816	-1.7989	7.20e-02
LatLeg1	-1.2590	0.49703	0.453192	-2.5331	1.13e-02
LongLeg2	-0.8508	0.29375	0.255948	-2.8963	3.78e-03
LatLeg2	-0.6961	0.70548	0.561110	-0.9867	3.24e-01
LongLeg1:LatLeg1	0.6615	0.58344	0.614508	1.1338	2.57e-01
IrrigTrends	-0.0564	0.03006	0.022457	-1.8763	6.06e-02
factor(GeolAbb)1:WellDepth	0.0460	0.06266	0.042613	0.7341	4.63e-01
factor(GeolAbb)2:WellDepth	0.1043	0.02487	0.018876	4.1939	2.74e-05
factor(GeolAbb)3:WellDepth	-0.0468	0.01633	0.016045	-2.8661	4.16e-03
factor(GeolAbb)4:WellDepth	0.0395	0.03939	0.038301	1.0029	3.16e-01
factor(GeolAbb)5:WellDepth	0.0217	0.01598	0.014806	1.3583	1.74e-01
factor(GeolAbb)6:WellDepth	0.0016	0.04745	0.027597	0.0337	9.73e-01
factor(GeolAbb)7:WellDepth	-0.0532	0.02204	0.027088	-2.4140	1.58e-02
factor(GeolAbb)8:WellDepth	-0.0130	0.01594	0.025617	-0.8154	4.15e-01
factor(GeolAbb)9:WellDepth	-0.0629	0.07318	0.066378	-0.8596	3.90e-01
factor(GeolAbb)10:WellDepth	0.0084	0.02036	0.045213	0.4126	6.80e-01
factor(GeolAbb)11:WellDepth	0.0155	0.01725	0.016536	0.8985	3.69e-01
factor(GeolAbb)12:WellDepth	0.0384	0.01387	0.017328	2.7678	5.64e-03
factor(GeolAbb)13:WellDepth	-0.0081	0.02313	0.019875	-0.3502	7.26e-01
factor(GeolAbb)14:WellDepth	0.0000	0.03675	0.034355	0.0000	1.00e+00
factor(GeolAbb)1:USCunit	-0.0621	0.03939	0.047992	-1.5767	1.15e-01
factor(GeolAbb)2:USCunit	0.0538	0.02567	0.030444	2.0960	3.61e-02
factor(GeolAbb)3:USCunit	-0.0869	0.03645	0.034630	-2.3840	1.71e-02
factor(GeolAbb)4:USCunit	0.0774	0.06208	0.046120	1.2468	2.12e-01
factor(GeolAbb)5:USCunit	-0.1297	0.04309	0.029828	-3.0098	2.61e-03
factor(GeolAbb)6:USCunit	0.0682	0.07711	0.069355	0.8845	3.76e-01
factor(GeolAbb)7:USCunit	0.0962	0.04611	0.052974	2.0863	3.69e-02

	Value	Std. Err	S.E.	z	p
factor(GeolAbb)8:USCunit	0.0355	0.03767	0.067396	0.9425	3.46e-01
factor(GeolAbb)9:USCunit	0.1564	0.10364	0.095686	1.5091	1.31e-01
factor(GeolAbb)10:USCunit	-0.0080	0.05288	0.107360	-0.1513	8.80e-01
factor(GeolAbb)11:USCunit	-0.0378	0.03319	0.032996	-1.1388	2.55e-01
factor(GeolAbb)12:USCunit	-0.0231	0.03696	0.030869	-0.6249	5.32e-01
factor(GeolAbb)13:USCunit	-0.0069	0.03212	0.031252	-0.2148	8.30e-01
factor(GeolAbb)14:USCunit	0.0035	0.04334	0.058935	0.0807	9.36e-01
factor(GeolAbb)1:RechPGI	0.0033	0.00986	0.007655	0.3346	7.38e-01
factor(GeolAbb)2:RechPGI	0.0030	0.00429	0.004299	0.6990	4.85e-01
factor(GeolAbb)3:RechPGI	-0.0018	0.00401	0.004048	-0.4483	6.54e-01
factor(GeolAbb)4:RechPGI	-0.0010	0.00432	0.004516	-0.2316	8.17e-01
factor(GeolAbb)5:RechPGI	0.0002	0.00436	0.004121	0.0459	9.63e-01
factor(GeolAbb)6:RechPGI	-0.0289	0.01449	0.010593	-1.9951	4.60e-02
factor(GeolAbb)7:RechPGI	-0.0005	0.01130	0.012255	-0.0443	9.65e-01
factor(GeolAbb)8:RechPGI	0.0068	0.00958	0.012903	0.7099	4.78e-01
factor(GeolAbb)9:RechPGI	0.0246	0.04298	0.042860	0.5723	5.67e-01
factor(GeolAbb)10:RechPGI	-0.0034	0.00924	0.012852	-0.3681	7.13e-01
factor(GeolAbb)11:RechPGI	0.0026	0.00432	0.004633	0.6015	5.48e-01
factor(GeolAbb)12:RechPGI	0.0289	0.01194	0.008085	2.4199	1.55e-02
factor(GeolAbb)13:RechPGI	-0.0014	0.00584	0.004621	-0.2396	8.11e-01
factor(GeolAbb)14:RechPGI	-0.0215	0.00907	0.006859	-2.3717	1.77e-02
Log(scale)	0.6515	0.05721	0.023417	11.3885	4.77e-30

Scale= 1.92

Weibull distribution
Loglik(model)= -6219.9   Loglik(intercept only)= -6780.2
        Chisq= 1120.45 on 68 degrees of freedom, p= 0
(Loglikelihood assumes independent observations)
Number of Newton-Raphson Iterations: 6
n= 1643

Abbreviation Key:

USCunit=thickness of surficial silt and clay (TSSC),
HydCond=hydraulic conductivity,
WellDepth=surveyed tubewell depth,
GWLtrend= trends in mean groundwater levels,
RechPGI=mean recharge for pre-developed groundwater-fed irrigation period,
Rchange=net changes in groundwater recharge,
Long=tubewell location longitude,
Lat=tubewell location latitude, and
IrrigTrends=groundwater-fed irrigation trends.
Value denotes model coefficient;
Std. Err and S.E. denote standard error of coefficients, and
(:) denotes statistical interaction term.