

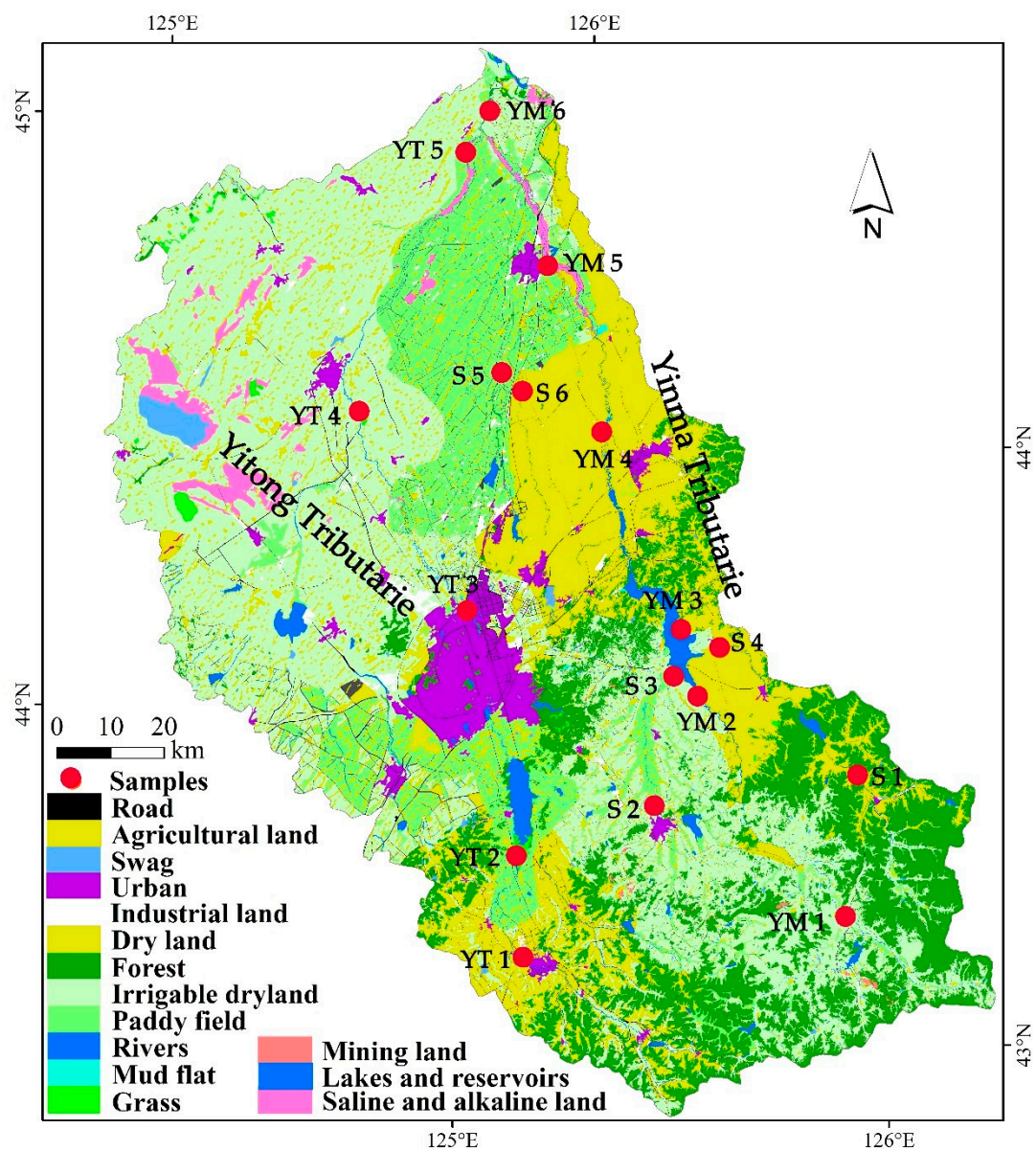


Figure S1. The land use distribution and layout of sampling sites in the Yinma River Basin.

Method to get the buffer zoo: In order to show the health risk values in details, buffers alaysis was conduct to clip the health risk map. First, the buffers of each sampling site were extracted in 'buffer tool' of ' Data management tool' in ArcGIS 10.0. When the buffer distance was larger than 500 m, the buffer covered two grids of data; when the buffer distance was larger than 1500 m, the buffers of two neighboring samples were overlapped. Then 1500 m buffer distance was used to acquired the boundary of 17 sampling sites, and continue to clip the health risk map. The map of health risk are show in figure 2 (a) and (b)

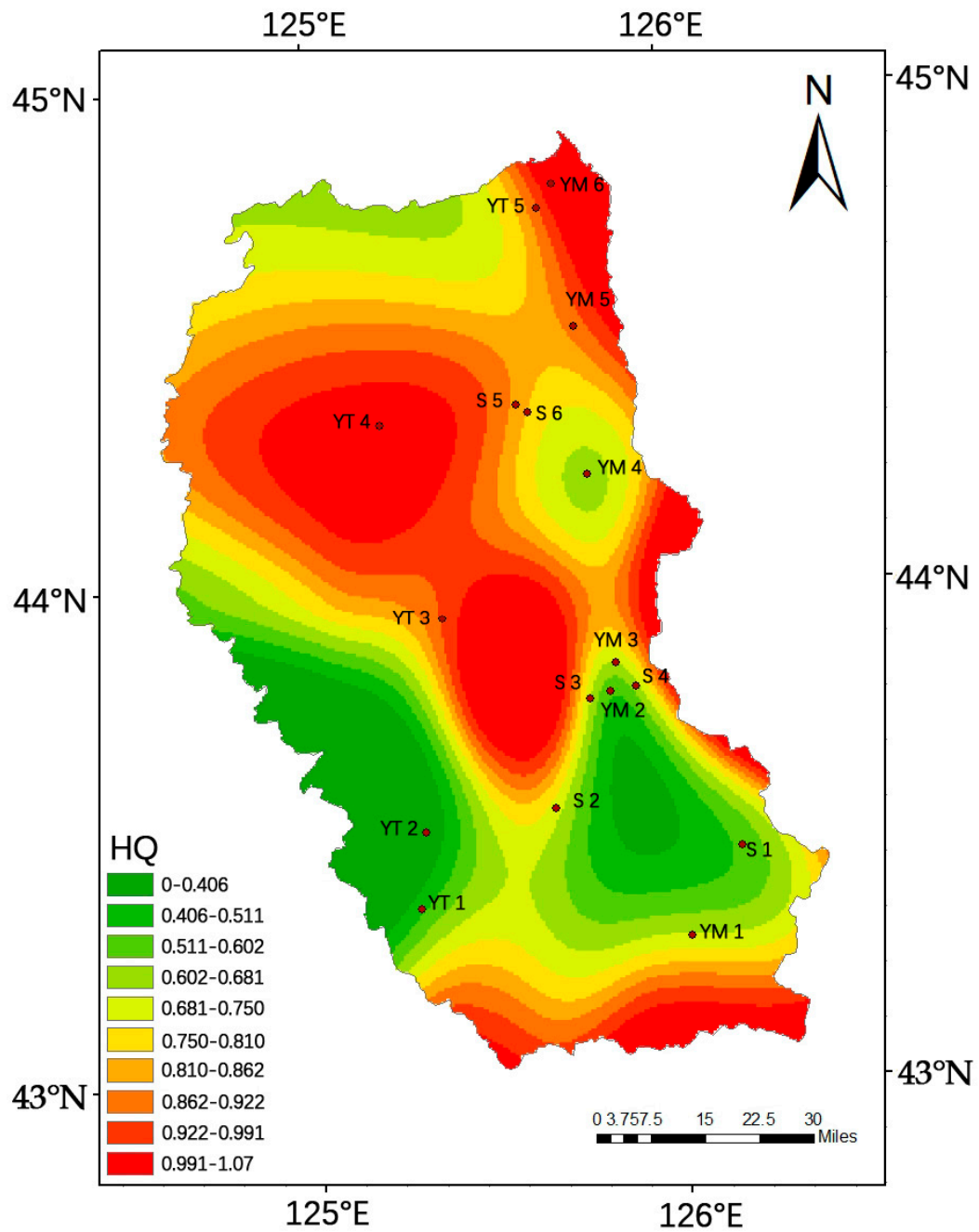


Figure S2 (a). The HQ distribution in wet season in the Yinma River Basin.

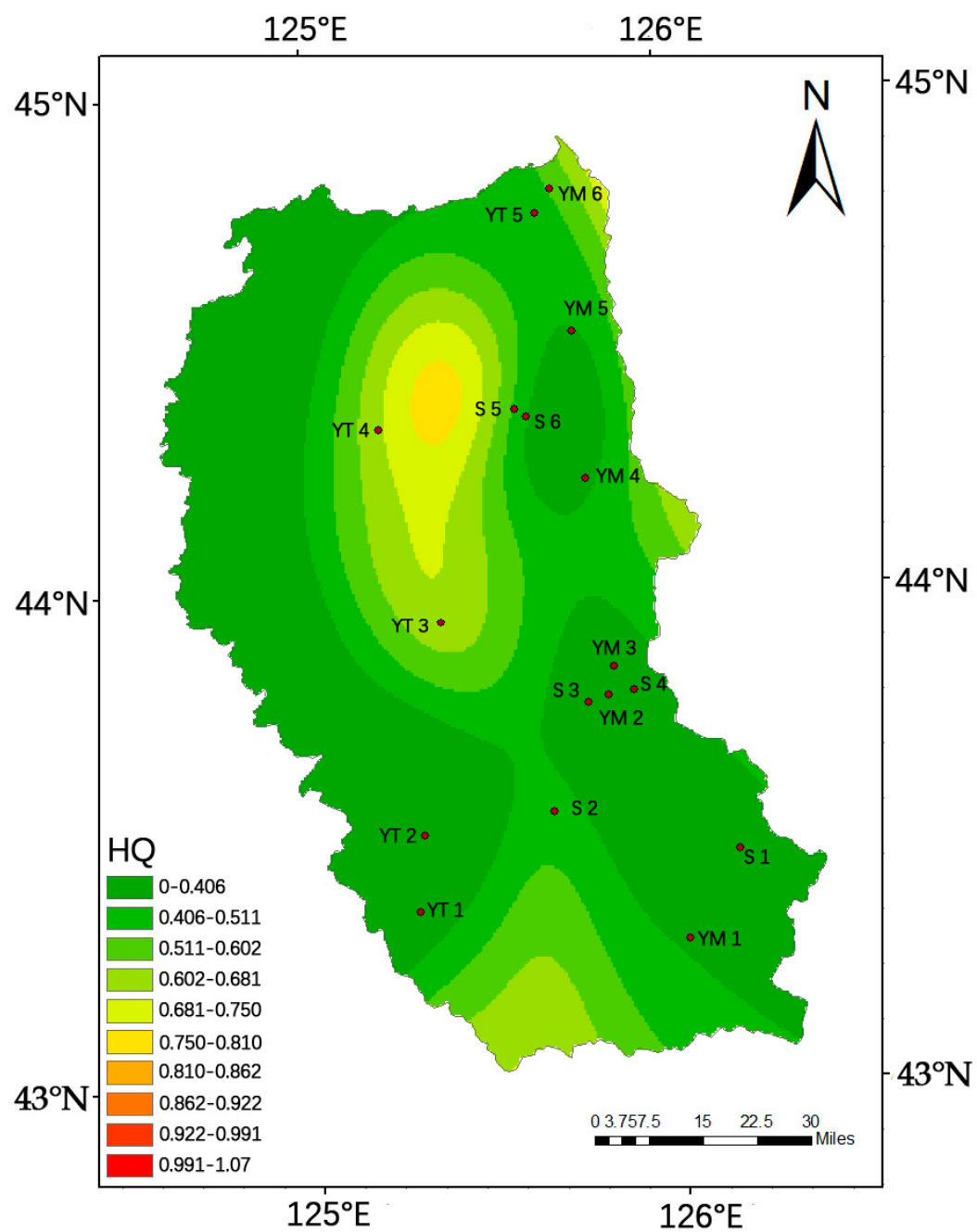


Figure S2 (b). The HQ distribution in dry season in the Yinma River Basin.

Table S1. The three parallel experiments concentration of antibiotics in two seasons of the sampling sites in the Yinma River Basin.

site	NOR-Wet (ng/L)			NOR-Dry (ng/L)			CIP-Wet (ng/L)			CIP-Dry (ng/L)			NOR-Mean (ng/L)	CIP-Mean (ng/L)
YT 1	70.500	70.611	70.722	52.336	51.719	51.102	2.107	2.040	1.973	1.872	1.989	2.106	61.164	2.015
YT 2	43.258	41.518	39.778	33.128	35.335	37.542	1.112	1.221	1.330	1.335	1.343	1.351	38.427	1.282
YT 3	66.339	64.497	62.655	74.212	75.034	75.856	4.552	4.491	4.430	4.321	4.276	4.231	69.766	4.384
YT 4	70.149	72.099	74.049	80.558	82.787	85.016	4.622	4.514	4.406	4.125	4.252	4.379	77.443	4.383
YT 5	74.001	74.618	75.235	43.443	42.226	41.009	4.215	4.381	4.547	3.735	3.830	3.925	58.422	4.105
Mean	64.849	64.669	64.488	56.735	57.420	58.105	16.608	3.329	3.337	3.078	3.138	3.198	61.044	3.234
Std	11.065	12.046	13.113	18.035	18.465	18.992	1.439	1.412	1.392	1.230	1.229	1.232	13.141	1.319
YM 1	45.228	48.211	51.194	43.662	41.494	39.326	3.231	3.415	3.599	3.124	3.245	3.366	44.852	3.330
YM 2	59.013	56.913	54.813	37.333	39.437	41.541	3.129	3.245	3.361	2.667	2.569	2.471	48.175	2.907
YM 3	61.200	60.281	59.362	59.769	57.227	54.685	3.225	3.180	3.135	2.332	2.530	2.728	58.754	2.855
YM 4	37.268	36.781	36.294	79.335	77.166	74.997	3.125	3.302	3.479	2.752	2.861	2.970	56.973	3.082
YM 5	72.111	74.838	77.565	48.222	46.273	44.324	4.012	4.236	4.460	2.887	2.977	3.067	60.556	3.607
YM 6	77.332	77.382	77.432	60.513	62.658	64.803	5.321	5.251	5.181	4.126	4.243	4.360	70.020	4.747
Mean	58.692	59.068	59.443	54.806	54.043	53.279	3.674	3.772	3.869	2.981	3.071	3.160	56.555	3.421
Std	13.989	14.170	14.591	13.734	13.230	13.033	0.739	0.750	0.718	0.565	0.578	0.604	8.261	0.646
S 1	42.101	43.850	45.599	52.002	51.024	50.046	2.412	2.582	2.752	2.754	2.831	2.908	47.437	2.707
S 2	75.632	74.260	72.888	79.193	78.765	78.337	3.158	3.279	3.400	3.215	3.388	3.561	76.512	3.333
S 3	55.338	56.590	57.842	53.001	53.220	53.439	2.395	2.495	2.595	2.446	2.335	2.224	54.905	2.415
S 4	40.262	41.857	43.452	55.328	57.028	58.728	3.075	3.174	3.273	2.556	2.484	2.412	49.443	2.829
S 5	63.579	63.183	62.787	50.654	49.185	47.716	4.012	3.913	3.814	3.415	3.426	3.437	56.184	3.669
S 6	78.364	80.575	82.786	73.662	75.823	77.984	3.992	3.975	3.958	3.876	3.964	4.052	78.199	3.969

Table S2. Various environmental factors of the sampling sites in the Yinma River Basin.

Site	GDP (RMB)	Population (person)	Land Use	Gradient (°)	Aspect
YT 1	9906.764	6070.000	Dry Land	4.223	196.390
YT 2	40929.871	262.000	Paddy Field	0.338	135.000
YT 3	21478.930	7180.000	Residence	1.013	135.000
YT 4	5489.228	87.000	Dry Land	1.350	315.000
YT 5	1435.017	88.000	Paddy Field	4.904	119.055
YM 1	0.000	3346.000	Residence	3.709	315.000
YM 2	5625.082	187.000	Residence	2.053	305.538
YM 3	13731.176	129.000	Dry Land	1.068	296.565
YM 4	632.573	93.000	Dry Land	4.582	207.897
YM 5	0.000	10.000	Saline-alkali Soil	2.635	185.194
YM 6	2216.345	51.000	Dry Land	1.688	261.870
S 1	0.522	597.000	Residence	2.720	142.125
S 2	0.001	785.000	Wetland	3.844	29.745
S 3	0.000	111.000	Residence	4.100	215.538
S 4	1789.420	215.000	Dry Land	0.755	198.435
S 5	0.000	143.000	Dry Land	17.676	228.180
S 6	0.000	17.000	Forest	4.716	315.000

Table S3. The water quality in two seasons of the sampling sites in the Yinma River Basin.

Site	Temperature (°C)		PH		DO (mg/L)		Free chlorine concentration (mg/L)		Ammonia nitrogen (mg/L)		COD (mg/L)	
	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry
YT 1	21.000	2.000	6.500	7.000	1.895	9.845	0.06035	0.075615	0.028	0.090	243.563	12.450
YT 2	21.000	2.000	6.500	6.000	2.751	11.414	0.044375	0.047925	0.029	0.110	243.563	23.375
YT 3	22.000	2.000	8.500	5.500	0.000	5.676	0	0.015265	0.365	0.290	333.980	83.215
YT 4	25.000	2.500	7.500	6.000	1.840	9.144	0.0568	0.064965	0.087	0.090	309.726	107.151
YT 5	25.000	3.800	7.000	6.500	2.548	9.082	0.0568	0.062125	0.094	0.420	275.346	107.525
YM 1	23.000	7.000	7.500	6.000	3.919	15.232	0.02698	0.042955	0.021	0.050	234.701	8.228
YM 2	22.000	3.000	6.500	6.000	0.340	10.237	0.06532	0.073485	0.026	0.130	249.064	14.212
YM 3	30.600	7.600	5.500	6.000	6.974	9.082	0.00355	0.04686	0.009	0.030	250.592	79.662
YM 4	25.700	5.300	5.500	6.500	5.180	14.943	0.01491	0.062125	0.036	0.050	238.062	78.465
YM 5	23.200	5.100	5.500	5.500	2.539	12.642	0.0284	0.06603	0.013	0.040	351.440	61.897
YM 6	25.000	3.700	7.500	6.500	0.672	7.967	0.079875	0.092655	0.177	0.250	310.490	61.523
S 1	21.000	7.000	6.000	6.000	5.934	11.992	0.008165	0.025205	0.084	0.010	231.798	9.524
S 2	23.000	5.000	7.500	7.000	0.718	8.535	0.0497	0.068515	0.040	0.250	236.076	11.220
S 3	25.000	3.000	7.500	6.000	5.603	3.509	0.00639	0.038695	0.010	0.000	230.117	14.960
S 4	23.100	7.400	8.500	5.500	5.971	10.929	0.01491	0.050765	0.011	0.020	335.396	18.700
S 5	21.100	3.300	6.500	6.000	2.236	4.613	0.0426	0.03905	0.038	0.460	252.731	65.076
S 6	21.600	3.100	5.500	5.500	0.754	6.192	0.075615	0.182115	0.077	0.180	430.02	82.093

Table S4. The health risk in two antibiotics in two seasons in the Yinma River Basin.

site	NOR		CIP		total	
	wet	dry	wet	dry	wet	dry
YT 1	0.108	0.052	0.372	0.237	0.481	0.289
YT 2	0.064	0.032	0.222	0.146	0.286	0.178
YT 3	0.100	0.083	0.829	0.565	0.929	0.648
YT 4	0.111	0.083	0.948	0.584	1.058	0.668
YT 5	0.114	0.039	0.797	0.416	0.911	0.455
YM 1	0.074	0.038	0.621	0.353	0.695	0.391
YM 2	0.088	0.037	0.595	0.285	0.683	0.321
YM 3	0.093	0.053	0.584	0.280	0.677	0.334
YM 4	0.056	0.071	0.601	0.311	0.657	0.382
YM 5	0.115	0.046	0.773	0.355	0.887	0.402
YM 6	0.119	0.057	0.955	0.461	1.074	0.519
S 1	0.067	0.047	0.470	0.308	0.537	0.355
S 2	0.115	0.073	0.602	0.375	0.716	0.449
S 3	0.087	0.050	0.458	0.259	0.545	0.308
S 4	0.065	0.053	0.582	0.275	0.647	0.328
S 5	0.097	0.045	0.712	0.373	0.808	0.418
S 6	0.123	0.069	0.723	0.431	0.846	0.500