Iowa Department of Natural Resources

Leading Iowans in caring for our natural resources

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Stream Water Quality Summary 2014

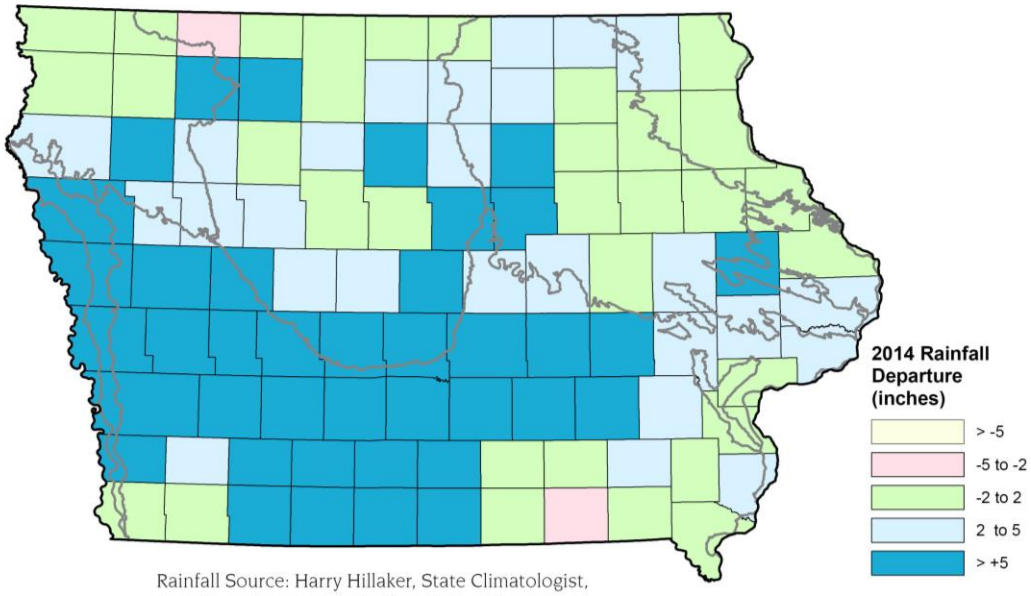
Water Quality Parameter	Units	Number of Samples	Min Value	Percentiles					Max Value
				10th	25th	50th	75th	90th	
Acetochlor	µg/L	519	<0.1	<0.1	<0.1	<0.1	0.2	0.5	4.3
Alachlor	µg/L	519	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alkalinity, Total	mg/L	200	110	280	395	480	580	640	920
Ammonia (as N)	mg/L	840	<0.05	<0.05	<0.05	<0.05	0.09	0.441	1.9
Atrazine	µg/L	519	<0.1	<0.1	<0.1	0.1	0.5	1.3	14
Butylate	µg/L	519	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Calcium	mg/L	200	18	54	68	79	98	120	150
Carbonaceous BOD (5 day)	mg/L	838	<2	<2	<2	<2	<2	4	20
Chloride	mg/L	840	1.3	9.4	16	22	29	47.1	180
Chlorophyll free of pheophytin	µg/L	840	<1	2	4	8	21	59.1	320
Cyanazine	µg/L	519	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2
Deethylatrazine	µg/L	519	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.3
Deisopropylatrazine	µg/L	519	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	0.7
Dimethenamid	µg/L	519	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	3.8
Diss. Orthophosphate (as P)	mg/L	840	<0.02	<0.02	0.04	0.1	0.19	0.44	8.3
Dissolved Oxygen	mg/L	840	<1	7.4	8.1	9.8	11.6	13.5	20.1
E.coli Bacteria	MPN/100 ml	838	<10	<10	20	97	530	2200	820,000
Field pH	pH units	824	6.7	7.4	7.7	8	8.3	8.5	9.8
Field Temperature	Celsius	840	0	0	0.7	10.7	20	23	27.9
Flow*	CFS	735	0.1	17	95	330	1,500	5,000	46,000
Magnesium	mg/L	200	11.2	30	41.5	54	68.5	76	136
Metolachlor	µg/L	519	<0.1	<0.1	<0.1	<0.1	0.4	0.9	15
Metribuzin	µg/L	519	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrate+Nitrite (as N)	mg/L	840	<0.1	0.92	2.4	5	7.8	12	38
Potassium	mg/L	200	2	3.2	4.4	6	9.45	13.6	34
Simazine	µg/L	519	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	13
Sodium	mg/L	200	4	10	16	19	26	32	138
Sulfate	mg/L	840	2.9	16	24	36	66	110	350
Total Dissolved Solids	mg/L	840	4	240	300	360	460	550	3,980
Total Hardness (as $CaCO_3$)	mg/L	840	3	170	230	300	353	420	780
Total Kjeldahl Nitrogen	mg/L	840	<0.1	0.2	0.4	0.76	1.4	2.3	9.1
Total Phosphorus	mg/L	840	<0.02	0.06	0.12	0.22	0.44	0.92	11
Total Suspended Solids	mg/L	840	0.5	2	6	26	79	281	6,820
Trifluralin	µg/L	519	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Turbidity	NTU	840	<1	1.4	3.4	12	36	151	4,300

µg/L – micrograms per liter (parts per billion)
mg/L – milligrams per liter (parts per million)
MPN/100 ml – Most Probable Number/100 milliliters of water
CFS – Cubic Feet per Second (ft^3/sec)
µmhos/cm – micromhos per centimeter
NTU – Nephelometric Turbidity Units; < – less than detection limit shown
BOD – Biological Oxygen Demand; Diss. - Dissolved

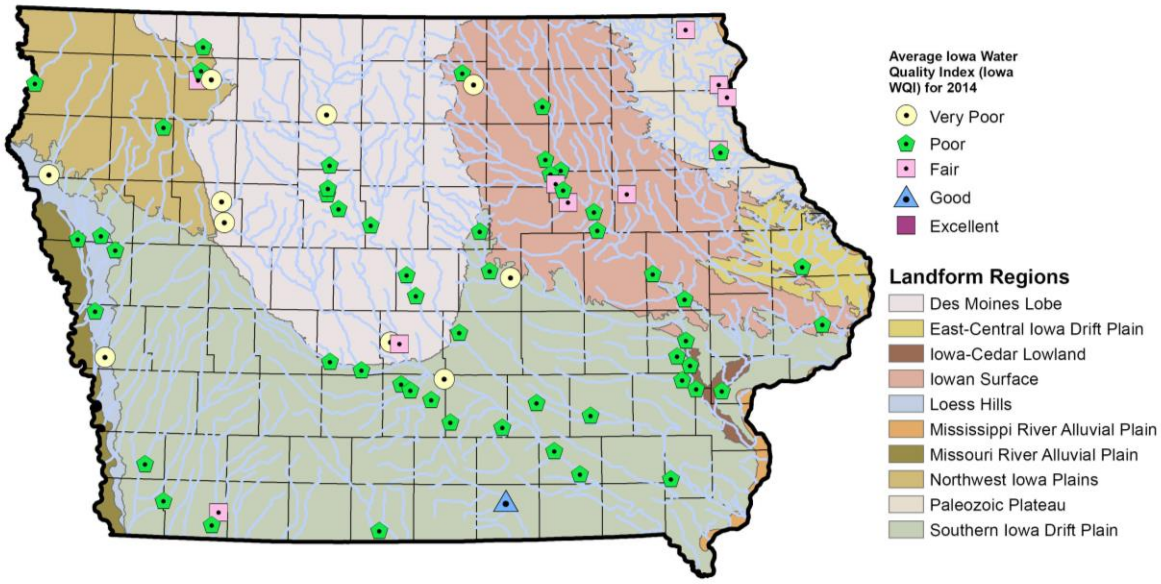
* Includes monthly samples for partial stream sites for January, February, and March. Provisional data from the U.S. Geological Survey

A total of 74 stream sites were sampled monthly from Jan through Aug; 78 in Sep; 60 in Oct and Nov; and 62 in Dec.
Raw data are available through IASTORET at https://programs.iowadnr.gov/iastoret/

Departure from Long-Term Average Annual Rainfall



Rainfall Source: Harry Hillaker, State Climatologist,
Iowa Department of Agriculture & Land Stewardship.
Gray lines represent landform regions.



Iowa Water Quality Index

In 2005, the Iowa Department of Natural Resources developed the Iowa Water Quality Index (WQI), a standardized method for comparing the water quality of various water bodies across the state. The Iowa WQI rates water quality using the following nine parameters: biological oxygen demand, dissolved oxygen, *E.*coli bacteria, nitrate+nitrite as nitrogen, total detected pesticides, pH, total phosphorus, total dissolved solids, and total suspended solids. If a result is missing for any of these parameters, the Iowa WQI assigns a default value for the missing parameters. Values range from 0 – 100 and streams are classified as **very poor** (0 – 25), **poor** (25.1 – 50), **fair** (50.1 – 70), **good** (70.1 – 90), and **excellent** (90.1 – 100). For 2014, 1% of the monthly stream WQI values were in the **excellent** category, 11% were **good**, 24% were **fair**, 35% were **poor**, and 29% were **very poor**. (See map above for average WQI rank for each site.) Water quality is affected by rainfall. For 2014, on average, rainfall was **4.29** inches above normal per county (see map above).