

IOWA'S WATER

Ambient Monitoring Program

Water Quality Summary 2011

Water Quality Parameter	Units	Number of Samples	Min Value	Percentiles					Max Value
				10th	25th	50th	75th	90th	
Ammonia (as N)	mg/L	972	<0.05	<0.05	<0.05	<0.05	0.07	0.17	0.66
Carbonaceous BOD (5 day)	mg/L	972	<2	<2	<2	<2	<2	3	16
Chloride	mg/L	972	4.4	11	15	18	24	34	89
Corrected Chlorophyll a	µg/L	33	<1	<1	9	14	22	30	45
Chlorophyll free of pheophytin	µg/L	939	<1	2	3	9	30	81	480
Diss. Orthophosphate (as P)	mg/L	972	<0.02	<0.02	0.05	0.09	0.14	0.22	4.5
Dissolved Oxygen	mg/L	958	4.5	7.7	8.9	10.8	12.9	14.1	19
<i>E. coli</i> Bacteria	MPN/100 ml	970	<10	20	41	120	330	933	24,000
Field pH	pH units	970	6.9	7.8	8.0	8.2	8.3	8.5	9.3
Field Temperature	Celsius	972	0.0	0.1	1.8	11.1	20.8	25.3	32.9
Flow**	CFS	915	<0.1	40	160	460	1,500	5,060	82,000
Nitrate+Nitrite (as N)	mg/L	972	<0.1	0.64	2.4	5.5	7.3	9.3	21
Sulfate	mg/L	972	13	19	24	33	58	96	260
Total Dissolved Solids	mg/L	972	140	270	310	350	423	500	870
Total Hardness (as CaCO ₃)	mg/L	972	86	210	250	300	343	400	620
Total Kjeldahl Nitrogen	mg/L	972	<0.1	0.2	0.5	0.7	1.0	1.3	3.7
Total Phosphorus	mg/L	972	<0.02	0.08	0.12	0.17	0.27	0.41	4.4
Total Suspended Solids	mg/L	972	<1	4	10	35	78	170	1,500
Turbidity	NTU	972	<1	2.4	6.1	16	34	70	860

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 (ft³/sec)

µmhos/cm – micromhos per centimeter

NTU – Nephelometric Turbidity Units

< – less than detection limit shown

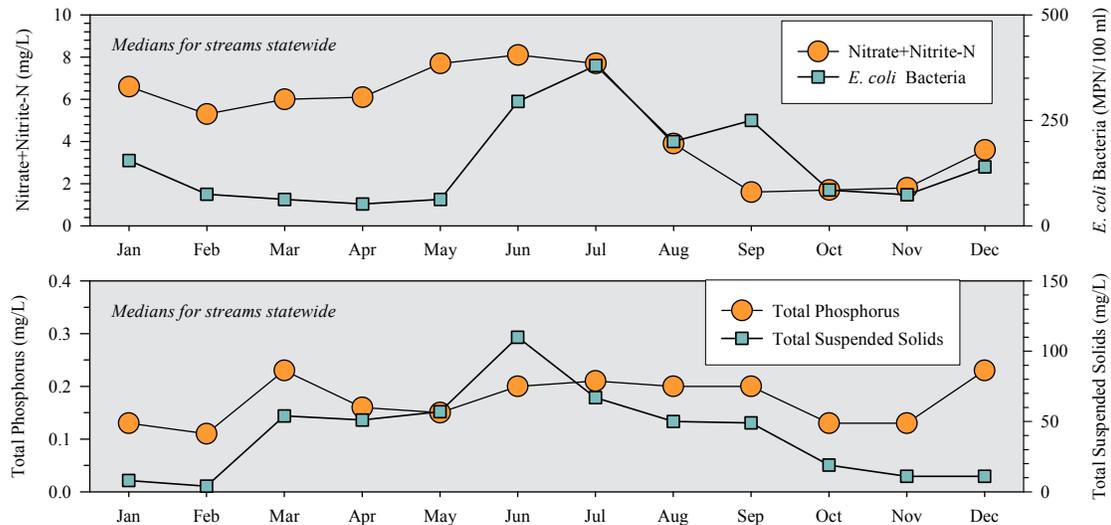
BOD – Biological Oxygen Demand; Diss. – Dissolved

A total of 81 stream sites were sampled monthly.

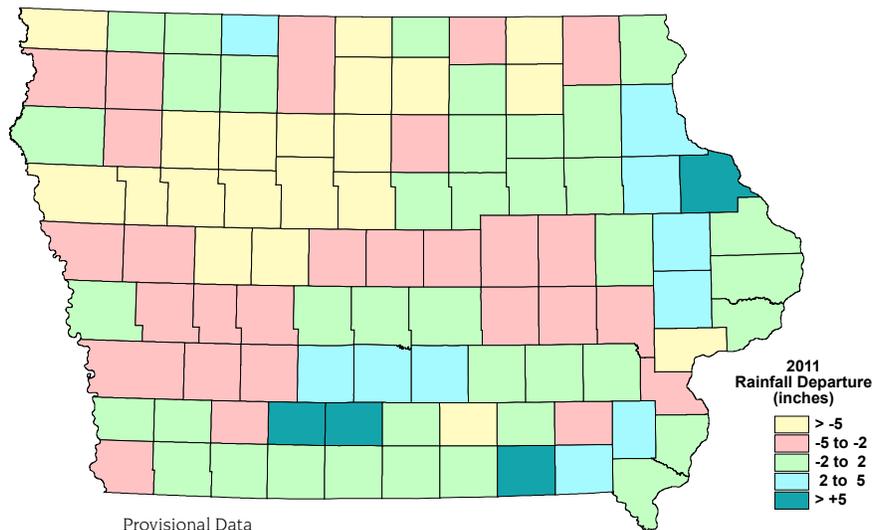
Raw data are available through STORET:

<https://programs.iowadnr.gov/iastoret/>

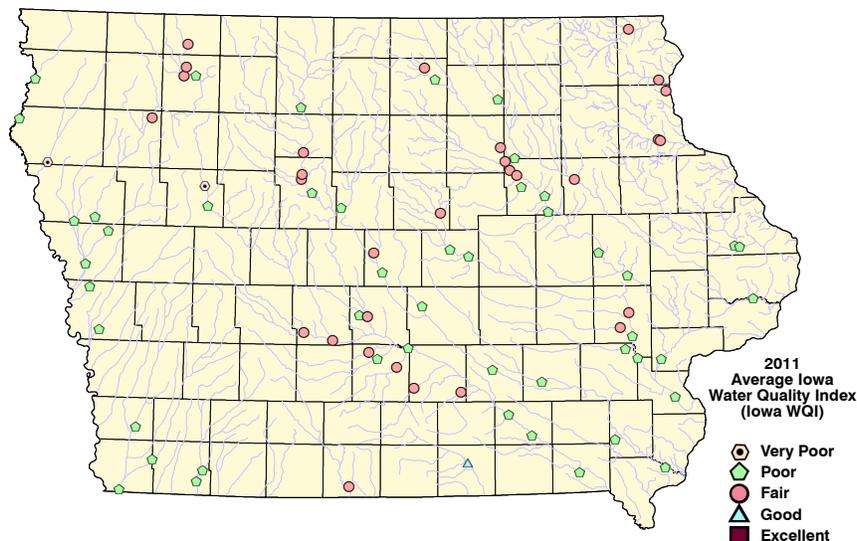
** Provisional data from the U.S. Geological Survey and State Hygienic Laboratory at the University of Iowa



Departure from Long-Term Average Annual Rainfall



Provisional Data
Source: Harry Hillaker, State Climatologist,
Iowa Department of Agriculture & Land Stewardship.



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 2011, 0% of the monthly stream WQI values were in the **excellent** category, 10% were **good**, 44% were **fair**, 34% were **poor**, and 11% were **very poor**. (See map above for average WQI rank for each site.) Water quality is affected by rainfall. For 2011, on average, rainfall was **1.8** inches below normal per county (see map above).



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