

IOWA'S WATER

Ambient Monitoring Program

Water Quality Summary 2010

Water Quality Parameter	Units	Number of Samples	Min Value	Percentiles					Max Value
				10th	25th	50th	75th	90th	
Ammonia (as N)	mg/L	918	<0.05	<0.05	<0.05	<0.05	<0.05	0.11	1
Carbonaceous BOD (5 day)	mg/L	909	<2	<2	<2	<2	<2	<2	8
Chloride	mg/L	918	2.2	9.2	13	17	22	28	51
Chlorophyll free of pheophytin	µg/L	918	<1	<1	2	6	17	40	320
Diss. Orthophosphate (as P)	mg/L	918	<0.02	0.03	0.05	0.08	0.13	0.18	1.0
Dissolved Oxygen	mg/L	918	6	7.7	8.7	10.5	12.8	14.4	17.3
<i>E. coli</i> Bacteria	MPN/100 ml	918	<10	20	52	155	500	2,400	58,000
Field pH	pH units	918	7.1	7.8	8.0	8.2	8.3	8.4	8.9
Field Temperature	Celsius	918	0.0	0.0	1.2	11.8	19.6	23.5	28.9
Flow**	CFS	858	8	170	330	760	2,300	6,130	72,000
Nitrate+Nitrite (as N)	mg/L	918	<0.1	2.5	4.5	6.0	7.4	9.1	16
Sulfate	mg/L	918	2.6	16	20	26	42	78	260
Total Dissolved Solids	mg/L	917	120	260	300	360	430	490	800
Total Hardness (as CaCO ₃)	mg/L	918	70	210	260	310	360	410	600
Total Kjeldahl Nitrogen	mg/L	918	<0.1	0.2	0.4	0.6	0.8	1.2	19
Total Phosphorus	mg/L	918	<0.05	0.07	0.10	0.16	0.24	0.39	6.3
Total Suspended Solids	mg/L	918	<1	4.7	10	33	83	210	11,000
Turbidity	NTU	918	<1	2.6	5.1	16	37	87	5,100

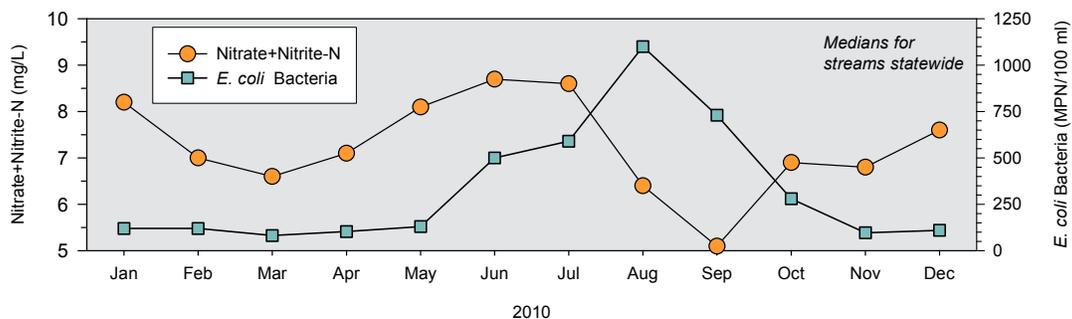
µg/L – micrograms per liter (parts per billion)
 mg/L – milligrams per liter (parts per million)
 MPN/100 ml – Most Probable Number/100 milliliters of water
 CFS – Cubic Feet per Second (ft³/sec)
 µmhos/cm – micromhos per centimeter
 NTU – Nephelometric Turbidity Units
 < – less than detection limit shown
 BOD – Biological Oxygen Demand; Diss. – Dissolved

A total of 75 stream sites were sampled monthly from Jan to Sept. A total of 81 stream sites were sampled from Oct to Dec.

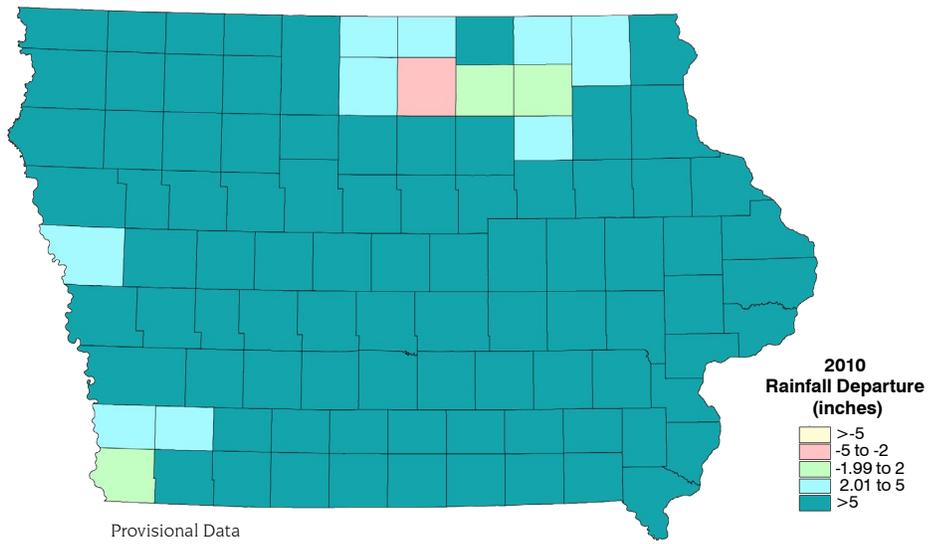
Raw data available through STORET:
<https://programs.iowadnr.gov.iastoret/>

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

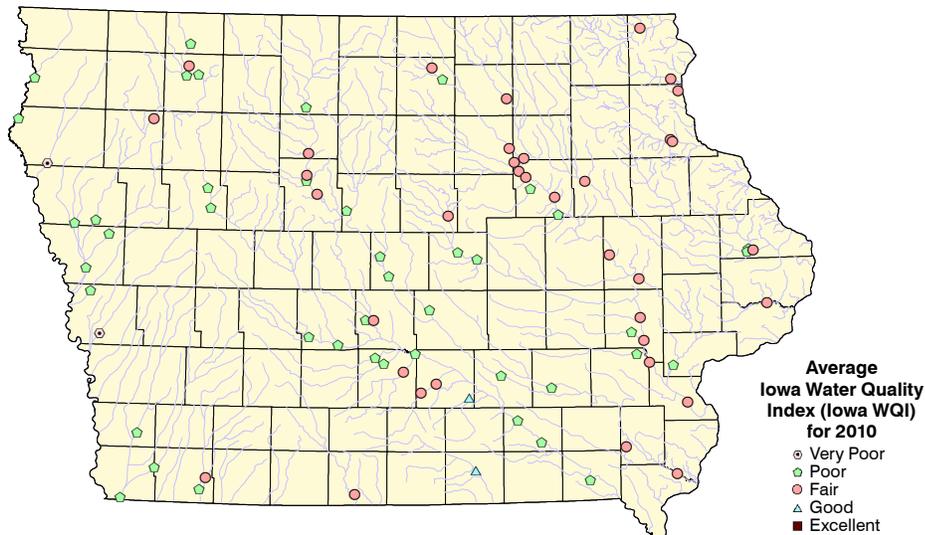
Beginning in October 2010, six new monthly stream sites were added to the existing network of 75 sites. These new sites included the Nishnabotna River near Hamburg, Skunk River near Augusta, Iowa River near Wapello, Little Sioux River near Turin, Big Sioux River near Akron, and Des Moines River near Keosauqua. With the addition of these new sites, the ambient stream network now monitors the water quality for surface waters draining 85% 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 2010, 0% of the monthly stream WQI values were in the **excellent** category, 6% were **good**, 53% were **fair**, 26% were **poor**, and 14% were **very poor**. (See map above for average WQI rank for each site.) Water quality is affected by rainfall. For 2010, on average, rainfall was **11.1** inches above normal per county (see map above).



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