

IOWA'S WATER

Ambient Monitoring Program

Water Quality Summary 2000-2003*

Water Quality Parameter	Units	Number of Samples	Min Value	Percentiles					Max Value
				10th	25th	50th	75th	90th	
Acetochlor	µg/L	4,113	<0.1	<0.1	<0.1	<0.1	<0.1	0.20	21
Alachlor	µg/L	4,113	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	8.6
Ammonia (as N)	mg/L	4,214	<0.1	<0.1	<0.1	<0.1	0.06	0.2	5.7
Atrazine	µg/L	4,137	<0.1	<0.1	<0.1	0.1	0.3	1.00	53
Butylate	µg/L	4,047	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carbonaceous BOD (5 day)	mg/L	3,779	<2	<2	<2	<2	3	6	35
Chloride	mg/L	2,990	2.9	12	16	22	32	44	170
Chlorophyll A	µg/L	3,844	<1	2	5	15	47	130	640
Chlorophyll B	µg/L	3,844	<1	<1	<1	<1	<1	2	70
Chlorophyll C	µg/L	3,844	<1	<1	<1	<1	2	9	66
Corrected Chlorophyll A	µg/L	3,844	<1	<1	3	11	39	114	620
Cyanazine	µg/L	4,047	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	1.3
Deethylatrazine	µg/L	4,047	<0.1	<0.1	<0.1	0.05	0.12	0.21	2.6
Deisopropylatrazine	µg/L	4,047	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.57
Dimethenamid	µg/L	3,260	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	4.4
Diss. Orthophosphate (as P)	mg/L	4,119	<0.1	<0.1	<0.1	<0.1	0.17	0.3	8.2
Dissolved Oxygen	mg/L	4,160	0.7	7.7	8.8	10.4	12.8	14.4	20.5
<i>E. coli</i> Bacteria	CFU/100 ml	3,902	<10	<10	18	90	370	2,500	960,000
Enterococci Bacteria	CFU/100 ml	3,899	<10	<10	30	120	390	2,800	390,000
Fecal Coliform Bacteria	CFU/100 ml	4,257	<10	<10	20	130	600	4,100	920,000
Field pH	pH units	3,820	5.0	7.8	8.0	8.2	8.4	8.6	9.6
Field Temperature	Celsius	4,189	0.0	0.2	2.5	13.2	20.8	24.5	34.3
Flow	CFS	3,547	1	11	49	210	890	2,500	39,000
Metolachlor	µg/L	4,113	<0.1	<0.1	<0.1	<0.1	0.12	0.4	36
Metribuzin	µg/L	4,047	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	1.5
Nitrate+Nitrite (as N)	mg/L	4,214	<0.1	0.6	2.3	5	7.9	11.0	28.0
Pheophytin	µg/L	3,844	<1	<1	1	3	10.0	21.0	204.0
Silica	mg/L	3,850	<1	4.1	7.8	12.0	16.0	20.0	120
Simazine	µg/L	3,769	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.56
Specific Conductivity	µmhos/cm	3,943	120	420	510	620	720	840	1,700
Sulfate	mg/L	2,827	6.3	21	27	39	63	100	400
Total Dissolved Solids	mg/L	3,850	95	250	300	360	440	510	1,640
Total Hardness (as CaCO ₃)	mg/L	3,778	64	190	240	300	350	410	750
Total Kjeldahl Nitrogen	mg/L	3,854	<0.1	0.3	0.5	0.8	1.4	2.2	28
Total Phosphorus	mg/L	4,211	<0.1	<0.1	0.1	0.2	0.4	0.7	26
Total Suspended Solids	mg/L	3,937	<1	3	8	29	79	200	17,000
Trifluralin	µg/L	4,047	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.35
Turbidity	NTU	4,203	<1	2.6	5.3	17.0	44.0	120.0	8,500

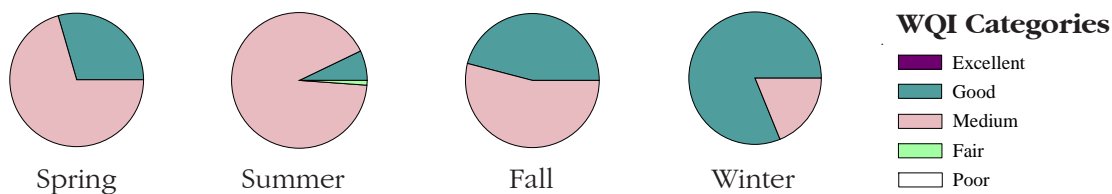
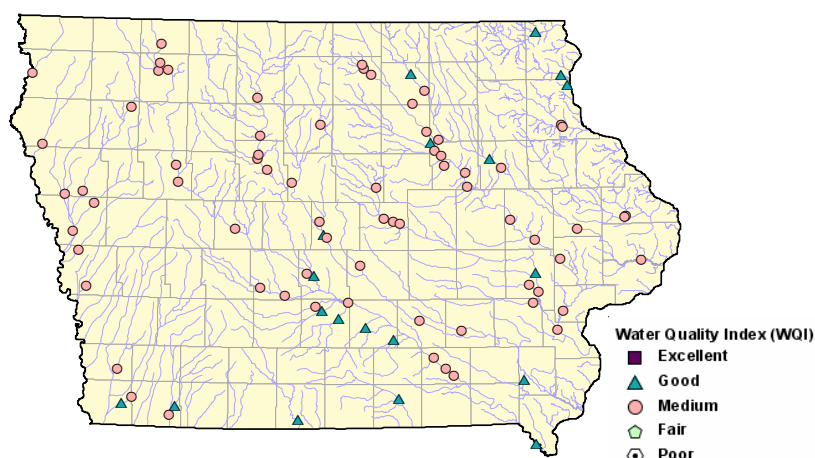
µg/L – micrograms per liter (parts per billion)
 mg/L – milligrams per liter (parts per million)
 CFU/100 ml – Colony Forming Units per
 100 milliliters of water

CFS – Cubic Feet per Second (ft³/sec)
 µmhos/cm – micromhos per centimeter
 NTU – Nephelometric Turbidity Units
 < – less than detection limit shown

*Includes monthly and event samples for all stream sites.

Water Quality Index

In 1970, the National Sanitation Foundation developed the Water Quality Index (WQI), a standardized method for comparing the water quality of various water bodies. In Iowa, the WQI is calculated by using eight common water quality parameters (dissolved oxygen, fecal coliform bacteria, pH, 5-day BOD, total phosphorus, nitrate-nitrogen, turbidity, and total dissolved solids). Values range from 0-100 and streams are classified as **poor** (0-25), **fair** (25-50), **medium** (50-70), **good** (70-90), or **excellent** (90-100). WQIs were calculated on the streams monitored monthly as part of Iowa's Ambient Water Monitoring Program. For 2000 through 2003, 79% of streams had a WQI in the medium category while the remaining 21% were in the good category.



Streams in Iowa show seasonal WQI patterns. For the majority of streams, water quality is **medium** during the spring, followed by a decline in water quality during the summer months when even more streams fall from the **good** category into the **medium** and **fair** categories. During the fall, just over half the streams exhibit **medium** water quality while the rest have **good** water quality. Water quality is at its best during the winter months, with more than 80% of the streams classified as **good**.



Prepared by
Iowa Department of Natural Resources, Geological Survey
109 Troubridge Hall, Iowa City, IA 52242-1319