

IOWA DEPARTMENT OF NATURAL RESOURCES

LEADING IOWANS IN CARING FOR OUR NATURAL RESOURCES

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Stream Water Quality Summary 2015

| Water Quality Parameter | Units | # of Samples | Average | Min Value | Percentiles | | | | | Max Value |
|--|------------|--------------|---------|-----------|-------------|-------|-------|-------|-------|-----------|
| | | | | | 10th | 25th | 50th | 75th | 90th | |
| Alkalinity, Total | mg/L | 255 | 235 | 80 | 160 | 190 | 230 | 280 | 310 | 400 |
| Ammonia (as N) | mg/L | 717 | 0.04 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | 0.06 | 0.79 |
| Calcium | mg/L | 255 | 83 | 27 | 59 | 67 | 80 | 100 | 110 | 150 |
| Carbonaceous BOD (5 day) | mg/L | 712 | <2 | <2 | <2 | <2 | <2 | <2 | 2.9 | 14 |
| Chloride | mg/L | 717 | 20.7 | 3.9 | 9.7 | 15 | 20 | 25 | 31 | 76 |
| Chlorophyll free of pheophytin | mg/L | 717 | 23 | <1 | 2 | 3 | 7 | 17 | 60.4 | 460 |
| Diss. Orthophosphate (as P) | mg/L | 717 | 0.1 | <0.02 | <0.02 | 0.04 | 0.08 | 0.13 | 0.18 | 1.2 |
| Dissolved Oxygen | mg/L | 716 | 10.4 | 6.3 | 8.0 | 8.6 | 9.9 | 12.1 | 13.3 | 16.3 |
| <i>E.coli</i> Bacteria | MPN/100 ml | 716 | 861 | <10 | 10 | 41 | 160 | 560 | 1,700 | 31,000 |
| Field pH | pH units | 710 | 8.1 | 5.8 | 7.8 | 8 | 8.2 | 8.3 | 8.4 | 9 |
| Field Temperature | Celsius | 716 | 12.6 | 0 | 0.2 | 3.275 | 14.3 | 20.3 | 23.55 | 29.8 |
| Magnesium | mg/L | 255 | 27 | 2.9 | 16 | 21 | 26 | 33.5 | 38 | 60 |
| Nitrate+Nitrite (as N) | mg/L | 717 | 7.4 | 0.05 | 1.66 | 4.8 | 7.2 | 10 | 12 | 20 |
| Organic Carbon, Dissolved | mg/L | 255 | 2.7 | <0.5 | 1.4 | 1.8 | 2.5 | 3.3 | 4.3 | 11 |
| Potassium | mg/L | 255 | 2.7 | <1 | 1.5 | 1.8 | 2.3 | 3.2 | 4.4 | 7.4 |
| Sodium | mg/L | 255 | 12.6 | 4.2 | 6.8 | 8.6 | 11 | 14 | 19.6 | 53 |
| Sulfate | mg/L | 717 | 38 | 6.7 | 18 | 21 | 28 | 44 | 78 | 190 |
| Total Dissolved Solids | mg/L | 717 | 386 | 130 | 270 | 320 | 370 | 450 | 520 | 780 |
| Total Hardness (as CaCO ₃) | mg/L | 717 | 321 | 90 | 220 | 260 | 320 | 380 | 440 | 790 |
| Total Kjeldahl Nitrogen | mg/L | 717 | 0.7 | <0.1 | <0.1 | 0.3 | 0.5 | 0.9 | 1.3 | 10 |
| Total Phosphorus | mg/L | 717 | 0.28 | <0.02 | 0.07 | 0.12 | 0.2 | 0.31 | 0.49 | 9.2 |
| Total Suspended Solids | mg/L | 717 | 120 | <1 | 3 | 10 | 42 | 110 | 260 | 6,020 |
| Total Volatile Suspended Solids | mg/L | 716 | 14 | <1 | 1 | 2 | 7 | 16 | 31 | 400 |
| Turbidity | NTU | 717 | 54 | <1 | 2.2 | 5.3 | 19 | 48 | 100 | 2,600 |

µg/L - micrograms per liter; mg/L - milligrams per liter
 MPN/100 ml - Most Probable Number /100
 NTU - Nephelometric Turbidity Units
 BOD - Biological Oxygen Demand

A total of 58 stream sites were sampled monthly from January through September and 60 sites from October through December
 Raw data are available through IASTORET at <https://programs.iowadnr.gov/iastoret/>

Table 1. Water quality summary statistics for DNR's Ambient Stream Monitoring Program.

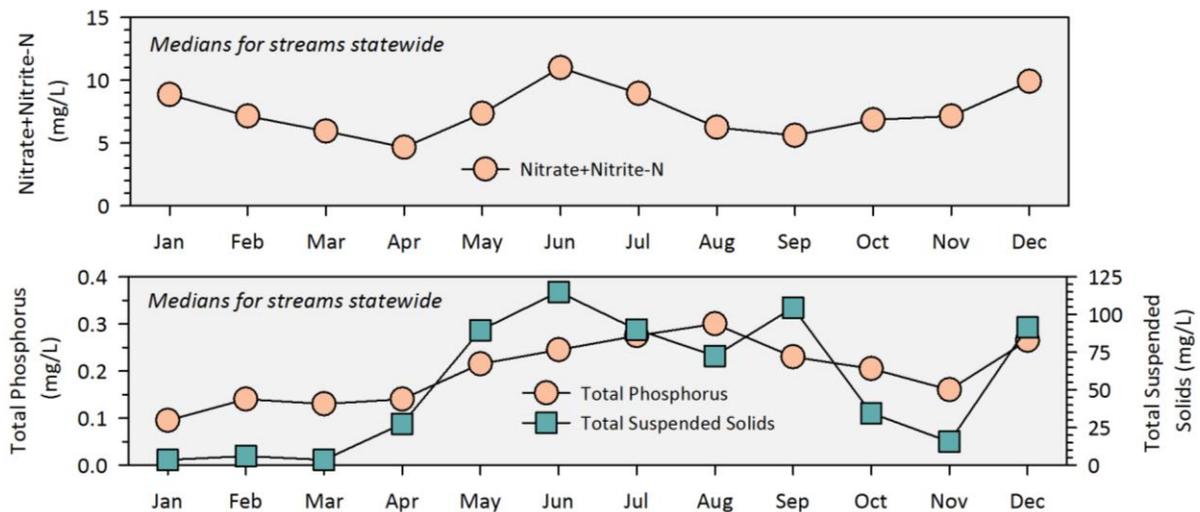


Figure 1. Median concentrations for 2015 by month for streams monitored statewide as part of the DNR's Ambient Stream Monitoring Program.

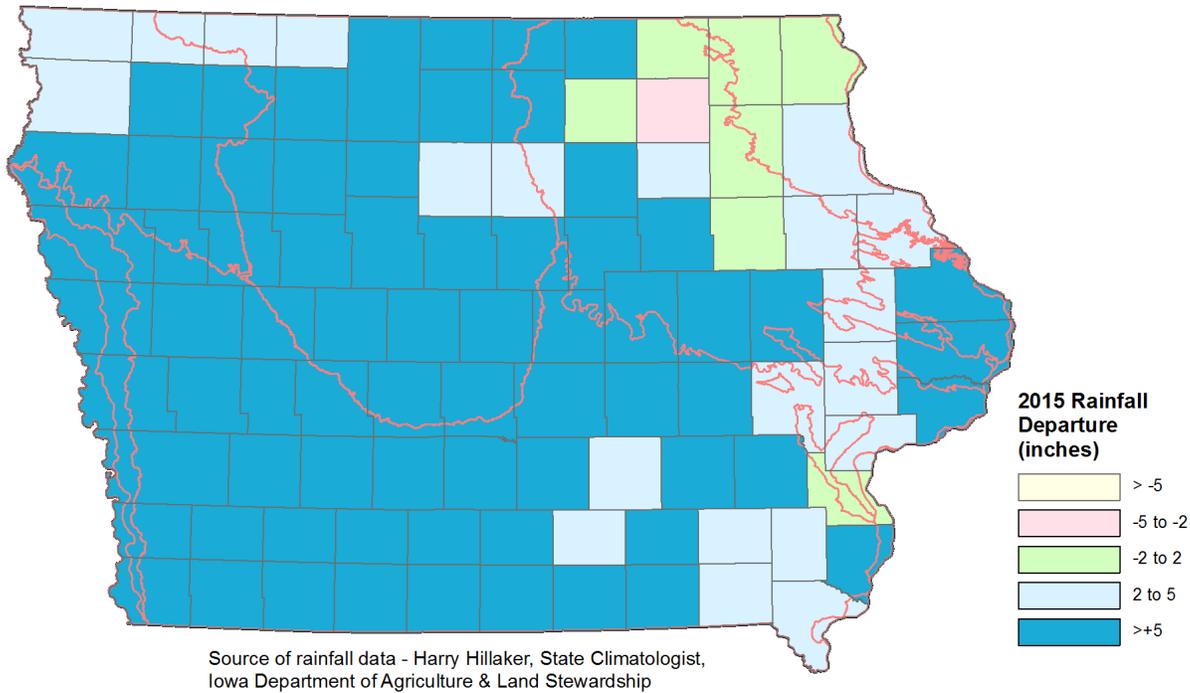


Figure 2. Departure from long-term average annual rainfall for 2015. Red lines represent landform regions.

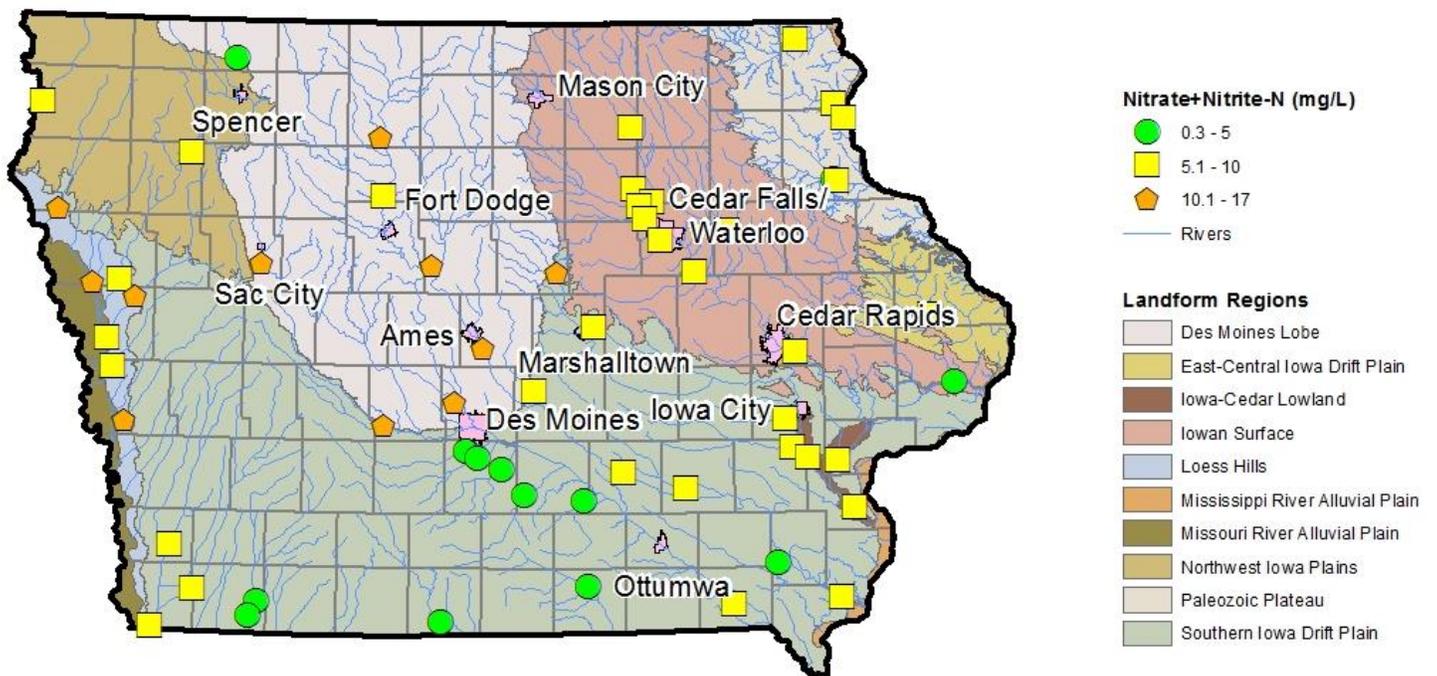


Figure 3. Median nitrate+nitrite-N concentrations for 2015 by site for DNR's Ambient Stream Monitoring Program. The overall median nitrate+nitrite-N concentration for 2015 was 7.2 mg/L (Table 1), an increase from medians for previous years of 6.0 mg/L in 2010, 5.5 mg/L in 2011, 2.7 mg/L in 2012, 3.7 mg/L in 2013, and 5.0 mg/L in 2014.