

IOWA DEPARTMENT OF NATURAL RESOURCES

Petition by the Iowa Environmental Council and the Environmental Law and Policy Center for the adoption of rules relating to numeric water quality standards for significant public recreational lakes.

PETITION FOR RULE MAKING

The Iowa Environmental Council and the Environmental Law and Policy Center present this petition for rule making pursuant to 567 IAC 5.1 and the Uniform Rules on Agency Procedure. The petition requests the adoption of numeric water quality standards for nutrients in significant public recreational lakes. The standards requested in this petition are based on the recommendations of the Department’s committee of Nutrient Science Advisors, headed by Iowa State University professor Dr. Michael Burkart, in February 2008. The petition requests that the Department promulgate numeric water quality standards for Secchi disc depth, Chlorophyll-a, Total phosphorus and Total nitrogen in Iowa’s significant public recreational lakes.

1. Relevant law

The Iowa Legislature has charged the Environmental Protection Commission with adopting appropriate water quality standards for the waters of our state. Iowa Code section 455B.176A(5) states:

“The commission shall adopt rules designating water quality standards which shall be specific to each designated use adopted pursuant to [subsection 4](#). The standards shall take into account the different characteristics of each designated use and shall provide for only the appropriate level of protection based upon that particular use. The standards shall not be identical for each designated use unless required for the appropriate level of protection. The appropriate level of protection and standards shall be determined on a scientific basis. In the development process for the water quality standards, input shall be received from a water quality standards advisory committee convened by the department. The water quality standards advisory committee shall be comprised of

experts in the scientific fields relating to water quality, such as environmental engineering, aquatic toxicology, fisheries biology, and other life sciences and experts in the development of the appropriate levels of aquatic life protection and standards. The water quality standards shall be reviewed and revised by the department as new scientific data becomes available to support revision.”

Iowa Code section 455B.176 lists the criteria the Commission is to consider in establishing water quality standards. Among other criteria, that section states that the Commission is to consider:

- The protection of public health
- The uses which have been made, are being made, or may be made of the affected water of the state for public, private, or domestic water supplies, irrigation; livestock watering; propagation of wildlife, fish, and other aquatic life; bathing, swimming, boating, or other recreational activity; transportation; and disposal of sewage and wastes.
- The economic costs and benefits. The goal shall be a reasonable balance between total costs to the people and to the economy, and the resultant benefits to the people of Iowa.

The federal Clean Water Act, at 33 U.S.C. § 1313(c)(2), requires states to establish water quality standards that will “protect the public health or welfare, enhance the quality of water and serve the purposes of this chapter.” The US Environmental Protection Agency has stated that “Adding nutrient criteria to State water quality standards is essential for Federal, State and local agencies, and the public, to better understand, identify, and manage nutrient over-enrichment problems in surface waters.”¹

2. Summary of argument in support of the proposed rules

Excessive phosphorus and nitrogen pollution can lead to harmful algae blooms in Iowa’s lakes. These algae blooms are threats to public health and to the economic well-being of Iowa’s lake communities. These lakes are currently protected from algae under Iowa’s narrative water quality standards at 567 IAC 61.3(2). These narrative standards state that lakes, like all Iowa’s

¹ US EPA, National Strategy for the Development of Regional Nutrient Criteria, page 6 (noticed in the Federal Register on June 25, 1998 at 63 Fed. Reg. 34648).

surface waters, should be free from “aesthetically objectionable conditions” and from “nuisance aquatic life”. These narrative standards are difficult to implement in discharge permits and do not address the *causes* of harmful algae blooms in lakes – excessive levels of phosphorus and nitrogen pollution. Since at least 2005, the Department has consistently stated that its current method for protecting lakes from algae under the narrative criteria serves as “an interim method for assessing lake water quality in Iowa until numeric criteria for nutrient parameters (phosphorus and nitrogen) and their response variables (Chlorophyll-a and turbidity) are adopted into the *Iowa Water Quality Standards*.”²

The Nutrient Science Advisors’ recommendations for lake nutrient standards were taken up by the Department, in part, in a December 2009 Notice of Intended Action. The 2009 NOIA did not include the Nutrient Science Advisors’ recommended standards for Total phosphorus or Total nitrogen. It did include standards for water clarity, as measured by Secchi disc depth, and algal biomass, as measured by Chlorophyll-a concentration. After discussions with stakeholders, a new NOIA was published in February 2011. This version of the rules contained a specified list of 159 lakes that would be protected, but still did not include the Nutrient Science Advisors’ recommended criteria for Total phosphorus or Total nitrogen. This rule making effort went through public meetings and a formal comment period, but was never brought for a final decision by the EPC. The Department never issued a response to the public comments it solicited. The rule making effort expired due to inaction in September 2011.

This petition proposes that the EPC adopt the Nutrient Science Advisors’ recommendations for Secchi disc depth, Chlorophyll-a, Total phosphorus, and Total nitrogen water quality standards. These proposed recreational standards would set numeric criteria for acceptable levels of algae and turbidity in Iowa’s lakes and for the phosphorus and nitrogen that causes it. These rules would be easy to implement in discharge permits and would protect Iowa’s lakes and lake communities from harmful algae blooms before they occur.

² DNR, “Methodology for Iowa’s 2004 Water Quality Assessment, Listing, and Reporting Pursuant to Section 305(b) and 303(d) of the Federal Clean Water Act”, 2005, at page 67. See also DNR 303(d) methodology documents for 2006, 2008, 2010, and 2012 listing cycles.

The proposed rules are drafted to mirror, as closely as possible, the rules proposed by the Department in its January 2011 Notice of Intended Action. We have added criteria for Total phosphorus and Total nitrogen, as recommended by the Nutrient Science Advisors. We have also added a use designation, “Significant Public Recreational Lakes”, to which the proposed criteria will apply.

We further encourage the Department to ensure that each of the 159 lakes proposed for coverage under this rule also has an A1 designation. Our review found that 20 of these lakes appear to be missing even that basic level of recreational protection. Five of the 20 lakes appear to be designated as general use, lacking even an aquatic life designation.

A brief in support of the proposed rules is attached.

3. Summary of data in support of the proposed rules

The 2008 report of the Nutrient Science Advisors contains detailed analysis of monitoring data at Iowa lakes relating to nutrients and algae. The report details the observed relationship in Iowa’s lakes between the causal variables phosphorus and nitrogen and the response variables Secchi disc depth (water clarity) and Chlorophyll-a concentration (algal biomass). The Nutrient Science Advisors used these data to recommend maximum phosphorus and nitrogen thresholds, above which acceptable levels of water clarity and algal biomass can no longer be assured in Iowa’s lakes.

The recommendations of this 2008 report are the basis for the proposed rules. The report is attached along with the Department’s 2011 Notice of Intended Action and Informal Regulatory Analysis.

4. Text of the proposed rule

Adopt the following new subrule 61.3(1) “b” (12):

(12) Significant Public Recreational Lakes (Class “D”). These are lakes which are Significant Publicly Owned Lakes, have a mean depth greater than or equal to three meters, or have a maintained swimming beach. This use does not apply to privately owned lakes, lakes where swimming is prohibited, or reservoirs or on-stream impoundments with a large drainage area to surface area ratio.

Adopt the following new subrule 61.3(3) “e”:

61.3(3) “e” *Class “D” waters.*

(1) The following criteria are applicable to all waters designated as Class D:

1. Transparency. The transparency of the lake, as measured with a Secchi disc, shall be greater than or equal to one meter at least 75 percent of the time.

2. Chlorophyll-a. The concentration of chlorophyll-a shall be less than or equal to 25 micrograms per liter (µg/l) at least 75% of the time.

3. Total phosphorus. The concentration of total phosphorus shall be less than or equal to 35 micrograms per liter (µg/l) at least 75% of the time.

4. Total nitrogen. The concentration of total nitrogen shall be less than or equal to 900 micrograms per liter (µg/l) at least 75% of the time. This total nitrogen criterion shall only apply to lakes that satisfy the total phosphorus criterion at part (3) of paragraph 61.3(3) “e”.

(2) Water sampling used to determine whether a lake meets the criteria in paragraph 61.3(4) “a” must meet the following requirements:

1. A minimum of nine sample results are required.
2. At least three of the samples must be taken from the deepest part of the lake.
3. All samples must be taken during the months of May through September.
4. At least three sampling events must be conducted in any one summer recreation season.
5. Samples must be taken in at least three summer seasons in a five-consecutive-year period.

(3) Criteria in paragraph 61.3(3) “e” (1) shall apply to all Class D waters, unless an alternative site-specific standard has been calculated and approved based on site-specific monitoring and data analysis. Criteria in paragraph 61.3(3) “e” (1) shall initially apply to the following list of Class D lakes, listed by county in which the lake is located:

Adair: Mormon Trail Lake, Meadow Lake, Orient Lake

Adams: Lake Icaria, Binder Lake

Appanoose: Rathbun Reservoir

Audubon: Littlefield Lake

Benton: Hannen Lake, Rodgers Park Lake

Black Hawk: Mitchell Lake, George Wyth Lake, South Prairie Lake, Meyers Lake, Green Belt Lake

Boone: Don Williams Lake

Bremer: Avenue of the Saints Pond

Buena Vista: Storm Lake (including Little Storm Lake), Sturchler Pit (Newell Pit), Marathon City Park Pond, Gustafson Lake

Calhoun: North Twin Lake

Carroll: Swan Lake

Cass: Lake Anita, Cold Springs Lake

Cerro Gordo: Bluebill Lake, Clear Lake, Blue Pit

Chickasaw: Airport Lake, Split Rock Lake
Clarke: East Lake
Clay: Scharnberg Pond, Trumbull Lake
Clinton: Malone Park Pond
Crawford: Yellow Smoke Park Lake, Newcom Riggleman Natural Resource Area Pond, Nelson Park Lake
Dallas: Beaver Lake
Davis: Lake Wapello
Decatur: Little River Watershed Lake, Slip Bluff Lake, Nine Eagles Lake
Delaware: Silver Lake
Des Moines: Big Hollow Lake
Dickinson: West Okoboji Lake, Big Spirit Lake, Center Lake, Minnewashta Lake, East Okoboji Lake, Silver Lake, Little Spirit Lake, Lower Gar Lake, Upper Gar Lake
Emmet: Ingham Lake, Tuttle Lake
Fayette: Volga Lake (aka Frog Hollow)
Floyd: Rudd Lake
Franklin: Beeds Lake
Fremont: Percival Lake, McPaul 'B' Pond
Greene: Spring Lake
Guthrie: Springbrook Lake
Hamilton: Briggs Woods Lake, Little Wall Lake
Hancock: Eldred Sherwood Lake, Crystal Lake
Hardin: Upper Pine Lake, Lower Pine Lake
Harrison: Willow Lake
Henry: Lake Geode
Howard: Lake Hendricks
Ida: Moorhead Park Pond, Crawford Creek Impoundment
Iowa: Iowa Lake
Jackson: Lower Sabula Lake
Jasper: Rock Creek Lake, Mariposa Lake
Jefferson: Fairfield Municipal Reservoir #1
Johnson: Lake Macbride, Kent Park Lake
Jones: Central Park Lake
Keokuk: Lake Belva Deer
Kossuth: Lake Smith
Lee: Pollmiller Park Lake, Wilson Lake
Linn: Pleasant Creek Lake
Lucas: Red Haw Lake, Williamson Pond
Lyon: Lake Pahoja
Madison: Badger Creek Lake
Mahaska: Hawthorn Lake (aka Barnes City Lake), Lake Keomah, White Oak Conservation Area Lake
Marion: Roberts Creek Lake
Marshall: Sand Lake, Green Castle Lake
Mills: Mile Hill Lake
Monona: Oldham Lake, Blue Lake
Monroe: Lake Miami
Montgomery: Viking Lake
O'Brien: Dog Creek Lake, Mill Creek Lake, Douma Area Pond
Osceola: Willow Creek, Ocheyedon Pit #1, Ashton Park Pond
Page: Pierce Creek Pond

Palo Alto: Lost Island Lake, Five Island Lake, Silver Lake
Plymouth: Hillview Recreational Area Pond
Pocahontas: Meredith Park Pond
Polk: Big Creek Lake, Grays Lake, Easter Lake, Blue Heron Lake (Raccoon River Park)
Pottawattamie: Carter Lake, Arrowhead Pond, Lake Manawa, Arbor Lake
Sac: Arrowhead Lake, Black Hawk Lake
Scott: Lake of the Hills
Shelby: Prairie Rose Lake, Manteno Park Pond
Sioux: Fairview Area Impoundment, Otter Creek Recreational Area Pond, Winterfield Pond (aka Van Zee Pit), Big Sioux
Story: Hickory Grove Lake, Peterson Pit West
Tama: Otter Creek Lake, Casey Lake (aka Hickory Hills Lake), Union Grove Lake
Taylor: Lake of Three Fires, Windmill Lake, Wilson Park Lake
Union: Three Mile Lake, Twelve Mile Creek Lake, Green Valley Lake, Thayer Lake
Van Buren: Lacey Keosauqua Park Lake, Lake Sugema, Indian Lake
Wapello: Ottumwa Lagoon
Warren: Lake Ahquabi
Washington: Lake Darling
Wayne: Bob White Lake
Webster: Brushy Creek Lake, Badger Lake
Winnebago: Lake Catherine, Rice Lake
Winneshiek: Lake Meyer
Woodbury: Little Sioux Park Lake, Browns Lake
Worth: Silver Lake, Kuennen's Pit Wildlife Area (south), Kuennen's Pit Wildlife Area (north)
Wright: Lake Cornelia

5. Affected class of persons

All Iowans who are interested in or rely on Iowa's water resources will be affected by the proposed rules.

6. Enclosures

Enclosure A: Brief in support of proposed rule making
Enclosure B: 2008 report of the Nutrient Science Advisors
Enclosure C: 2011 DNR Notice of Intended Action
Enclosure D: 2011 DNR Informal Regulatory Analysis
Enclosure E: Map of lakes protected by the proposed rules

The Iowa Environmental Council and Environmental Law and Policy Center respectfully requests a meeting with the Department regarding this petition as provided at 567 IAC 5.1 and the Uniform Rules on Agency Procedure. Communication regarding this petition should be directed to Ralph Rosenberg of the Iowa Environmental Council.

Signed:

Ralph Rosenberg

Date: August 20, 2013

A handwritten signature in black ink that reads "Ralph Rosenberg". The signature is written in a cursive style with a long, sweeping underline.

Executive Director
Iowa Environmental Council

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Josh Mandelbaum

Date: August 20, 2013

A handwritten signature in blue ink that reads "Josh Mandelbaum". The signature is written in a cursive style with a long, sweeping underline.

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