

ENVIRONMENTAL PROTECTION COMMISSION[567]

Notice of Intended Action

Twenty-five interested persons, a governmental subdivision, an agency or association of 25 or more persons may demand an oral presentation hereon as provided in Iowa Code section 17A.4(1)“b.”

Notice is also given to the public that the Administrative Rules Review Committee may, on its own motion or on written request by any individual or group, review this proposed action under section 17A.8(6) at a regular or special meeting where the public or interested persons may be heard.

Pursuant to the authority of Iowa Code sections 455B.105 and 455B.173, the Environmental Protection Commission hereby gives Notice of Intended Action to amend Chapter 61, “Water Quality Standards,” Iowa Administrative Code.

Iowa Code sections 455B.171 through 455B.183 establish requirements for the protection and management of surface water quality. The Environmental Protection Commission, through the assistance of the Department, promulgates administrative rules on water quality. Iowa’s Water Quality Standards (WQS) are written into regulation at Chapter 61.

The Department appointed Mike Burkhart, a professor at Iowa State University, to head a science advisory panel to research nutrients and their effects on recreational uses, such as swimming, in Iowa lakes. In February 2008, the nutrient science advisors (NSA) completed their recommendations for criteria for recreational uses in lakes. The report can be found on the Department’s Web site at: <http://www.iowadnr.gov/water/standards/nutrients.html>. Based on the recommendations in the NSA report, the Department has developed draft criteria necessary to support swimming.

The NSA recommended setting two criteria that are necessary to support swimming: (1) Secchi disk depth of one meter or greater; and (2) chlorophyll-a at no higher than 25 micrograms per liter ($\mu\text{g/l}$). Both of these criteria are measures of the transparency of the water. A Secchi disk is a black and white disk developed to accurately and precisely measure how far light penetrates into the water. The disk is lowered into the water on a rope, and the depth at which the disk can still be seen is recorded. Chlorophyll-a is the pigment in algae that can make the water appear green in the summer. The clarity of the water is important for swimmers so underwater hazards can be avoided. Studies show that people are more likely to swim in lakes where the water is clearer than where it is turbid or green.

In addition to the clarity criteria discussed above, the NSA report also recommended establishing criteria for total phosphorus of 35 $\mu\text{g/l}$ and total nitrogen of 900 $\mu\text{g/l}$. Criteria for total phosphorus and total nitrogen are not included in this rule making because the Department’s analysis of the data shows that the correlation between total phosphorus and water clarity is not strong enough to warrant setting a standard that would apply to lakes across the state. Studies have shown that a stronger relationship between total phosphorus and water clarity can be drawn when a single lake is studied, but the relationship breaks down when data from multiple lakes are examined. The relationship between total nitrogen and water clarity is weaker than the relationship between total phosphorus and water clarity.

After reviewing a comprehensive list of Iowa lakes on an individual basis, the Department has developed a list of lakes to which the clarity criteria will apply. The criteria used for selection of the lakes are discussed below. A complete list of lakes reviewed for inclusion can be found on the Department’s Web site at: <http://www.iowadnr.gov/water/standards/nutrients.html>.

A lake was added to the list if the lake has a maintained beach, appears on the list of significant publicly owned lakes or has a mean depth of more than three meters (9.9 feet). Lakes with a very large drainage area to surface area ratio (DA/SA ratio), lakes where swimming is prohibited, and privately owned lakes were not added to the list. More details on the criteria used for the selection of lakes are discussed below.

Beaches: All lakes with a maintained swimming beach (except impoundments with large DA/SA ratios) are to be included in the list. The clarity criteria are intended to determine whether the water

quality in a lake can fully support recreational uses, and any lake that encourages swimming should be included regardless of the lake's mean depth or whether the lake is a significant publicly owned lake.

SPOL: All lakes considered to be a significant publicly owned lake (SPOL), except impoundments with large DA/SA ratios and lakes where swimming is prohibited, are included on the list. The definition of SPOL was created in 1980 by the Department and Iowa State University to determine which lakes should receive continuous monitoring. Significant publicly owned lakes are defined as those lakes which are principally maintained for public use, contain a minimum surface area of 10 acres and are capable of supporting fish stocks of at least 200 pounds per acre. It was decided that if a lake meets the definition of an SPOL, it should be included on the list of lakes to which the clarity criteria apply.

Mean Depth: All lakes with a mean depth of three meters (9.9 feet) or greater (except impoundments with large DA/SA ratios and lakes where swimming is prohibited) are included on the list. Any lake may become a swimming hole, but deeper lakes are typically considered to be more enticing and have more recreational potential than shallow ones and should be protected to allow for swimming.

DA/SA Ratio: Reservoirs and on-stream impoundments with a large drainage area to surface area ratio have high flow-through rates and are considered to be more like a river than a lake and should not be subject to nutrient standards intended for lakes. These water bodies were excluded from the list regardless of whether they had beaches, met the mean depth requirement, or were considered to be an SPOL.

Swimming Prohibited: Swimming is prohibited in the majority of lakes used as a drinking water supply by the municipal drinking water utility that owns the lake. These lakes were excluded from the list even if they met the SPOL or mean depth criteria. It was decided that criteria focused on swimming should not be applied to lakes that do not allow such use.

Privately Owned Lakes: Lakes that do not allow for public access are excluded from the list.

This proposed rule making is part of a wider effort to define how clean Iowa's lakes and streams should be in relation to excess nutrients. The Department is also looking at nutrients in two other major projects:

The Department has contracted with Iowa State University to develop an Index of Biotic Integrity (IBI) for lakes that will describe numerically what a healthy lake ecosystem looks like. Lakes that have IBI scores below the minimum score will be considered impaired, and corrective action will be necessary under the Clean Water Act. Iowa State University has completed the field work on this project, and the final report is expected in December 2012.

For over ten years, the Department has been collecting data from smaller streams (referred to as "wadeable streams") to determine what a healthy stream looks like. In the spring of 2010, the Department convened an advisory panel of stream experts to look at these data to see if a strong relationship exists between the health of the stream ecosystem and the nutrient levels in the stream. If a strong relationship exists, the data can be used to determine the maximum concentration of nutrients in the stream that still allows for a healthy stream.

Any person may submit written suggestions or comments on the proposed amendment on or before April 30, 2011. Such written material should be submitted to Chuck Corell, Iowa Department of Natural Resources, Wallace State Office Building, 502 East 9th Street, Des Moines, Iowa 50319-0034; or sent by fax to (515)281-8895 or by E-mail to chuck.corell@dnr.iowa.gov.

Persons are also invited to present oral or written comments at public hearings which will be held as follows:

March 23, 2011	10 a.m.	Falcon Civic Center 1305 5th Ave. NE Independence
March 23, 2011	4 p.m.	Washington Public Library State Bank Room 115 West Washington St. Washington
March 24, 2011	10 a.m.	Clear Lake Public Library 200 North Fourth St. Clear Lake
March 25, 2011	1 p.m.	Wallace State Office Building Fifth Floor Conference Rooms 502 East 9th St. Des Moines
March 29, 2011	10 a.m.	Rock Island Depot 102 Chestnut St. Atlantic
March 29, 2011	6 p.m.	Iowa Lakeside Laboratory Waitt Building, 1838 Hwy 86 Milford
March 31, 2011	4 p.m.	Chariton Public Library 803 Braden Ave. Chariton

At the hearings, persons will be asked to give their names and addresses for the record and to confine their remarks to the subject of the amendment.

Any persons who intend to attend a public hearing and have special requirements, such as those related to hearing or mobility impairments, should contact the Department to advise of specific needs.

This amendment may have an impact upon small businesses.

This amendment is intended to implement Iowa Code chapter 455B, division III, part 1.

The following amendment is proposed.

Adopt the following **new** subrule 61.3(4):

61.3(4) Lake criteria.

a. So that swimming can be supported, the following criteria are applicable to all lakes listed in paragraph 61.3(4)“*d.*”

(1) Transparency. The transparency of the lake, as measured with a Secchi disk, shall be one meter or more in at least 75 percent of the measurements taken.

(2) Chlorophyll-a. The concentration of chlorophyll-a in 75 percent of the samples analyzed shall not exceed 25 micrograms per liter (µg/l).

b. Water sampling used to determine whether a lake meets the transparency and chlorophyll-a 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.

c. Nitrogen and phosphorus concentrations are among several variables affecting lake transparency and chlorophyll-a levels. However, individual lake and watershed characteristics determine the precise amount of these nutrients that can be present and still allow the lake to meet the criteria in paragraph 61.3(4)“*a.*” For this reason, nitrogen and phosphorus reduction targets will be determined on a case-by-case basis as a result of lake-specific monitoring and data analysis. Lake nutrient-response models, such as those used to establish total maximum daily loads for lakes impaired

for not meeting the Secchi disk depth and chlorophyll-a criteria, or other appropriate scientific methods will be utilized for this purpose.

d. Criteria in paragraph 61.3(4)“a” shall apply to the following lakes, listed by the 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
- 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, 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