

Chapter 581: REGULATIONS RELATING TO WATER QUALITY EVALUATIONS

SUMMARY: These rules provide for the maintenance of stream and lake classifications without violations by computing capacity of the waters to break down waste and shows fish, wildlife, and organisms in the receiving waters to migrate both up and downstream in an undisturbed section of river adjacent to a waste discharge outfall. In addition, a scale of 0 to 100 is established in order to measure the trophic state or degree of enrichment of lakes due to nutrient input.

1. **Assimilative Capacity--Rivers and Streams.** For the purpose of computing whether a discharge will violate the classification of any river or stream, the assimilative capacity of such river or stream shall be computed using the minimum seven day low flow which occurs once in ten years. Waste discharges shall be appropriately reduced when flows fall below the seven day-ten year-low flow if the Board determines that such reduction is necessary to maintain such applicable classifications.
2. **Minimum Flow--Regulated Rivers and Streams.** For regulated rivers and streams, the Department may establish a minimum flow necessary to maintain water quality standards. This flow will be based upon achieving the assigned classification, criteria and protection of the uses of the stream. The Department will cooperate with appropriate Federal, State and private interests in the development and maintenance of stream flow requirements.
3. **Assimilative Capacity--Great Ponds.** The hydraulic residence time will be used to compute the assimilative capacity of great ponds. Hydraulic residence time will be computed by dividing lake volume by the product of watershed area and the precipitation runoff coefficient.
4. **Reserved**
5. **Zone of Passage.** All discharges of pollutants shall, at a minimum, provide for a zone of passage for free-swimming and drifting organisms. Such zone of passage shall not be less than 3/4 of the cross-sectional area at any point in the receiving body of water. Such zone of passage may be reduced whenever the applicant for a discharge can demonstrate that (a) because of physical phenomena in the receiving body of water such minimum zone cannot be maintained and (b) such minimum zone of passage is not necessary to protect organisms in the receiving body of water from substantial adverse effects.
6. **Great Ponds Trophic State**
 - A. Trophic state is the ability of a body of water to produce algae and other aquatic plants. The trophic state of a body of water is a function of its nutrient content and may be estimated using the Maine Trophic State Index (TSI) as follows:

All Lakes:

$$TSI = 70 \log (\text{mean chlorophyll } a + 0.7)$$

Lakes with water color <30 SPU:

$$TSI = 70 \log (.33 \text{ mean total phosphorus} + 0.7) \text{ or,}$$

$$TSI = 70 \log (\underline{105} + 0.7)$$

mean Secchi disk

Standardized data requirements for calculating TSI shall be determined by the Department.

- B. Algal bloom.** - An algal bloom is defined as a planktonic growth of algae which causes Secchi disk transparency to be less than 2.0 meters.
- C. Stable or decreasing trophic state.** A GPA water shall be considered to have stable or declining trophic state unless it exhibits (1) a perceivable and sustained increase in its trophic state as characterized by its Trophic State Index or other appropriate indices, or (2) the onset of algal blooms.

AUTHORITY: 38 M.R.S.A., Section 343-A and 465-A.

EFFECTIVE DATE: November 29, 1973
 Amended: March 14, 1977
 Amended: January 29, 1989

EFFECTIVE DATE (ELECTRONIC CONVERSION): May 4, 1996

BASIS STATEMENT

These regulations provide the framework for more clearly and comprehensively defined water quality evaluation for both rivers and ponds and allows for optimum management of waters of the State. Sections 1, 2, and 5 define design flows and other requirements for rivers and streams to be used in waste discharge licensing procedures and have not been changed.

Section 6 has been changed to better define the new descriptive standards for classification of lakes and ponds contained in Maine's new Water Classification Program (38 MRSA Section 465-A).

Section 7, Stream Species Diversity Index is deleted since it is no longer used. New biological criteria are currently being developed and will be subject to future rulemaking.