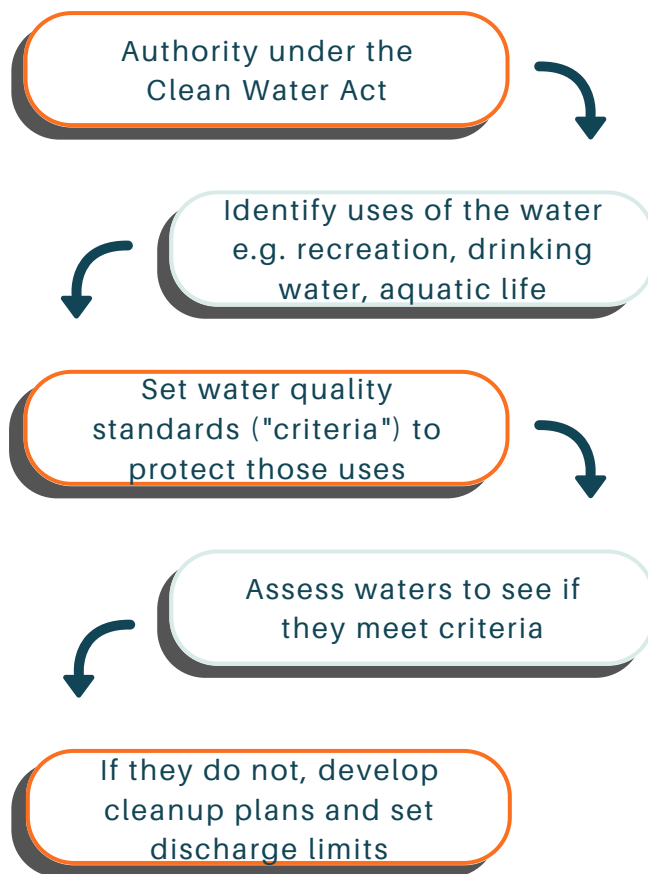


Numeric Nutrient Criteria for Iowa's Lakes

How Water Quality Standards Work



Current standards for nutrient pollution are *narrative*:

All surface waters "shall be free from materials attributable to wastewater discharges or agricultural practices producing objectionable color, odor, or other aesthetically objectionable conditions." [1]

All surface waters "shall be free from substances, attributable to wastewater discharges or agricultural practices, in quantities which would produce undesirable or nuisance aquatic life." [2]

Nutrient pollution is nitrogen and phosphorus, primarily from fertilizers

Narrative criteria are insufficient because they are not:

- OBJECTIVE
- PROTECTIVE
- SUPPORTED BY SOUND SCIENTIFIC RATIONALE
- SUBSTITUTES FOR NUMERIC CRITERIA

By adopting NNC, the state can protect waterways from adverse impacts that can affect human health, recreation, and aquatic life

What would *numeric* standards look like?

- U.S. EPA has developed a model for recommended numeric nutrient criteria (NNC) for lakes and reservoirs based on Iowa water data.
- NNC are water quality standards for nitrogen and phosphorus.
- The criteria are based on "stressor-response" modeling. This means that the recommended limits on the "stressors" (nitrogen and phosphorus pollution) prevent an adverse "response" (i.e. a harmful algae bloom, depletion of dissolved oxygen).
- The stressor-response model is designed to reflect unique local conditions.

[1] 567 IAC 61.3(2)(c)

[2] 567 IAC 61.3(2)(e)