

Nuisance species excerpts from other states assessment methodologies.

Delaware:

The following conditions will also result in segments being listed in Category 5:

1. There were documented cases of nuisance algal blooms or excessive macrophyte growth.

These cases violate Section 4.1.1.3 of Delaware's Standards which require waters of the State to be free from substances that may result in a dominance of nuisance species

Massachusetts:

From Table 1: Summary of Massachusetts Surface Water Quality Standards (MassDEP 2006, MA DPH 2002, FDA 2003).

Aesthetics Use: All Classes: All surface waters shall be free from pollutants in concentrations or combinations that settle to form objectionable deposits; float as debris, scum or other matter to form nuisances; produce objectionable odor, color, taste or turbidity; or produce undesirable or nuisance species of aquatic life.

Pg 15: Massachusetts Estuaries Project (MEP) incorporates eelgrass mapping information into their assessment of nutrient-related health of coastal embayments in southeastern Massachusetts (Howes et al. 2003). The MEP also uses the presence and degree of accumulation of nuisance species of macroalgae as an indication of nutrient impairment in coastal embayments.

Pg 45: Aesthetics Use Assessment

Use is Supported: No aesthetically objectionable conditions; waterbodies are generally "free from pollutants in concentrations or combinations that settle to form objectionable deposits; float as debris, scum or other matter to form nuisances; produce objectionable odor, color, taste or turbidity; or produce undesirable or nuisance species of aquatic life"

Use is Impaired: Aesthetically objectionable conditions frequently observed (e.g., blooms, scums, water odors, discoloration, taste, visual turbidity highly cloudy/murky, excess algal growth (>40% filamentous cover in rivers, nuisance growths >25% dense/very dense macrophytes or blooms in lakes (or the impounded reaches of a river AU), Secchi disk transparency < 4 feet at least twice during survey season.

New York

Pg 23:

Habitat/Hydrology Condition

The evaluation of the *Habitat/Hydrology* condition of a waterbody is helpful in instances where water quality is appropriate to fully support uses, but other conditions – such as poor or altered

habitat, low streamflow/water level, invasive or nuisance species – result in impacts to uses. Federal (USEPA) guidance regarding water quality assessments recognizes a distinction between impacts and impairments that are caused by pollutants (i.e., substances/contaminants in a waterbody whose loadings can be reduced) and those that are the result of pollution (i.e. conditions that are characteristic, perhaps naturally occurring, of the waterbody). NYSDEC uses the evaluation of the *Habitat/Hydrology* condition to identify and segregate water quality-caused impacts from conditions that are related to habitat and/or hydrology.

Table 8 Habitat/Hydrology Condition

Evaluation Criteria	Condition
Conditions are a Determining Factor in Some Use Support Evaluations - Habitat conditions¹ that result in moderate or severe biological impact. - Reduced streamflow or impoundment effects that result in moderate or severe biological or recreational impact. - Low flow or other barriers that restrict passage of fish species - Excessive invasive/exotic plant growth² resulting in impacts requiring active management (e.g. mechanical weed harvesting) to maintain recreational use.	Poor
Conditions have Some Influence on Use Support Evaluations - Habitat conditions¹ that result in slight biological impact. - Invasive or exotic plant growth² that is well established that requires active management (e.g. mechanical harvesting) to enhance recreation use.	Fair
Conditions Do Not Influence Use Support Evaluations - No biological impacts that are the result of habitat/hydrology conditions, and - No indications of restricted passage that limit fish propagation, and - No recreational impacts from invasive and/or exotic plants.	Good
* Parameter-Specific Condition Evaluation Criteria Habitat Model Affinity < 70	
¹ Typically determined using Habitat Model Affinity (See <i>Parameter-Specific Condition Evaluation Criteria</i> , above), or other measures/observations of habitat or hydrologic impacts to biological community. ² Invasive/Exotic plant growth is reflected in the Habitat/Hydrology condition. Excessive native plant growth is more typically captured in the Aesthetic condition.	

Rhode Island

2.3 Narrative Water Quality Criteria

The state has adopted narrative criteria to supplement the numeric criteria. Narrative criteria are descriptions of the conditions necessary for a waterbody to attain its designated use. The narrative criteria are contained within the Water Quality Regulations. The state uses these descriptive criteria to evaluate water quality indicators such as toxicity, nutrients, excess algal growth, noxious aquatic plants, aesthetics, habitat and biological condition. In general, the state's narrative criteria indicate that waters should be free from substances that:

- Cause injury to, are toxic to, or produce adverse physiological responses in humans, animals, or plants;
- Settle to form objectionable deposits;
- Float as debris, scum, oil, or other material in concentrations that form nuisances;
- Produce objectionable color, odor, taste, or turbidity; or
- Produce undesirable aquatic life or result in the dominance of nuisance species.

Vermont

Pg 23: Nuisance and Invasive Aquatic Species

Full Support: Waters have native plant species and communities as would be expected and in good ecological balance. Waters are not stressed or altered by invasive non-native aquatic species.

Stressed: Invasive non-native species are present but not at levels where a nuisance has been documented or in “light” densities (scattered areas of growth in limited areas of the littoral zone). In the case of Eurasian milfoil, lakes within a 10-mile radius of an infested lake are considered stressed, unless access to the lake is remote or inaccessible by conventional means.

Altered: Invasive non-native species present in densities such that swimming uses are not met. For aquatic macrophytes, typically these conditions are characterized by greater than 75% cover of the non-native macrophyte and designated as “moderate” or “heavy” infestations. For species other than aquatic macrophytes such as zebra mussels, colonies would be present in such densities and at such depths as to impact swimming uses due to potential for injury to bare feet. Nutrients are not applicable in this category.

Impaired: An on-going record of public complaint concerning the algal conditions in the water has been established. For cyanobacteria (blue-green algae), regular, reliable monitoring indicates that cyanobacteria routinely exceed guidelines established by the Vermont Department of Health for recreation. Invasive non-native aquatic species are not applicable in this category.

Pg 27: Secondary Contact/Non-Contact Recreation Use

For assessment of Secondary Contact/Non-Contact Recreation Use, the DEC Watershed Management Division uses information regarding water quantity and water quality, data and other information regarding the game fishery and records of public feedback and complaint to determine levels of support.

Full Support: Water quantity and quality sufficient for boating and fishing.

Stressed: Odor, color, plant growth, low water conditions occasionally discourage boating or fishing.

Altered: Fishing and/or boating are limited due to insufficient or diminished or lack of water, aquatic nuisance species or channel alterations. Boating is not feasible to the degree deemed achievable for the water’s Water Management Type.

Impaired: Fishing and/or boating are limited due to water quality or aquatic habitat impairment(s) caused by pollutants from human sources