



## **Aquatic Characteristic: Vegetation**

### Description

Vegetation are plants that grow in and around water bodies and provide in-water cover and physical structuring.

### General Condition of Feature

This habitat is considered 70% in good to excellent condition, 25% in fair condition, and 5% in degraded to very degraded condition.

### Associated Species of Greatest Conservation Need

#### **SNAILS**

spindle lymnaea (*Acella haldemani*)

#### **CRAYFISH**

digger crayfish (*Fallicambarus fodiens*)

#### **INSECTS**

a sand minnow mayfly (*Siphloplecton basale*)

sedge darner (*Aeshna juncea*)

spatterdock darner (*Aeshna mutata*)

zigzag darner (*Aeshna sitchensis*)

rapids clubtail (*Gomphus quadricolor*)

incurvate emerald dragonfly (*Somatochlora incurvata*)

ebony boghaunter (*Williamsonia fletcheri*)

#### **FISH**

brassy minnow (*Hybognathus hankinsoni*)

#### **FISH cont.**

finescale dace (*Phoxinus neogaeus*)

brown bullhead (*Ameiurus nebulosus*)

slimy sculpin (*Cottus cognatus*)

least darter (*Etheostoma microperca*)

#### **AMPHIBIANS**

blue-spotted salamander (*Ambystoma laterale*)

eastern tiger salamander (*Ambystoma tigrinum tigrinum*)

four-toed salamander (*Hemidactylium scutatum*)

mudpuppy (*Necturus maculosus maculosus*)

pickereel frog (*Rana palustris*)

northern leopard frog (*Rana pipiens*)

#### **REPTILES**

Blanding's turtle (*Emydoidea blandingii*)

### Associated Threats

#### **POLLUTION**

- Altered nutrient inputs: Eutrophication (low threat)
- Altered sediment loads: (low threat)
- Pesticides and herbicides: (low threat)
- Urban, municipal, and industrial pollution: (low threat)

#### **HABITAT CONVERSION**

- Riparian modifications: Riparian macrophyte removal

#### **BIOLOGICAL INTERACTIONS**

- Disease, pathogens, and parasites: (low threat)
- Invasive plants and animals: Especially Eurasian milfoil

#### **NON-CONSUMPTIVE BIOLOGICAL RESOURCE USE**

- Macrophyte removal: Aquatic macrophyte removal from riparian shoreline (low threat)

### Conservation Actions Needed (Threats addressed)

#### **LAND, WATER & SPECIES MANAGEMENT**

- Control and prevent aquatic invasive species introductions and establishments (invasive plants and animals)
- Develop integrated pest management plans (invasive plants and animals)
- Maintain or establish riparian buffers of at least 50 ft., but 500 ft. or wider maximizes conservation benefits (riparian modifications)
- Rehabilitate native flora (riparian modifications)
- Removal of invasive vegetation should preserve 60-80% of native vegetation (invasive plants and animals)
- Require all vegetation management to occur in conjunction with a watershed management plan (macrophyte removal)
- Soften or remove hard river or shoreline structures (riparian modifications)

#### **LAW & POLICY**

- Continued vigilance and cooperation on preventing more aquatic invasive species establishments (invasive plants and animals)
- Enact and enforce shoreline protection regulations (riparian modifications)
- Restrict beach grooming (riparian modifications)
- Use natural materials or soft engineering techniques for any shoreline or riparian modifications (riparian modifications)
- Work with local governments to develop and refine planning and zoning regulations and ordinances that consider natural processes (riparian modifications)

- Work with local officials on setback and buffer ordinances (riparian modifications)

**EDUCATION & AWARENESS**

- Educate landowners of the importance of shoreline vegetation (riparian modifications)
- Educate landowners on the value of macrophytes, riparian vegetation, natural shorelines, wetlands, and stewardship issues (variety of threats)
- Increase education to boaters, scuba divers, windsurfers, and other water users on preventing the spread of invasive aquatic species (invasive plants and animals)

**Research and Survey Needs**

- Determine prevention, control, and survey techniques for aquatic invasive species
- Determine life history requirements for SGCN associated with vegetation
- Determine condition of vegetation habitat in watersheds
- Determine amount of pesticides and herbicides used in each watershed and ways to decrease amounts
- Educate the public on the role and value of vegetation
- Model hydrologic flows in each watershed
- Survey erosion sites within watershed and develop strategies to reduce identified problems
- Survey for important nursery areas in lakes that have frequent macrophyte treatments

**Monitoring**

- Aquatic invasive species
- Dredging and channelization
- Hydrologic flows
- Macrophyte manipulation
- Native flora
- Pesticide and herbicide use
- Riparian modifications
- Wetland modification